Appendix I
Hydrology and Water Quality

ESA

I-1 Preliminary Drainage Report (Two Buildings Option)

PRELIMINARY DRAINAGE REPORT

For

Veterans Industrial Park 215

PROJECT LOCATION

East of 215 Freeway adjacent to March Air Force Base

DEVELOPER

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PREPARATION DATE

October 14, 2016
Revised: December 5, 2019

HZ PROJECT NUMBER

R304163.01

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Introduction

This preliminary drainage report has been prepared for Riverside Inland Development and March Joint Powers Authority (MJPA). The project is a new development of two industrial warehouse buildings located on the east side of the 215 Freeway at the southerly terminus of Van Buren Boulevard adjacent to March Air Force Base. Building 1 is located on the north half of the site and is approximately 1,002,601 square feet in size on approximately 60 acres of undeveloped land. Building 2 is located on the south half of the site and is approximately 1,087,917 square feet in size on approximately 68 acres of undeveloped land.

Purpose

The purpose of this report is to present the drainage concept for the project and to determine the design flow rates, estimate the storm drain sizes, and accurately size the bio-retention basins. The hydrology maps and calculations reflect the tributary areas and runoff flows for multiple storm events.

Existing Condition

The project site generally slopes from northwest to southeast, elevations ranging from ±1525 feet to ±1500 feet. There is an existing earthen channel that runs from the northwest corner to the southeast corner of the site. The channel picks up runoff from culverts beneath the 215 freeway and conveys the runoff southerly through the Air Force Base property. Runoff from the vacant site is also tributary to this channel, which eventually discharges into the Perris Valley Channel at Heacock Street.

Due to the condition of the earthen channel and the lack of improved downstream drainage facilities, the project will be required to mitigate the developed flows to pre-development levels.

Site Discussion

For the proposed condition, the project site will be divided into two parcels sharing a common property line. Each building or parcel will have its own drainage improvements in order to allow the project to be constructed in phases.

The earthen channel will be replaced with an underground RCB storm drain which will run just inside the property along Van Buren. Once the RCB reaches the southeast corner it will transition to a concrete-lined trapezoidal channel and discharge to the existing earthen channel inside the Air Force Base property. Existing runoff from the freeway culverts will be connected to the RCB by new storm drain box culverts or pipes.

The proposed runoff will be directed to on-site bio-retention basins using a combination of surface gutters and sub-surface storm drain pipes. The project WQMP report contains specific details about the bio-retention basins. Each basin has additional storage capacity above the water quality treatment volume to mitigate different storm events. Runoff from the basin's subdrain system and overflow grate will gravity drain to the proposed RCB storm drain.

Off-site runoff generated from Van Buren will be addressed by others and is excluded from this report.

Hydrologic Analysis

A hydrologic analysis was prepared using the methodology outlined in the Riverside County Flood Control and Water Conservation District Hydrology Manual. A rational method analysis was completed for the proposed 100-year return event using Civild software. The calculations are included in Appendix A and indicate flow data at each node. Existing and Proposed condition Hydrology Maps for this project are included in Appendix B of this report.

Unit Hydrograph and Basin Routing calculations were also performed utilizing the Civild software and the results are included in Appendices C and D.

The 100-year, 1-hour rainfall rates were taken from the isohyetal maps in the Riverside County Flood Control and Water Conservation District Hydrology Manual. The hydrologic soils type for the site is "C" and was taken from the soils map in the Riverside County Flood Control and Water Conservation District Hydrology Manual (see Appendix E for reference maps). A "commercial" land use was used with an AMC of III.

Results

The basin routing summary table on the following page demonstrates that the proposed discharge after basin routing is less than the existing runoff at each of the three bio-retention basins for the 1, 2, 5, 10, 25, and 100 year storm events.

All proposed drainage and storm drain facilities will be sized adequately for the 100-year storm event and additional calculations will be provided in the final Drainage Report including storm drain hydraulics and catch basin sizing.

AREA A - BASIN 1 (60.2 ac.)

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	5.08	7.36	11.96	17.45	22.05	30.79
EXISTING RUNOFF	0.94	1.29	1.72	11.50	16.01	28.28
REQUIRED MITIGATION:	**4.14**	**6.07**	**10.24**	**5.95**	**6.04**	**2.51**
DISCHARGE FROM BASIN AFTER ROUTING*	0.92	1.06	1.87	8.02	13.32	20.40
ALLOWABLE TOTAL DISCHARGE	**0.94**	**1.29**	**1.72**	**11.50**	**16.01**	**28.28**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)

AREA B - BASIN 2 (29.1 ac.)*

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	2.47	3.62	5.86	8.52	10.76	15.00
EXISTING RUNOFF	0.46	0.62	0.84	5.58	7.77	13.71
REQUIRED MITIGATION:	**2.01**	**3.00**	**5.02**	**2.94**	**2.99**	**1.29**
DISCHARGE FROM BASIN AFTER ROUTING*	0.46	0.51	0.82	1.92	6.41	11.11
ALLOWABLE TOTAL DISCHARGE	**0.46**	**0.62**	**0.84**	**5.58**	**7.77**	**13.71**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)
* 43.8% OF AREA B

AREA B - BASIN 3 (37.4 ac.)*

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	3.16	4.59	7.46	10.87	13.73	19.17
EXISTING RUNOFF	0.58	0.80	1.07	7.17	9.98	17.59
REQUIRED MITIGATION:	**2.58**	**3.79**	**6.39**	**3.70**	**3.75**	**1.58**
DISCHARGE FROM BASIN AFTER ROUTING*	0.51	0.63	1.04	6.37	9.47	15.24
ALLOWABLE TOTAL DISCHARGE	**0.58**	**0.80**	**1.07**	**7.17**	**9.98**	**17.59**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)
* 56.2% OF AREA B

List of Appendices

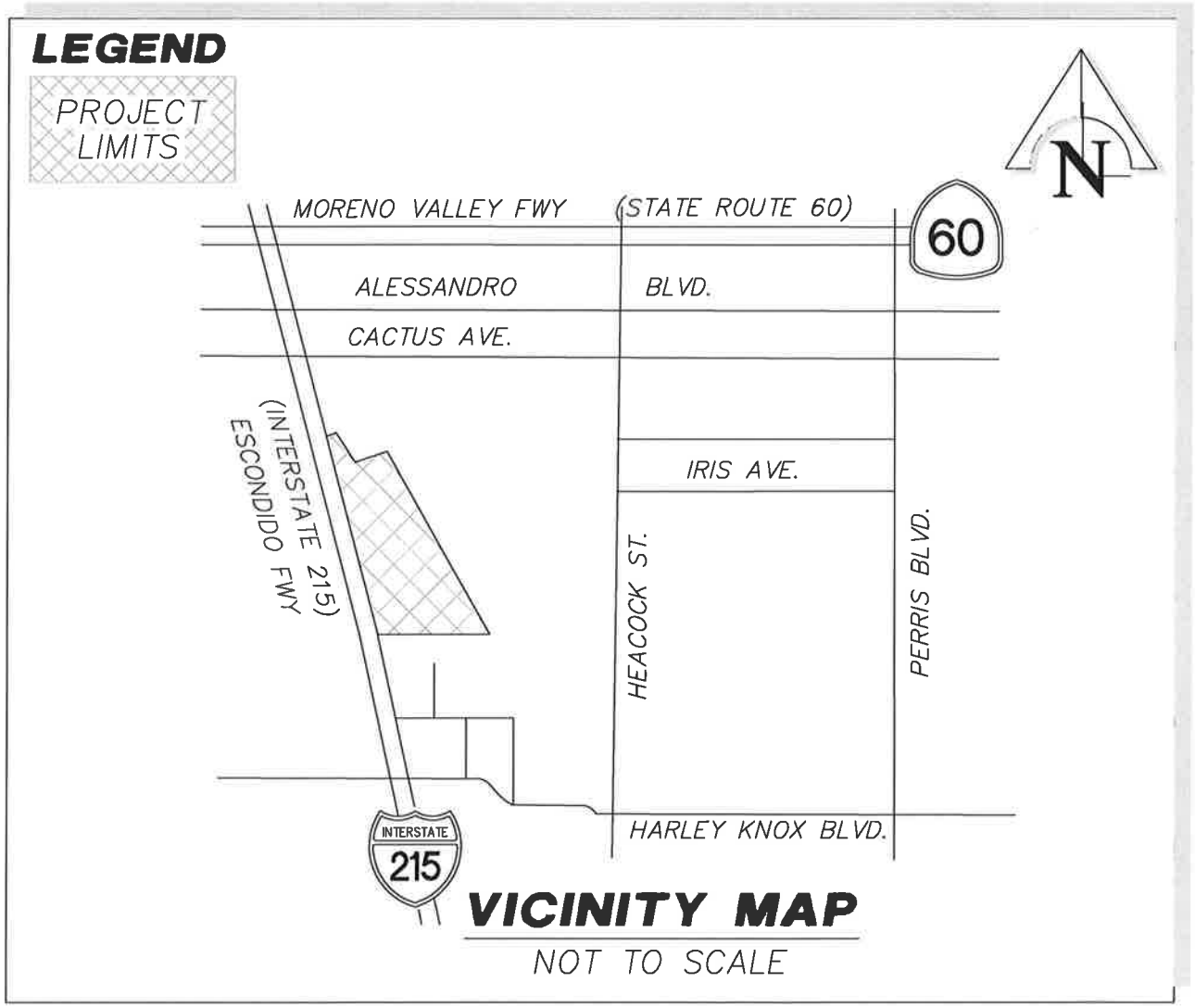
Appendix A
- Basin 1 Proposed 100-year Rational Method Hydrologic Analysis
- Basin 2 Proposed 100-year Rational Method Hydrologic Analysis
- Basin 3 Proposed 100-year Rational Method Hydrologic Analysis

Appendix B
- Existing Preliminary Hydrology Map
- Proposed Preliminary Hydrology Map

Appendix C
- Area A-1 Existing U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
- Area B-1 Existing U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
- Basin 1 Proposed U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
- Basin 2 Proposed U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
- Basin 3 Proposed U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms

Appendix D
- Basin 1 Routing Analysis for 1, 2, 5, 10, 25, and 100 year storms
- Basin 2 Routing Analysis for 1, 2, 5, 10, 25, and 100 year storms
- Basin 3 Routing Analysis for 1, 2, 5, 10, 25, and 100 year storms

Appendix E
- Soil Group Map and Isohyetal Map



VICINITY MAP

NOT TO SCALE

Appendix A

Basin 1 Proposed 100-year Rational Method Hydrologic Analysis
Basin 2 Proposed 100-year Rational Method Hydrologic Analysis
Basin 3 Proposed 100-year Rational Method Hydrologic Analysis

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 10/13/16 File:4163NP100.out

PROPOSED 100 YEAR HYDROLOGY
MJPA 304163
BUILDING 1

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6145

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 3

2 year, 1 hour precipitation = 0.480(In.)
100 year, 1 hour precipitation = 1.200(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.200(In/Hr)
Slope of intensity duration curve = 0.4800

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Process from Point/Station 21.000 to Point/Station 22.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 540.000(Ft.)
Top (of initial area) elevation = 1524.650(Ft.)
Bottom (of initial area) elevation = 1520.900(Ft.)
Difference in elevation = 3.750(Ft.)
Slope = 0.00694 s(percent)= 0.69
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 10.040 min.
Rainfall intensity = 2.830(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.893
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3) = 84.40
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 7.581(CFS)
Total initial stream area = 3.000(Ac.)
Pervious area fraction = 0.100

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Process from Point/Station       22.000 to Point/Station       23.000
**** IMPROVED CHANNEL TRAVEL TIME ****
------------------------------------------------------------------------------
Upstream point elevation =  1520.900(Ft.)
Downstream point elevation =  1513.790(Ft.)
Channel length thru subarea  =  1057.000(Ft.)
Channel base width  =    3.000(Ft.)
Slope or 'Z' of left channel bank = 100.000
Slope or 'Z' of right channel bank =  40.000
Estimated mean flow rate at midpoint of channel =     18.727(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     18.727(CFS)
Depth of flow =   0.310(Ft.), Average velocity =   2.445(Ft/s)
Channel flow top width =   46.410(Ft.)
Flow Velocity =    2.44(Ft/s)
Travel time  =    7.21 min.
Time of concentration =   17.25 min.

Sub-Channel No. 1 Critical depth =      0.318(Ft.)
  '     '       '     Critical flow top width =     47.570(Ft.)
  '     '       '     Critical flow velocity=    2.326(Ft/s)
  '     '       '     Critical flow area =      8.050(Sq.Ft)

 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.183(In/Hr) for a   100.0 year storm
Subarea runoff =     22.230(CFS) for     11.430(Ac.)
Total runoff =     29.811(CFS)   Total area =      14.430(Ac.)
Depth of flow =   0.373(Ft.), Average velocity =   2.747(Ft/s)

Sub-Channel No. 1 Critical depth =      0.387(Ft.)
  '     '       '     Critical flow top width =     57.141(Ft.)
  '     '       '     Critical flow velocity=    2.564(Ft/s)
  '     '       '     Critical flow area =     11.629(Sq.Ft)



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Process from Point/Station       23.000 to Point/Station       24.000
**** IMPROVED CHANNEL TRAVEL TIME ****
------------------------------------------------------------------------------
Upstream point elevation =  1513.790(Ft.)
Downstream point elevation =  1511.290(Ft.)
Channel length thru subarea  =   488.000(Ft.)
Channel base width  =    3.000(Ft.)
Slope or 'Z' of left channel bank = 100.000
Slope or 'Z' of right channel bank =  40.000
Estimated mean flow rate at midpoint of channel =     38.012(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     38.012(CFS)
Depth of flow =   0.433(Ft.), Average velocity =   2.636(Ft/s)
Channel flow top width =   63.614(Ft.)
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Flow Velocity =    2.64(Ft/s)
Travel time  =    3.09 min.
Time of concentration =   20.33 min.

Sub-Channel No. 1 Critical depth =      0.430(Ft.)
  '     '       '     Critical flow top width =     63.156(Ft.)
  '     '       '     Critical flow velocity=    2.674(Ft/s)
  '     '       '     Critical flow area =     14.213(Sq.Ft)

 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.017(In/Hr) for a   100.0 year storm
Subarea runoff =     16.324(CFS) for      9.090(Ac.)
Total runoff =     46.134(CFS)   Total area =      23.520(Ac.)
Depth of flow =   0.467(Ft.), Average velocity =   2.767(Ft/s)

Sub-Channel No. 1 Critical depth =      0.465(Ft.)
  '     '       '     Critical flow top width =     68.078(Ft.)
  '     '       '     Critical flow velocity=    2.793(Ft/s)
  '     '       '     Critical flow area =     16.520(Sq.Ft)



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Process from Point/Station       24.000 to Point/Station       25.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1506.110(Ft.)
Downstream point/station elevation =  1502.110(Ft.)
Pipe length  =  1000.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    46.134(CFS)
Nearest computed pipe diameter  =     36.00(In.)
Calculated individual pipe flow  =    46.134(CFS)
Normal flow depth in pipe =   29.81(In.)
Flow top width inside pipe =   27.16(In.)
Critical Depth =   26.55(In.)
Pipe flow velocity =      7.37(Ft/s)
Travel time through pipe =    2.26 min.
Time of concentration (TC) =    22.59 min.


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Process from Point/Station       25.000 to Point/Station       25.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    22.59 min.
Rainfall intensity =      1.918(In/Hr) for a   100.0 year storm
Subarea runoff =     13.752(CFS) for      8.060(Ac.)
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Total runoff =     59.887(CFS)   Total area =      31.580(Ac.)


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Process from Point/Station       25.000 to Point/Station       30.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1502.110(Ft.)
Downstream point/station elevation =  1502.000(Ft.)
Pipe length  =    26.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    59.887(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    59.887(CFS)
Normal flow depth in pipe =   33.09(In.)
Flow top width inside pipe =   27.96(In.)
Critical Depth =   29.65(In.)
Pipe flow velocity =      7.98(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    22.65 min.


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Process from Point/Station       30.000 to Point/Station       30.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     31.580(Ac.)
Runoff from this stream =     59.887(CFS)
Time of concentration =   22.65 min.
Rainfall intensity =     1.915(In/Hr)
Program is now starting with Main Stream No. 2


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Process from Point/Station       26.000 to Point/Station       27.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   925.000(Ft.)
Top (of initial area) elevation =  1525.400(Ft.)
Bottom (of initial area) elevation =  1519.000(Ft.)
Difference in elevation =     6.400(Ft.)
Slope =    0.00692  s(percent)=       0.69
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.461 min.
Rainfall intensity =      2.552(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.892
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      3.164(CFS)
Total initial stream area =        1.390(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station       27.000 to Point/Station       28.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
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Top of street segment elevation =  1519.000(Ft.)
End of street segment elevation =  1511.810(Ft.)
Length of street segment  =   710.000(Ft.)
Height of curb above gutter flowline  =    8.0(In.)
Width of half street (curb to crown)  =  36.000(Ft.)
Distance from crown to crossfall grade break  =  10.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  11.000(Ft.)
Slope from curb to property line (v/hz) =   0.018
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     11.835(CFS)
Depth of flow =   0.500(Ft.), Average velocity =   3.276(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  18.672(Ft.)
Flow velocity =   3.28(Ft/s)
Travel time =    3.61 min.     TC =   16.07  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.258(In/Hr) for a   100.0 year storm
Subarea runoff =     17.266(CFS) for      8.580(Ac.)
Total runoff =     20.430(CFS)   Total area =       9.970(Ac.)
Street flow at end of street =     20.430(CFS)
Half street flow at end of street =     20.430(CFS)
Depth of flow =   0.588(Ft.), Average velocity =   3.746(Ft/s)
Flow width (from curb towards crown)=  23.081(Ft.)


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Process from Point/Station       28.000 to Point/Station       29.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
_____________________________________________________________________________
Top of street segment elevation =  1511.810(Ft.)
End of street segment elevation =  1508.440(Ft.)
Length of street segment  =   674.000(Ft.)
Height of curb above gutter flowline  =    8.0(In.)
Width of half street (curb to crown)  =  36.000(Ft.)
Distance from crown to crossfall grade break  =  10.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  11.000(Ft.)
Slope from curb to property line (v/hz) =   0.018
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     29.858(CFS)
Depth of flow =   0.751(Ft.), Average velocity =   2.964(Ft/s)
Warning: depth of flow exceeds top of curb
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Distance that curb overflow reaches into property =    4.69(Ft.)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  31.222(Ft.)
Flow velocity =   2.96(Ft/s)
Travel time =    3.79 min.     TC =   19.86  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.040(In/Hr) for a   100.0 year storm
Subarea runoff =     18.779(CFS) for     10.340(Ac.)
Total runoff =     39.209(CFS)   Total area =      20.310(Ac.)
Street flow at end of street =     39.209(CFS)
Half street flow at end of street =     39.209(CFS)
Depth of flow =   0.819(Ft.), Average velocity =   3.079(Ft/s)
Warning: depth of flow exceeds top of curb
Distance that curb overflow reaches into property =    8.44(Ft.)
Flow width (from curb towards crown)=  34.596(Ft.)


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Process from Point/Station       29.000 to Point/Station       30.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1502.140(Ft.)
Downstream point/station elevation =  1502.000(Ft.)
Pipe length  =    34.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    39.209(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    39.209(CFS)
Normal flow depth in pipe =   29.70(In.)
Flow top width inside pipe =   19.80(In.)
Critical Depth =   24.98(In.)
Pipe flow velocity =      6.96(Ft/s)
Travel time through pipe =    0.08 min.
Time of concentration (TC) =    19.94 min.


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Process from Point/Station       30.000 to Point/Station       30.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =     20.310(Ac.)
Runoff from this stream =     39.209(CFS)
Time of concentration =   19.94 min.
Rainfall intensity =     2.036(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       59.887     22.65           1.915
2       39.209     19.94           2.036
Largest stream flow has longer time of concentration
Qp =     59.887 + sum of
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         Qb         Ia/Ib
         39.209 *    0.941 =     36.888
Qp =     96.775

Total of 2 main streams to confluence:
Flow rates before confluence point:
      59.887      39.209
Area of streams before confluence:
       31.580       20.310


Results of confluence:
Total flow rate =     96.775(CFS)
Time of concentration =    22.649 min.
Effective stream area after confluence  =     51.890(Ac.)


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Process from Point/Station       30.000 to Point/Station       30.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    22.65 min.
Rainfall intensity =      1.915(In/Hr) for a   100.0 year storm
Subarea runoff =      3.715(CFS) for      2.180(Ac.)
Total runoff =    100.491(CFS)   Total area =      54.070(Ac.)
End of computations, total study area =           54.07 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
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Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 12/05/19 File:4163p100.out

PROPOSED 100 YEAR HYDROLOGY
MJPA 304163
BASIN 2

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6145

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 3

2 year, 1 hour precipitation = 0.480(In.)
100 year, 1 hour precipitation = 1.200(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.200(In/Hr)
Slope of intensity duration curve = 0.4800

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Process from Point/Station 10.000 to Point/Station 11.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 850.000(Ft.)
Top (of initial area) elevation = 1516.800(Ft.)
Bottom (of initial area) elevation = 1510.800(Ft.)
Difference in elevation = 6.000(Ft.)
Slope = 0.00706 s(percent)= 0.71
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.999 min.
Rainfall intensity = 2.598(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.892
Decimal fraction soil group A = 0.000

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Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      5.402(CFS)
Total initial stream area =        2.330(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station       11.000 to Point/Station       12.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  1510.800(Ft.)
End of street segment elevation =  1508.440(Ft.)
Length of street segment  =   932.000(Ft.)
Height of curb above gutter flowline  =   12.0(In.)
Width of half street (curb to crown)  = 100.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   5.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   1.500(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     13.265(CFS)
Depth of flow =   0.608(Ft.), Average velocity =   1.995(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  25.647(Ft.)
Flow velocity =   1.99(Ft/s)
Travel time =    7.79 min.     TC =   19.79  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.044(In/Hr) for a   100.0 year storm
Subarea runoff =     15.649(CFS) for      8.600(Ac.)
Total runoff =     21.051(CFS)    Total area =      10.930(Ac.)
Street flow at end of street =     21.051(CFS)
Half street flow at end of street =     21.051(CFS)
Depth of flow =   0.706(Ft.), Average velocity =   2.238(Ft/s)
Flow width (from curb towards crown)=  30.553(Ft.)
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Process from Point/Station       12.000 to Point/Station       13.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  1500.000(Ft.)
Downstream point/station elevation =  1499.500(Ft.)
Pipe length  =    21.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    21.051(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    21.051(CFS)
Normal flow depth in pipe =   15.02(In.)
Flow top width inside pipe =   18.95(In.)
Critical Depth =   19.44(In.)
Pipe flow velocity =     11.43(Ft/s)
Travel time through pipe =    0.03 min.
Time of concentration (TC) =    19.82 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       13.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    19.82 min.
Rainfall intensity =      2.042(In/Hr) for a   100.0 year storm
Subarea runoff =      5.128(CFS) for      2.820(Ac.)
Total runoff =     26.178(CFS)    Total area =      13.750(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       14.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  1499.500(Ft.)
Downstream point/station elevation =  1498.500(Ft.)
Pipe length  =    66.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    26.178(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    26.178(CFS)
Normal flow depth in pipe =   18.49(In.)
Flow top width inside pipe =   20.18(In.)
Critical Depth =   21.47(In.)
Pipe flow velocity =     10.08(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =    19.93 min.
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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       14.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    19.93 min.
Rainfall intensity =      2.037(In/Hr) for a   100.0 year storm
Subarea runoff =      4.135(CFS) for      2.280(Ac.)
Total runoff =     30.313(CFS)    Total area =      16.030(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       14.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    19.93 min.
Rainfall intensity =      2.037(In/Hr) for a   100.0 year storm
Subarea runoff =     23.684(CFS) for     13.060(Ac.)
Total runoff =     53.997(CFS)    Total area =      29.090(Ac.)
End of computations, total study area =           29.09 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
```

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Rational Hydrology Study Date: 12/05/19 File:4163P100.out

PROPOSED 100 YEAR HYDROLOGY
MJPA 304163
BASIN 3

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6145

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 3

2 year, 1 hour precipitation = 0.480(In.)
100 year, 1 hour precipitation = 1.200(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.200(In/Hr)
Slope of intensity duration curve = 0.4800

++

Process from Point/Station 1.000 to Point/Station 2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 780.000(Ft.)
Top (of initial area) elevation = 1524.000(Ft.)
Bottom (of initial area) elevation = 1509.000(Ft.)
Difference in elevation = 15.000(Ft.)
Slope = 0.01923 s(percent)= 1.92
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 9.488 min.
Rainfall intensity = 2.908(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.893
Decimal fraction soil group A = 0.000

```
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     23.296(CFS)
Total initial stream area =        8.970(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        3.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1509.000(Ft.)
Downstream point elevation =  1504.590(Ft.)
Channel length thru subarea  =   880.000(Ft.)
Channel base width     =    3.000(Ft.)
Slope or 'Z' of left channel bank = 100.000
Slope or 'Z' of right channel bank =  50.000
Estimated mean flow rate at midpoint of channel =     42.001(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     42.001(CFS)
Depth of flow =   0.441(Ft.), Average velocity =   2.635(Ft/s)
Channel flow top width =   69.220(Ft.)
Flow Velocity =    2.63(Ft/s)
Travel time  =    5.57 min.
Time of concentration =   15.05 min.

Sub-Channel No. 1 Critical depth =      0.436(Ft.)
  '     '       '     Critical flow top width =     68.332(Ft.)
  '     '       '     Critical flow velocity=    2.704(Ft/s)
  '     '       '     Critical flow area =     15.534(Sq.Ft)

 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.330(In/Hr) for a   100.0 year storm
Subarea runoff =     37.328(CFS) for     17.970(Ac.)
Total runoff =     60.624(CFS)    Total area =      26.940(Ac.)
Depth of flow =   0.509(Ft.), Average velocity =   2.888(Ft/s)

Sub-Channel No. 1 Critical depth =      0.508(Ft.)
  '     '       '     Critical flow top width =     79.172(Ft.)
  '     '       '     Critical flow velocity=    2.906(Ft/s)
  '     '       '     Critical flow area =     20.864(Sq.Ft)
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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1499.800(Ft.)
Downstream point/station elevation =  1498.970(Ft.)
Pipe length  =   260.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    60.624(CFS)
Nearest computed pipe diameter  =     42.00(In.)
Calculated individual pipe flow  =    60.624(CFS)
Normal flow depth in pipe =   37.80(In.)
Flow top width inside pipe =   25.20(In.)
Critical Depth =   29.30(In.)
Pipe flow velocity =      6.64(Ft/s)
Travel time through pipe =    0.65 min.
Time of concentration (TC) =    15.71 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        4.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    15.71 min.
Rainfall intensity =      2.283(In/Hr) for a   100.0 year storm
Subarea runoff =      9.158(CFS) for      4.500(Ac.)
Total runoff =     69.782(CFS)    Total area =      31.440(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1498.970(Ft.)
Downstream point/station elevation =  1497.880(Ft.)
Pipe length  =   340.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    69.782(CFS)
Nearest computed pipe diameter  =     45.00(In.)
Calculated individual pipe flow  =    69.782(CFS)
Normal flow depth in pipe =   37.69(In.)
Flow top width inside pipe =   33.20(In.)
Critical Depth =   30.87(In.)
Pipe flow velocity =      7.06(Ft/s)
Travel time through pipe =    0.80 min.
Time of concentration (TC) =    16.51 min.
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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        5.000
**** SUBAREA FLOW ADDITION ****
_____________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    16.51 min.
Rainfall intensity =      2.229(In/Hr) for a   100.0 year storm
Subarea runoff =      1.708(CFS) for      0.860(Ac.)
Total runoff =     71.490(CFS)    Total area =      32.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
_____________________________________________________________________________
Upstream point/station elevation =  1497.880(Ft.)
Downstream point/station elevation =  1496.350(Ft.)
Pipe length  =   477.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    71.490(CFS)
Nearest computed pipe diameter  =     45.00(In.)
Calculated individual pipe flow  =    71.490(CFS)
Normal flow depth in pipe =   39.00(In.)
Flow top width inside pipe =   30.59(In.)
Critical Depth =   31.25(In.)
Pipe flow velocity =      7.03(Ft/s)
Travel time through pipe =    1.13 min.
Time of concentration (TC) =    17.64 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        6.000
**** SUBAREA FLOW ADDITION ****
_____________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    17.64 min.
Rainfall intensity =      2.160(In/Hr) for a   100.0 year storm
Subarea runoff =      6.368(CFS) for      3.310(Ac.)
Total runoff =     77.858(CFS)    Total area =      35.610(Ac.)
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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
_____________________________________________________________________________
Upstream point/station elevation =  1496.350(Ft.)
Downstream point/station elevation =  1496.000(Ft.)
Pipe length  =    86.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    77.858(CFS)
Nearest computed pipe diameter  =     45.00(In.)
Calculated individual pipe flow  =    77.858(CFS)
Normal flow depth in pipe =   37.31(In.)
Flow top width inside pipe =   33.87(In.)
Critical Depth =   32.63(In.)
Pipe flow velocity =      7.96(Ft/s)
Travel time through pipe =    0.18 min.
Time of concentration (TC) =    17.82 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        7.000 to Point/Station        7.000
**** SUBAREA FLOW ADDITION ****
_____________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    17.82 min.
Rainfall intensity =      2.149(In/Hr) for a   100.0 year storm
Subarea runoff =      3.388(CFS) for      1.770(Ac.)
Total runoff =     81.246(CFS)    Total area =      37.380(Ac.)
End of computations, total study area =           37.38 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
```

Appendix B
Existing Preliminary Hydrology Map
Proposed Preliminary Hydrology Map

1502.50 FL
Q1=0.94 CFS
Q2=1.29 CFS
Q5=1.72 CFS
Q10=11.50 CFS
Q25=16.01 CFS
Q100=28.28 CFS

L=2,550'

L=185'

CENTROID

A-1
60.22 Ac

1511.00 FS

WESTERN WAY

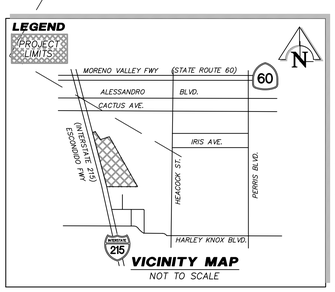
FREEWAY 215

LEGEND

NO. 900	HYDROLOGY MODEL NODE NUMBER / ELEVATION AT NODE
X	HYDRAULIC MODEL NODE NUMBER
A= XXX.X AC	TRIBUTARY AREA IN ACRES
L= XXX.X	LENGTH OF FLOW
	DRAINAGE BOUNDARY
	PROPOSED STORM DRAIN
CB #1	CATCH BASIN NUMBER
XXXX	CONTOUR ELEVATION
R	PROPOSED RIDGE LINE
	PROPOSED GRATING INLET
	PROPOSED CURB OPENING INLET
FL	FLOWLINE
INV	INVERT
LAT.	LATERAL
SD	STORM DRAIN
TG	TOP OF GRATE

LEGEND

PROJECT BOUNDARIES



VICINITY MAP
NOT TO SCALE

SCALE: 1"= 80'

GRAPHIC SCALE
80 40 0 40 80 160 320
(IN FEET)
1"=80'

REGISTERED PROFESSIONAL ENGINEER
MAURICE H. MURAD
No. 33366
Expiration
6-30-16
CIVIL
STATE OF CALIFORNIA

REV	DESCRIPTION	DATE

PRELIMINARY HYDROLOGY MAP - EXISTING CONDITION
FOR
MARCH JPA INDUSTRIAL
EAST OF 215 FREEWAY
COUNTY OF RIVERSIDE

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

APPROVED BY MAURICE H. MURAD — R.C.E. 33366 — EXPIRES 6-30-16 — DATE

DESIGNED BY	M.H.M.
DRAWN BY	H-Z STAFF
CHECKED BY	M.H.M.
FIELD BOOK	
JOB NO.	304163.01

SHEET 1 OF 2 SHEETS

Date: Dec 03 2019 2:29pm - User:DJ - J:\304163.01 - Hillwood - March JPA Industrial\05 Design\05.2 H&A\LHYDRO-EX.dwg, Layout: 01

1492.70' FL
Q1=1.04 CFS
Q2=1.42 CFS
Q5=1.91 CFS
Q10=12.75 CFS
Q25=17.75 CFS
Q100=31.30 CFS

1502.50 FL

L=2,220'

L=565'

CENTROID

B-1
66.49 Ac

WESTERN WAY

WESTERN WAY

WESTERN WAY

FREEWAY 215

LEGEND

NO. 900	HYDROLOGY MODEL NODE NUMBER / ELEVATION AT NODE
X	HYDRAULIC MODEL NODE NUMBER
A= XXX.X AC	TRIBUTARY AREA IN ACRES
L= XXX.X	LENGTH OF FLOW
	DRAINAGE BOUNDARY
	PROPOSED STORM DRAIN
CB #1	CATCH BASIN NUMBER
XXXX	CONTOUR ELEVATION
R	PROPOSED RIDGE LINE
	PROPOSED GRATING INLET
	PROPOSED CURB OPENING INLET
FL	FLOWLINE
INV	INVERT
LAT.	LATERAL
SD	STORM DRAIN
TG	TOP OF GRATE

SCALE: 1"= 80'

GRAPHIC SCALE

80 40 0 40 80 160 320

(IN FEET)
1"=80'

LEGEND

PROJECT LIMITS

MORENO VALLEY FWY (STATE ROUTE 60) 60
ALESSANDRO BLVD.
CACTUS AVE.
IRIS AVE.
HEACOCK ST.
PERRIS BLVD.
(INTERSTATE 215) ESCONDIDO FWY
HARLEY KNOX BLVD.
INTERSTATE 215

N

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER MAURICE H. MURAD No. 33366 Expiration 6-30-16 STATE OF CALIFORNIA CIVIL

REV	DESCRIPTION	DATE

PRELIMINARY HYDROLOGY MAP - EXISTING CONDITION
FOR
MARCH JPA INDUSTRIAL
EAST OF 215 FREEWAY
COUNTY OF RIVERSIDE

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 * ONTARIO, CALIFORNIA 91764 * (909) 941-7799

APPROVED BY MAURICE H. MURAD — R.C.E. 33366 — EXPIRES 6-30-16 — DATE

DESIGNED BY	M.H.M.
DRAWN BY	H-Z STAFF
CHECKED BY	M.H.M.
FIELD BOOK	
SHEET	2 OF 2 SHEETS
JOB NO.	304163.01

D:\proj\304163.01 - Hillwood - March JPA Industrial\05 Design\05.2 H&A\LDP\EXH-EX.dwg, Layout: 02, Dec 03, 2019 2:29pm

CB #4
1511.47 FL
Q100=17.27 CFS
ΣQ100=20.43 CFS

CB #5
1508.44 FL
Q100=18.78 CFS
ΣQ100=39.21 CFS

Q100=7.58 CFS
ΣQ100=39.21 CFS

1501.50 TG
1495.00 INV.
Q100=3.72 CFS
ΣQ100=100.49 CFS
TC=22.65 MIN

PROPERTY LINE

A-7
4.90 Ac

A-9
2.94 Ac

BIORETENTION BASIN 1

L=640'
STORM DRAIN
LINE B

L=47'

CB #3
1508.48 FL
Q100=13.75 CFS
ΣQ100=59.89 CFS

1519.00 FL
Q100=3.16 CFS

A-6
8.90 Ac
L=830'

A-8
8.55 Ac

PROPOSED
BUILDING 1

A-4
7.85 Ac

A-5
1.71 Ac
L=925'

CENTROID

PROPERTY
LINE

1524.65 FS

1525.85 FS

A-1
3.25 Ac
L=540'

1523.00 FF
1522.00 FF
0.5% BUILDING SLOPES @
1521.00 FF
1520.00 FF
1519.00 FF
1518.00 FF
0.5% BUILDING SLOPES @
1517.00 FF
1516.00 FF

L=365'

L=966'

1520.90 FL
Q100=7.58 CFS

A-2
11.58 Ac

CB #1
1513.76 FL
Q100=22.23 CFS
ΣQ100=29.81 CFS

A-3
10.55 Ac

L=1200'

L=3510' (UNIT HYDROGRAPH)

L=550'

CB #2
1511.04 TG
Q100=16.32 CFS
ΣQ100=46.13 CFS

STORM DRAIN
LINE A

WESTERN WAY

FREEWAY 215

LEGEND

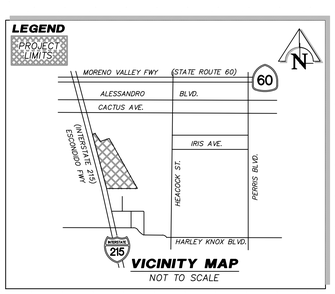
- NO. / 900 — HYDROLOGY MODEL NODE NUMBER / ELEVATION AT NODE
- X — HYDRAULIC MODEL NODE NUMBER
- A= XXX.X AC — TRIBUTARY AREA IN ACRES
- L= XXX.X — LENGTH OF FLOW
- DRAINAGE BOUNDARY
- PROPOSED STORM DRAIN
- CB #1 — CATCH BASIN NUMBER
- XXXX — CONTOUR ELEVATION
- —R— PROPOSED RIDGE LINE
- PROPOSED GRATING INLET
- PROPOSED CURB OPENING INLET
- FL — FLOWLINE
- INV — INVERT
- LAT. — LATERAL
- SD — STORM DRAIN
- TG — TOP OF GRATE

SCALE: 1"=80'

GRAPHIC SCALE
80 40 0 40 80 160 320
(IN FEET)
1"=80'

LEGEND

PROJECT LIMITS



VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
MAURICE H. MURAD
No. 33366
Expiration
6-30-16
CIVIL
STATE OF CALIFORNIA

REV	DESCRIPTION	DATE

PRELIMINARY HYDROLOGY MAP - PROPOSED CONDITION
FOR
MARCH JPA INDUSTRIAL
EAST OF 215 FREEWAY
COUNTY OF RIVERSIDE

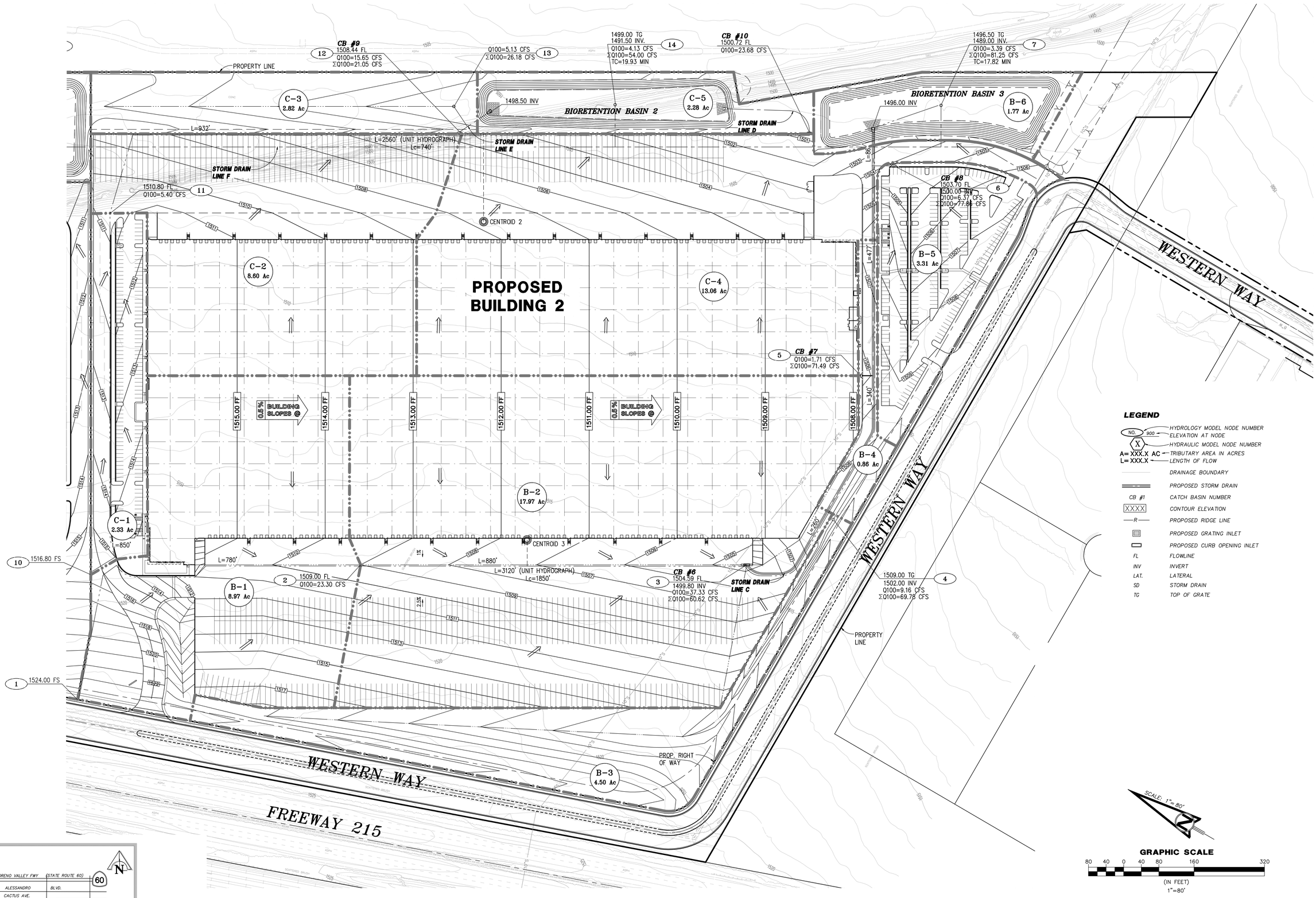
HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

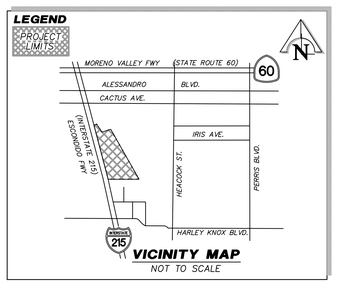
APPROVED BY MAURICE H. MURAD — R.C.E. 33366 — EXPIRES 6-30-16 — DATE

DESIGNED BY M.H.M.
DRAWN BY H-Z STAFF
CHECKED BY M.H.M.
FIELD BOOK

SHEET 1 OF 2 SHEETS
JOB NO. 304163.01

D:\proj\304163\03 - Hillwood - March JPA Industrial\05 Design\052 H&H\H&H01dwg, Layout: 01, Dec 05 2019 12:59pm





REV	DESCRIPTION	DATE

REGISTERED PROFESSIONAL ENGINEER M. MURAD No. 33366 Expiration 6-30-16 CIVIL STATE OF CALIFORNIA

PRELIMINARY HYDROLOGY MAP - PROPOSED CONDITION
FOR
MARCH JPA INDUSTRIAL
EAST OF 215 FREEWAY
COUNTY OF RIVERSIDE

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799
APPROVED BY MAURICE H. MURAD R.C.E. 33366 EXPIRES 6-30-16 DATE

DESIGNED BY	M.H.M.
DRAWN BY	H-Z STAFF
CHECKED BY	M.H.M.
FIELD BOOK	
JOB NO.	30416.01
SHEET	2 OF 2 SHEETS

D:\proj\30416\301 - Hillwood - March JPA Industrial\05 Design\052 HM\HYD\dwg, Layout: B2, Dec 05, 2019 - 1:62pm

Appendix C

Area A-1 Existing U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
Area B-1 Existing U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
Basin 1 Proposed U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
Basin 2 Proposed U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
Basin 3 Proposed U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163UHE1241.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 1 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA A-1
4163UHE1.UM1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 2550.00(Ft.)
Length along longest watercourse measured to centroid = 1125.00(Ft.)
Length along longest watercourse = 0.483 Mi.
Length along longest watercourse measured to centroid = 0.213 Mi.
Difference in elevation = 8.50(Ft.)
Slope along watercourse = 17.6000 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 1.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.175(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.175(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	86.00	0.000

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.360	5.636	3.421
2	0.167	94.720	23.906	14.508
3	0.250	142.080	28.909	17.545
4	0.333	189.440	13.984	8.487
5	0.417	236.800	7.077	4.295
6	0.500	284.160	4.874	2.958
7	0.583	331.520	3.553	2.156
8	0.667	378.880	2.732	1.658
9	0.750	426.241	2.054	1.247
10	0.833	473.601	1.560	0.947
11	0.917	520.961	1.396	0.847
12	1.000	568.321	1.087	0.659
13	1.083	615.681	0.878	0.533
14	1.167	663.041	0.698	0.424
15	1.250	710.401	0.523	0.318
16	1.333	757.761	0.474	0.287

17	1.417	805.121	0.659		0.400
			Sum = 100.000	Sum=	60.690

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.009	0.608	0.008	0.00
2	0.17	0.07	0.009	0.606	0.008	0.00
3	0.25	0.07	0.009	0.604	0.008	0.00
4	0.33	0.10	0.014	0.601	0.013	0.00
5	0.42	0.10	0.014	0.599	0.013	0.00
6	0.50	0.10	0.014	0.597	0.013	0.00
7	0.58	0.10	0.014	0.594	0.013	0.00
8	0.67	0.10	0.014	0.592	0.013	0.00
9	0.75	0.10	0.014	0.590	0.013	0.00
10	0.83	0.13	0.019	0.587	0.017	0.00
11	0.92	0.13	0.019	0.585	0.017	0.00
12	1.00	0.13	0.019	0.583	0.017	0.00
13	1.08	0.10	0.014	0.580	0.013	0.00
14	1.17	0.10	0.014	0.578	0.013	0.00
15	1.25	0.10	0.014	0.576	0.013	0.00
16	1.33	0.10	0.014	0.573	0.013	0.00
17	1.42	0.10	0.014	0.571	0.013	0.00
18	1.50	0.10	0.014	0.569	0.013	0.00
19	1.58	0.10	0.014	0.567	0.013	0.00
20	1.67	0.10	0.014	0.564	0.013	0.00
21	1.75	0.10	0.014	0.562	0.013	0.00
22	1.83	0.13	0.019	0.560	0.017	0.00
23	1.92	0.13	0.019	0.558	0.017	0.00
24	2.00	0.13	0.019	0.555	0.017	0.00
25	2.08	0.13	0.019	0.553	0.017	0.00
26	2.17	0.13	0.019	0.551	0.017	0.00
27	2.25	0.13	0.019	0.549	0.017	0.00
28	2.33	0.13	0.019	0.546	0.017	0.00
29	2.42	0.13	0.019	0.544	0.017	0.00
30	2.50	0.13	0.019	0.542	0.017	0.00
31	2.58	0.17	0.023	0.540	0.021	0.00
32	2.67	0.17	0.023	0.537	0.021	0.00
33	2.75	0.17	0.023	0.535	0.021	0.00
34	2.83	0.17	0.023	0.533	0.021	0.00
35	2.92	0.17	0.023	0.531	0.021	0.00
36	3.00	0.17	0.023	0.529	0.021	0.00
37	3.08	0.17	0.023	0.526	0.021	0.00
38	3.17	0.17	0.023	0.524	0.021	0.00
39	3.25	0.17	0.023	0.522	0.021	0.00
40	3.33	0.17	0.023	0.520	0.021	0.00
41	3.42	0.17	0.023	0.518	0.021	0.00
42	3.50	0.17	0.023	0.516	0.021	0.00
43	3.58	0.17	0.023	0.513	0.021	0.00
44	3.67	0.17	0.023	0.511	0.021	0.00
45	3.75	0.17	0.023	0.509	0.021	0.00
46	3.83	0.20	0.028	0.507	0.025	0.00
47	3.92	0.20	0.028	0.505	0.025	0.00

48	4.00	0.20	0.028	0.503	0.025	0.00
49	4.08	0.20	0.028	0.501	0.025	0.00
50	4.17	0.20	0.028	0.498	0.025	0.00
51	4.25	0.20	0.028	0.496	0.025	0.00
52	4.33	0.23	0.033	0.494	0.030	0.00
53	4.42	0.23	0.033	0.492	0.030	0.00
54	4.50	0.23	0.033	0.490	0.030	0.00
55	4.58	0.23	0.033	0.488	0.030	0.00
56	4.67	0.23	0.033	0.486	0.030	0.00
57	4.75	0.23	0.033	0.484	0.030	0.00
58	4.83	0.27	0.038	0.482	0.034	0.00
59	4.92	0.27	0.038	0.480	0.034	0.00
60	5.00	0.27	0.038	0.477	0.034	0.00
61	5.08	0.20	0.028	0.475	0.025	0.00
62	5.17	0.20	0.028	0.473	0.025	0.00
63	5.25	0.20	0.028	0.471	0.025	0.00
64	5.33	0.23	0.033	0.469	0.030	0.00
65	5.42	0.23	0.033	0.467	0.030	0.00
66	5.50	0.23	0.033	0.465	0.030	0.00
67	5.58	0.27	0.038	0.463	0.034	0.00
68	5.67	0.27	0.038	0.461	0.034	0.00
69	5.75	0.27	0.038	0.459	0.034	0.00
70	5.83	0.27	0.038	0.457	0.034	0.00
71	5.92	0.27	0.038	0.455	0.034	0.00
72	6.00	0.27	0.038	0.453	0.034	0.00
73	6.08	0.30	0.042	0.451	0.038	0.00
74	6.17	0.30	0.042	0.449	0.038	0.00
75	6.25	0.30	0.042	0.447	0.038	0.00
76	6.33	0.30	0.042	0.445	0.038	0.00
77	6.42	0.30	0.042	0.443	0.038	0.00
78	6.50	0.30	0.042	0.441	0.038	0.00
79	6.58	0.33	0.047	0.439	0.042	0.00
80	6.67	0.33	0.047	0.437	0.042	0.00
81	6.75	0.33	0.047	0.435	0.042	0.00
82	6.83	0.33	0.047	0.433	0.042	0.00
83	6.92	0.33	0.047	0.431	0.042	0.00
84	7.00	0.33	0.047	0.429	0.042	0.00
85	7.08	0.33	0.047	0.427	0.042	0.00
86	7.17	0.33	0.047	0.425	0.042	0.00
87	7.25	0.33	0.047	0.423	0.042	0.00
88	7.33	0.37	0.052	0.421	0.047	0.01
89	7.42	0.37	0.052	0.419	0.047	0.01
90	7.50	0.37	0.052	0.417	0.047	0.01
91	7.58	0.40	0.056	0.416	0.051	0.01
92	7.67	0.40	0.056	0.414	0.051	0.01
93	7.75	0.40	0.056	0.412	0.051	0.01
94	7.83	0.43	0.061	0.410	0.055	0.01
95	7.92	0.43	0.061	0.408	0.055	0.01
96	8.00	0.43	0.061	0.406	0.055	0.01
97	8.08	0.50	0.070	0.404	0.063	0.01
98	8.17	0.50	0.070	0.402	0.063	0.01
99	8.25	0.50	0.070	0.400	0.063	0.01
100	8.33	0.50	0.070	0.399	0.063	0.01
101	8.42	0.50	0.070	0.397	0.063	0.01

102	8.50	0.50	0.070	0.395	0.063	0.01
103	8.58	0.53	0.075	0.393	0.068	0.01
104	8.67	0.53	0.075	0.391	0.068	0.01
105	8.75	0.53	0.075	0.389	0.068	0.01
106	8.83	0.57	0.080	0.387	0.072	0.01
107	8.92	0.57	0.080	0.386	0.072	0.01
108	9.00	0.57	0.080	0.384	0.072	0.01
109	9.08	0.63	0.089	0.382	0.080	0.01
110	9.17	0.63	0.089	0.380	0.080	0.01
111	9.25	0.63	0.089	0.378	0.080	0.01
112	9.33	0.67	0.094	0.377	0.085	0.01
113	9.42	0.67	0.094	0.375	0.085	0.01
114	9.50	0.67	0.094	0.373	0.085	0.01
115	9.58	0.70	0.099	0.371	0.089	0.01
116	9.67	0.70	0.099	0.369	0.089	0.01
117	9.75	0.70	0.099	0.368	0.089	0.01
118	9.83	0.73	0.103	0.366	0.093	0.01
119	9.92	0.73	0.103	0.364	0.093	0.01
120	10.00	0.73	0.103	0.362	0.093	0.01
121	10.08	0.50	0.070	0.361	0.063	0.01
122	10.17	0.50	0.070	0.359	0.063	0.01
123	10.25	0.50	0.070	0.357	0.063	0.01
124	10.33	0.50	0.070	0.355	0.063	0.01
125	10.42	0.50	0.070	0.354	0.063	0.01
126	10.50	0.50	0.070	0.352	0.063	0.01
127	10.58	0.67	0.094	0.350	0.085	0.01
128	10.67	0.67	0.094	0.348	0.085	0.01
129	10.75	0.67	0.094	0.347	0.085	0.01
130	10.83	0.67	0.094	0.345	0.085	0.01
131	10.92	0.67	0.094	0.343	0.085	0.01
132	11.00	0.67	0.094	0.342	0.085	0.01
133	11.08	0.63	0.089	0.340	0.080	0.01
134	11.17	0.63	0.089	0.338	0.080	0.01
135	11.25	0.63	0.089	0.337	0.080	0.01
136	11.33	0.63	0.089	0.335	0.080	0.01
137	11.42	0.63	0.089	0.333	0.080	0.01
138	11.50	0.63	0.089	0.332	0.080	0.01
139	11.58	0.57	0.080	0.330	0.072	0.01
140	11.67	0.57	0.080	0.328	0.072	0.01
141	11.75	0.57	0.080	0.327	0.072	0.01
142	11.83	0.60	0.085	0.325	0.076	0.01
143	11.92	0.60	0.085	0.324	0.076	0.01
144	12.00	0.60	0.085	0.322	0.076	0.01
145	12.08	0.83	0.117	0.320	0.106	0.01
146	12.17	0.83	0.117	0.319	0.106	0.01
147	12.25	0.83	0.117	0.317	0.106	0.01
148	12.33	0.87	0.122	0.316	0.110	0.01
149	12.42	0.87	0.122	0.314	0.110	0.01
150	12.50	0.87	0.122	0.312	0.110	0.01
151	12.58	0.93	0.132	0.311	0.118	0.01
152	12.67	0.93	0.132	0.309	0.118	0.01
153	12.75	0.93	0.132	0.308	0.118	0.01
154	12.83	0.97	0.136	0.306	0.123	0.01
155	12.92	0.97	0.136	0.305	0.123	0.01

156	13.00	0.97	0.136	0.303	0.123	0.01
157	13.08	1.13	0.160	0.301	0.144	0.02
158	13.17	1.13	0.160	0.300	0.144	0.02
159	13.25	1.13	0.160	0.298	0.144	0.02
160	13.33	1.13	0.160	0.297	0.144	0.02
161	13.42	1.13	0.160	0.295	0.144	0.02
162	13.50	1.13	0.160	0.294	0.144	0.02
163	13.58	0.77	0.108	0.292	0.097	0.01
164	13.67	0.77	0.108	0.291	0.097	0.01
165	13.75	0.77	0.108	0.289	0.097	0.01
166	13.83	0.77	0.108	0.288	0.097	0.01
167	13.92	0.77	0.108	0.286	0.097	0.01
168	14.00	0.77	0.108	0.285	0.097	0.01
169	14.08	0.90	0.127	0.284	0.114	0.01
170	14.17	0.90	0.127	0.282	0.114	0.01
171	14.25	0.90	0.127	0.281	0.114	0.01
172	14.33	0.87	0.122	0.279	0.110	0.01
173	14.42	0.87	0.122	0.278	0.110	0.01
174	14.50	0.87	0.122	0.276	0.110	0.01
175	14.58	0.87	0.122	0.275	0.110	0.01
176	14.67	0.87	0.122	0.274	0.110	0.01
177	14.75	0.87	0.122	0.272	0.110	0.01
178	14.83	0.83	0.117	0.271	0.106	0.01
179	14.92	0.83	0.117	0.269	0.106	0.01
180	15.00	0.83	0.117	0.268	0.106	0.01
181	15.08	0.80	0.113	0.267	0.101	0.01
182	15.17	0.80	0.113	0.265	0.101	0.01
183	15.25	0.80	0.113	0.264	0.101	0.01
184	15.33	0.77	0.108	0.263	0.097	0.01
185	15.42	0.77	0.108	0.261	0.097	0.01
186	15.50	0.77	0.108	0.260	0.097	0.01
187	15.58	0.63	0.089	0.259	0.080	0.01
188	15.67	0.63	0.089	0.257	0.080	0.01
189	15.75	0.63	0.089	0.256	0.080	0.01
190	15.83	0.63	0.089	0.255	0.080	0.01
191	15.92	0.63	0.089	0.253	0.080	0.01
192	16.00	0.63	0.089	0.252	0.080	0.01
193	16.08	0.13	0.019	0.251	0.017	0.00
194	16.17	0.13	0.019	0.249	0.017	0.00
195	16.25	0.13	0.019	0.248	0.017	0.00
196	16.33	0.13	0.019	0.247	0.017	0.00
197	16.42	0.13	0.019	0.246	0.017	0.00
198	16.50	0.13	0.019	0.244	0.017	0.00
199	16.58	0.10	0.014	0.243	0.013	0.00
200	16.67	0.10	0.014	0.242	0.013	0.00
201	16.75	0.10	0.014	0.241	0.013	0.00
202	16.83	0.10	0.014	0.239	0.013	0.00
203	16.92	0.10	0.014	0.238	0.013	0.00
204	17.00	0.10	0.014	0.237	0.013	0.00
205	17.08	0.17	0.023	0.236	0.021	0.00
206	17.17	0.17	0.023	0.235	0.021	0.00
207	17.25	0.17	0.023	0.233	0.021	0.00
208	17.33	0.17	0.023	0.232	0.021	0.00
209	17.42	0.17	0.023	0.231	0.021	0.00

210	17.50	0.17	0.023	0.230	0.021	0.00
211	17.58	0.17	0.023	0.229	0.021	0.00
212	17.67	0.17	0.023	0.228	0.021	0.00
213	17.75	0.17	0.023	0.227	0.021	0.00
214	17.83	0.13	0.019	0.225	0.017	0.00
215	17.92	0.13	0.019	0.224	0.017	0.00
216	18.00	0.13	0.019	0.223	0.017	0.00
217	18.08	0.13	0.019	0.222	0.017	0.00
218	18.17	0.13	0.019	0.221	0.017	0.00
219	18.25	0.13	0.019	0.220	0.017	0.00
220	18.33	0.13	0.019	0.219	0.017	0.00
221	18.42	0.13	0.019	0.218	0.017	0.00
222	18.50	0.13	0.019	0.217	0.017	0.00
223	18.58	0.10	0.014	0.216	0.013	0.00
224	18.67	0.10	0.014	0.215	0.013	0.00
225	18.75	0.10	0.014	0.214	0.013	0.00
226	18.83	0.07	0.009	0.213	0.008	0.00
227	18.92	0.07	0.009	0.212	0.008	0.00
228	19.00	0.07	0.009	0.211	0.008	0.00
229	19.08	0.10	0.014	0.210	0.013	0.00
230	19.17	0.10	0.014	0.209	0.013	0.00
231	19.25	0.10	0.014	0.208	0.013	0.00
232	19.33	0.13	0.019	0.207	0.017	0.00
233	19.42	0.13	0.019	0.206	0.017	0.00
234	19.50	0.13	0.019	0.205	0.017	0.00
235	19.58	0.10	0.014	0.204	0.013	0.00
236	19.67	0.10	0.014	0.203	0.013	0.00
237	19.75	0.10	0.014	0.202	0.013	0.00
238	19.83	0.07	0.009	0.201	0.008	0.00
239	19.92	0.07	0.009	0.200	0.008	0.00
240	20.00	0.07	0.009	0.199	0.008	0.00
241	20.08	0.10	0.014	0.198	0.013	0.00
242	20.17	0.10	0.014	0.197	0.013	0.00
243	20.25	0.10	0.014	0.197	0.013	0.00
244	20.33	0.10	0.014	0.196	0.013	0.00
245	20.42	0.10	0.014	0.195	0.013	0.00
246	20.50	0.10	0.014	0.194	0.013	0.00
247	20.58	0.10	0.014	0.193	0.013	0.00
248	20.67	0.10	0.014	0.192	0.013	0.00
249	20.75	0.10	0.014	0.192	0.013	0.00
250	20.83	0.07	0.009	0.191	0.008	0.00
251	20.92	0.07	0.009	0.190	0.008	0.00
252	21.00	0.07	0.009	0.189	0.008	0.00
253	21.08	0.10	0.014	0.189	0.013	0.00
254	21.17	0.10	0.014	0.188	0.013	0.00
255	21.25	0.10	0.014	0.187	0.013	0.00
256	21.33	0.07	0.009	0.186	0.008	0.00
257	21.42	0.07	0.009	0.186	0.008	0.00
258	21.50	0.07	0.009	0.185	0.008	0.00
259	21.58	0.10	0.014	0.184	0.013	0.00
260	21.67	0.10	0.014	0.184	0.013	0.00
261	21.75	0.10	0.014	0.183	0.013	0.00
262	21.83	0.07	0.009	0.182	0.008	0.00
263	21.92	0.07	0.009	0.182	0.008	0.00

264	22.00	0.07	0.009	0.181	0.008	0.00
265	22.08	0.10	0.014	0.181	0.013	0.00
266	22.17	0.10	0.014	0.180	0.013	0.00
267	22.25	0.10	0.014	0.179	0.013	0.00
268	22.33	0.07	0.009	0.179	0.008	0.00
269	22.42	0.07	0.009	0.178	0.008	0.00
270	22.50	0.07	0.009	0.178	0.008	0.00
271	22.58	0.07	0.009	0.177	0.008	0.00
272	22.67	0.07	0.009	0.177	0.008	0.00
273	22.75	0.07	0.009	0.176	0.008	0.00
274	22.83	0.07	0.009	0.176	0.008	0.00
275	22.92	0.07	0.009	0.175	0.008	0.00
276	23.00	0.07	0.009	0.175	0.008	0.00
277	23.08	0.07	0.009	0.175	0.008	0.00
278	23.17	0.07	0.009	0.174	0.008	0.00
279	23.25	0.07	0.009	0.174	0.008	0.00
280	23.33	0.07	0.009	0.173	0.008	0.00
281	23.42	0.07	0.009	0.173	0.008	0.00
282	23.50	0.07	0.009	0.173	0.008	0.00
283	23.58	0.07	0.009	0.173	0.008	0.00
284	23.67	0.07	0.009	0.172	0.008	0.00
285	23.75	0.07	0.009	0.172	0.008	0.00
286	23.83	0.07	0.009	0.172	0.008	0.00
287	23.92	0.07	0.009	0.172	0.008	0.00
288	24.00	0.07	0.009	0.172	0.008	0.00
	Sum =	100.0			Sum =	1.4

Flood volume = Effective rainfall 0.12(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 0.6(Ac.Ft)
Total soil loss = 1.06(In)
Total soil loss = 5.305(Ac.Ft)
Total rainfall = 1.17(In)
Flood volume = 25677.0 Cubic Feet
Total soil loss = 231093.4 Cubic Feet

Peak flow rate of this hydrograph = 0.944(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0001	0.02	Q	|	|	|	|
0+15	0.0004	0.03	Q	|	|	|	|
0+20	0.0007	0.04	Q	|	|	|	|
0+25	0.0010	0.05	Q	|	|	|	|
0+30	0.0015	0.06	Q	|	|	|	|
0+35	0.0020	0.07	Q	|	|	|	|
0+40	0.0025	0.07	Q	|	|	|	|
0+45	0.0030	0.08	Q	|	|	|	|

0+50	0.0036	0.08	Q	|	|	|	|
0+55	0.0042	0.09	Q	|	|	|	|
1+ 0	0.0049	0.10	Q	|	|	|	|
1+ 5	0.0056	0.10	Q	|	|	|	|
1+10	0.0062	0.10	Q	|	|	|	|
1+15	0.0069	0.09	Q	|	|	|	|
1+20	0.0075	0.09	Q	|	|	|	|
1+25	0.0081	0.09	Q	|	|	|	|
1+30	0.0087	0.09	Q	|	|	|	|
1+35	0.0093	0.09	Q	|	|	|	|
1+40	0.0099	0.09	Q	|	|	|	|
1+45	0.0105	0.09	Q	|	|	|	|
1+50	0.0111	0.09	Q	|	|	|	|
1+55	0.0117	0.09	Q	|	|	|	|
2+ 0	0.0124	0.10	Q	|	|	|	|
2+ 5	0.0132	0.11	Q	|	|	|	|
2+10	0.0139	0.11	Q	|	|	|	|
2+15	0.0147	0.11	Q	|	|	|	|
2+20	0.0155	0.11	QV	|	|	|	|
2+25	0.0162	0.11	QV	|	|	|	|
2+30	0.0170	0.11	QV	|	|	|	|
2+35	0.0178	0.11	QV	|	|	|	|
2+40	0.0186	0.12	QV	|	|	|	|
2+45	0.0195	0.13	QV	|	|	|	|
2+50	0.0204	0.13	QV	|	|	|	|
2+55	0.0214	0.14	QV	|	|	|	|
3+ 0	0.0223	0.14	QV	|	|	|	|
3+ 5	0.0233	0.14	QV	|	|	|	|
3+10	0.0242	0.14	QV	|	|	|	|
3+15	0.0252	0.14	QV	|	|	|	|
3+20	0.0262	0.14	QV	|	|	|	|
3+25	0.0272	0.14	QV	|	|	|	|
3+30	0.0281	0.14	QV	|	|	|	|
3+35	0.0291	0.14	QV	|	|	|	|
3+40	0.0301	0.14	Q V	|	|	|	|
3+45	0.0311	0.14	Q V	|	|	|	|
3+50	0.0321	0.14	Q V	|	|	|	|
3+55	0.0331	0.15	Q V	|	|	|	|
4+ 0	0.0342	0.16	Q V	|	|	|	|
4+ 5	0.0353	0.16	Q V	|	|	|	|
4+10	0.0365	0.17	Q V	|	|	|	|
4+15	0.0376	0.17	Q V	|	|	|	|
4+20	0.0388	0.17	Q V	|	|	|	|
4+25	0.0400	0.18	Q V	|	|	|	|
4+30	0.0413	0.19	Q V	|	|	|	|
4+35	0.0426	0.19	Q V	|	|	|	|
4+40	0.0439	0.19	Q V	|	|	|	|
4+45	0.0452	0.19	Q V	|	|	|	|
4+50	0.0466	0.20	Q V	|	|	|	|
4+55	0.0480	0.21	Q V	|	|	|	|
5+ 0	0.0495	0.21	Q V	|	|	|	|
5+ 5	0.0510	0.22	Q V	|	|	|	|
5+10	0.0524	0.20	Q V	|	|	|	|
5+15	0.0537	0.19	Q V	|	|	|	|

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5+20       0.0550      0.18  Q  V      |          |          |          |
5+25       0.0563      0.19  Q  V      |          |          |          |
5+30       0.0576      0.19  Q  V      |          |          |          |
5+35       0.0590      0.20  Q   V     |          |          |          |
5+40       0.0604      0.21  Q   V     |          |          |          |
5+45       0.0619      0.22  Q   V     |          |          |          |
5+50       0.0634      0.22  Q   V     |          |          |          |
5+55       0.0649      0.22  Q   V     |          |          |          |
6+ 0       0.0664      0.22  Q   V     |          |          |          |
6+ 5       0.0680      0.23  Q   V     |          |          |          |
6+10       0.0696      0.23  Q   V     |          |          |          |
6+15       0.0713      0.24  Q   V     |          |          |          |
6+20       0.0730      0.25  Q   V     |          |          |          |
6+25       0.0747      0.25  Q    V    |          |          |          |
6+30       0.0764      0.25  |Q   V    |          |          |          |
6+35       0.0782      0.25  |Q   V    |          |          |          |
6+40       0.0800      0.26  |Q   V    |          |          |          |
6+45       0.0818      0.27  |Q   V    |          |          |          |
6+50       0.0837      0.28  |Q   V    |          |          |          |
6+55       0.0857      0.28  |Q   V    |          |          |          |
7+ 0       0.0876      0.28  |Q   V    |          |          |          |
7+ 5       0.0895      0.28  |Q    V   |          |          |          |
7+10       0.0915      0.28  |Q    V   |          |          |          |
7+15       0.0934      0.28  |Q    V   |          |          |          |
7+20       0.0954      0.29  |Q    V   |          |          |          |
7+25       0.0974      0.29  |Q    V   |          |          |          |
7+30       0.0995      0.30  |Q    V   |          |          |          |
7+35       0.1016      0.31  |Q    V   |          |          |          |
7+40       0.1038      0.32  |Q     V  |          |          |          |
7+45       0.1060      0.33  |Q     V  |          |          |          |
7+50       0.1083      0.33  |Q     V  |          |          |          |
7+55       0.1106      0.34  |Q     V  |          |          |          |
8+ 0       0.1131      0.35  |Q     V  |          |          |          |
8+ 5       0.1156      0.36  |Q     V  |          |          |          |
8+10       0.1182      0.38  |Q      V |          |          |          |
8+15       0.1209      0.40  |Q      V |          |          |          |
8+20       0.1237      0.41  |Q      V |          |          |          |
8+25       0.1265      0.41  |Q      V |          |          |          |
8+30       0.1294      0.42  |Q      V |          |          |          |
8+35       0.1323      0.42  |Q      V |          |          |          |
8+40       0.1352      0.43  |Q       V|          |          |          |
8+45       0.1383      0.44  |Q       V|          |          |          |
8+50       0.1413      0.45  |Q       V|          |          |          |
8+55       0.1445      0.46  |Q       V|          |          |          |
9+ 0       0.1477      0.47  |Q        V          |          |          |
9+ 5       0.1510      0.48  |Q        V          |          |          |
9+10       0.1544      0.49  |Q        V          |          |          |
9+15       0.1579      0.51  | Q       V          |          |          |
9+20       0.1615      0.52  | Q       V          |          |          |
9+25       0.1652      0.53  | Q       |V         |          |          |
9+30       0.1689      0.55  | Q       |V         |          |          |
9+35       0.1728      0.56  | Q       |V         |          |          |
9+40       0.1767      0.57  | Q       |V         |          |          |
9+45       0.1806      0.58  | Q       | V        |          |          |
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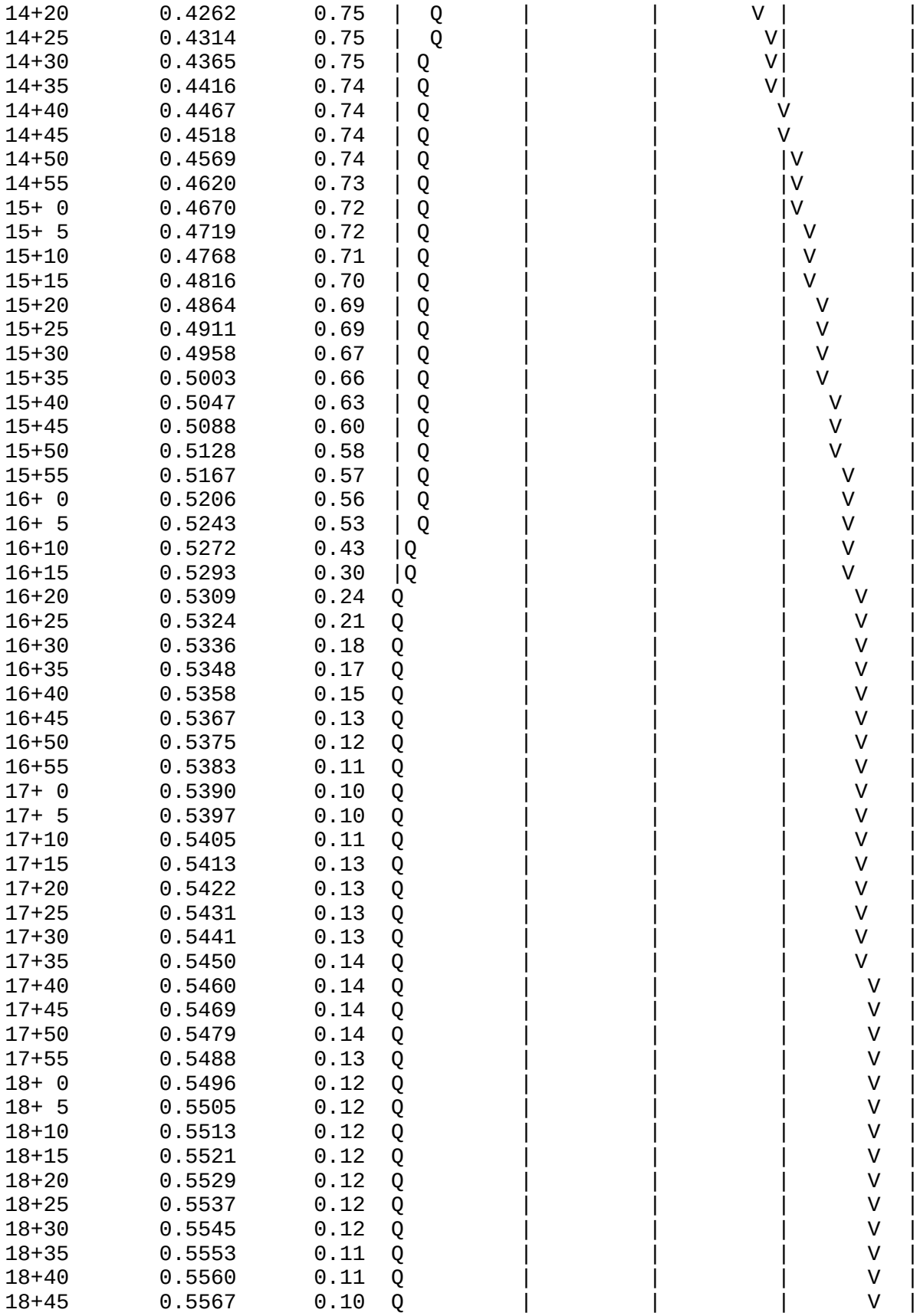
9+50	0.1847	0.59	Q	V			
9+55	0.1888	0.60	Q	V			
10+ 0	0.1930	0.61	Q	V			
10+ 5	0.1971	0.60	Q	V			
10+10	0.2009	0.56	Q	V			
10+15	0.2044	0.50	Q	V			
10+20	0.2077	0.48	Q	V			
10+25	0.2109	0.46	Q	V			
10+30	0.2140	0.46	Q	V			
10+35	0.2172	0.46	Q	V			
10+40	0.2205	0.49	Q	V			
10+45	0.2241	0.52	Q	V			
10+50	0.2279	0.54	Q	V			
10+55	0.2317	0.55	Q	V			
11+ 0	0.2355	0.55	Q	V			
11+ 5	0.2393	0.56	Q	V			
11+10	0.2431	0.55	Q	V			
11+15	0.2469	0.55	Q	V			
11+20	0.2506	0.54	Q	V			
11+25	0.2543	0.54	Q	V			
11+30	0.2581	0.54	Q	V			
11+35	0.2618	0.54	Q	V			
11+40	0.2654	0.53	Q	V			
11+45	0.2689	0.51	Q	V			
11+50	0.2724	0.50	Q	V			
11+55	0.2759	0.51	Q	V			
12+ 0	0.2794	0.51	Q	V			
12+ 5	0.2830	0.52	Q	V			
12+10	0.2869	0.57	Q	V			
12+15	0.2913	0.63	Q	V			
12+20	0.2958	0.66	Q	V			
12+25	0.3005	0.68	Q	V			
12+30	0.3053	0.70	Q	V			
12+35	0.3102	0.71	Q	V			
12+40	0.3153	0.73	Q	V			
12+45	0.3205	0.76	Q	V			
12+50	0.3258	0.77	Q	V			
12+55	0.3312	0.78	Q	V			
13+ 0	0.3367	0.80	Q	V			
13+ 5	0.3423	0.81	Q	V			
13+10	0.3482	0.85	Q	V			
13+15	0.3544	0.90	Q	V			
13+20	0.3607	0.92	Q	V			
13+25	0.3672	0.94	Q	V			
13+30	0.3737	0.94	Q	V			
13+35	0.3801	0.93	Q	V			
13+40	0.3860	0.86	Q	V			
13+45	0.3913	0.77	Q	V			
13+50	0.3964	0.73	Q	V			
13+55	0.4013	0.71	Q	V			
14+ 0	0.4061	0.70	Q	V			
14+ 5	0.4109	0.70	Q	V			
14+10	0.4159	0.72	Q	V			
14+15	0.4210	0.74	Q	V			



18+50	0.5573	0.09	Q	|	|	|	V |
18+55	0.5579	0.08	Q	|	|	|	V |
19+ 0	0.5584	0.07	Q	|	|	|	V |
19+ 5	0.5589	0.07	Q	|	|	|	V |
19+10	0.5594	0.07	Q	|	|	|	V |
19+15	0.5600	0.08	Q	|	|	|	V |
19+20	0.5606	0.08	Q	|	|	|	V |
19+25	0.5612	0.09	Q	|	|	|	V |
19+30	0.5619	0.10	Q	|	|	|	V |
19+35	0.5626	0.10	Q	|	|	|	V |
19+40	0.5633	0.10	Q	|	|	|	V |
19+45	0.5639	0.09	Q	|	|	|	V |
19+50	0.5645	0.09	Q	|	|	|	V |
19+55	0.5651	0.08	Q	|	|	|	V |
20+ 0	0.5656	0.07	Q	|	|	|	V |
20+ 5	0.5660	0.07	Q	|	|	|	V |
20+10	0.5665	0.07	Q	|	|	|	V |
20+15	0.5671	0.08	Q	|	|	|	V |
20+20	0.5676	0.08	Q	|	|	|	V |
20+25	0.5682	0.08	Q	|	|	|	V |
20+30	0.5688	0.08	Q	|	|	|	V |
20+35	0.5694	0.08	Q	|	|	|	V |
20+40	0.5699	0.08	Q	|	|	|	V |
20+45	0.5705	0.08	Q	|	|	|	V |
20+50	0.5711	0.08	Q	|	|	|	V |
20+55	0.5716	0.08	Q	|	|	|	V |
21+ 0	0.5721	0.07	Q	|	|	|	V |
21+ 5	0.5725	0.07	Q	|	|	|	V |
21+10	0.5730	0.07	Q	|	|	|	V |
21+15	0.5736	0.08	Q	|	|	|	V |
21+20	0.5741	0.08	Q	|	|	|	V |
21+25	0.5746	0.07	Q	|	|	|	V |
21+30	0.5751	0.07	Q	|	|	|	V|
21+35	0.5755	0.06	Q	|	|	|	V|
21+40	0.5760	0.07	Q	|	|	|	V|
21+45	0.5765	0.08	Q	|	|	|	V|
21+50	0.5771	0.08	Q	|	|	|	V|
21+55	0.5776	0.07	Q	|	|	|	V|
22+ 0	0.5780	0.07	Q	|	|	|	V|
22+ 5	0.5785	0.06	Q	|	|	|	V|
22+10	0.5790	0.07	Q	|	|	|	V|
22+15	0.5795	0.08	Q	|	|	|	V|
22+20	0.5800	0.08	Q	|	|	|	V|
22+25	0.5805	0.07	Q	|	|	|	V|
22+30	0.5810	0.07	Q	|	|	|	V|
22+35	0.5814	0.06	Q	|	|	|	V|
22+40	0.5818	0.06	Q	|	|	|	V|
22+45	0.5823	0.06	Q	|	|	|	V|
22+50	0.5827	0.06	Q	|	|	|	V|
22+55	0.5831	0.06	Q	|	|	|	V|
23+ 0	0.5835	0.06	Q	|	|	|	V|
23+ 5	0.5839	0.06	Q	|	|	|	V|
23+10	0.5843	0.06	Q	|	|	|	V|
23+15	0.5847	0.06	Q	|	|	|	V|

23+20	0.5851	0.06	Q	|	|	|	V|
23+25	0.5855	0.06	Q	|	|	|	V|
23+30	0.5859	0.06	Q	|	|	|	V|
23+35	0.5863	0.06	Q	|	|	|	V|
23+40	0.5866	0.06	Q	|	|	|	V|
23+45	0.5870	0.06	Q	|	|	|	V|
23+50	0.5874	0.06	Q	|	|	|	V|
23+55	0.5878	0.06	Q	|	|	|	V|
24+ 0	0.5882	0.06	Q	|	|	|	V|
24+ 5	0.5886	0.05	Q	|	|	|	V|
24+10	0.5889	0.04	Q	|	|	|	V|
24+15	0.5890	0.02	Q	|	|	|	V|
24+20	0.5891	0.02	Q	|	|	|	V|
24+25	0.5892	0.01	Q	|	|	|	V|
24+30	0.5893	0.01	Q	|	|	|	V|
24+35	0.5893	0.01	Q	|	|	|	V|
24+40	0.5894	0.01	Q	|	|	|	V|
24+45	0.5894	0.00	Q	|	|	|	V|
24+50	0.5894	0.00	Q	|	|	|	V|
24+55	0.5894	0.00	Q	|	|	|	V|
25+ 0	0.5894	0.00	Q	|	|	|	V|
25+ 5	0.5895	0.00	Q	|	|	|	V|
25+10	0.5895	0.00	Q	|	|	|	V|
25+15	0.5895	0.00	Q	|	|	|	V|
25+20	0.5895	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163UHE2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 2 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA A-1
4163UHE2.UM1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 2550.00(Ft.)
Length along longest watercourse measured to centroid = 1125.00(Ft.)
Length along longest watercourse = 0.483 Mi.
Length along longest watercourse measured to centroid = 0.213 Mi.
Difference in elevation = 8.50(Ft.)
Slope along watercourse = 17.6000 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	86.00	0.000

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.360	5.636	3.421
2	0.167	94.720	23.906	14.508
3	0.250	142.080	28.909	17.545
4	0.333	189.440	13.984	8.487
5	0.417	236.800	7.077	4.295
6	0.500	284.160	4.874	2.958
7	0.583	331.520	3.553	2.156
8	0.667	378.880	2.732	1.658
9	0.750	426.241	2.054	1.247
10	0.833	473.601	1.560	0.947
11	0.917	520.961	1.396	0.847
12	1.000	568.321	1.087	0.659
13	1.083	615.681	0.878	0.533
14	1.167	663.041	0.698	0.424
15	1.250	710.401	0.523	0.318
16	1.333	757.761	0.474	0.287

17	1.417	805.121	0.659		0.400
			Sum = 100.000	Sum=	60.690

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.013	0.608	0.012	0.00
2	0.17	0.07	0.013	0.606	0.012	0.00
3	0.25	0.07	0.013	0.604	0.012	0.00
4	0.33	0.10	0.019	0.601	0.017	0.00
5	0.42	0.10	0.019	0.599	0.017	0.00
6	0.50	0.10	0.019	0.597	0.017	0.00
7	0.58	0.10	0.019	0.594	0.017	0.00
8	0.67	0.10	0.019	0.592	0.017	0.00
9	0.75	0.10	0.019	0.590	0.017	0.00
10	0.83	0.13	0.026	0.587	0.023	0.00
11	0.92	0.13	0.026	0.585	0.023	0.00
12	1.00	0.13	0.026	0.583	0.023	0.00
13	1.08	0.10	0.019	0.580	0.017	0.00
14	1.17	0.10	0.019	0.578	0.017	0.00
15	1.25	0.10	0.019	0.576	0.017	0.00
16	1.33	0.10	0.019	0.573	0.017	0.00
17	1.42	0.10	0.019	0.571	0.017	0.00
18	1.50	0.10	0.019	0.569	0.017	0.00
19	1.58	0.10	0.019	0.567	0.017	0.00
20	1.67	0.10	0.019	0.564	0.017	0.00
21	1.75	0.10	0.019	0.562	0.017	0.00
22	1.83	0.13	0.026	0.560	0.023	0.00
23	1.92	0.13	0.026	0.558	0.023	0.00
24	2.00	0.13	0.026	0.555	0.023	0.00
25	2.08	0.13	0.026	0.553	0.023	0.00
26	2.17	0.13	0.026	0.551	0.023	0.00
27	2.25	0.13	0.026	0.549	0.023	0.00
28	2.33	0.13	0.026	0.546	0.023	0.00
29	2.42	0.13	0.026	0.544	0.023	0.00
30	2.50	0.13	0.026	0.542	0.023	0.00
31	2.58	0.17	0.032	0.540	0.029	0.00
32	2.67	0.17	0.032	0.537	0.029	0.00
33	2.75	0.17	0.032	0.535	0.029	0.00
34	2.83	0.17	0.032	0.533	0.029	0.00
35	2.92	0.17	0.032	0.531	0.029	0.00
36	3.00	0.17	0.032	0.529	0.029	0.00
37	3.08	0.17	0.032	0.526	0.029	0.00
38	3.17	0.17	0.032	0.524	0.029	0.00
39	3.25	0.17	0.032	0.522	0.029	0.00
40	3.33	0.17	0.032	0.520	0.029	0.00
41	3.42	0.17	0.032	0.518	0.029	0.00
42	3.50	0.17	0.032	0.516	0.029	0.00
43	3.58	0.17	0.032	0.513	0.029	0.00
44	3.67	0.17	0.032	0.511	0.029	0.00
45	3.75	0.17	0.032	0.509	0.029	0.00
46	3.83	0.20	0.038	0.507	0.035	0.00
47	3.92	0.20	0.038	0.505	0.035	0.00

48	4.00	0.20	0.038	0.503	0.035	0.00
49	4.08	0.20	0.038	0.501	0.035	0.00
50	4.17	0.20	0.038	0.498	0.035	0.00
51	4.25	0.20	0.038	0.496	0.035	0.00
52	4.33	0.23	0.045	0.494	0.040	0.00
53	4.42	0.23	0.045	0.492	0.040	0.00
54	4.50	0.23	0.045	0.490	0.040	0.00
55	4.58	0.23	0.045	0.488	0.040	0.00
56	4.67	0.23	0.045	0.486	0.040	0.00
57	4.75	0.23	0.045	0.484	0.040	0.00
58	4.83	0.27	0.051	0.482	0.046	0.01
59	4.92	0.27	0.051	0.480	0.046	0.01
60	5.00	0.27	0.051	0.477	0.046	0.01
61	5.08	0.20	0.038	0.475	0.035	0.00
62	5.17	0.20	0.038	0.473	0.035	0.00
63	5.25	0.20	0.038	0.471	0.035	0.00
64	5.33	0.23	0.045	0.469	0.040	0.00
65	5.42	0.23	0.045	0.467	0.040	0.00
66	5.50	0.23	0.045	0.465	0.040	0.00
67	5.58	0.27	0.051	0.463	0.046	0.01
68	5.67	0.27	0.051	0.461	0.046	0.01
69	5.75	0.27	0.051	0.459	0.046	0.01
70	5.83	0.27	0.051	0.457	0.046	0.01
71	5.92	0.27	0.051	0.455	0.046	0.01
72	6.00	0.27	0.051	0.453	0.046	0.01
73	6.08	0.30	0.058	0.451	0.052	0.01
74	6.17	0.30	0.058	0.449	0.052	0.01
75	6.25	0.30	0.058	0.447	0.052	0.01
76	6.33	0.30	0.058	0.445	0.052	0.01
77	6.42	0.30	0.058	0.443	0.052	0.01
78	6.50	0.30	0.058	0.441	0.052	0.01
79	6.58	0.33	0.064	0.439	0.058	0.01
80	6.67	0.33	0.064	0.437	0.058	0.01
81	6.75	0.33	0.064	0.435	0.058	0.01
82	6.83	0.33	0.064	0.433	0.058	0.01
83	6.92	0.33	0.064	0.431	0.058	0.01
84	7.00	0.33	0.064	0.429	0.058	0.01
85	7.08	0.33	0.064	0.427	0.058	0.01
86	7.17	0.33	0.064	0.425	0.058	0.01
87	7.25	0.33	0.064	0.423	0.058	0.01
88	7.33	0.37	0.070	0.421	0.063	0.01
89	7.42	0.37	0.070	0.419	0.063	0.01
90	7.50	0.37	0.070	0.417	0.063	0.01
91	7.58	0.40	0.077	0.416	0.069	0.01
92	7.67	0.40	0.077	0.414	0.069	0.01
93	7.75	0.40	0.077	0.412	0.069	0.01
94	7.83	0.43	0.083	0.410	0.075	0.01
95	7.92	0.43	0.083	0.408	0.075	0.01
96	8.00	0.43	0.083	0.406	0.075	0.01
97	8.08	0.50	0.096	0.404	0.086	0.01
98	8.17	0.50	0.096	0.402	0.086	0.01
99	8.25	0.50	0.096	0.400	0.086	0.01
100	8.33	0.50	0.096	0.399	0.086	0.01
101	8.42	0.50	0.096	0.397	0.086	0.01

102	8.50	0.50	0.096	0.395	0.086	0.01
103	8.58	0.53	0.102	0.393	0.092	0.01
104	8.67	0.53	0.102	0.391	0.092	0.01
105	8.75	0.53	0.102	0.389	0.092	0.01
106	8.83	0.57	0.109	0.387	0.098	0.01
107	8.92	0.57	0.109	0.386	0.098	0.01
108	9.00	0.57	0.109	0.384	0.098	0.01
109	9.08	0.63	0.122	0.382	0.109	0.01
110	9.17	0.63	0.122	0.380	0.109	0.01
111	9.25	0.63	0.122	0.378	0.109	0.01
112	9.33	0.67	0.128	0.377	0.115	0.01
113	9.42	0.67	0.128	0.375	0.115	0.01
114	9.50	0.67	0.128	0.373	0.115	0.01
115	9.58	0.70	0.134	0.371	0.121	0.01
116	9.67	0.70	0.134	0.369	0.121	0.01
117	9.75	0.70	0.134	0.368	0.121	0.01
118	9.83	0.73	0.141	0.366	0.127	0.01
119	9.92	0.73	0.141	0.364	0.127	0.01
120	10.00	0.73	0.141	0.362	0.127	0.01
121	10.08	0.50	0.096	0.361	0.086	0.01
122	10.17	0.50	0.096	0.359	0.086	0.01
123	10.25	0.50	0.096	0.357	0.086	0.01
124	10.33	0.50	0.096	0.355	0.086	0.01
125	10.42	0.50	0.096	0.354	0.086	0.01
126	10.50	0.50	0.096	0.352	0.086	0.01
127	10.58	0.67	0.128	0.350	0.115	0.01
128	10.67	0.67	0.128	0.348	0.115	0.01
129	10.75	0.67	0.128	0.347	0.115	0.01
130	10.83	0.67	0.128	0.345	0.115	0.01
131	10.92	0.67	0.128	0.343	0.115	0.01
132	11.00	0.67	0.128	0.342	0.115	0.01
133	11.08	0.63	0.122	0.340	0.109	0.01
134	11.17	0.63	0.122	0.338	0.109	0.01
135	11.25	0.63	0.122	0.337	0.109	0.01
136	11.33	0.63	0.122	0.335	0.109	0.01
137	11.42	0.63	0.122	0.333	0.109	0.01
138	11.50	0.63	0.122	0.332	0.109	0.01
139	11.58	0.57	0.109	0.330	0.098	0.01
140	11.67	0.57	0.109	0.328	0.098	0.01
141	11.75	0.57	0.109	0.327	0.098	0.01
142	11.83	0.60	0.115	0.325	0.104	0.01
143	11.92	0.60	0.115	0.324	0.104	0.01
144	12.00	0.60	0.115	0.322	0.104	0.01
145	12.08	0.83	0.160	0.320	0.144	0.02
146	12.17	0.83	0.160	0.319	0.144	0.02
147	12.25	0.83	0.160	0.317	0.144	0.02
148	12.33	0.87	0.166	0.316	0.150	0.02
149	12.42	0.87	0.166	0.314	0.150	0.02
150	12.50	0.87	0.166	0.312	0.150	0.02
151	12.58	0.93	0.179	0.311	0.161	0.02
152	12.67	0.93	0.179	0.309	0.161	0.02
153	12.75	0.93	0.179	0.308	0.161	0.02
154	12.83	0.97	0.186	0.306	0.167	0.02
155	12.92	0.97	0.186	0.305	0.167	0.02

156	13.00	0.97	0.186	0.303	0.167	0.02
157	13.08	1.13	0.218	0.301	0.196	0.02
158	13.17	1.13	0.218	0.300	0.196	0.02
159	13.25	1.13	0.218	0.298	0.196	0.02
160	13.33	1.13	0.218	0.297	0.196	0.02
161	13.42	1.13	0.218	0.295	0.196	0.02
162	13.50	1.13	0.218	0.294	0.196	0.02
163	13.58	0.77	0.147	0.292	0.132	0.01
164	13.67	0.77	0.147	0.291	0.132	0.01
165	13.75	0.77	0.147	0.289	0.132	0.01
166	13.83	0.77	0.147	0.288	0.132	0.01
167	13.92	0.77	0.147	0.286	0.132	0.01
168	14.00	0.77	0.147	0.285	0.132	0.01
169	14.08	0.90	0.173	0.284	0.156	0.02
170	14.17	0.90	0.173	0.282	0.156	0.02
171	14.25	0.90	0.173	0.281	0.156	0.02
172	14.33	0.87	0.166	0.279	0.150	0.02
173	14.42	0.87	0.166	0.278	0.150	0.02
174	14.50	0.87	0.166	0.276	0.150	0.02
175	14.58	0.87	0.166	0.275	0.150	0.02
176	14.67	0.87	0.166	0.274	0.150	0.02
177	14.75	0.87	0.166	0.272	0.150	0.02
178	14.83	0.83	0.160	0.271	0.144	0.02
179	14.92	0.83	0.160	0.269	0.144	0.02
180	15.00	0.83	0.160	0.268	0.144	0.02
181	15.08	0.80	0.154	0.267	0.138	0.02
182	15.17	0.80	0.154	0.265	0.138	0.02
183	15.25	0.80	0.154	0.264	0.138	0.02
184	15.33	0.77	0.147	0.263	0.132	0.01
185	15.42	0.77	0.147	0.261	0.132	0.01
186	15.50	0.77	0.147	0.260	0.132	0.01
187	15.58	0.63	0.122	0.259	0.109	0.01
188	15.67	0.63	0.122	0.257	0.109	0.01
189	15.75	0.63	0.122	0.256	0.109	0.01
190	15.83	0.63	0.122	0.255	0.109	0.01
191	15.92	0.63	0.122	0.253	0.109	0.01
192	16.00	0.63	0.122	0.252	0.109	0.01
193	16.08	0.13	0.026	0.251	0.023	0.00
194	16.17	0.13	0.026	0.249	0.023	0.00
195	16.25	0.13	0.026	0.248	0.023	0.00
196	16.33	0.13	0.026	0.247	0.023	0.00
197	16.42	0.13	0.026	0.246	0.023	0.00
198	16.50	0.13	0.026	0.244	0.023	0.00
199	16.58	0.10	0.019	0.243	0.017	0.00
200	16.67	0.10	0.019	0.242	0.017	0.00
201	16.75	0.10	0.019	0.241	0.017	0.00
202	16.83	0.10	0.019	0.239	0.017	0.00
203	16.92	0.10	0.019	0.238	0.017	0.00
204	17.00	0.10	0.019	0.237	0.017	0.00
205	17.08	0.17	0.032	0.236	0.029	0.00
206	17.17	0.17	0.032	0.235	0.029	0.00
207	17.25	0.17	0.032	0.233	0.029	0.00
208	17.33	0.17	0.032	0.232	0.029	0.00
209	17.42	0.17	0.032	0.231	0.029	0.00

210	17.50	0.17	0.032	0.230	0.029	0.00
211	17.58	0.17	0.032	0.229	0.029	0.00
212	17.67	0.17	0.032	0.228	0.029	0.00
213	17.75	0.17	0.032	0.227	0.029	0.00
214	17.83	0.13	0.026	0.225	0.023	0.00
215	17.92	0.13	0.026	0.224	0.023	0.00
216	18.00	0.13	0.026	0.223	0.023	0.00
217	18.08	0.13	0.026	0.222	0.023	0.00
218	18.17	0.13	0.026	0.221	0.023	0.00
219	18.25	0.13	0.026	0.220	0.023	0.00
220	18.33	0.13	0.026	0.219	0.023	0.00
221	18.42	0.13	0.026	0.218	0.023	0.00
222	18.50	0.13	0.026	0.217	0.023	0.00
223	18.58	0.10	0.019	0.216	0.017	0.00
224	18.67	0.10	0.019	0.215	0.017	0.00
225	18.75	0.10	0.019	0.214	0.017	0.00
226	18.83	0.07	0.013	0.213	0.012	0.00
227	18.92	0.07	0.013	0.212	0.012	0.00
228	19.00	0.07	0.013	0.211	0.012	0.00
229	19.08	0.10	0.019	0.210	0.017	0.00
230	19.17	0.10	0.019	0.209	0.017	0.00
231	19.25	0.10	0.019	0.208	0.017	0.00
232	19.33	0.13	0.026	0.207	0.023	0.00
233	19.42	0.13	0.026	0.206	0.023	0.00
234	19.50	0.13	0.026	0.205	0.023	0.00
235	19.58	0.10	0.019	0.204	0.017	0.00
236	19.67	0.10	0.019	0.203	0.017	0.00
237	19.75	0.10	0.019	0.202	0.017	0.00
238	19.83	0.07	0.013	0.201	0.012	0.00
239	19.92	0.07	0.013	0.200	0.012	0.00
240	20.00	0.07	0.013	0.199	0.012	0.00
241	20.08	0.10	0.019	0.198	0.017	0.00
242	20.17	0.10	0.019	0.197	0.017	0.00
243	20.25	0.10	0.019	0.197	0.017	0.00
244	20.33	0.10	0.019	0.196	0.017	0.00
245	20.42	0.10	0.019	0.195	0.017	0.00
246	20.50	0.10	0.019	0.194	0.017	0.00
247	20.58	0.10	0.019	0.193	0.017	0.00
248	20.67	0.10	0.019	0.192	0.017	0.00
249	20.75	0.10	0.019	0.192	0.017	0.00
250	20.83	0.07	0.013	0.191	0.012	0.00
251	20.92	0.07	0.013	0.190	0.012	0.00
252	21.00	0.07	0.013	0.189	0.012	0.00
253	21.08	0.10	0.019	0.189	0.017	0.00
254	21.17	0.10	0.019	0.188	0.017	0.00
255	21.25	0.10	0.019	0.187	0.017	0.00
256	21.33	0.07	0.013	0.186	0.012	0.00
257	21.42	0.07	0.013	0.186	0.012	0.00
258	21.50	0.07	0.013	0.185	0.012	0.00
259	21.58	0.10	0.019	0.184	0.017	0.00
260	21.67	0.10	0.019	0.184	0.017	0.00
261	21.75	0.10	0.019	0.183	0.017	0.00
262	21.83	0.07	0.013	0.182	0.012	0.00
263	21.92	0.07	0.013	0.182	0.012	0.00

264	22.00	0.07	0.013	0.181	0.012	0.00
265	22.08	0.10	0.019	0.181	0.017	0.00
266	22.17	0.10	0.019	0.180	0.017	0.00
267	22.25	0.10	0.019	0.179	0.017	0.00
268	22.33	0.07	0.013	0.179	0.012	0.00
269	22.42	0.07	0.013	0.178	0.012	0.00
270	22.50	0.07	0.013	0.178	0.012	0.00
271	22.58	0.07	0.013	0.177	0.012	0.00
272	22.67	0.07	0.013	0.177	0.012	0.00
273	22.75	0.07	0.013	0.176	0.012	0.00
274	22.83	0.07	0.013	0.176	0.012	0.00
275	22.92	0.07	0.013	0.175	0.012	0.00
276	23.00	0.07	0.013	0.175	0.012	0.00
277	23.08	0.07	0.013	0.175	0.012	0.00
278	23.17	0.07	0.013	0.174	0.012	0.00
279	23.25	0.07	0.013	0.174	0.012	0.00
280	23.33	0.07	0.013	0.173	0.012	0.00
281	23.42	0.07	0.013	0.173	0.012	0.00
282	23.50	0.07	0.013	0.173	0.012	0.00
283	23.58	0.07	0.013	0.173	0.012	0.00
284	23.67	0.07	0.013	0.172	0.012	0.00
285	23.75	0.07	0.013	0.172	0.012	0.00
286	23.83	0.07	0.013	0.172	0.012	0.00
287	23.92	0.07	0.013	0.172	0.012	0.00
288	24.00	0.07	0.013	0.172	0.012	0.00
	Sum =	100.0			Sum =	1.9

Flood volume = Effective rainfall 0.16(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 0.8(Ac.Ft)
Total soil loss = 1.44(In)
Total soil loss = 7.226(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 34971.7 Cubic Feet
Total soil loss = 314745.0 Cubic Feet

Peak flow rate of this hydrograph = 1.285(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

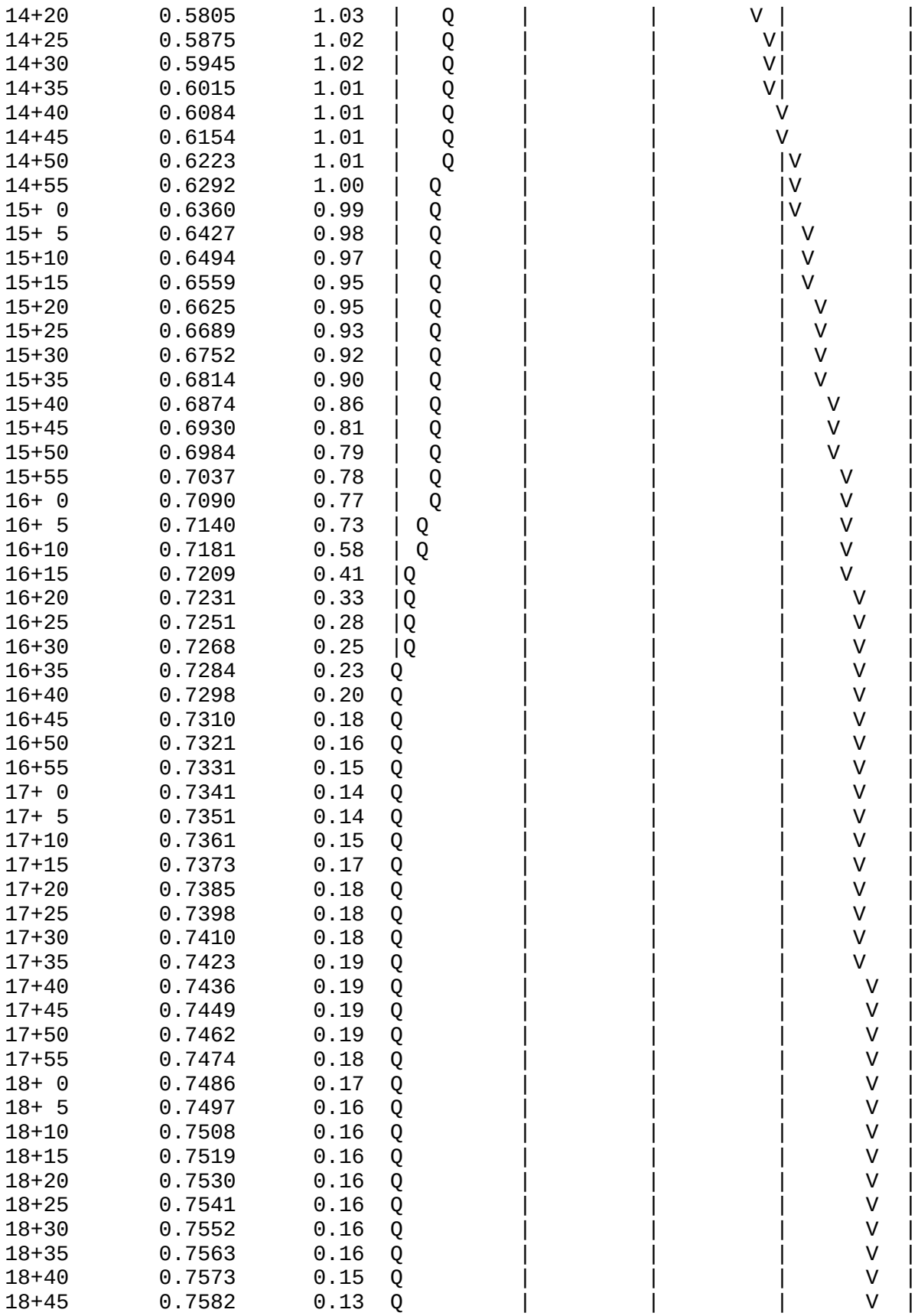
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0002	0.02	Q	|	|	|	|
0+15	0.0005	0.05	Q	|	|	|	|
0+20	0.0009	0.06	Q	|	|	|	|
0+25	0.0014	0.07	Q	|	|	|	|
0+30	0.0020	0.09	Q	|	|	|	|
0+35	0.0027	0.10	Q	|	|	|	|
0+40	0.0034	0.10	Q	|	|	|	|
0+45	0.0041	0.10	Q	|	|	|	|

0+50	0.0049	0.11	Q	|	|	|	|
0+55	0.0057	0.12	Q	|	|	|	|
1+ 0	0.0066	0.13	Q	|	|	|	|
1+ 5	0.0076	0.14	Q	|	|	|	|
1+10	0.0085	0.13	Q	|	|	|	|
1+15	0.0093	0.12	Q	|	|	|	|
1+20	0.0102	0.12	Q	|	|	|	|
1+25	0.0110	0.12	Q	|	|	|	|
1+30	0.0118	0.12	Q	|	|	|	|
1+35	0.0126	0.12	Q	|	|	|	|
1+40	0.0135	0.12	Q	|	|	|	|
1+45	0.0143	0.12	Q	|	|	|	|
1+50	0.0151	0.12	Q	|	|	|	|
1+55	0.0160	0.13	Q	|	|	|	|
2+ 0	0.0170	0.14	Q	|	|	|	|
2+ 5	0.0180	0.15	Q	|	|	|	|
2+10	0.0190	0.15	Q	|	|	|	|
2+15	0.0200	0.15	Q	|	|	|	|
2+20	0.0210	0.15	QV	|	|	|	|
2+25	0.0221	0.15	QV	|	|	|	|
2+30	0.0231	0.15	QV	|	|	|	|
2+35	0.0242	0.16	QV	|	|	|	|
2+40	0.0254	0.17	QV	|	|	|	|
2+45	0.0266	0.18	QV	|	|	|	|
2+50	0.0278	0.18	QV	|	|	|	|
2+55	0.0291	0.19	QV	|	|	|	|
3+ 0	0.0304	0.19	QV	|	|	|	|
3+ 5	0.0317	0.19	QV	|	|	|	|
3+10	0.0330	0.19	QV	|	|	|	|
3+15	0.0343	0.19	QV	|	|	|	|
3+20	0.0357	0.19	QV	|	|	|	|
3+25	0.0370	0.19	QV	|	|	|	|
3+30	0.0383	0.19	QV	|	|	|	|
3+35	0.0396	0.19	QV	|	|	|	|
3+40	0.0410	0.19	Q V	|	|	|	|
3+45	0.0423	0.19	Q V	|	|	|	|
3+50	0.0437	0.20	Q V	|	|	|	|
3+55	0.0451	0.21	Q V	|	|	|	|
4+ 0	0.0466	0.22	Q V	|	|	|	|
4+ 5	0.0481	0.22	Q V	|	|	|	|
4+10	0.0497	0.23	Q V	|	|	|	|
4+15	0.0512	0.23	Q V	|	|	|	|
4+20	0.0528	0.23	Q V	|	|	|	|
4+25	0.0545	0.24	Q V	|	|	|	|
4+30	0.0562	0.25	|QV	|	|	|	|
4+35	0.0580	0.26	|QV	|	|	|	|
4+40	0.0598	0.26	|QV	|	|	|	|
4+45	0.0616	0.26	|Q V	|	|	|	|
4+50	0.0635	0.27	|Q V	|	|	|	|
4+55	0.0654	0.28	|Q V	|	|	|	|
5+ 0	0.0674	0.29	|Q V	|	|	|	|
5+ 5	0.0694	0.29	|Q V	|	|	|	|
5+10	0.0713	0.28	|Q V	|	|	|	|
5+15	0.0731	0.26	|Q V	|	|	|	|

5+20	0.0749	0.25	Q V			
5+25	0.0766	0.26	Q V			
5+30	0.0784	0.26	Q V			
5+35	0.0803	0.27	Q V			
5+40	0.0822	0.28	Q V			
5+45	0.0843	0.29	Q V			
5+50	0.0863	0.30	Q V			
5+55	0.0884	0.30	Q V			
6+ 0	0.0905	0.30	Q V			
6+ 5	0.0926	0.31	Q V			
6+10	0.0948	0.32	Q V			
6+15	0.0971	0.33	Q V			
6+20	0.0994	0.34	Q V			
6+25	0.1017	0.34	Q V			
6+30	0.1041	0.34	Q V			
6+35	0.1065	0.35	Q V			
6+40	0.1089	0.36	Q V			
6+45	0.1115	0.37	Q V			
6+50	0.1141	0.38	Q V			
6+55	0.1167	0.38	Q V			
7+ 0	0.1193	0.38	Q V			
7+ 5	0.1219	0.38	Q V			
7+10	0.1246	0.38	Q V			
7+15	0.1272	0.39	Q V			
7+20	0.1299	0.39	Q V			
7+25	0.1326	0.40	Q V			
7+30	0.1355	0.41	Q V			
7+35	0.1383	0.42	Q V			
7+40	0.1413	0.43	Q V			
7+45	0.1444	0.44	Q V			
7+50	0.1475	0.45	Q V			
7+55	0.1507	0.47	Q V			
8+ 0	0.1540	0.48	Q V			
8+ 5	0.1574	0.49	Q V			
8+10	0.1609	0.51	Q V			
8+15	0.1647	0.54	Q V			
8+20	0.1685	0.55	Q V			
8+25	0.1723	0.56	Q V			
8+30	0.1762	0.57	Q V			
8+35	0.1802	0.57	Q V			
8+40	0.1842	0.58	Q V			
8+45	0.1883	0.60	Q V			
8+50	0.1925	0.61	Q V			
8+55	0.1968	0.62	Q V			
9+ 0	0.2012	0.64	Q V			
9+ 5	0.2056	0.65	Q V			
9+10	0.2102	0.67	Q V			
9+15	0.2150	0.70	Q V			
9+20	0.2199	0.71	Q V			
9+25	0.2250	0.73	Q V			
9+30	0.2301	0.74	Q V			
9+35	0.2353	0.76	Q V			
9+40	0.2406	0.77	Q V			
9+45	0.2460	0.79	Q V			

9+50	0.2515	0.80	Q	V			
9+55	0.2571	0.81	Q	V			
10+ 0	0.2628	0.83	Q	V			
10+ 5	0.2684	0.82	Q	V			
10+10	0.2737	0.76	Q	V			
10+15	0.2784	0.68	Q	V			
10+20	0.2829	0.65	Q	V			
10+25	0.2872	0.63	Q	V			
10+30	0.2915	0.62	Q	V			
10+35	0.2958	0.62	Q	V			
10+40	0.3004	0.66	Q	V			
10+45	0.3053	0.71	Q	V			
10+50	0.3104	0.74	Q	V			
10+55	0.3155	0.75	Q	V			
11+ 0	0.3207	0.76	Q	V			
11+ 5	0.3259	0.76	Q	V			
11+10	0.3311	0.75	Q	V			
11+15	0.3362	0.74	Q	V			
11+20	0.3413	0.74	Q	V			
11+25	0.3464	0.74	Q	V			
11+30	0.3515	0.74	Q	V			
11+35	0.3565	0.73	Q	V			
11+40	0.3615	0.72	Q	V			
11+45	0.3663	0.69	Q	V			
11+50	0.3710	0.69	Q	V			
11+55	0.3757	0.69	Q	V			
12+ 0	0.3805	0.70	Q	V			
12+ 5	0.3854	0.71	Q	V			
12+10	0.3908	0.78	Q	V			
12+15	0.3967	0.86	Q	V			
12+20	0.4029	0.90	Q	V			
12+25	0.4093	0.93	Q	V			
12+30	0.4158	0.95	Q	V			
12+35	0.4225	0.97	Q	V			
12+40	0.4294	1.00	Q	V			
12+45	0.4365	1.03	Q	V			
12+50	0.4437	1.05	Q	V			
12+55	0.4511	1.07	Q	V			
13+ 0	0.4586	1.09	Q	V			
13+ 5	0.4662	1.11	Q	V			
13+10	0.4742	1.16	Q	V			
13+15	0.4826	1.22	Q	V			
13+20	0.4913	1.26	Q	V			
13+25	0.5001	1.27	Q	V			
13+30	0.5089	1.29	Q	V			
13+35	0.5177	1.27	Q	V			
13+40	0.5257	1.17	Q	V			
13+45	0.5330	1.06	Q	V			
13+50	0.5399	1.00	Q	V			
13+55	0.5466	0.97	Q	V			
14+ 0	0.5531	0.95	Q	V			
14+ 5	0.5597	0.95	Q	V			
14+10	0.5664	0.98	Q	V			
14+15	0.5734	1.01	Q	V			



18+50	0.7591	0.13	Q	|	|	|	V |
18+55	0.7599	0.11	Q	|	|	|	V |
19+ 0	0.7606	0.10	Q	|	|	|	V |
19+ 5	0.7612	0.10	Q	|	|	|	V |
19+10	0.7619	0.10	Q	|	|	|	V |
19+15	0.7627	0.11	Q	|	|	|	V |
19+20	0.7635	0.11	Q	|	|	|	V |
19+25	0.7643	0.13	Q	|	|	|	V |
19+30	0.7653	0.14	Q	|	|	|	V |
19+35	0.7662	0.14	Q	|	|	|	V |
19+40	0.7672	0.13	Q	|	|	|	V |
19+45	0.7680	0.13	Q	|	|	|	V |
19+50	0.7689	0.12	Q	|	|	|	V |
19+55	0.7696	0.11	Q	|	|	|	V |
20+ 0	0.7703	0.10	Q	|	|	|	V |
20+ 5	0.7709	0.09	Q	|	|	|	V |
20+10	0.7716	0.10	Q	|	|	|	V |
20+15	0.7723	0.11	Q	|	|	|	V |
20+20	0.7731	0.11	Q	|	|	|	V |
20+25	0.7739	0.11	Q	|	|	|	V |
20+30	0.7747	0.11	Q	|	|	|	V |
20+35	0.7755	0.11	Q	|	|	|	V |
20+40	0.7762	0.12	Q	|	|	|	V |
20+45	0.7770	0.12	Q	|	|	|	V |
20+50	0.7778	0.11	Q	|	|	|	V |
20+55	0.7785	0.10	Q	|	|	|	V |
21+ 0	0.7792	0.09	Q	|	|	|	V |
21+ 5	0.7798	0.09	Q	|	|	|	V |
21+10	0.7805	0.10	Q	|	|	|	V |
21+15	0.7812	0.11	Q	|	|	|	V |
21+20	0.7819	0.11	Q	|	|	|	V |
21+25	0.7826	0.10	Q	|	|	|	V |
21+30	0.7833	0.09	Q	|	|	|	V|
21+35	0.7839	0.09	Q	|	|	|	V|
21+40	0.7845	0.10	Q	|	|	|	V|
21+45	0.7852	0.10	Q	|	|	|	V|
21+50	0.7860	0.11	Q	|	|	|	V|
21+55	0.7867	0.10	Q	|	|	|	V|
22+ 0	0.7873	0.09	Q	|	|	|	V|
22+ 5	0.7879	0.09	Q	|	|	|	V|
22+10	0.7885	0.09	Q	|	|	|	V|
22+15	0.7893	0.10	Q	|	|	|	V|
22+20	0.7900	0.11	Q	|	|	|	V|
22+25	0.7907	0.10	Q	|	|	|	V|
22+30	0.7913	0.09	Q	|	|	|	V|
22+35	0.7919	0.09	Q	|	|	|	V|
22+40	0.7925	0.08	Q	|	|	|	V|
22+45	0.7930	0.08	Q	|	|	|	V|
22+50	0.7936	0.08	Q	|	|	|	V|
22+55	0.7941	0.08	Q	|	|	|	V|
23+ 0	0.7947	0.08	Q	|	|	|	V|
23+ 5	0.7952	0.08	Q	|	|	|	V|
23+10	0.7958	0.08	Q	|	|	|	V|
23+15	0.7963	0.08	Q	|	|	|	V|

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   23+20       0.7968      0.08  Q          |           |           |         V|
   23+25       0.7974      0.08  Q          |           |           |         V|
   23+30       0.7979      0.08  Q          |           |           |         V|
   23+35       0.7985      0.08  Q          |           |           |         V|
   23+40       0.7990      0.08  Q          |           |           |         V|
   23+45       0.7995      0.08  Q          |           |           |         V|
   23+50       0.8001      0.08  Q          |           |           |         V|
   23+55       0.8006      0.08  Q          |           |           |         V|
   24+ 0       0.8011      0.08  Q          |           |           |         V|
   24+ 5       0.8016      0.07  Q          |           |           |         V|
   24+10       0.8020      0.05  Q          |           |           |         V|
   24+15       0.8022      0.03  Q          |           |           |         V|
   24+20       0.8024      0.02  Q          |           |           |         V|
   24+25       0.8025      0.02  Q          |           |           |         V|
   24+30       0.8026      0.01  Q          |           |           |         V|
   24+35       0.8026      0.01  Q          |           |           |         V|
   24+40       0.8027      0.01  Q          |           |           |         V|
   24+45       0.8027      0.01  Q          |           |           |         V|
   24+50       0.8028      0.00  Q          |           |           |         V|
   24+55       0.8028      0.00  Q          |           |           |         V|
   25+ 0       0.8028      0.00  Q          |           |           |         V|
   25+ 5       0.8028      0.00  Q          |           |           |         V|
   25+10       0.8028      0.00  Q          |           |           |         V|
   25+15       0.8028      0.00  Q          |           |           |         V|
   25+20       0.8028      0.00  Q          |           |           |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163UHE5245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 5 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA A-1
4163UHE5.UM1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 2550.00(Ft.)
Length along longest watercourse measured to centroid = 1125.00(Ft.)
Length along longest watercourse = 0.483 Mi.
Length along longest watercourse measured to centroid = 0.213 Mi.
Difference in elevation = 8.50(Ft.)
Slope along watercourse = 17.6000 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.162(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.162(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	86.00	0.000

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.360	5.636	3.421
2	0.167	94.720	23.906	14.508
3	0.250	142.080	28.909	17.545
4	0.333	189.440	13.984	8.487
5	0.417	236.800	7.077	4.295
6	0.500	284.160	4.874	2.958
7	0.583	331.520	3.553	2.156
8	0.667	378.880	2.732	1.658
9	0.750	426.241	2.054	1.247
10	0.833	473.601	1.560	0.947
11	0.917	520.961	1.396	0.847
12	1.000	568.321	1.087	0.659
13	1.083	615.681	0.878	0.533
14	1.167	663.041	0.698	0.424
15	1.250	710.401	0.523	0.318
16	1.333	757.761	0.474	0.287

17	1.417	805.121	0.659		0.400
			Sum = 100.000	Sum=	60.690

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.017	0.608	0.016	0.00
2	0.17	0.07	0.017	0.606	0.016	0.00
3	0.25	0.07	0.017	0.604	0.016	0.00
4	0.33	0.10	0.026	0.601	0.023	0.00
5	0.42	0.10	0.026	0.599	0.023	0.00
6	0.50	0.10	0.026	0.597	0.023	0.00
7	0.58	0.10	0.026	0.594	0.023	0.00
8	0.67	0.10	0.026	0.592	0.023	0.00
9	0.75	0.10	0.026	0.590	0.023	0.00
10	0.83	0.13	0.035	0.587	0.031	0.00
11	0.92	0.13	0.035	0.585	0.031	0.00
12	1.00	0.13	0.035	0.583	0.031	0.00
13	1.08	0.10	0.026	0.580	0.023	0.00
14	1.17	0.10	0.026	0.578	0.023	0.00
15	1.25	0.10	0.026	0.576	0.023	0.00
16	1.33	0.10	0.026	0.573	0.023	0.00
17	1.42	0.10	0.026	0.571	0.023	0.00
18	1.50	0.10	0.026	0.569	0.023	0.00
19	1.58	0.10	0.026	0.567	0.023	0.00
20	1.67	0.10	0.026	0.564	0.023	0.00
21	1.75	0.10	0.026	0.562	0.023	0.00
22	1.83	0.13	0.035	0.560	0.031	0.00
23	1.92	0.13	0.035	0.558	0.031	0.00
24	2.00	0.13	0.035	0.555	0.031	0.00
25	2.08	0.13	0.035	0.553	0.031	0.00
26	2.17	0.13	0.035	0.551	0.031	0.00
27	2.25	0.13	0.035	0.549	0.031	0.00
28	2.33	0.13	0.035	0.546	0.031	0.00
29	2.42	0.13	0.035	0.544	0.031	0.00
30	2.50	0.13	0.035	0.542	0.031	0.00
31	2.58	0.17	0.043	0.540	0.039	0.00
32	2.67	0.17	0.043	0.537	0.039	0.00
33	2.75	0.17	0.043	0.535	0.039	0.00
34	2.83	0.17	0.043	0.533	0.039	0.00
35	2.92	0.17	0.043	0.531	0.039	0.00
36	3.00	0.17	0.043	0.529	0.039	0.00
37	3.08	0.17	0.043	0.526	0.039	0.00
38	3.17	0.17	0.043	0.524	0.039	0.00
39	3.25	0.17	0.043	0.522	0.039	0.00
40	3.33	0.17	0.043	0.520	0.039	0.00
41	3.42	0.17	0.043	0.518	0.039	0.00
42	3.50	0.17	0.043	0.516	0.039	0.00
43	3.58	0.17	0.043	0.513	0.039	0.00
44	3.67	0.17	0.043	0.511	0.039	0.00
45	3.75	0.17	0.043	0.509	0.039	0.00
46	3.83	0.20	0.052	0.507	0.047	0.01
47	3.92	0.20	0.052	0.505	0.047	0.01

48	4.00	0.20	0.052	0.503	0.047	0.01
49	4.08	0.20	0.052	0.501	0.047	0.01
50	4.17	0.20	0.052	0.498	0.047	0.01
51	4.25	0.20	0.052	0.496	0.047	0.01
52	4.33	0.23	0.061	0.494	0.054	0.01
53	4.42	0.23	0.061	0.492	0.054	0.01
54	4.50	0.23	0.061	0.490	0.054	0.01
55	4.58	0.23	0.061	0.488	0.054	0.01
56	4.67	0.23	0.061	0.486	0.054	0.01
57	4.75	0.23	0.061	0.484	0.054	0.01
58	4.83	0.27	0.069	0.482	0.062	0.01
59	4.92	0.27	0.069	0.480	0.062	0.01
60	5.00	0.27	0.069	0.477	0.062	0.01
61	5.08	0.20	0.052	0.475	0.047	0.01
62	5.17	0.20	0.052	0.473	0.047	0.01
63	5.25	0.20	0.052	0.471	0.047	0.01
64	5.33	0.23	0.061	0.469	0.054	0.01
65	5.42	0.23	0.061	0.467	0.054	0.01
66	5.50	0.23	0.061	0.465	0.054	0.01
67	5.58	0.27	0.069	0.463	0.062	0.01
68	5.67	0.27	0.069	0.461	0.062	0.01
69	5.75	0.27	0.069	0.459	0.062	0.01
70	5.83	0.27	0.069	0.457	0.062	0.01
71	5.92	0.27	0.069	0.455	0.062	0.01
72	6.00	0.27	0.069	0.453	0.062	0.01
73	6.08	0.30	0.078	0.451	0.070	0.01
74	6.17	0.30	0.078	0.449	0.070	0.01
75	6.25	0.30	0.078	0.447	0.070	0.01
76	6.33	0.30	0.078	0.445	0.070	0.01
77	6.42	0.30	0.078	0.443	0.070	0.01
78	6.50	0.30	0.078	0.441	0.070	0.01
79	6.58	0.33	0.086	0.439	0.078	0.01
80	6.67	0.33	0.086	0.437	0.078	0.01
81	6.75	0.33	0.086	0.435	0.078	0.01
82	6.83	0.33	0.086	0.433	0.078	0.01
83	6.92	0.33	0.086	0.431	0.078	0.01
84	7.00	0.33	0.086	0.429	0.078	0.01
85	7.08	0.33	0.086	0.427	0.078	0.01
86	7.17	0.33	0.086	0.425	0.078	0.01
87	7.25	0.33	0.086	0.423	0.078	0.01
88	7.33	0.37	0.095	0.421	0.086	0.01
89	7.42	0.37	0.095	0.419	0.086	0.01
90	7.50	0.37	0.095	0.417	0.086	0.01
91	7.58	0.40	0.104	0.416	0.093	0.01
92	7.67	0.40	0.104	0.414	0.093	0.01
93	7.75	0.40	0.104	0.412	0.093	0.01
94	7.83	0.43	0.112	0.410	0.101	0.01
95	7.92	0.43	0.112	0.408	0.101	0.01
96	8.00	0.43	0.112	0.406	0.101	0.01
97	8.08	0.50	0.130	0.404	0.117	0.01
98	8.17	0.50	0.130	0.402	0.117	0.01
99	8.25	0.50	0.130	0.400	0.117	0.01
100	8.33	0.50	0.130	0.399	0.117	0.01
101	8.42	0.50	0.130	0.397	0.117	0.01

102	8.50	0.50	0.130	0.395	0.117	0.01
103	8.58	0.53	0.138	0.393	0.125	0.01
104	8.67	0.53	0.138	0.391	0.125	0.01
105	8.75	0.53	0.138	0.389	0.125	0.01
106	8.83	0.57	0.147	0.387	0.132	0.01
107	8.92	0.57	0.147	0.386	0.132	0.01
108	9.00	0.57	0.147	0.384	0.132	0.01
109	9.08	0.63	0.164	0.382	0.148	0.02
110	9.17	0.63	0.164	0.380	0.148	0.02
111	9.25	0.63	0.164	0.378	0.148	0.02
112	9.33	0.67	0.173	0.377	0.156	0.02
113	9.42	0.67	0.173	0.375	0.156	0.02
114	9.50	0.67	0.173	0.373	0.156	0.02
115	9.58	0.70	0.182	0.371	0.163	0.02
116	9.67	0.70	0.182	0.369	0.163	0.02
117	9.75	0.70	0.182	0.368	0.163	0.02
118	9.83	0.73	0.190	0.366	0.171	0.02
119	9.92	0.73	0.190	0.364	0.171	0.02
120	10.00	0.73	0.190	0.362	0.171	0.02
121	10.08	0.50	0.130	0.361	0.117	0.01
122	10.17	0.50	0.130	0.359	0.117	0.01
123	10.25	0.50	0.130	0.357	0.117	0.01
124	10.33	0.50	0.130	0.355	0.117	0.01
125	10.42	0.50	0.130	0.354	0.117	0.01
126	10.50	0.50	0.130	0.352	0.117	0.01
127	10.58	0.67	0.173	0.350	0.156	0.02
128	10.67	0.67	0.173	0.348	0.156	0.02
129	10.75	0.67	0.173	0.347	0.156	0.02
130	10.83	0.67	0.173	0.345	0.156	0.02
131	10.92	0.67	0.173	0.343	0.156	0.02
132	11.00	0.67	0.173	0.342	0.156	0.02
133	11.08	0.63	0.164	0.340	0.148	0.02
134	11.17	0.63	0.164	0.338	0.148	0.02
135	11.25	0.63	0.164	0.337	0.148	0.02
136	11.33	0.63	0.164	0.335	0.148	0.02
137	11.42	0.63	0.164	0.333	0.148	0.02
138	11.50	0.63	0.164	0.332	0.148	0.02
139	11.58	0.57	0.147	0.330	0.132	0.01
140	11.67	0.57	0.147	0.328	0.132	0.01
141	11.75	0.57	0.147	0.327	0.132	0.01
142	11.83	0.60	0.156	0.325	0.140	0.02
143	11.92	0.60	0.156	0.324	0.140	0.02
144	12.00	0.60	0.156	0.322	0.140	0.02
145	12.08	0.83	0.216	0.320	0.195	0.02
146	12.17	0.83	0.216	0.319	0.195	0.02
147	12.25	0.83	0.216	0.317	0.195	0.02
148	12.33	0.87	0.225	0.316	0.202	0.02
149	12.42	0.87	0.225	0.314	0.202	0.02
150	12.50	0.87	0.225	0.312	0.202	0.02
151	12.58	0.93	0.242	0.311	0.218	0.02
152	12.67	0.93	0.242	0.309	0.218	0.02
153	12.75	0.93	0.242	0.308	0.218	0.02
154	12.83	0.97	0.251	0.306	0.226	0.03
155	12.92	0.97	0.251	0.305	0.226	0.03

156	13.00	0.97	0.251	0.303	0.226	0.03
157	13.08	1.13	0.294	0.301	0.265	0.03
158	13.17	1.13	0.294	0.300	0.265	0.03
159	13.25	1.13	0.294	0.298	0.265	0.03
160	13.33	1.13	0.294	0.297	0.265	0.03
161	13.42	1.13	0.294	0.295	0.265	0.03
162	13.50	1.13	0.294	0.294	---	0.00
163	13.58	0.77	0.199	0.292	0.179	0.02
164	13.67	0.77	0.199	0.291	0.179	0.02
165	13.75	0.77	0.199	0.289	0.179	0.02
166	13.83	0.77	0.199	0.288	0.179	0.02
167	13.92	0.77	0.199	0.286	0.179	0.02
168	14.00	0.77	0.199	0.285	0.179	0.02
169	14.08	0.90	0.233	0.284	0.210	0.02
170	14.17	0.90	0.233	0.282	0.210	0.02
171	14.25	0.90	0.233	0.281	0.210	0.02
172	14.33	0.87	0.225	0.279	0.202	0.02
173	14.42	0.87	0.225	0.278	0.202	0.02
174	14.50	0.87	0.225	0.276	0.202	0.02
175	14.58	0.87	0.225	0.275	0.202	0.02
176	14.67	0.87	0.225	0.274	0.202	0.02
177	14.75	0.87	0.225	0.272	0.202	0.02
178	14.83	0.83	0.216	0.271	0.195	0.02
179	14.92	0.83	0.216	0.269	0.195	0.02
180	15.00	0.83	0.216	0.268	0.195	0.02
181	15.08	0.80	0.208	0.267	0.187	0.02
182	15.17	0.80	0.208	0.265	0.187	0.02
183	15.25	0.80	0.208	0.264	0.187	0.02
184	15.33	0.77	0.199	0.263	0.179	0.02
185	15.42	0.77	0.199	0.261	0.179	0.02
186	15.50	0.77	0.199	0.260	0.179	0.02
187	15.58	0.63	0.164	0.259	0.148	0.02
188	15.67	0.63	0.164	0.257	0.148	0.02
189	15.75	0.63	0.164	0.256	0.148	0.02
190	15.83	0.63	0.164	0.255	0.148	0.02
191	15.92	0.63	0.164	0.253	0.148	0.02
192	16.00	0.63	0.164	0.252	0.148	0.02
193	16.08	0.13	0.035	0.251	0.031	0.00
194	16.17	0.13	0.035	0.249	0.031	0.00
195	16.25	0.13	0.035	0.248	0.031	0.00
196	16.33	0.13	0.035	0.247	0.031	0.00
197	16.42	0.13	0.035	0.246	0.031	0.00
198	16.50	0.13	0.035	0.244	0.031	0.00
199	16.58	0.10	0.026	0.243	0.023	0.00
200	16.67	0.10	0.026	0.242	0.023	0.00
201	16.75	0.10	0.026	0.241	0.023	0.00
202	16.83	0.10	0.026	0.239	0.023	0.00
203	16.92	0.10	0.026	0.238	0.023	0.00
204	17.00	0.10	0.026	0.237	0.023	0.00
205	17.08	0.17	0.043	0.236	0.039	0.00
206	17.17	0.17	0.043	0.235	0.039	0.00
207	17.25	0.17	0.043	0.233	0.039	0.00
208	17.33	0.17	0.043	0.232	0.039	0.00
209	17.42	0.17	0.043	0.231	0.039	0.00

210	17.50	0.17	0.043	0.230	0.039	0.00
211	17.58	0.17	0.043	0.229	0.039	0.00
212	17.67	0.17	0.043	0.228	0.039	0.00
213	17.75	0.17	0.043	0.227	0.039	0.00
214	17.83	0.13	0.035	0.225	0.031	0.00
215	17.92	0.13	0.035	0.224	0.031	0.00
216	18.00	0.13	0.035	0.223	0.031	0.00
217	18.08	0.13	0.035	0.222	0.031	0.00
218	18.17	0.13	0.035	0.221	0.031	0.00
219	18.25	0.13	0.035	0.220	0.031	0.00
220	18.33	0.13	0.035	0.219	0.031	0.00
221	18.42	0.13	0.035	0.218	0.031	0.00
222	18.50	0.13	0.035	0.217	0.031	0.00
223	18.58	0.10	0.026	0.216	0.023	0.00
224	18.67	0.10	0.026	0.215	0.023	0.00
225	18.75	0.10	0.026	0.214	0.023	0.00
226	18.83	0.07	0.017	0.213	0.016	0.00
227	18.92	0.07	0.017	0.212	0.016	0.00
228	19.00	0.07	0.017	0.211	0.016	0.00
229	19.08	0.10	0.026	0.210	0.023	0.00
230	19.17	0.10	0.026	0.209	0.023	0.00
231	19.25	0.10	0.026	0.208	0.023	0.00
232	19.33	0.13	0.035	0.207	0.031	0.00
233	19.42	0.13	0.035	0.206	0.031	0.00
234	19.50	0.13	0.035	0.205	0.031	0.00
235	19.58	0.10	0.026	0.204	0.023	0.00
236	19.67	0.10	0.026	0.203	0.023	0.00
237	19.75	0.10	0.026	0.202	0.023	0.00
238	19.83	0.07	0.017	0.201	0.016	0.00
239	19.92	0.07	0.017	0.200	0.016	0.00
240	20.00	0.07	0.017	0.199	0.016	0.00
241	20.08	0.10	0.026	0.198	0.023	0.00
242	20.17	0.10	0.026	0.197	0.023	0.00
243	20.25	0.10	0.026	0.197	0.023	0.00
244	20.33	0.10	0.026	0.196	0.023	0.00
245	20.42	0.10	0.026	0.195	0.023	0.00
246	20.50	0.10	0.026	0.194	0.023	0.00
247	20.58	0.10	0.026	0.193	0.023	0.00
248	20.67	0.10	0.026	0.192	0.023	0.00
249	20.75	0.10	0.026	0.192	0.023	0.00
250	20.83	0.07	0.017	0.191	0.016	0.00
251	20.92	0.07	0.017	0.190	0.016	0.00
252	21.00	0.07	0.017	0.189	0.016	0.00
253	21.08	0.10	0.026	0.189	0.023	0.00
254	21.17	0.10	0.026	0.188	0.023	0.00
255	21.25	0.10	0.026	0.187	0.023	0.00
256	21.33	0.07	0.017	0.186	0.016	0.00
257	21.42	0.07	0.017	0.186	0.016	0.00
258	21.50	0.07	0.017	0.185	0.016	0.00
259	21.58	0.10	0.026	0.184	0.023	0.00
260	21.67	0.10	0.026	0.184	0.023	0.00
261	21.75	0.10	0.026	0.183	0.023	0.00
262	21.83	0.07	0.017	0.182	0.016	0.00
263	21.92	0.07	0.017	0.182	0.016	0.00

264	22.00	0.07	0.017	0.181	0.016	0.00
265	22.08	0.10	0.026	0.181	0.023	0.00
266	22.17	0.10	0.026	0.180	0.023	0.00
267	22.25	0.10	0.026	0.179	0.023	0.00
268	22.33	0.07	0.017	0.179	0.016	0.00
269	22.42	0.07	0.017	0.178	0.016	0.00
270	22.50	0.07	0.017	0.178	0.016	0.00
271	22.58	0.07	0.017	0.177	0.016	0.00
272	22.67	0.07	0.017	0.177	0.016	0.00
273	22.75	0.07	0.017	0.176	0.016	0.00
274	22.83	0.07	0.017	0.176	0.016	0.00
275	22.92	0.07	0.017	0.175	0.016	0.00
276	23.00	0.07	0.017	0.175	0.016	0.00
277	23.08	0.07	0.017	0.175	0.016	0.00
278	23.17	0.07	0.017	0.174	0.016	0.00
279	23.25	0.07	0.017	0.174	0.016	0.00
280	23.33	0.07	0.017	0.173	0.016	0.00
281	23.42	0.07	0.017	0.173	0.016	0.00
282	23.50	0.07	0.017	0.173	0.016	0.00
283	23.58	0.07	0.017	0.173	0.016	0.00
284	23.67	0.07	0.017	0.172	0.016	0.00
285	23.75	0.07	0.017	0.172	0.016	0.00
286	23.83	0.07	0.017	0.172	0.016	0.00
287	23.92	0.07	0.017	0.172	0.016	0.00
288	24.00	0.07	0.017	0.172	0.016	0.00
	Sum =	100.0			Sum =	2.6

Flood volume = Effective rainfall 0.21(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 1.1(Ac.Ft)
Total soil loss = 1.95(In)
Total soil loss = 9.776(Ac.Ft)
Total rainfall = 2.16(In)
Flood volume = 46725.2 Cubic Feet
Total soil loss = 425859.6 Cubic Feet

Peak flow rate of this hydrograph = 1.721(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q	|	|	|	|
0+10	0.0003	0.03	Q	|	|	|	|
0+15	0.0007	0.06	Q	|	|	|	|
0+20	0.0012	0.08	Q	|	|	|	|
0+25	0.0019	0.10	Q	|	|	|	|
0+30	0.0027	0.12	Q	|	|	|	|
0+35	0.0036	0.13	Q	|	|	|	|
0+40	0.0046	0.14	Q	|	|	|	|
0+45	0.0055	0.14	Q	|	|	|	|

0+50	0.0066	0.15	Q	|	|	|	|
0+55	0.0077	0.16	Q	|	|	|	|
1+ 0	0.0089	0.18	Q	|	|	|	|
1+ 5	0.0102	0.19	Q	|	|	|	|
1+10	0.0115	0.18	Q	|	|	|	|
1+15	0.0126	0.17	Q	|	|	|	|
1+20	0.0137	0.16	Q	|	|	|	|
1+25	0.0149	0.16	Q	|	|	|	|
1+30	0.0160	0.16	Q	|	|	|	|
1+35	0.0171	0.16	Q	|	|	|	|
1+40	0.0182	0.16	Q	|	|	|	|
1+45	0.0193	0.16	Q	|	|	|	|
1+50	0.0204	0.16	Q	|	|	|	|
1+55	0.0216	0.17	Q	|	|	|	|
2+ 0	0.0229	0.19	Q	|	|	|	|
2+ 5	0.0243	0.20	Q	|	|	|	|
2+10	0.0256	0.20	Q	|	|	|	|
2+15	0.0270	0.20	QV	|	|	|	|
2+20	0.0284	0.20	QV	|	|	|	|
2+25	0.0299	0.21	QV	|	|	|	|
2+30	0.0313	0.21	QV	|	|	|	|
2+35	0.0327	0.21	QV	|	|	|	|
2+40	0.0343	0.22	QV	|	|	|	|
2+45	0.0359	0.24	QV	|	|	|	|
2+50	0.0376	0.25	QV	|	|	|	|
2+55	0.0393	0.25	|Q	|	|	|	|
3+ 0	0.0411	0.25	|Q	|	|	|	|
3+ 5	0.0428	0.26	|Q	|	|	|	|
3+10	0.0446	0.26	|Q	|	|	|	|
3+15	0.0464	0.26	|Q	|	|	|	|
3+20	0.0482	0.26	|Q	|	|	|	|
3+25	0.0500	0.26	|Q	|	|	|	|
3+30	0.0518	0.26	|Q	|	|	|	|
3+35	0.0536	0.26	|Q	|	|	|	|
3+40	0.0554	0.26	|QV	|	|	|	|
3+45	0.0572	0.26	|QV	|	|	|	|
3+50	0.0590	0.27	|QV	|	|	|	|
3+55	0.0609	0.28	|QV	|	|	|	|
4+ 0	0.0629	0.29	|QV	|	|	|	|
4+ 5	0.0650	0.30	|QV	|	|	|	|
4+10	0.0671	0.30	|QV	|	|	|	|
4+15	0.0692	0.31	|QV	|	|	|	|
4+20	0.0714	0.31	|QV	|	|	|	|
4+25	0.0736	0.33	|QV	|	|	|	|
4+30	0.0760	0.34	|QV	|	|	|	|
4+35	0.0784	0.35	|QV	|	|	|	|
4+40	0.0808	0.35	|Q V	|	|	|	|
4+45	0.0833	0.36	|Q V	|	|	|	|
4+50	0.0858	0.36	|Q V	|	|	|	|
4+55	0.0884	0.38	|Q V	|	|	|	|
5+ 0	0.0911	0.39	|Q V	|	|	|	|
5+ 5	0.0938	0.40	|Q V	|	|	|	|
5+10	0.0964	0.38	|Q V	|	|	|	|
5+15	0.0988	0.35	|Q V	|	|	|	|

```
5+20       0.1012      0.34  |Q V      |          |          |          |
5+25       0.1035      0.35  |Q V      |          |          |          |
5+30       0.1060      0.36  |Q V      |          |          |          |
5+35       0.1085      0.37  |Q  V     |          |          |          |
5+40       0.1111      0.38  |Q  V     |          |          |          |
5+45       0.1139      0.40  |Q  V     |          |          |          |
5+50       0.1166      0.40  |Q  V     |          |          |          |
5+55       0.1195      0.41  |Q  V     |          |          |          |
6+ 0       0.1223      0.41  |Q  V     |          |          |          |
6+ 5       0.1251      0.42  |Q  V     |          |          |          |
6+10       0.1281      0.43  |Q  V     |          |          |          |
6+15       0.1312      0.45  |Q  V     |          |          |          |
6+20       0.1343      0.45  |Q   V    |          |          |          |
6+25       0.1375      0.46  |Q   V    |          |          |          |
6+30       0.1407      0.46  |Q   V    |          |          |          |
6+35       0.1439      0.47  |Q   V    |          |          |          |
6+40       0.1472      0.48  |Q   V    |          |          |          |
6+45       0.1506      0.50  |Q   V    |          |          |          |
6+50       0.1541      0.51  | Q  V    |          |          |          |
6+55       0.1577      0.51  | Q  V    |          |          |          |
7+ 0       0.1612      0.52  | Q   V   |          |          |          |
7+ 5       0.1648      0.52  | Q   V   |          |          |          |
7+10       0.1683      0.52  | Q   V   |          |          |          |
7+15       0.1719      0.52  | Q   V   |          |          |          |
7+20       0.1755      0.52  | Q   V   |          |          |          |
7+25       0.1792      0.54  | Q   V   |          |          |          |
7+30       0.1831      0.55  | Q   V   |          |          |          |
7+35       0.1870      0.56  | Q   V   |          |          |          |
7+40       0.1910      0.58  | Q    V  |          |          |          |
7+45       0.1951      0.60  | Q    V  |          |          |          |
7+50       0.1993      0.61  | Q    V  |          |          |          |
7+55       0.2036      0.63  | Q    V  |          |          |          |
8+ 0       0.2081      0.65  | Q    V  |          |          |          |
8+ 5       0.2127      0.66  | Q    V  |          |          |          |
8+10       0.2175      0.70  | Q     V |          |          |          |
8+15       0.2225      0.73  | Q     V |          |          |          |
8+20       0.2277      0.75  | Q     V |          |          |          |
8+25       0.2329      0.76  |  Q    V |          |          |          |
8+30       0.2382      0.77  |  Q    V |          |          |          |
8+35       0.2435      0.77  |  Q     V|          |          |          |
8+40       0.2489      0.79  |  Q     V|          |          |          |
8+45       0.2545      0.81  |  Q     V|          |          |          |
8+50       0.2601      0.82  |  Q     V|          |          |          |
8+55       0.2659      0.84  |  Q     V|          |          |          |
9+ 0       0.2718      0.86  |  Q      V          |          |          |
9+ 5       0.2779      0.87  |  Q      V          |          |          |
9+10       0.2841      0.91  |  Q      V          |          |          |
9+15       0.2906      0.94  |  Q      V          |          |          |
9+20       0.2972      0.96  |  Q      |V         |          |          |
9+25       0.3040      0.98  |  Q      |V         |          |          |
9+30       0.3109      1.01  |   Q     |V         |          |          |
9+35       0.3180      1.02  |   Q     |V         |          |          |
9+40       0.3251      1.04  |   Q     | V        |          |          |
9+45       0.3325      1.06  |   Q     | V        |          |          |
```

9+50	0.3399	1.08	Q	V			
9+55	0.3474	1.10	Q	V			
10+ 0	0.3551	1.12	Q	V			
10+ 5	0.3628	1.11	Q	V			
10+10	0.3698	1.03	Q	V			
10+15	0.3762	0.93	Q	V			
10+20	0.3822	0.88	Q	V			
10+25	0.3881	0.85	Q	V			
10+30	0.3939	0.84	Q	V			
10+35	0.3997	0.84	Q	V			
10+40	0.4059	0.90	Q	V			
10+45	0.4125	0.97	Q	V			
10+50	0.4194	1.00	Q	V			
10+55	0.4264	1.01	Q	V			
11+ 0	0.4334	1.02	Q	V			
11+ 5	0.4404	1.02	Q	V			
11+10	0.4474	1.02	Q	V			
11+15	0.4544	1.00	Q	V			
11+20	0.4612	1.00	Q	V			
11+25	0.4681	1.00	Q	V			
11+30	0.4750	1.00	Q	V			
11+35	0.4818	0.99	Q	V			
11+40	0.4885	0.97	Q	V			
11+45	0.4949	0.94	Q	V			
11+50	0.5013	0.93	Q	V			
11+55	0.5077	0.93	Q	V			
12+ 0	0.5142	0.94	Q	V			
12+ 5	0.5209	0.97	Q	V			
12+10	0.5281	1.05	Q	V			
12+15	0.5361	1.16	Q	V			
12+20	0.5445	1.21	Q	V			
12+25	0.5531	1.25	Q	V			
12+30	0.5619	1.29	Q	V			
12+35	0.5710	1.31	Q	V			
12+40	0.5803	1.35	Q	V			
12+45	0.5899	1.39	Q	V			
12+50	0.5996	1.42	Q	V			
12+55	0.6096	1.44	Q	V			
13+ 0	0.6197	1.47	Q	V			
13+ 5	0.6300	1.50	Q	V			
13+10	0.6408	1.57	Q	V			
13+15	0.6522	1.65	Q	V			
13+20	0.6639	1.70	Q	V			
13+25	0.6757	1.72	Q	V			
13+30	0.6870	1.64	Q	V			
13+35	0.6959	1.29	Q	V			
13+40	0.7033	1.07	Q	V			
13+45	0.7114	1.18	Q	V			
13+50	0.7198	1.22	Q	V			
13+55	0.7283	1.23	Q	V			
14+ 0	0.7367	1.23	Q	V			
14+ 5	0.7452	1.23	Q	V			
14+10	0.7541	1.28	Q	V			
14+15	0.7633	1.34	Q	V			

```
14+20       0.7727      1.36  |    Q    |          |       V |          |
14+25       0.7821      1.36  |    Q    |          |        V|          |
14+30       0.7914      1.36  |    Q    |          |        V|          |
14+35       0.8008      1.36  |    Q    |          |        V|          |
14+40       0.8101      1.36  |    Q    |          |         V          |
14+45       0.8195      1.36  |    Q    |          |         V          |
14+50       0.8287      1.35  |    Q    |          |         V          |
14+55       0.8380      1.35  |    Q    |          |          |V         |
15+ 0       0.8472      1.33  |    Q    |          |          |V         |
15+ 5       0.8563      1.32  |    Q    |          |          |V         |
15+10       0.8653      1.31  |    Q    |          |          | V        |
15+15       0.8742      1.29  |    Q    |          |          | V        |
15+20       0.8830      1.28  |    Q    |          |          | V        |
15+25       0.8917      1.26  |    Q    |          |          |  V       |
15+30       0.9002      1.24  |   Q     |          |          |  V       |
15+35       0.9086      1.22  |   Q     |          |          |  V       |
15+40       0.9166      1.16  |   Q     |          |          |   V      |
15+45       0.9242      1.10  |   Q     |          |          |   V      |
15+50       0.9315      1.07  |   Q     |          |          |   V      |
15+55       0.9388      1.05  |   Q     |          |          |    V     |
16+ 0       0.9459      1.04  |   Q     |          |          |    V     |
16+ 5       0.9527      0.98  |  Q      |          |          |    V     |
16+10       0.9581      0.79  |  Q      |          |          |    V     |
16+15       0.9619      0.55  | Q       |          |          |    V     |
16+20       0.9649      0.44  |Q        |          |          |    V     |
16+25       0.9676      0.38  |Q        |          |          |     V    |
16+30       0.9699      0.34  |Q        |          |          |     V    |
16+35       0.9720      0.31  |Q        |          |          |     V    |
16+40       0.9739      0.27  |Q        |          |          |     V    |
16+45       0.9756      0.24  Q         |          |          |     V    |
16+50       0.9771      0.22  Q         |          |          |     V    |
16+55       0.9784      0.20  Q         |          |          |     V    |
17+ 0       0.9798      0.19  Q         |          |          |     V    |
17+ 5       0.9811      0.19  Q         |          |          |     V    |
17+10       0.9825      0.21  Q         |          |          |     V    |
17+15       0.9841      0.23  Q         |          |          |     V    |
17+20       0.9857      0.24  Q         |          |          |     V    |
17+25       0.9874      0.24  Q         |          |          |     V    |
17+30       0.9891      0.25  Q         |          |          |     V    |
17+35       0.9909      0.25  |Q        |          |          |     V    |
17+40       0.9926      0.25  |Q        |          |          |      V   |
17+45       0.9944      0.26  |Q        |          |          |      V   |
17+50       0.9961      0.25  |Q        |          |          |      V   |
17+55       0.9978      0.24  Q         |          |          |      V   |
18+ 0       0.9994      0.23  Q         |          |          |      V   |
18+ 5       1.0009      0.22  Q         |          |          |      V   |
18+10       1.0024      0.22  Q         |          |          |      V   |
18+15       1.0039      0.22  Q         |          |          |      V   |
18+20       1.0054      0.22  Q         |          |          |      V   |
18+25       1.0069      0.21  Q         |          |          |      V   |
18+30       1.0083      0.21  Q         |          |          |      V   |
18+35       1.0098      0.21  Q         |          |          |      V   |
18+40       1.0111      0.20  Q         |          |          |      V   |
18+45       1.0124      0.18  Q         |          |          |      V   |
```

18+50	1.0135	0.17	Q	|	|	|	V |
18+55	1.0146	0.15	Q	|	|	|	V |
19+ 0	1.0155	0.14	Q	|	|	|	V |
19+ 5	1.0164	0.13	Q	|	|	|	V |
19+10	1.0174	0.14	Q	|	|	|	V |
19+15	1.0184	0.15	Q	|	|	|	V |
19+20	1.0195	0.16	Q	|	|	|	V |
19+25	1.0206	0.17	Q	|	|	|	V |
19+30	1.0219	0.19	Q	|	|	|	V |
19+35	1.0232	0.19	Q	|	|	|	V |
19+40	1.0245	0.18	Q	|	|	|	V |
19+45	1.0256	0.17	Q	|	|	|	V |
19+50	1.0267	0.16	Q	|	|	|	V |
19+55	1.0278	0.15	Q	|	|	|	V |
20+ 0	1.0287	0.13	Q	|	|	|	V |
20+ 5	1.0295	0.12	Q	|	|	|	V |
20+10	1.0304	0.13	Q	|	|	|	V |
20+15	1.0314	0.15	Q	|	|	|	V |
20+20	1.0325	0.15	Q	|	|	|	V |
20+25	1.0335	0.15	Q	|	|	|	V |
20+30	1.0346	0.15	Q	|	|	|	V |
20+35	1.0357	0.16	Q	|	|	|	V |
20+40	1.0367	0.16	Q	|	|	|	V |
20+45	1.0378	0.16	Q	|	|	|	V |
20+50	1.0389	0.15	Q	|	|	|	V |
20+55	1.0398	0.14	Q	|	|	|	V |
21+ 0	1.0407	0.13	Q	|	|	|	V |
21+ 5	1.0415	0.12	Q	|	|	|	V |
21+10	1.0424	0.13	Q	|	|	|	V |
21+15	1.0434	0.14	Q	|	|	|	V |
21+20	1.0444	0.15	Q	|	|	|	V |
21+25	1.0454	0.14	Q	|	|	|	V |
21+30	1.0462	0.12	Q	|	|	|	V|
21+35	1.0470	0.12	Q	|	|	|	V|
21+40	1.0479	0.13	Q	|	|	|	V|
21+45	1.0489	0.14	Q	|	|	|	V|
21+50	1.0499	0.14	Q	|	|	|	V|
21+55	1.0508	0.13	Q	|	|	|	V|
22+ 0	1.0516	0.12	Q	|	|	|	V|
22+ 5	1.0525	0.12	Q	|	|	|	V|
22+10	1.0533	0.13	Q	|	|	|	V|
22+15	1.0543	0.14	Q	|	|	|	V|
22+20	1.0553	0.14	Q	|	|	|	V|
22+25	1.0562	0.13	Q	|	|	|	V|
22+30	1.0571	0.12	Q	|	|	|	V|
22+35	1.0579	0.12	Q	|	|	|	V|
22+40	1.0586	0.11	Q	|	|	|	V|
22+45	1.0594	0.11	Q	|	|	|	V|
22+50	1.0601	0.11	Q	|	|	|	V|
22+55	1.0609	0.11	Q	|	|	|	V|
23+ 0	1.0616	0.11	Q	|	|	|	V|
23+ 5	1.0624	0.11	Q	|	|	|	V|
23+10	1.0631	0.11	Q	|	|	|	V|
23+15	1.0638	0.11	Q	|	|	|	V|

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   23+20       1.0646      0.11  Q          |           |           |         V|
   23+25       1.0653      0.11  Q          |           |           |         V|
   23+30       1.0660      0.11  Q          |           |           |         V|
   23+35       1.0667      0.11  Q          |           |           |         V|
   23+40       1.0675      0.11  Q          |           |           |         V|
   23+45       1.0682      0.11  Q          |           |           |         V|
   23+50       1.0689      0.11  Q          |           |           |         V|
   23+55       1.0696      0.11  Q          |           |           |         V|
   24+ 0       1.0704      0.11  Q          |           |           |         V|
   24+ 5       1.0710      0.10  Q          |           |           |         V|
   24+10       1.0716      0.07  Q          |           |           |         V|
   24+15       1.0719      0.04  Q          |           |           |         V|
   24+20       1.0721      0.03  Q          |           |           |         V|
   24+25       1.0722      0.02  Q          |           |           |         V|
   24+30       1.0723      0.02  Q          |           |           |         V|
   24+35       1.0724      0.01  Q          |           |           |         V|
   24+40       1.0725      0.01  Q          |           |           |         V|
   24+45       1.0725      0.01  Q          |           |           |         V|
   24+50       1.0726      0.01  Q          |           |           |         V|
   24+55       1.0726      0.00  Q          |           |           |         V|
   25+ 0       1.0726      0.00  Q          |           |           |         V|
   25+ 5       1.0726      0.00  Q          |           |           |         V|
   25+10       1.0726      0.00  Q          |           |           |         V|
   25+15       1.0727      0.00  Q          |           |           |         V|
   25+20       1.0727      0.00  Q          |           |           |          V
---------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/29/19 File: 4163UHE102410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 10 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA A-1
4163UHE10.UM1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 2550.00(Ft.)
Length along longest watercourse measured to centroid = 1125.00(Ft.)
Length along longest watercourse = 0.483 Mi.
Length along longest watercourse measured to centroid = 0.213 Mi.
Difference in elevation = 8.50(Ft.)
Slope along watercourse = 17.6000 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.587(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.587(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	86.00	0.000

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.000	0.176	1.000	0.176
					Sum (F) =	0.176

Area averaged mean soil loss (F) (In/Hr) = 0.176
Minimum soil loss rate ((In/Hr)) = 0.088
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.360	5.636	3.421
2	0.167	94.720	23.906	14.508
3	0.250	142.080	28.909	17.545
4	0.333	189.440	13.984	8.487
5	0.417	236.800	7.077	4.295
6	0.500	284.160	4.874	2.958
7	0.583	331.520	3.553	2.156
8	0.667	378.880	2.732	1.658
9	0.750	426.241	2.054	1.247
10	0.833	473.601	1.560	0.947
11	0.917	520.961	1.396	0.847
12	1.000	568.321	1.087	0.659
13	1.083	615.681	0.878	0.533
14	1.167	663.041	0.698	0.424
15	1.250	710.401	0.523	0.318
16	1.333	757.761	0.474	0.287

17	1.417	805.121	0.659		0.400
			Sum = 100.000	Sum=	60.690

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.021	0.311	0.019	0.00
2	0.17	0.07	0.021	0.310	0.019	0.00
3	0.25	0.07	0.021	0.309	0.019	0.00
4	0.33	0.10	0.031	0.308	0.028	0.00
5	0.42	0.10	0.031	0.306	0.028	0.00
6	0.50	0.10	0.031	0.305	0.028	0.00
7	0.58	0.10	0.031	0.304	0.028	0.00
8	0.67	0.10	0.031	0.303	0.028	0.00
9	0.75	0.10	0.031	0.302	0.028	0.00
10	0.83	0.13	0.041	0.301	0.037	0.00
11	0.92	0.13	0.041	0.299	0.037	0.00
12	1.00	0.13	0.041	0.298	0.037	0.00
13	1.08	0.10	0.031	0.297	0.028	0.00
14	1.17	0.10	0.031	0.296	0.028	0.00
15	1.25	0.10	0.031	0.295	0.028	0.00
16	1.33	0.10	0.031	0.293	0.028	0.00
17	1.42	0.10	0.031	0.292	0.028	0.00
18	1.50	0.10	0.031	0.291	0.028	0.00
19	1.58	0.10	0.031	0.290	0.028	0.00
20	1.67	0.10	0.031	0.289	0.028	0.00
21	1.75	0.10	0.031	0.288	0.028	0.00
22	1.83	0.13	0.041	0.287	0.037	0.00
23	1.92	0.13	0.041	0.285	0.037	0.00
24	2.00	0.13	0.041	0.284	0.037	0.00
25	2.08	0.13	0.041	0.283	0.037	0.00
26	2.17	0.13	0.041	0.282	0.037	0.00
27	2.25	0.13	0.041	0.281	0.037	0.00
28	2.33	0.13	0.041	0.280	0.037	0.00
29	2.42	0.13	0.041	0.278	0.037	0.00
30	2.50	0.13	0.041	0.277	0.037	0.00
31	2.58	0.17	0.052	0.276	0.047	0.01
32	2.67	0.17	0.052	0.275	0.047	0.01
33	2.75	0.17	0.052	0.274	0.047	0.01
34	2.83	0.17	0.052	0.273	0.047	0.01
35	2.92	0.17	0.052	0.272	0.047	0.01
36	3.00	0.17	0.052	0.271	0.047	0.01
37	3.08	0.17	0.052	0.269	0.047	0.01
38	3.17	0.17	0.052	0.268	0.047	0.01
39	3.25	0.17	0.052	0.267	0.047	0.01
40	3.33	0.17	0.052	0.266	0.047	0.01
41	3.42	0.17	0.052	0.265	0.047	0.01
42	3.50	0.17	0.052	0.264	0.047	0.01
43	3.58	0.17	0.052	0.263	0.047	0.01
44	3.67	0.17	0.052	0.262	0.047	0.01
45	3.75	0.17	0.052	0.261	0.047	0.01
46	3.83	0.20	0.062	0.259	0.056	0.01
47	3.92	0.20	0.062	0.258	0.056	0.01

48	4.00	0.20	0.062	0.257	0.056	0.01
49	4.08	0.20	0.062	0.256	0.056	0.01
50	4.17	0.20	0.062	0.255	0.056	0.01
51	4.25	0.20	0.062	0.254	0.056	0.01
52	4.33	0.23	0.072	0.253	0.065	0.01
53	4.42	0.23	0.072	0.252	0.065	0.01
54	4.50	0.23	0.072	0.251	0.065	0.01
55	4.58	0.23	0.072	0.250	0.065	0.01
56	4.67	0.23	0.072	0.249	0.065	0.01
57	4.75	0.23	0.072	0.248	0.065	0.01
58	4.83	0.27	0.083	0.246	0.075	0.01
59	4.92	0.27	0.083	0.245	0.075	0.01
60	5.00	0.27	0.083	0.244	0.075	0.01
61	5.08	0.20	0.062	0.243	0.056	0.01
62	5.17	0.20	0.062	0.242	0.056	0.01
63	5.25	0.20	0.062	0.241	0.056	0.01
64	5.33	0.23	0.072	0.240	0.065	0.01
65	5.42	0.23	0.072	0.239	0.065	0.01
66	5.50	0.23	0.072	0.238	0.065	0.01
67	5.58	0.27	0.083	0.237	0.075	0.01
68	5.67	0.27	0.083	0.236	0.075	0.01
69	5.75	0.27	0.083	0.235	0.075	0.01
70	5.83	0.27	0.083	0.234	0.075	0.01
71	5.92	0.27	0.083	0.233	0.075	0.01
72	6.00	0.27	0.083	0.232	0.075	0.01
73	6.08	0.30	0.093	0.231	0.084	0.01
74	6.17	0.30	0.093	0.230	0.084	0.01
75	6.25	0.30	0.093	0.229	0.084	0.01
76	6.33	0.30	0.093	0.228	0.084	0.01
77	6.42	0.30	0.093	0.227	0.084	0.01
78	6.50	0.30	0.093	0.226	0.084	0.01
79	6.58	0.33	0.103	0.225	0.093	0.01
80	6.67	0.33	0.103	0.224	0.093	0.01
81	6.75	0.33	0.103	0.223	0.093	0.01
82	6.83	0.33	0.103	0.222	0.093	0.01
83	6.92	0.33	0.103	0.221	0.093	0.01
84	7.00	0.33	0.103	0.220	0.093	0.01
85	7.08	0.33	0.103	0.219	0.093	0.01
86	7.17	0.33	0.103	0.218	0.093	0.01
87	7.25	0.33	0.103	0.217	0.093	0.01
88	7.33	0.37	0.114	0.216	0.102	0.01
89	7.42	0.37	0.114	0.215	0.102	0.01
90	7.50	0.37	0.114	0.214	0.102	0.01
91	7.58	0.40	0.124	0.213	0.112	0.01
92	7.67	0.40	0.124	0.212	0.112	0.01
93	7.75	0.40	0.124	0.211	0.112	0.01
94	7.83	0.43	0.135	0.210	0.121	0.01
95	7.92	0.43	0.135	0.209	0.121	0.01
96	8.00	0.43	0.135	0.208	0.121	0.01
97	8.08	0.50	0.155	0.207	0.140	0.02
98	8.17	0.50	0.155	0.206	0.140	0.02
99	8.25	0.50	0.155	0.205	0.140	0.02
100	8.33	0.50	0.155	0.204	0.140	0.02
101	8.42	0.50	0.155	0.203	0.140	0.02

102	8.50	0.50	0.155	0.202	0.140	0.02
103	8.58	0.53	0.166	0.201	0.149	0.02
104	8.67	0.53	0.166	0.200	0.149	0.02
105	8.75	0.53	0.166	0.199	0.149	0.02
106	8.83	0.57	0.176	0.198	0.158	0.02
107	8.92	0.57	0.176	0.197	0.158	0.02
108	9.00	0.57	0.176	0.196	0.158	0.02
109	9.08	0.63	0.197	0.195	---	0.00
110	9.17	0.63	0.197	0.195	---	0.00
111	9.25	0.63	0.197	0.194	---	0.00
112	9.33	0.67	0.207	0.193	---	0.01
113	9.42	0.67	0.207	0.192	---	0.02
114	9.50	0.67	0.207	0.191	---	0.02
115	9.58	0.70	0.217	0.190	---	0.03
116	9.67	0.70	0.217	0.189	---	0.03
117	9.75	0.70	0.217	0.188	---	0.03
118	9.83	0.73	0.228	0.187	---	0.04
119	9.92	0.73	0.228	0.186	---	0.04
120	10.00	0.73	0.228	0.185	---	0.04
121	10.08	0.50	0.155	0.185	0.140	0.02
122	10.17	0.50	0.155	0.184	0.140	0.02
123	10.25	0.50	0.155	0.183	0.140	0.02
124	10.33	0.50	0.155	0.182	0.140	0.02
125	10.42	0.50	0.155	0.181	0.140	0.02
126	10.50	0.50	0.155	0.180	0.140	0.02
127	10.58	0.67	0.207	0.179	---	0.03
128	10.67	0.67	0.207	0.178	---	0.03
129	10.75	0.67	0.207	0.177	---	0.03
130	10.83	0.67	0.207	0.177	---	0.03
131	10.92	0.67	0.207	0.176	---	0.03
132	11.00	0.67	0.207	0.175	---	0.03
133	11.08	0.63	0.197	0.174	---	0.02
134	11.17	0.63	0.197	0.173	---	0.02
135	11.25	0.63	0.197	0.172	---	0.02
136	11.33	0.63	0.197	0.171	---	0.03
137	11.42	0.63	0.197	0.171	---	0.03
138	11.50	0.63	0.197	0.170	---	0.03
139	11.58	0.57	0.176	0.169	---	0.01
140	11.67	0.57	0.176	0.168	---	0.01
141	11.75	0.57	0.176	0.167	---	0.01
142	11.83	0.60	0.186	0.166	---	0.02
143	11.92	0.60	0.186	0.166	---	0.02
144	12.00	0.60	0.186	0.165	---	0.02
145	12.08	0.83	0.259	0.164	---	0.09
146	12.17	0.83	0.259	0.163	---	0.10
147	12.25	0.83	0.259	0.162	---	0.10
148	12.33	0.87	0.269	0.161	---	0.11
149	12.42	0.87	0.269	0.161	---	0.11
150	12.50	0.87	0.269	0.160	---	0.11
151	12.58	0.93	0.290	0.159	---	0.13
152	12.67	0.93	0.290	0.158	---	0.13
153	12.75	0.93	0.290	0.157	---	0.13
154	12.83	0.97	0.300	0.157	---	0.14
155	12.92	0.97	0.300	0.156	---	0.14

156	13.00	0.97	0.300	0.155	---	0.15
157	13.08	1.13	0.352	0.154	---	0.20
158	13.17	1.13	0.352	0.154	---	0.20
159	13.25	1.13	0.352	0.153	---	0.20
160	13.33	1.13	0.352	0.152	---	0.20
161	13.42	1.13	0.352	0.151	---	0.20
162	13.50	1.13	0.352	0.150	---	0.20
163	13.58	0.77	0.238	0.150	---	0.09
164	13.67	0.77	0.238	0.149	---	0.09
165	13.75	0.77	0.238	0.148	---	0.09
166	13.83	0.77	0.238	0.147	---	0.09
167	13.92	0.77	0.238	0.147	---	0.09
168	14.00	0.77	0.238	0.146	---	0.09
169	14.08	0.90	0.279	0.145	---	0.13
170	14.17	0.90	0.279	0.144	---	0.14
171	14.25	0.90	0.279	0.144	---	0.14
172	14.33	0.87	0.269	0.143	---	0.13
173	14.42	0.87	0.269	0.142	---	0.13
174	14.50	0.87	0.269	0.141	---	0.13
175	14.58	0.87	0.269	0.141	---	0.13
176	14.67	0.87	0.269	0.140	---	0.13
177	14.75	0.87	0.269	0.139	---	0.13
178	14.83	0.83	0.259	0.139	---	0.12
179	14.92	0.83	0.259	0.138	---	0.12
180	15.00	0.83	0.259	0.137	---	0.12
181	15.08	0.80	0.248	0.136	---	0.11
182	15.17	0.80	0.248	0.136	---	0.11
183	15.25	0.80	0.248	0.135	---	0.11
184	15.33	0.77	0.238	0.134	---	0.10
185	15.42	0.77	0.238	0.134	---	0.10
186	15.50	0.77	0.238	0.133	---	0.11
187	15.58	0.63	0.197	0.132	---	0.06
188	15.67	0.63	0.197	0.132	---	0.06
189	15.75	0.63	0.197	0.131	---	0.07
190	15.83	0.63	0.197	0.130	---	0.07
191	15.92	0.63	0.197	0.130	---	0.07
192	16.00	0.63	0.197	0.129	---	0.07
193	16.08	0.13	0.041	0.128	0.037	0.00
194	16.17	0.13	0.041	0.128	0.037	0.00
195	16.25	0.13	0.041	0.127	0.037	0.00
196	16.33	0.13	0.041	0.126	0.037	0.00
197	16.42	0.13	0.041	0.126	0.037	0.00
198	16.50	0.13	0.041	0.125	0.037	0.00
199	16.58	0.10	0.031	0.124	0.028	0.00
200	16.67	0.10	0.031	0.124	0.028	0.00
201	16.75	0.10	0.031	0.123	0.028	0.00
202	16.83	0.10	0.031	0.123	0.028	0.00
203	16.92	0.10	0.031	0.122	0.028	0.00
204	17.00	0.10	0.031	0.121	0.028	0.00
205	17.08	0.17	0.052	0.121	0.047	0.01
206	17.17	0.17	0.052	0.120	0.047	0.01
207	17.25	0.17	0.052	0.119	0.047	0.01
208	17.33	0.17	0.052	0.119	0.047	0.01
209	17.42	0.17	0.052	0.118	0.047	0.01

210	17.50	0.17	0.052	0.118	0.047	0.01
211	17.58	0.17	0.052	0.117	0.047	0.01
212	17.67	0.17	0.052	0.117	0.047	0.01
213	17.75	0.17	0.052	0.116	0.047	0.01
214	17.83	0.13	0.041	0.115	0.037	0.00
215	17.92	0.13	0.041	0.115	0.037	0.00
216	18.00	0.13	0.041	0.114	0.037	0.00
217	18.08	0.13	0.041	0.114	0.037	0.00
218	18.17	0.13	0.041	0.113	0.037	0.00
219	18.25	0.13	0.041	0.113	0.037	0.00
220	18.33	0.13	0.041	0.112	0.037	0.00
221	18.42	0.13	0.041	0.111	0.037	0.00
222	18.50	0.13	0.041	0.111	0.037	0.00
223	18.58	0.10	0.031	0.110	0.028	0.00
224	18.67	0.10	0.031	0.110	0.028	0.00
225	18.75	0.10	0.031	0.109	0.028	0.00
226	18.83	0.07	0.021	0.109	0.019	0.00
227	18.92	0.07	0.021	0.108	0.019	0.00
228	19.00	0.07	0.021	0.108	0.019	0.00
229	19.08	0.10	0.031	0.107	0.028	0.00
230	19.17	0.10	0.031	0.107	0.028	0.00
231	19.25	0.10	0.031	0.106	0.028	0.00
232	19.33	0.13	0.041	0.106	0.037	0.00
233	19.42	0.13	0.041	0.105	0.037	0.00
234	19.50	0.13	0.041	0.105	0.037	0.00
235	19.58	0.10	0.031	0.104	0.028	0.00
236	19.67	0.10	0.031	0.104	0.028	0.00
237	19.75	0.10	0.031	0.103	0.028	0.00
238	19.83	0.07	0.021	0.103	0.019	0.00
239	19.92	0.07	0.021	0.102	0.019	0.00
240	20.00	0.07	0.021	0.102	0.019	0.00
241	20.08	0.10	0.031	0.102	0.028	0.00
242	20.17	0.10	0.031	0.101	0.028	0.00
243	20.25	0.10	0.031	0.101	0.028	0.00
244	20.33	0.10	0.031	0.100	0.028	0.00
245	20.42	0.10	0.031	0.100	0.028	0.00
246	20.50	0.10	0.031	0.099	0.028	0.00
247	20.58	0.10	0.031	0.099	0.028	0.00
248	20.67	0.10	0.031	0.099	0.028	0.00
249	20.75	0.10	0.031	0.098	0.028	0.00
250	20.83	0.07	0.021	0.098	0.019	0.00
251	20.92	0.07	0.021	0.097	0.019	0.00
252	21.00	0.07	0.021	0.097	0.019	0.00
253	21.08	0.10	0.031	0.097	0.028	0.00
254	21.17	0.10	0.031	0.096	0.028	0.00
255	21.25	0.10	0.031	0.096	0.028	0.00
256	21.33	0.07	0.021	0.095	0.019	0.00
257	21.42	0.07	0.021	0.095	0.019	0.00
258	21.50	0.07	0.021	0.095	0.019	0.00
259	21.58	0.10	0.031	0.094	0.028	0.00
260	21.67	0.10	0.031	0.094	0.028	0.00
261	21.75	0.10	0.031	0.094	0.028	0.00
262	21.83	0.07	0.021	0.093	0.019	0.00
263	21.92	0.07	0.021	0.093	0.019	0.00

264	22.00	0.07	0.021	0.093	0.019	0.00
265	22.08	0.10	0.031	0.092	0.028	0.00
266	22.17	0.10	0.031	0.092	0.028	0.00
267	22.25	0.10	0.031	0.092	0.028	0.00
268	22.33	0.07	0.021	0.092	0.019	0.00
269	22.42	0.07	0.021	0.091	0.019	0.00
270	22.50	0.07	0.021	0.091	0.019	0.00
271	22.58	0.07	0.021	0.091	0.019	0.00
272	22.67	0.07	0.021	0.090	0.019	0.00
273	22.75	0.07	0.021	0.090	0.019	0.00
274	22.83	0.07	0.021	0.090	0.019	0.00
275	22.92	0.07	0.021	0.090	0.019	0.00
276	23.00	0.07	0.021	0.090	0.019	0.00
277	23.08	0.07	0.021	0.089	0.019	0.00
278	23.17	0.07	0.021	0.089	0.019	0.00
279	23.25	0.07	0.021	0.089	0.019	0.00
280	23.33	0.07	0.021	0.089	0.019	0.00
281	23.42	0.07	0.021	0.089	0.019	0.00
282	23.50	0.07	0.021	0.088	0.019	0.00
283	23.58	0.07	0.021	0.088	0.019	0.00
284	23.67	0.07	0.021	0.088	0.019	0.00
285	23.75	0.07	0.021	0.088	0.019	0.00
286	23.83	0.07	0.021	0.088	0.019	0.00
287	23.92	0.07	0.021	0.088	0.019	0.00
288	24.00	0.07	0.021	0.088	0.019	0.00
	Sum =	100.0			Sum =	7.7

Flood volume = Effective rainfall 0.64(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 3.2(Ac.Ft)
Total soil loss = 1.95(In)
Total soil loss = 9.780(Ac.Ft)
Total rainfall = 2.59(In)
Flood volume = 139493.0 Cubic Feet
Total soil loss = 426038.0 Cubic Feet

Peak flow rate of this hydrograph = 11.498(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

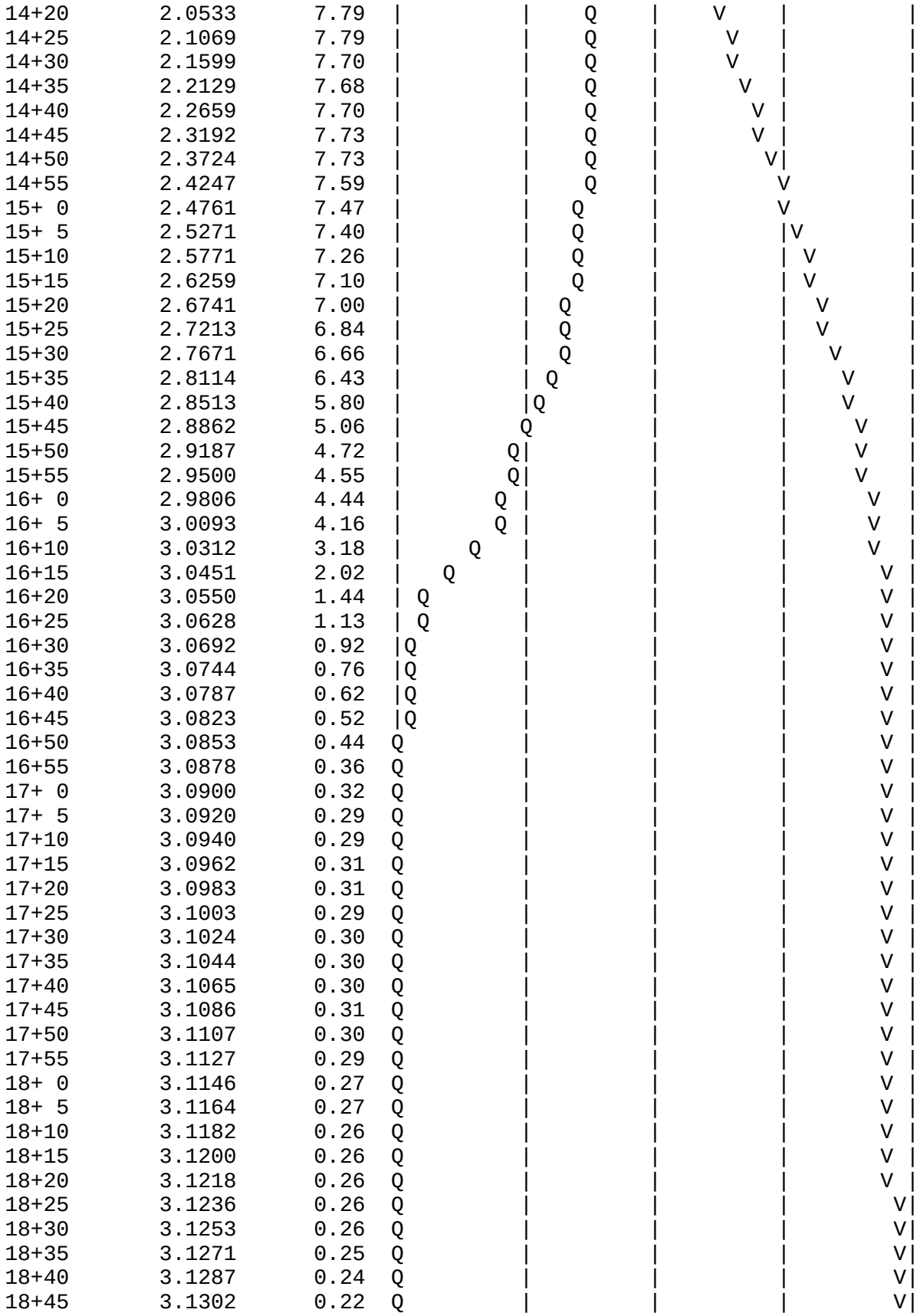
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0000	0.01	Q	|	|	|	|
0+10	0.0003	0.04	Q	|	|	|	|
0+15	0.0008	0.07	Q	|	|	|	|
0+20	0.0015	0.09	Q	|	|	|	|
0+25	0.0023	0.12	Q	|	|	|	|
0+30	0.0033	0.14	Q	|	|	|	|
0+35	0.0043	0.16	Q	|	|	|	|
0+40	0.0055	0.16	Q	|	|	|	|
0+45	0.0066	0.17	Q	|	|	|	|

0+50	0.0079	0.18	Q	|	|	|	|
0+55	0.0092	0.20	Q	|	|	|	|
1+ 0	0.0107	0.22	Q	|	|	|	|
1+ 5	0.0122	0.22	Q	|	|	|	|
1+10	0.0137	0.22	Q	|	|	|	|
1+15	0.0151	0.20	Q	|	|	|	|
1+20	0.0165	0.20	Q	|	|	|	|
1+25	0.0178	0.19	Q	|	|	|	|
1+30	0.0191	0.19	Q	|	|	|	|
1+35	0.0204	0.19	Q	|	|	|	|
1+40	0.0218	0.19	Q	|	|	|	|
1+45	0.0231	0.19	Q	|	|	|	|
1+50	0.0244	0.19	Q	|	|	|	|
1+55	0.0259	0.21	Q	|	|	|	|
2+ 0	0.0274	0.23	Q	|	|	|	|
2+ 5	0.0290	0.24	Q	|	|	|	|
2+10	0.0307	0.24	Q	|	|	|	|
2+15	0.0324	0.24	Q	|	|	|	|
2+20	0.0340	0.24	Q	|	|	|	|
2+25	0.0357	0.25	Q	|	|	|	|
2+30	0.0374	0.25	Q	|	|	|	|
2+35	0.0392	0.25	Q	|	|	|	|
2+40	0.0410	0.27	Q	|	|	|	|
2+45	0.0430	0.29	Q	|	|	|	|
2+50	0.0450	0.30	Q	|	|	|	|
2+55	0.0471	0.30	Q	|	|	|	|
3+ 0	0.0492	0.30	Q	|	|	|	|
3+ 5	0.0513	0.31	Q	|	|	|	|
3+10	0.0534	0.31	Q	|	|	|	|
3+15	0.0555	0.31	Q	|	|	|	|
3+20	0.0577	0.31	Q	|	|	|	|
3+25	0.0598	0.31	Q	|	|	|	|
3+30	0.0620	0.31	Q	|	|	|	|
3+35	0.0641	0.31	Q	|	|	|	|
3+40	0.0663	0.31	Q	|	|	|	|
3+45	0.0684	0.31	Q	|	|	|	|
3+50	0.0706	0.32	Q	|	|	|	|
3+55	0.0729	0.33	Q	|	|	|	|
4+ 0	0.0753	0.35	Q	|	|	|	|
4+ 5	0.0778	0.36	Q	|	|	|	|
4+10	0.0803	0.36	QV	|	|	|	|
4+15	0.0828	0.37	QV	|	|	|	|
4+20	0.0854	0.37	QV	|	|	|	|
4+25	0.0881	0.39	QV	|	|	|	|
4+30	0.0909	0.41	QV	|	|	|	|
4+35	0.0938	0.42	QV	|	|	|	|
4+40	0.0967	0.42	QV	|	|	|	|
4+45	0.0997	0.43	QV	|	|	|	|
4+50	0.1027	0.43	QV	|	|	|	|
4+55	0.1058	0.45	QV	|	|	|	|
5+ 0	0.1090	0.47	QV	|	|	|	|
5+ 5	0.1123	0.47	QV	|	|	|	|
5+10	0.1154	0.45	QV	|	|	|	|
5+15	0.1182	0.42	QV	|	|	|	|

5+20	0.1210	0.41	QV	|	|	|	|
5+25	0.1239	0.41	QV	|	|	|	|
5+30	0.1268	0.43	QV	|	|	|	|
5+35	0.1299	0.44	QV	|	|	|	|
5+40	0.1330	0.45	QV	|	|	|	|
5+45	0.1363	0.47	QV	|	|	|	|
5+50	0.1396	0.48	QV	|	|	|	|
5+55	0.1429	0.49	QV	|	|	|	|
6+ 0	0.1463	0.49	QV	|	|	|	|
6+ 5	0.1498	0.50	QV	|	|	|	|
6+10	0.1533	0.51	|Q	|	|	|	|
6+15	0.1570	0.53	|Q	|	|	|	|
6+20	0.1607	0.54	|QV	|	|	|	|
6+25	0.1645	0.55	|QV	|	|	|	|
6+30	0.1683	0.55	|QV	|	|	|	|
6+35	0.1722	0.56	|QV	|	|	|	|
6+40	0.1761	0.58	|QV	|	|	|	|
6+45	0.1803	0.60	|QV	|	|	|	|
6+50	0.1844	0.61	|QV	|	|	|	|
6+55	0.1887	0.61	|QV	|	|	|	|
7+ 0	0.1929	0.62	|QV	|	|	|	|
7+ 5	0.1972	0.62	|QV	|	|	|	|
7+10	0.2015	0.62	|QV	|	|	|	|
7+15	0.2057	0.62	|QV	|	|	|	|
7+20	0.2101	0.63	|QV	|	|	|	|
7+25	0.2145	0.64	|QV	|	|	|	|
7+30	0.2191	0.66	|QV	|	|	|	|
7+35	0.2237	0.68	|QV	|	|	|	|
7+40	0.2285	0.70	|QV	|	|	|	|
7+45	0.2335	0.72	|QV	|	|	|	|
7+50	0.2385	0.73	|QV	|	|	|	|
7+55	0.2437	0.75	|Q V	|	|	|	|
8+ 0	0.2490	0.78	|Q V	|	|	|	|
8+ 5	0.2545	0.80	|Q V	|	|	|	|
8+10	0.2603	0.83	|Q V	|	|	|	|
8+15	0.2663	0.87	|Q V	|	|	|	|
8+20	0.2724	0.90	|Q V	|	|	|	|
8+25	0.2787	0.91	|Q V	|	|	|	|
8+30	0.2850	0.92	|Q V	|	|	|	|
8+35	0.2914	0.93	|Q V	|	|	|	|
8+40	0.2979	0.95	|Q V	|	|	|	|
8+45	0.3045	0.97	|Q V	|	|	|	|
8+50	0.3113	0.98	|Q V	|	|	|	|
8+55	0.3182	1.00	| QV	|	|	|	|
9+ 0	0.3253	1.03	| Q V	|	|	|	|
9+ 5	0.3321	0.98	|Q V	|	|	|	|
9+10	0.3373	0.76	|Q V	|	|	|	|
9+15	0.3406	0.49	Q V	|	|	|	|
9+20	0.3435	0.42	Q V	|	|	|	|
9+25	0.3473	0.54	|Q V	|	|	|	|
9+30	0.3523	0.72	|Q V	|	|	|	|
9+35	0.3582	0.86	|Q V	|	|	|	|
9+40	0.3656	1.08	| Q V	|	|	|	|
9+45	0.3747	1.32	| Q V	|	|	|	|

9+50	0.3850	1.50	| QV |	|	|	|
9+55	0.3971	1.75	| QV |	|	|	|
10+ 0	0.4110	2.02	| QV |	|	|	|
10+ 5	0.4254	2.09	| QV |	|	|	|
10+10	0.4379	1.80	| Q V |	|	|	|
10+15	0.4475	1.40	| Q V |	|	|	|
10+20	0.4560	1.22	| Q V |	|	|	|
10+25	0.4638	1.14	| Q V |	|	|	|
10+30	0.4714	1.10	| Q V |	|	|	|
10+35	0.4790	1.11	| Q V |	|	|	|
10+40	0.4877	1.26	| Q V |	|	|	|
10+45	0.4979	1.48	| Q V |	|	|	|
10+50	0.5089	1.60	| Q V |	|	|	|
10+55	0.5204	1.68	| Q V |	|	|	|
11+ 0	0.5324	1.74	| Q V |	|	|	|
11+ 5	0.5446	1.77	| Q V |	|	|	|
11+10	0.5561	1.68	| Q V |	|	|	|
11+15	0.5668	1.55	| Q V |	|	|	|
11+20	0.5772	1.51	| Q V |	|	|	|
11+25	0.5877	1.52	| Q V |	|	|	|
11+30	0.5983	1.55	| Q V |	|	|	|
11+35	0.6087	1.51	| Q V |	|	|	|
11+40	0.6173	1.25	| Q V |	|	|	|
11+45	0.6237	0.93	|Q V |	|	|	|
11+50	0.6294	0.83	|Q V |	|	|	|
11+55	0.6358	0.94	|Q V |	|	|	|
12+ 0	0.6434	1.10	| Q V |	|	|	|
12+ 5	0.6533	1.44	| Q V |	|	|	|
12+10	0.6709	2.55	| Q V |	|	|	|
12+15	0.6975	3.87	| QV |	|	|	|
12+20	0.7290	4.57	| Q|	|	|	|
12+25	0.7639	5.08	| VQ |	|	|	|
12+30	0.8020	5.52	| VQ |	|	|	|
12+35	0.8425	5.88	| VQ |	|	|	|
12+40	0.8865	6.40	| |VQ |	|	|	|
12+45	0.9343	6.93	| |V Q |	|	|	|
12+50	0.9844	7.28	| | V Q |	|	|	|
12+55	1.0371	7.65	| | V Q |	|	|	|
13+ 0	1.0922	8.00	| | V Q |	|	|	|
13+ 5	1.1501	8.41	| | V Q |	|	|	|
13+10	1.2144	9.33	| | V Q |	|	|	|
13+15	1.2858	10.37	| | V Q |	|	|	|
13+20	1.3611	10.93	| | V |Q |	|	|	|
13+25	1.4387	11.27	| | V | Q |	|	|	|
13+30	1.5179	11.50	| | V | Q |	|	|	|
13+35	1.5956	11.29	| | V| Q |	|	|	|
13+40	1.6631	9.79	| | QV |	|	|	|
13+45	1.7176	7.92	| | Q |V |	|	|	|
13+50	1.7662	7.06	| | Q | V |	|	|	|
13+55	1.8122	6.67	| | Q | V |	|	|	|
14+ 0	1.8564	6.42	| | Q | V |	|	|	|
14+ 5	1.9004	6.39	| | Q | V |	|	|	|
14+10	1.9478	6.88	| | Q | V |	|	|	|
14+15	1.9996	7.52	| | Q | V |	|	|	|



18+50	3.1316	0.20	Q	|	|	|	V|
18+55	3.1328	0.18	Q	|	|	|	V|
19+ 0	3.1340	0.16	Q	|	|	|	V|
19+ 5	3.1350	0.15	Q	|	|	|	V|
19+10	3.1361	0.16	Q	|	|	|	V|
19+15	3.1374	0.18	Q	|	|	|	V|
19+20	3.1386	0.19	Q	|	|	|	V|
19+25	3.1400	0.20	Q	|	|	|	V|
19+30	3.1416	0.22	Q	|	|	|	V|
19+35	3.1431	0.23	Q	|	|	|	V|
19+40	3.1446	0.22	Q	|	|	|	V|
19+45	3.1460	0.20	Q	|	|	|	V|
19+50	3.1474	0.19	Q	|	|	|	V|
19+55	3.1486	0.18	Q	|	|	|	V|
20+ 0	3.1496	0.16	Q	|	|	|	V|
20+ 5	3.1507	0.15	Q	|	|	|	V|
20+10	3.1518	0.16	Q	|	|	|	V|
20+15	3.1530	0.17	Q	|	|	|	V|
20+20	3.1542	0.18	Q	|	|	|	V|
20+25	3.1555	0.18	Q	|	|	|	V|
20+30	3.1567	0.18	Q	|	|	|	V|
20+35	3.1580	0.19	Q	|	|	|	V|
20+40	3.1593	0.19	Q	|	|	|	V|
20+45	3.1606	0.19	Q	|	|	|	V|
20+50	3.1619	0.18	Q	|	|	|	V|
20+55	3.1630	0.17	Q	|	|	|	V|
21+ 0	3.1641	0.15	Q	|	|	|	V|
21+ 5	3.1651	0.15	Q	|	|	|	V|
21+10	3.1661	0.16	Q	|	|	|	V|
21+15	3.1673	0.17	Q	|	|	|	V|
21+20	3.1685	0.17	Q	|	|	|	V|
21+25	3.1696	0.16	Q	|	|	|	V|
21+30	3.1706	0.15	Q	|	|	|	V|
21+35	3.1716	0.14	Q	|	|	|	V|
21+40	3.1727	0.15	Q	|	|	|	V|
21+45	3.1739	0.17	Q	|	|	|	V|
21+50	3.1751	0.17	Q	|	|	|	V|
21+55	3.1762	0.16	Q	|	|	|	V|
22+ 0	3.1772	0.15	Q	|	|	|	V|
22+ 5	3.1781	0.14	Q	|	|	|	V|
22+10	3.1792	0.15	Q	|	|	|	V|
22+15	3.1804	0.17	Q	|	|	|	V|
22+20	3.1815	0.17	Q	|	|	|	V|
22+25	3.1827	0.16	Q	|	|	|	V|
22+30	3.1837	0.15	Q	|	|	|	V|
22+35	3.1846	0.14	Q	|	|	|	V|
22+40	3.1855	0.13	Q	|	|	|	V|
22+45	3.1864	0.13	Q	|	|	|	V|
22+50	3.1873	0.13	Q	|	|	|	V|
22+55	3.1882	0.13	Q	|	|	|	V|
23+ 0	3.1891	0.13	Q	|	|	|	V|
23+ 5	3.1900	0.13	Q	|	|	|	V|
23+10	3.1909	0.13	Q	|	|	|	V|
23+15	3.1918	0.13	Q	|	|	|	V|

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   23+20       3.1926      0.13  Q          |          |          |         V|
   23+25       3.1935      0.13  Q          |          |          |         V|
   23+30       3.1944      0.13  Q          |          |          |         V|
   23+35       3.1952      0.13  Q          |          |          |         V|
   23+40       3.1961      0.13  Q          |          |          |         V|
   23+45       3.1970      0.13  Q          |          |          |         V|
   23+50       3.1978      0.13  Q          |          |          |         V|
   23+55       3.1987      0.13  Q          |          |          |         V|
   24+ 0       3.1996      0.13  Q          |          |          |         V|
   24+ 5       3.2004      0.12  Q          |          |          |         V|
   24+10       3.2010      0.09  Q          |          |          |         V|
   24+15       3.2014      0.05  Q          |          |          |         V|
   24+20       3.2016      0.03  Q          |          |          |         V|
   24+25       3.2018      0.03  Q          |          |          |         V|
   24+30       3.2019      0.02  Q          |          |          |         V|
   24+35       3.2020      0.02  Q          |          |          |         V|
   24+40       3.2021      0.01  Q          |          |          |         V|
   24+45       3.2022      0.01  Q          |          |          |         V|
   24+50       3.2022      0.01  Q          |          |          |         V|
   24+55       3.2022      0.01  Q          |          |          |         V|
   25+ 0       3.2023      0.00  Q          |          |          |         V|
   25+ 5       3.2023      0.00  Q          |          |          |         V|
   25+10       3.2023      0.00  Q          |          |          |         V|
   25+15       3.2023      0.00  Q          |          |          |         V|
   25+20       3.2023      0.00  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/29/19 File: 4163UHE252425.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 25 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA A-1
4163UHE25.UM1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 2550.00(Ft.)
Length along longest watercourse measured to centroid = 1125.00(Ft.)
Length along longest watercourse = 0.483 Mi.
Length along longest watercourse measured to centroid = 0.213 Mi.
Difference in elevation = 8.50(Ft.)
Slope along watercourse = 17.6000 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 25.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.149(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	86.00	0.000

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.000	0.176	1.000	0.176
					Sum (F) =	0.176

Area averaged mean soil loss (F) (In/Hr) = 0.176
Minimum soil loss rate ((In/Hr)) = 0.088
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.360	5.636	3.421
2	0.167	94.720	23.906	14.508
3	0.250	142.080	28.909	17.545
4	0.333	189.440	13.984	8.487
5	0.417	236.800	7.077	4.295
6	0.500	284.160	4.874	2.958
7	0.583	331.520	3.553	2.156
8	0.667	378.880	2.732	1.658
9	0.750	426.241	2.054	1.247
10	0.833	473.601	1.560	0.947
11	0.917	520.961	1.396	0.847
12	1.000	568.321	1.087	0.659
13	1.083	615.681	0.878	0.533
14	1.167	663.041	0.698	0.424
15	1.250	710.401	0.523	0.318
16	1.333	757.761	0.474	0.287

17	1.417	805.121	0.659		0.400
			Sum = 100.000	Sum=	60.690

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.025	0.311	0.023	0.00
2	0.17	0.07	0.025	0.310	0.023	0.00
3	0.25	0.07	0.025	0.309	0.023	0.00
4	0.33	0.10	0.038	0.308	0.034	0.00
5	0.42	0.10	0.038	0.306	0.034	0.00
6	0.50	0.10	0.038	0.305	0.034	0.00
7	0.58	0.10	0.038	0.304	0.034	0.00
8	0.67	0.10	0.038	0.303	0.034	0.00
9	0.75	0.10	0.038	0.302	0.034	0.00
10	0.83	0.13	0.050	0.301	0.045	0.01
11	0.92	0.13	0.050	0.299	0.045	0.01
12	1.00	0.13	0.050	0.298	0.045	0.01
13	1.08	0.10	0.038	0.297	0.034	0.00
14	1.17	0.10	0.038	0.296	0.034	0.00
15	1.25	0.10	0.038	0.295	0.034	0.00
16	1.33	0.10	0.038	0.293	0.034	0.00
17	1.42	0.10	0.038	0.292	0.034	0.00
18	1.50	0.10	0.038	0.291	0.034	0.00
19	1.58	0.10	0.038	0.290	0.034	0.00
20	1.67	0.10	0.038	0.289	0.034	0.00
21	1.75	0.10	0.038	0.288	0.034	0.00
22	1.83	0.13	0.050	0.287	0.045	0.01
23	1.92	0.13	0.050	0.285	0.045	0.01
24	2.00	0.13	0.050	0.284	0.045	0.01
25	2.08	0.13	0.050	0.283	0.045	0.01
26	2.17	0.13	0.050	0.282	0.045	0.01
27	2.25	0.13	0.050	0.281	0.045	0.01
28	2.33	0.13	0.050	0.280	0.045	0.01
29	2.42	0.13	0.050	0.278	0.045	0.01
30	2.50	0.13	0.050	0.277	0.045	0.01
31	2.58	0.17	0.063	0.276	0.057	0.01
32	2.67	0.17	0.063	0.275	0.057	0.01
33	2.75	0.17	0.063	0.274	0.057	0.01
34	2.83	0.17	0.063	0.273	0.057	0.01
35	2.92	0.17	0.063	0.272	0.057	0.01
36	3.00	0.17	0.063	0.271	0.057	0.01
37	3.08	0.17	0.063	0.269	0.057	0.01
38	3.17	0.17	0.063	0.268	0.057	0.01
39	3.25	0.17	0.063	0.267	0.057	0.01
40	3.33	0.17	0.063	0.266	0.057	0.01
41	3.42	0.17	0.063	0.265	0.057	0.01
42	3.50	0.17	0.063	0.264	0.057	0.01
43	3.58	0.17	0.063	0.263	0.057	0.01
44	3.67	0.17	0.063	0.262	0.057	0.01
45	3.75	0.17	0.063	0.261	0.057	0.01
46	3.83	0.20	0.076	0.259	0.068	0.01
47	3.92	0.20	0.076	0.258	0.068	0.01

48	4.00	0.20	0.076	0.257	0.068	0.01
49	4.08	0.20	0.076	0.256	0.068	0.01
50	4.17	0.20	0.076	0.255	0.068	0.01
51	4.25	0.20	0.076	0.254	0.068	0.01
52	4.33	0.23	0.088	0.253	0.079	0.01
53	4.42	0.23	0.088	0.252	0.079	0.01
54	4.50	0.23	0.088	0.251	0.079	0.01
55	4.58	0.23	0.088	0.250	0.079	0.01
56	4.67	0.23	0.088	0.249	0.079	0.01
57	4.75	0.23	0.088	0.248	0.079	0.01
58	4.83	0.27	0.101	0.246	0.091	0.01
59	4.92	0.27	0.101	0.245	0.091	0.01
60	5.00	0.27	0.101	0.244	0.091	0.01
61	5.08	0.20	0.076	0.243	0.068	0.01
62	5.17	0.20	0.076	0.242	0.068	0.01
63	5.25	0.20	0.076	0.241	0.068	0.01
64	5.33	0.23	0.088	0.240	0.079	0.01
65	5.42	0.23	0.088	0.239	0.079	0.01
66	5.50	0.23	0.088	0.238	0.079	0.01
67	5.58	0.27	0.101	0.237	0.091	0.01
68	5.67	0.27	0.101	0.236	0.091	0.01
69	5.75	0.27	0.101	0.235	0.091	0.01
70	5.83	0.27	0.101	0.234	0.091	0.01
71	5.92	0.27	0.101	0.233	0.091	0.01
72	6.00	0.27	0.101	0.232	0.091	0.01
73	6.08	0.30	0.113	0.231	0.102	0.01
74	6.17	0.30	0.113	0.230	0.102	0.01
75	6.25	0.30	0.113	0.229	0.102	0.01
76	6.33	0.30	0.113	0.228	0.102	0.01
77	6.42	0.30	0.113	0.227	0.102	0.01
78	6.50	0.30	0.113	0.226	0.102	0.01
79	6.58	0.33	0.126	0.225	0.113	0.01
80	6.67	0.33	0.126	0.224	0.113	0.01
81	6.75	0.33	0.126	0.223	0.113	0.01
82	6.83	0.33	0.126	0.222	0.113	0.01
83	6.92	0.33	0.126	0.221	0.113	0.01
84	7.00	0.33	0.126	0.220	0.113	0.01
85	7.08	0.33	0.126	0.219	0.113	0.01
86	7.17	0.33	0.126	0.218	0.113	0.01
87	7.25	0.33	0.126	0.217	0.113	0.01
88	7.33	0.37	0.139	0.216	0.125	0.01
89	7.42	0.37	0.139	0.215	0.125	0.01
90	7.50	0.37	0.139	0.214	0.125	0.01
91	7.58	0.40	0.151	0.213	0.136	0.02
92	7.67	0.40	0.151	0.212	0.136	0.02
93	7.75	0.40	0.151	0.211	0.136	0.02
94	7.83	0.43	0.164	0.210	0.147	0.02
95	7.92	0.43	0.164	0.209	0.147	0.02
96	8.00	0.43	0.164	0.208	0.147	0.02
97	8.08	0.50	0.189	0.207	0.170	0.02
98	8.17	0.50	0.189	0.206	0.170	0.02
99	8.25	0.50	0.189	0.205	0.170	0.02
100	8.33	0.50	0.189	0.204	0.170	0.02
101	8.42	0.50	0.189	0.203	0.170	0.02

102	8.50	0.50	0.189	0.202	0.170	0.02
103	8.58	0.53	0.202	0.201	---	0.00
104	8.67	0.53	0.202	0.200	---	0.00
105	8.75	0.53	0.202	0.199	---	0.00
106	8.83	0.57	0.214	0.198	---	0.02
107	8.92	0.57	0.214	0.197	---	0.02
108	9.00	0.57	0.214	0.196	---	0.02
109	9.08	0.63	0.239	0.195	---	0.04
110	9.17	0.63	0.239	0.195	---	0.04
111	9.25	0.63	0.239	0.194	---	0.05
112	9.33	0.67	0.252	0.193	---	0.06
113	9.42	0.67	0.252	0.192	---	0.06
114	9.50	0.67	0.252	0.191	---	0.06
115	9.58	0.70	0.265	0.190	---	0.07
116	9.67	0.70	0.265	0.189	---	0.08
117	9.75	0.70	0.265	0.188	---	0.08
118	9.83	0.73	0.277	0.187	---	0.09
119	9.92	0.73	0.277	0.186	---	0.09
120	10.00	0.73	0.277	0.185	---	0.09
121	10.08	0.50	0.189	0.185	---	0.00
122	10.17	0.50	0.189	0.184	---	0.01
123	10.25	0.50	0.189	0.183	---	0.01
124	10.33	0.50	0.189	0.182	---	0.01
125	10.42	0.50	0.189	0.181	---	0.01
126	10.50	0.50	0.189	0.180	---	0.01
127	10.58	0.67	0.252	0.179	---	0.07
128	10.67	0.67	0.252	0.178	---	0.07
129	10.75	0.67	0.252	0.177	---	0.07
130	10.83	0.67	0.252	0.177	---	0.08
131	10.92	0.67	0.252	0.176	---	0.08
132	11.00	0.67	0.252	0.175	---	0.08
133	11.08	0.63	0.239	0.174	---	0.07
134	11.17	0.63	0.239	0.173	---	0.07
135	11.25	0.63	0.239	0.172	---	0.07
136	11.33	0.63	0.239	0.171	---	0.07
137	11.42	0.63	0.239	0.171	---	0.07
138	11.50	0.63	0.239	0.170	---	0.07
139	11.58	0.57	0.214	0.169	---	0.05
140	11.67	0.57	0.214	0.168	---	0.05
141	11.75	0.57	0.214	0.167	---	0.05
142	11.83	0.60	0.227	0.166	---	0.06
143	11.92	0.60	0.227	0.166	---	0.06
144	12.00	0.60	0.227	0.165	---	0.06
145	12.08	0.83	0.315	0.164	---	0.15
146	12.17	0.83	0.315	0.163	---	0.15
147	12.25	0.83	0.315	0.162	---	0.15
148	12.33	0.87	0.328	0.161	---	0.17
149	12.42	0.87	0.328	0.161	---	0.17
150	12.50	0.87	0.328	0.160	---	0.17
151	12.58	0.93	0.353	0.159	---	0.19
152	12.67	0.93	0.353	0.158	---	0.19
153	12.75	0.93	0.353	0.157	---	0.20
154	12.83	0.97	0.365	0.157	---	0.21
155	12.92	0.97	0.365	0.156	---	0.21

156	13.00	0.97	0.365	0.155	---	0.21
157	13.08	1.13	0.428	0.154	---	0.27
158	13.17	1.13	0.428	0.154	---	0.27
159	13.25	1.13	0.428	0.153	---	0.28
160	13.33	1.13	0.428	0.152	---	0.28
161	13.42	1.13	0.428	0.151	---	0.28
162	13.50	1.13	0.428	0.150	---	0.28
163	13.58	0.77	0.290	0.150	---	0.14
164	13.67	0.77	0.290	0.149	---	0.14
165	13.75	0.77	0.290	0.148	---	0.14
166	13.83	0.77	0.290	0.147	---	0.14
167	13.92	0.77	0.290	0.147	---	0.14
168	14.00	0.77	0.290	0.146	---	0.14
169	14.08	0.90	0.340	0.145	---	0.19
170	14.17	0.90	0.340	0.144	---	0.20
171	14.25	0.90	0.340	0.144	---	0.20
172	14.33	0.87	0.328	0.143	---	0.18
173	14.42	0.87	0.328	0.142	---	0.19
174	14.50	0.87	0.328	0.141	---	0.19
175	14.58	0.87	0.328	0.141	---	0.19
176	14.67	0.87	0.328	0.140	---	0.19
177	14.75	0.87	0.328	0.139	---	0.19
178	14.83	0.83	0.315	0.139	---	0.18
179	14.92	0.83	0.315	0.138	---	0.18
180	15.00	0.83	0.315	0.137	---	0.18
181	15.08	0.80	0.302	0.136	---	0.17
182	15.17	0.80	0.302	0.136	---	0.17
183	15.25	0.80	0.302	0.135	---	0.17
184	15.33	0.77	0.290	0.134	---	0.16
185	15.42	0.77	0.290	0.134	---	0.16
186	15.50	0.77	0.290	0.133	---	0.16
187	15.58	0.63	0.239	0.132	---	0.11
188	15.67	0.63	0.239	0.132	---	0.11
189	15.75	0.63	0.239	0.131	---	0.11
190	15.83	0.63	0.239	0.130	---	0.11
191	15.92	0.63	0.239	0.130	---	0.11
192	16.00	0.63	0.239	0.129	---	0.11
193	16.08	0.13	0.050	0.128	0.045	0.01
194	16.17	0.13	0.050	0.128	0.045	0.01
195	16.25	0.13	0.050	0.127	0.045	0.01
196	16.33	0.13	0.050	0.126	0.045	0.01
197	16.42	0.13	0.050	0.126	0.045	0.01
198	16.50	0.13	0.050	0.125	0.045	0.01
199	16.58	0.10	0.038	0.124	0.034	0.00
200	16.67	0.10	0.038	0.124	0.034	0.00
201	16.75	0.10	0.038	0.123	0.034	0.00
202	16.83	0.10	0.038	0.123	0.034	0.00
203	16.92	0.10	0.038	0.122	0.034	0.00
204	17.00	0.10	0.038	0.121	0.034	0.00
205	17.08	0.17	0.063	0.121	0.057	0.01
206	17.17	0.17	0.063	0.120	0.057	0.01
207	17.25	0.17	0.063	0.119	0.057	0.01
208	17.33	0.17	0.063	0.119	0.057	0.01
209	17.42	0.17	0.063	0.118	0.057	0.01

210	17.50	0.17	0.063	0.118	0.057	0.01
211	17.58	0.17	0.063	0.117	0.057	0.01
212	17.67	0.17	0.063	0.117	0.057	0.01
213	17.75	0.17	0.063	0.116	0.057	0.01
214	17.83	0.13	0.050	0.115	0.045	0.01
215	17.92	0.13	0.050	0.115	0.045	0.01
216	18.00	0.13	0.050	0.114	0.045	0.01
217	18.08	0.13	0.050	0.114	0.045	0.01
218	18.17	0.13	0.050	0.113	0.045	0.01
219	18.25	0.13	0.050	0.113	0.045	0.01
220	18.33	0.13	0.050	0.112	0.045	0.01
221	18.42	0.13	0.050	0.111	0.045	0.01
222	18.50	0.13	0.050	0.111	0.045	0.01
223	18.58	0.10	0.038	0.110	0.034	0.00
224	18.67	0.10	0.038	0.110	0.034	0.00
225	18.75	0.10	0.038	0.109	0.034	0.00
226	18.83	0.07	0.025	0.109	0.023	0.00
227	18.92	0.07	0.025	0.108	0.023	0.00
228	19.00	0.07	0.025	0.108	0.023	0.00
229	19.08	0.10	0.038	0.107	0.034	0.00
230	19.17	0.10	0.038	0.107	0.034	0.00
231	19.25	0.10	0.038	0.106	0.034	0.00
232	19.33	0.13	0.050	0.106	0.045	0.01
233	19.42	0.13	0.050	0.105	0.045	0.01
234	19.50	0.13	0.050	0.105	0.045	0.01
235	19.58	0.10	0.038	0.104	0.034	0.00
236	19.67	0.10	0.038	0.104	0.034	0.00
237	19.75	0.10	0.038	0.103	0.034	0.00
238	19.83	0.07	0.025	0.103	0.023	0.00
239	19.92	0.07	0.025	0.102	0.023	0.00
240	20.00	0.07	0.025	0.102	0.023	0.00
241	20.08	0.10	0.038	0.102	0.034	0.00
242	20.17	0.10	0.038	0.101	0.034	0.00
243	20.25	0.10	0.038	0.101	0.034	0.00
244	20.33	0.10	0.038	0.100	0.034	0.00
245	20.42	0.10	0.038	0.100	0.034	0.00
246	20.50	0.10	0.038	0.099	0.034	0.00
247	20.58	0.10	0.038	0.099	0.034	0.00
248	20.67	0.10	0.038	0.099	0.034	0.00
249	20.75	0.10	0.038	0.098	0.034	0.00
250	20.83	0.07	0.025	0.098	0.023	0.00
251	20.92	0.07	0.025	0.097	0.023	0.00
252	21.00	0.07	0.025	0.097	0.023	0.00
253	21.08	0.10	0.038	0.097	0.034	0.00
254	21.17	0.10	0.038	0.096	0.034	0.00
255	21.25	0.10	0.038	0.096	0.034	0.00
256	21.33	0.07	0.025	0.095	0.023	0.00
257	21.42	0.07	0.025	0.095	0.023	0.00
258	21.50	0.07	0.025	0.095	0.023	0.00
259	21.58	0.10	0.038	0.094	0.034	0.00
260	21.67	0.10	0.038	0.094	0.034	0.00
261	21.75	0.10	0.038	0.094	0.034	0.00
262	21.83	0.07	0.025	0.093	0.023	0.00
263	21.92	0.07	0.025	0.093	0.023	0.00

264	22.00	0.07	0.025	0.093	0.023	0.00
265	22.08	0.10	0.038	0.092	0.034	0.00
266	22.17	0.10	0.038	0.092	0.034	0.00
267	22.25	0.10	0.038	0.092	0.034	0.00
268	22.33	0.07	0.025	0.092	0.023	0.00
269	22.42	0.07	0.025	0.091	0.023	0.00
270	22.50	0.07	0.025	0.091	0.023	0.00
271	22.58	0.07	0.025	0.091	0.023	0.00
272	22.67	0.07	0.025	0.090	0.023	0.00
273	22.75	0.07	0.025	0.090	0.023	0.00
274	22.83	0.07	0.025	0.090	0.023	0.00
275	22.92	0.07	0.025	0.090	0.023	0.00
276	23.00	0.07	0.025	0.090	0.023	0.00
277	23.08	0.07	0.025	0.089	0.023	0.00
278	23.17	0.07	0.025	0.089	0.023	0.00
279	23.25	0.07	0.025	0.089	0.023	0.00
280	23.33	0.07	0.025	0.089	0.023	0.00
281	23.42	0.07	0.025	0.089	0.023	0.00
282	23.50	0.07	0.025	0.088	0.023	0.00
283	23.58	0.07	0.025	0.088	0.023	0.00
284	23.67	0.07	0.025	0.088	0.023	0.00
285	23.75	0.07	0.025	0.088	0.023	0.00
286	23.83	0.07	0.025	0.088	0.023	0.00
287	23.92	0.07	0.025	0.088	0.023	0.00
288	24.00	0.07	0.025	0.088	0.023	0.00
	Sum =	100.0			Sum =	11.9

Flood volume = Effective rainfall 0.99(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 5.0(Ac.Ft)
Total soil loss = 2.16(In)
Total soil loss = 10.841(Ac.Ft)
Total rainfall = 3.15(In)
Flood volume = 216172.9 Cubic Feet
Total soil loss = 472226.3 Cubic Feet

Peak flow rate of this hydrograph = 16.012(CFS)

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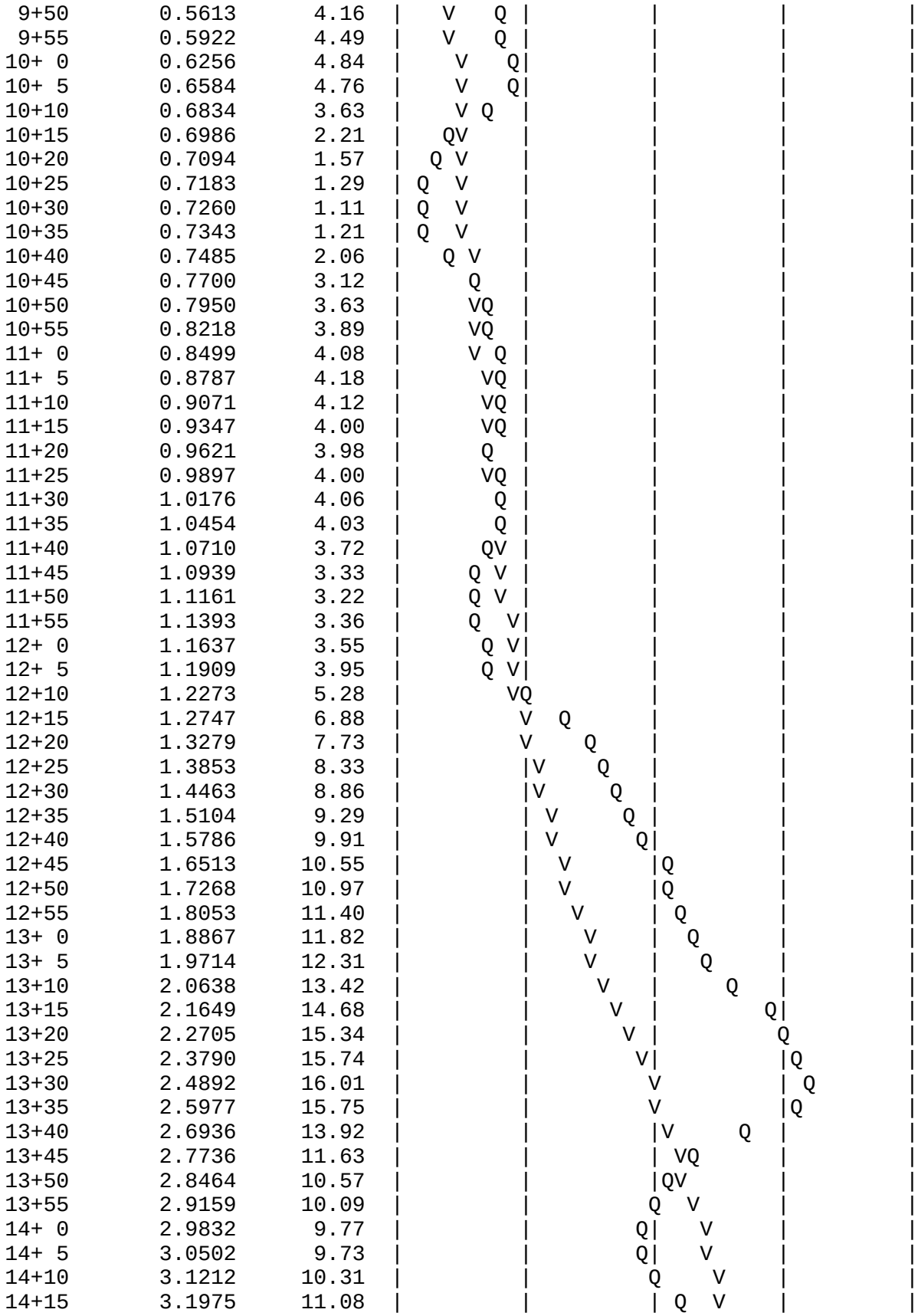
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

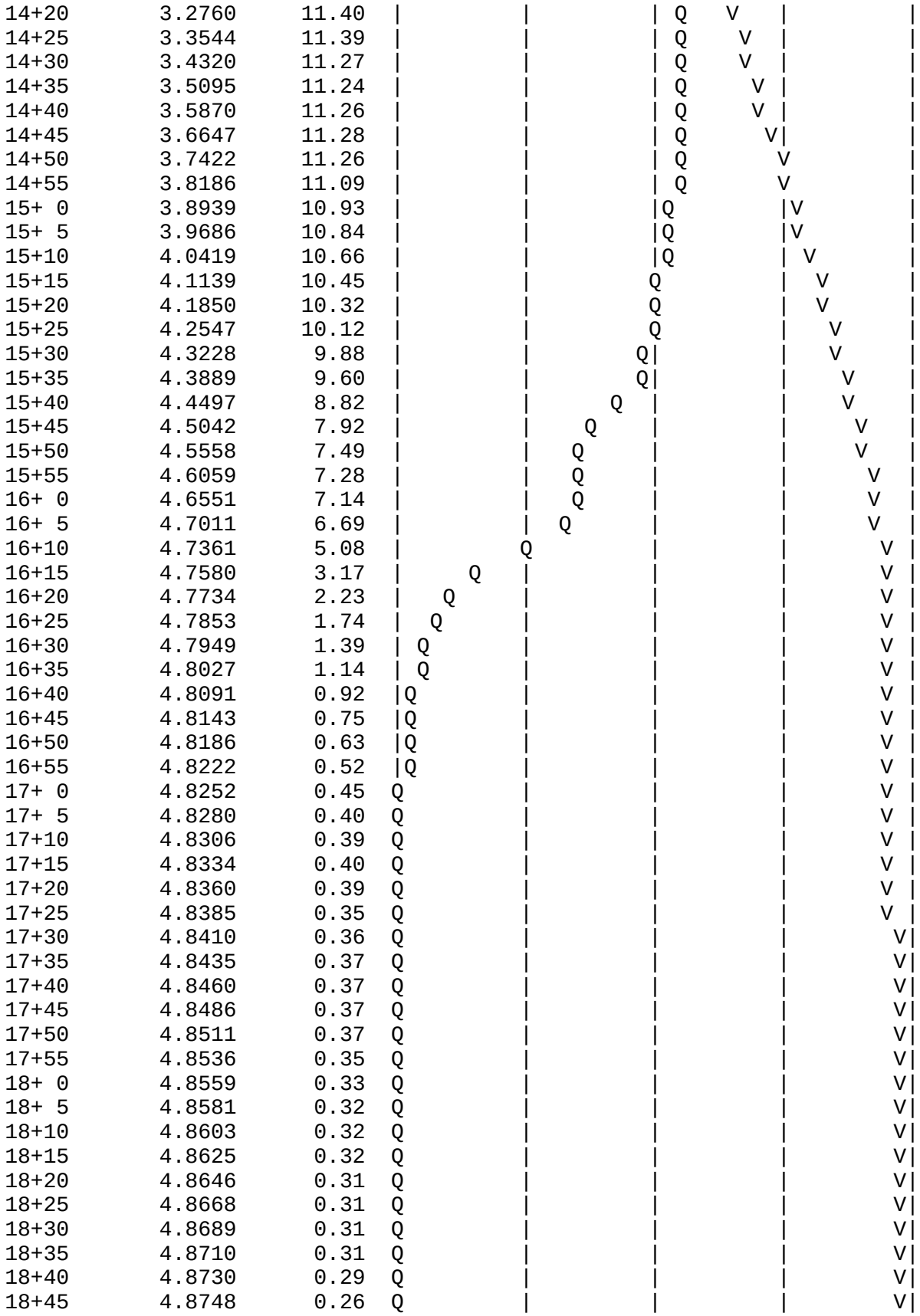
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0004	0.05	Q	|	|	|	|
0+15	0.0010	0.09	Q	|	|	|	|
0+20	0.0018	0.12	Q	|	|	|	|
0+25	0.0028	0.14	Q	|	|	|	|
0+30	0.0040	0.17	Q	|	|	|	|
0+35	0.0053	0.19	Q	|	|	|	|
0+40	0.0067	0.20	Q	|	|	|	|
0+45	0.0081	0.21	Q	|	|	|	|

0+50	0.0096	0.22	Q	|	|	|	|
0+55	0.0112	0.24	Q	|	|	|	|
1+ 0	0.0130	0.26	Q	|	|	|	|
1+ 5	0.0149	0.27	Q	|	|	|	|
1+10	0.0167	0.26	Q	|	|	|	|
1+15	0.0184	0.25	Q	|	|	|	|
1+20	0.0200	0.24	Q	|	|	|	|
1+25	0.0217	0.24	Q	|	|	|	|
1+30	0.0233	0.23	Q	|	|	|	|
1+35	0.0249	0.23	Q	|	|	|	|
1+40	0.0265	0.23	Q	|	|	|	|
1+45	0.0281	0.23	Q	|	|	|	|
1+50	0.0297	0.24	Q	|	|	|	|
1+55	0.0315	0.25	Q	|	|	|	|
2+ 0	0.0334	0.28	Q	|	|	|	|
2+ 5	0.0353	0.29	Q	|	|	|	|
2+10	0.0374	0.29	Q	|	|	|	|
2+15	0.0394	0.29	Q	|	|	|	|
2+20	0.0414	0.30	Q	|	|	|	|
2+25	0.0435	0.30	Q	|	|	|	|
2+30	0.0456	0.30	Q	|	|	|	|
2+35	0.0477	0.31	Q	|	|	|	|
2+40	0.0499	0.33	Q	|	|	|	|
2+45	0.0523	0.35	Q	|	|	|	|
2+50	0.0548	0.36	Q	|	|	|	|
2+55	0.0573	0.37	Q	|	|	|	|
3+ 0	0.0598	0.37	Q	|	|	|	|
3+ 5	0.0624	0.37	Q	|	|	|	|
3+10	0.0650	0.38	Q	|	|	|	|
3+15	0.0676	0.38	Q	|	|	|	|
3+20	0.0702	0.38	Q	|	|	|	|
3+25	0.0728	0.38	Q	|	|	|	|
3+30	0.0754	0.38	Q	|	|	|	|
3+35	0.0780	0.38	Q	|	|	|	|
3+40	0.0807	0.38	Q	|	|	|	|
3+45	0.0833	0.38	Q	|	|	|	|
3+50	0.0860	0.39	Q	|	|	|	|
3+55	0.0887	0.41	Q	|	|	|	|
4+ 0	0.0917	0.43	Q	|	|	|	|
4+ 5	0.0947	0.44	Q	|	|	|	|
4+10	0.0978	0.44	Q	|	|	|	|
4+15	0.1008	0.45	Q	|	|	|	|
4+20	0.1040	0.45	Q	|	|	|	|
4+25	0.1072	0.47	Q	|	|	|	|
4+30	0.1107	0.50	Q	|	|	|	|
4+35	0.1142	0.51	VQ	|	|	|	|
4+40	0.1177	0.52	VQ	|	|	|	|
4+45	0.1213	0.52	VQ	|	|	|	|
4+50	0.1250	0.53	|Q	|	|	|	|
4+55	0.1287	0.55	|Q	|	|	|	|
5+ 0	0.1327	0.57	|Q	|	|	|	|
5+ 5	0.1367	0.58	|Q	|	|	|	|
5+10	0.1404	0.55	|Q	|	|	|	|
5+15	0.1439	0.51	|Q	|	|	|	|

5+20	0.1473	0.49	QV	|	|	|	|
5+25	0.1508	0.50	|Q	|	|	|	|
5+30	0.1544	0.52	|Q	|	|	|	|
5+35	0.1581	0.53	|Q	|	|	|	|
5+40	0.1619	0.55	|Q	|	|	|	|
5+45	0.1659	0.58	|Q	|	|	|	|
5+50	0.1699	0.59	|Q	|	|	|	|
5+55	0.1740	0.59	|Q	|	|	|	|
6+ 0	0.1781	0.60	|Q	|	|	|	|
6+ 5	0.1823	0.61	|Q	|	|	|	|
6+10	0.1866	0.63	|Q	|	|	|	|
6+15	0.1911	0.65	|Q	|	|	|	|
6+20	0.1957	0.66	|Q	|	|	|	|
6+25	0.2003	0.67	|Q	|	|	|	|
6+30	0.2049	0.67	|Q	|	|	|	|
6+35	0.2096	0.68	|Q	|	|	|	|
6+40	0.2144	0.70	|Q	|	|	|	|
6+45	0.2194	0.73	|Q	|	|	|	|
6+50	0.2245	0.74	|Q	|	|	|	|
6+55	0.2296	0.75	|Q	|	|	|	|
7+ 0	0.2348	0.75	|Q	|	|	|	|
7+ 5	0.2400	0.75	|Q	|	|	|	|
7+10	0.2452	0.76	|Q	|	|	|	|
7+15	0.2504	0.76	|QV	|	|	|	|
7+20	0.2557	0.76	|QV	|	|	|	|
7+25	0.2611	0.78	|QV	|	|	|	|
7+30	0.2667	0.81	|QV	|	|	|	|
7+35	0.2723	0.82	|QV	|	|	|	|
7+40	0.2782	0.85	|QV	|	|	|	|
7+45	0.2842	0.87	|QV	|	|	|	|
7+50	0.2903	0.89	|QV	|	|	|	|
7+55	0.2966	0.92	|QV	|	|	|	|
8+ 0	0.3031	0.95	|QV	|	|	|	|
8+ 5	0.3098	0.97	|QV	|	|	|	|
8+10	0.3168	1.01	| Q	|	|	|	|
8+15	0.3241	1.06	| Q	|	|	|	|
8+20	0.3316	1.09	| Q	|	|	|	|
8+25	0.3392	1.10	| Q	|	|	|	|
8+30	0.3469	1.11	| Q	|	|	|	|
8+35	0.3542	1.06	| Q	|	|	|	|
8+40	0.3597	0.80	|QV	|	|	|	|
8+45	0.3631	0.50	Q V	|	|	|	|
8+50	0.3660	0.42	Q V	|	|	|	|
8+55	0.3700	0.57	|QV	|	|	|	|
9+ 0	0.3753	0.78	|Q V	|	|	|	|
9+ 5	0.3821	0.99	|Q V	|	|	|	|
9+10	0.3920	1.43	| QV	|	|	|	|
9+15	0.4053	1.94	| Q	|	|	|	|
9+20	0.4208	2.25	| VQ	|	|	|	|
9+25	0.4388	2.61	| V Q	|	|	|	|
9+30	0.4591	2.96	| V Q	|	|	|	|
9+35	0.4813	3.22	| V Q	|	|	|	|
9+40	0.5058	3.56	| V Q	|	|	|	|
9+45	0.5327	3.90	| V Q	|	|	|	|





18+50	4.8765	0.25	Q	|	|	|	V|
18+55	4.8781	0.22	Q	|	|	|	V|
19+ 0	4.8794	0.20	Q	|	|	|	V|
19+ 5	4.8807	0.19	Q	|	|	|	V|
19+10	4.8821	0.20	Q	|	|	|	V|
19+15	4.8836	0.22	Q	|	|	|	V|
19+20	4.8851	0.23	Q	|	|	|	V|
19+25	4.8868	0.25	Q	|	|	|	V|
19+30	4.8887	0.27	Q	|	|	|	V|
19+35	4.8906	0.28	Q	|	|	|	V|
19+40	4.8924	0.27	Q	|	|	|	V|
19+45	4.8941	0.25	Q	|	|	|	V|
19+50	4.8958	0.23	Q	|	|	|	V|
19+55	4.8972	0.21	Q	|	|	|	V|
20+ 0	4.8985	0.19	Q	|	|	|	V|
20+ 5	4.8998	0.18	Q	|	|	|	V|
20+10	4.9011	0.19	Q	|	|	|	V|
20+15	4.9026	0.21	Q	|	|	|	V|
20+20	4.9041	0.22	Q	|	|	|	V|
20+25	4.9056	0.22	Q	|	|	|	V|
20+30	4.9072	0.22	Q	|	|	|	V|
20+35	4.9087	0.23	Q	|	|	|	V|
20+40	4.9103	0.23	Q	|	|	|	V|
20+45	4.9119	0.23	Q	|	|	|	V|
20+50	4.9134	0.22	Q	|	|	|	V|
20+55	4.9148	0.20	Q	|	|	|	V|
21+ 0	4.9161	0.18	Q	|	|	|	V|
21+ 5	4.9173	0.18	Q	|	|	|	V|
21+10	4.9186	0.19	Q	|	|	|	V|
21+15	4.9200	0.21	Q	|	|	|	V|
21+20	4.9215	0.21	Q	|	|	|	V|
21+25	4.9229	0.20	Q	|	|	|	V|
21+30	4.9241	0.18	Q	|	|	|	V|
21+35	4.9253	0.17	Q	|	|	|	V|
21+40	4.9266	0.19	Q	|	|	|	V|
21+45	4.9280	0.21	Q	|	|	|	V|
21+50	4.9295	0.21	Q	|	|	|	V|
21+55	4.9308	0.20	Q	|	|	|	V|
22+ 0	4.9320	0.18	Q	|	|	|	V|
22+ 5	4.9332	0.17	Q	|	|	|	V|
22+10	4.9345	0.19	Q	|	|	|	V|
22+15	4.9359	0.21	Q	|	|	|	V|
22+20	4.9374	0.21	Q	|	|	|	V|
22+25	4.9387	0.20	Q	|	|	|	V|
22+30	4.9399	0.18	Q	|	|	|	V|
22+35	4.9411	0.17	Q	|	|	|	V|
22+40	4.9422	0.16	Q	|	|	|	V|
22+45	4.9433	0.16	Q	|	|	|	V|
22+50	4.9444	0.16	Q	|	|	|	V|
22+55	4.9455	0.16	Q	|	|	|	V|
23+ 0	4.9466	0.16	Q	|	|	|	V|
23+ 5	4.9477	0.16	Q	|	|	|	V|
23+10	4.9487	0.16	Q	|	|	|	V|
23+15	4.9498	0.15	Q	|	|	|	V|

23+20	4.9509	0.15	Q	|	|	|	V|
23+25	4.9519	0.15	Q	|	|	|	V|
23+30	4.9530	0.15	Q	|	|	|	V|
23+35	4.9540	0.15	Q	|	|	|	V|
23+40	4.9551	0.15	Q	|	|	|	V|
23+45	4.9561	0.15	Q	|	|	|	V|
23+50	4.9572	0.15	Q	|	|	|	V|
23+55	4.9582	0.15	Q	|	|	|	V|
24+ 0	4.9593	0.15	Q	|	|	|	V|
24+ 5	4.9603	0.14	Q	|	|	|	V|
24+10	4.9610	0.11	Q	|	|	|	V|
24+15	4.9615	0.06	Q	|	|	|	V|
24+20	4.9618	0.04	Q	|	|	|	V|
24+25	4.9620	0.03	Q	|	|	|	V|
24+30	4.9621	0.02	Q	|	|	|	V|
24+35	4.9623	0.02	Q	|	|	|	V|
24+40	4.9624	0.01	Q	|	|	|	V|
24+45	4.9624	0.01	Q	|	|	|	V|
24+50	4.9625	0.01	Q	|	|	|	V|
24+55	4.9626	0.01	Q	|	|	|	V|
25+ 0	4.9626	0.00	Q	|	|	|	V|
25+ 5	4.9626	0.00	Q	|	|	|	V|
25+10	4.9626	0.00	Q	|	|	|	V|
25+15	4.9626	0.00	Q	|	|	|	V|
25+20	4.9626	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163UHE10024100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 100 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA A-1
4163UHE100.UM1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 2550.00(Ft.)
Length along longest watercourse measured to centroid = 1125.00(Ft.)
Length along longest watercourse = 0.483 Mi.
Length along longest watercourse measured to centroid = 0.213 Mi.
Difference in elevation = 8.50(Ft.)
Slope along watercourse = 17.6000 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 4.000(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	86.00	0.000

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	94.4	0.073	0.000	0.073	1.000	0.073
					Sum (F) =	0.073

Area averaged mean soil loss (F) (In/Hr) = 0.073
Minimum soil loss rate ((In/Hr)) = 0.036
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.360	5.636	3.421
2	0.167	94.720	23.906	14.508
3	0.250	142.080	28.909	17.545
4	0.333	189.440	13.984	8.487
5	0.417	236.800	7.077	4.295
6	0.500	284.160	4.874	2.958
7	0.583	331.520	3.553	2.156
8	0.667	378.880	2.732	1.658
9	0.750	426.241	2.054	1.247
10	0.833	473.601	1.560	0.947
11	0.917	520.961	1.396	0.847
12	1.000	568.321	1.087	0.659
13	1.083	615.681	0.878	0.533
14	1.167	663.041	0.698	0.424
15	1.250	710.401	0.523	0.318
16	1.333	757.761	0.474	0.287

17	1.417	805.121	0.659		0.400
			Sum = 100.000	Sum=	60.690

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.032	0.129	0.029	0.00
2	0.17	0.07	0.032	0.129	0.029	0.00
3	0.25	0.07	0.032	0.128	0.029	0.00
4	0.33	0.10	0.048	0.128	0.043	0.00
5	0.42	0.10	0.048	0.127	0.043	0.00
6	0.50	0.10	0.048	0.127	0.043	0.00
7	0.58	0.10	0.048	0.126	0.043	0.00
8	0.67	0.10	0.048	0.126	0.043	0.00
9	0.75	0.10	0.048	0.125	0.043	0.00
10	0.83	0.13	0.064	0.125	0.058	0.01
11	0.92	0.13	0.064	0.124	0.058	0.01
12	1.00	0.13	0.064	0.124	0.058	0.01
13	1.08	0.10	0.048	0.123	0.043	0.00
14	1.17	0.10	0.048	0.123	0.043	0.00
15	1.25	0.10	0.048	0.122	0.043	0.00
16	1.33	0.10	0.048	0.122	0.043	0.00
17	1.42	0.10	0.048	0.121	0.043	0.00
18	1.50	0.10	0.048	0.121	0.043	0.00
19	1.58	0.10	0.048	0.120	0.043	0.00
20	1.67	0.10	0.048	0.120	0.043	0.00
21	1.75	0.10	0.048	0.119	0.043	0.00
22	1.83	0.13	0.064	0.119	0.058	0.01
23	1.92	0.13	0.064	0.118	0.058	0.01
24	2.00	0.13	0.064	0.118	0.058	0.01
25	2.08	0.13	0.064	0.117	0.058	0.01
26	2.17	0.13	0.064	0.117	0.058	0.01
27	2.25	0.13	0.064	0.116	0.058	0.01
28	2.33	0.13	0.064	0.116	0.058	0.01
29	2.42	0.13	0.064	0.115	0.058	0.01
30	2.50	0.13	0.064	0.115	0.058	0.01
31	2.58	0.17	0.080	0.115	0.072	0.01
32	2.67	0.17	0.080	0.114	0.072	0.01
33	2.75	0.17	0.080	0.114	0.072	0.01
34	2.83	0.17	0.080	0.113	0.072	0.01
35	2.92	0.17	0.080	0.113	0.072	0.01
36	3.00	0.17	0.080	0.112	0.072	0.01
37	3.08	0.17	0.080	0.112	0.072	0.01
38	3.17	0.17	0.080	0.111	0.072	0.01
39	3.25	0.17	0.080	0.111	0.072	0.01
40	3.33	0.17	0.080	0.110	0.072	0.01
41	3.42	0.17	0.080	0.110	0.072	0.01
42	3.50	0.17	0.080	0.109	0.072	0.01
43	3.58	0.17	0.080	0.109	0.072	0.01
44	3.67	0.17	0.080	0.108	0.072	0.01
45	3.75	0.17	0.080	0.108	0.072	0.01
46	3.83	0.20	0.096	0.108	0.086	0.01
47	3.92	0.20	0.096	0.107	0.086	0.01

48	4.00	0.20	0.096	0.107	0.086	0.01
49	4.08	0.20	0.096	0.106	0.086	0.01
50	4.17	0.20	0.096	0.106	0.086	0.01
51	4.25	0.20	0.096	0.105	0.086	0.01
52	4.33	0.23	0.112	0.105	---	0.01
53	4.42	0.23	0.112	0.104	---	0.01
54	4.50	0.23	0.112	0.104	---	0.01
55	4.58	0.23	0.112	0.104	---	0.01
56	4.67	0.23	0.112	0.103	---	0.01
57	4.75	0.23	0.112	0.103	---	0.01
58	4.83	0.27	0.128	0.102	---	0.03
59	4.92	0.27	0.128	0.102	---	0.03
60	5.00	0.27	0.128	0.101	---	0.03
61	5.08	0.20	0.096	0.101	0.086	0.01
62	5.17	0.20	0.096	0.100	0.086	0.01
63	5.25	0.20	0.096	0.100	0.086	0.01
64	5.33	0.23	0.112	0.100	---	0.01
65	5.42	0.23	0.112	0.099	---	0.01
66	5.50	0.23	0.112	0.099	---	0.01
67	5.58	0.27	0.128	0.098	---	0.03
68	5.67	0.27	0.128	0.098	---	0.03
69	5.75	0.27	0.128	0.097	---	0.03
70	5.83	0.27	0.128	0.097	---	0.03
71	5.92	0.27	0.128	0.097	---	0.03
72	6.00	0.27	0.128	0.096	---	0.03
73	6.08	0.30	0.144	0.096	---	0.05
74	6.17	0.30	0.144	0.095	---	0.05
75	6.25	0.30	0.144	0.095	---	0.05
76	6.33	0.30	0.144	0.094	---	0.05
77	6.42	0.30	0.144	0.094	---	0.05
78	6.50	0.30	0.144	0.094	---	0.05
79	6.58	0.33	0.160	0.093	---	0.07
80	6.67	0.33	0.160	0.093	---	0.07
81	6.75	0.33	0.160	0.092	---	0.07
82	6.83	0.33	0.160	0.092	---	0.07
83	6.92	0.33	0.160	0.091	---	0.07
84	7.00	0.33	0.160	0.091	---	0.07
85	7.08	0.33	0.160	0.091	---	0.07
86	7.17	0.33	0.160	0.090	---	0.07
87	7.25	0.33	0.160	0.090	---	0.07
88	7.33	0.37	0.176	0.089	---	0.09
89	7.42	0.37	0.176	0.089	---	0.09
90	7.50	0.37	0.176	0.089	---	0.09
91	7.58	0.40	0.192	0.088	---	0.10
92	7.67	0.40	0.192	0.088	---	0.10
93	7.75	0.40	0.192	0.087	---	0.10
94	7.83	0.43	0.208	0.087	---	0.12
95	7.92	0.43	0.208	0.087	---	0.12
96	8.00	0.43	0.208	0.086	---	0.12
97	8.08	0.50	0.240	0.086	---	0.15
98	8.17	0.50	0.240	0.085	---	0.15
99	8.25	0.50	0.240	0.085	---	0.16
100	8.33	0.50	0.240	0.085	---	0.16
101	8.42	0.50	0.240	0.084	---	0.16

102	8.50	0.50	0.240	0.084	---	0.16
103	8.58	0.53	0.256	0.083	---	0.17
104	8.67	0.53	0.256	0.083	---	0.17
105	8.75	0.53	0.256	0.083	---	0.17
106	8.83	0.57	0.272	0.082	---	0.19
107	8.92	0.57	0.272	0.082	---	0.19
108	9.00	0.57	0.272	0.081	---	0.19
109	9.08	0.63	0.304	0.081	---	0.22
110	9.17	0.63	0.304	0.081	---	0.22
111	9.25	0.63	0.304	0.080	---	0.22
112	9.33	0.67	0.320	0.080	---	0.24
113	9.42	0.67	0.320	0.080	---	0.24
114	9.50	0.67	0.320	0.079	---	0.24
115	9.58	0.70	0.336	0.079	---	0.26
116	9.67	0.70	0.336	0.078	---	0.26
117	9.75	0.70	0.336	0.078	---	0.26
118	9.83	0.73	0.352	0.078	---	0.27
119	9.92	0.73	0.352	0.077	---	0.27
120	10.00	0.73	0.352	0.077	---	0.28
121	10.08	0.50	0.240	0.077	---	0.16
122	10.17	0.50	0.240	0.076	---	0.16
123	10.25	0.50	0.240	0.076	---	0.16
124	10.33	0.50	0.240	0.075	---	0.16
125	10.42	0.50	0.240	0.075	---	0.16
126	10.50	0.50	0.240	0.075	---	0.17
127	10.58	0.67	0.320	0.074	---	0.25
128	10.67	0.67	0.320	0.074	---	0.25
129	10.75	0.67	0.320	0.074	---	0.25
130	10.83	0.67	0.320	0.073	---	0.25
131	10.92	0.67	0.320	0.073	---	0.25
132	11.00	0.67	0.320	0.072	---	0.25
133	11.08	0.63	0.304	0.072	---	0.23
134	11.17	0.63	0.304	0.072	---	0.23
135	11.25	0.63	0.304	0.071	---	0.23
136	11.33	0.63	0.304	0.071	---	0.23
137	11.42	0.63	0.304	0.071	---	0.23
138	11.50	0.63	0.304	0.070	---	0.23
139	11.58	0.57	0.272	0.070	---	0.20
140	11.67	0.57	0.272	0.070	---	0.20
141	11.75	0.57	0.272	0.069	---	0.20
142	11.83	0.60	0.288	0.069	---	0.22
143	11.92	0.60	0.288	0.069	---	0.22
144	12.00	0.60	0.288	0.068	---	0.22
145	12.08	0.83	0.400	0.068	---	0.33
146	12.17	0.83	0.400	0.068	---	0.33
147	12.25	0.83	0.400	0.067	---	0.33
148	12.33	0.87	0.416	0.067	---	0.35
149	12.42	0.87	0.416	0.067	---	0.35
150	12.50	0.87	0.416	0.066	---	0.35
151	12.58	0.93	0.448	0.066	---	0.38
152	12.67	0.93	0.448	0.066	---	0.38
153	12.75	0.93	0.448	0.065	---	0.38
154	12.83	0.97	0.464	0.065	---	0.40
155	12.92	0.97	0.464	0.065	---	0.40

156	13.00	0.97	0.464	0.064	---	0.40
157	13.08	1.13	0.544	0.064	---	0.48
158	13.17	1.13	0.544	0.064	---	0.48
159	13.25	1.13	0.544	0.063	---	0.48
160	13.33	1.13	0.544	0.063	---	0.48
161	13.42	1.13	0.544	0.063	---	0.48
162	13.50	1.13	0.544	0.062	---	0.48
163	13.58	0.77	0.368	0.062	---	0.31
164	13.67	0.77	0.368	0.062	---	0.31
165	13.75	0.77	0.368	0.061	---	0.31
166	13.83	0.77	0.368	0.061	---	0.31
167	13.92	0.77	0.368	0.061	---	0.31
168	14.00	0.77	0.368	0.060	---	0.31
169	14.08	0.90	0.432	0.060	---	0.37
170	14.17	0.90	0.432	0.060	---	0.37
171	14.25	0.90	0.432	0.060	---	0.37
172	14.33	0.87	0.416	0.059	---	0.36
173	14.42	0.87	0.416	0.059	---	0.36
174	14.50	0.87	0.416	0.059	---	0.36
175	14.58	0.87	0.416	0.058	---	0.36
176	14.67	0.87	0.416	0.058	---	0.36
177	14.75	0.87	0.416	0.058	---	0.36
178	14.83	0.83	0.400	0.057	---	0.34
179	14.92	0.83	0.400	0.057	---	0.34
180	15.00	0.83	0.400	0.057	---	0.34
181	15.08	0.80	0.384	0.057	---	0.33
182	15.17	0.80	0.384	0.056	---	0.33
183	15.25	0.80	0.384	0.056	---	0.33
184	15.33	0.77	0.368	0.056	---	0.31
185	15.42	0.77	0.368	0.055	---	0.31
186	15.50	0.77	0.368	0.055	---	0.31
187	15.58	0.63	0.304	0.055	---	0.25
188	15.67	0.63	0.304	0.055	---	0.25
189	15.75	0.63	0.304	0.054	---	0.25
190	15.83	0.63	0.304	0.054	---	0.25
191	15.92	0.63	0.304	0.054	---	0.25
192	16.00	0.63	0.304	0.053	---	0.25
193	16.08	0.13	0.064	0.053	---	0.01
194	16.17	0.13	0.064	0.053	---	0.01
195	16.25	0.13	0.064	0.053	---	0.01
196	16.33	0.13	0.064	0.052	---	0.01
197	16.42	0.13	0.064	0.052	---	0.01
198	16.50	0.13	0.064	0.052	---	0.01
199	16.58	0.10	0.048	0.052	0.043	0.00
200	16.67	0.10	0.048	0.051	0.043	0.00
201	16.75	0.10	0.048	0.051	0.043	0.00
202	16.83	0.10	0.048	0.051	0.043	0.00
203	16.92	0.10	0.048	0.051	0.043	0.00
204	17.00	0.10	0.048	0.050	0.043	0.00
205	17.08	0.17	0.080	0.050	---	0.03
206	17.17	0.17	0.080	0.050	---	0.03
207	17.25	0.17	0.080	0.050	---	0.03
208	17.33	0.17	0.080	0.049	---	0.03
209	17.42	0.17	0.080	0.049	---	0.03

210	17.50	0.17	0.080	0.049	---	0.03
211	17.58	0.17	0.080	0.049	---	0.03
212	17.67	0.17	0.080	0.048	---	0.03
213	17.75	0.17	0.080	0.048	---	0.03
214	17.83	0.13	0.064	0.048	---	0.02
215	17.92	0.13	0.064	0.048	---	0.02
216	18.00	0.13	0.064	0.047	---	0.02
217	18.08	0.13	0.064	0.047	---	0.02
218	18.17	0.13	0.064	0.047	---	0.02
219	18.25	0.13	0.064	0.047	---	0.02
220	18.33	0.13	0.064	0.046	---	0.02
221	18.42	0.13	0.064	0.046	---	0.02
222	18.50	0.13	0.064	0.046	---	0.02
223	18.58	0.10	0.048	0.046	---	0.00
224	18.67	0.10	0.048	0.046	---	0.00
225	18.75	0.10	0.048	0.045	---	0.00
226	18.83	0.07	0.032	0.045	0.029	0.00
227	18.92	0.07	0.032	0.045	0.029	0.00
228	19.00	0.07	0.032	0.045	0.029	0.00
229	19.08	0.10	0.048	0.044	---	0.00
230	19.17	0.10	0.048	0.044	---	0.00
231	19.25	0.10	0.048	0.044	---	0.00
232	19.33	0.13	0.064	0.044	---	0.02
233	19.42	0.13	0.064	0.044	---	0.02
234	19.50	0.13	0.064	0.043	---	0.02
235	19.58	0.10	0.048	0.043	---	0.00
236	19.67	0.10	0.048	0.043	---	0.00
237	19.75	0.10	0.048	0.043	---	0.01
238	19.83	0.07	0.032	0.043	0.029	0.00
239	19.92	0.07	0.032	0.042	0.029	0.00
240	20.00	0.07	0.032	0.042	0.029	0.00
241	20.08	0.10	0.048	0.042	---	0.01
242	20.17	0.10	0.048	0.042	---	0.01
243	20.25	0.10	0.048	0.042	---	0.01
244	20.33	0.10	0.048	0.042	---	0.01
245	20.42	0.10	0.048	0.041	---	0.01
246	20.50	0.10	0.048	0.041	---	0.01
247	20.58	0.10	0.048	0.041	---	0.01
248	20.67	0.10	0.048	0.041	---	0.01
249	20.75	0.10	0.048	0.041	---	0.01
250	20.83	0.07	0.032	0.041	0.029	0.00
251	20.92	0.07	0.032	0.040	0.029	0.00
252	21.00	0.07	0.032	0.040	0.029	0.00
253	21.08	0.10	0.048	0.040	---	0.01
254	21.17	0.10	0.048	0.040	---	0.01
255	21.25	0.10	0.048	0.040	---	0.01
256	21.33	0.07	0.032	0.040	0.029	0.00
257	21.42	0.07	0.032	0.039	0.029	0.00
258	21.50	0.07	0.032	0.039	0.029	0.00
259	21.58	0.10	0.048	0.039	---	0.01
260	21.67	0.10	0.048	0.039	---	0.01
261	21.75	0.10	0.048	0.039	---	0.01
262	21.83	0.07	0.032	0.039	0.029	0.00
263	21.92	0.07	0.032	0.039	0.029	0.00

264	22.00	0.07	0.032	0.038	0.029	0.00
265	22.08	0.10	0.048	0.038	---	0.01
266	22.17	0.10	0.048	0.038	---	0.01
267	22.25	0.10	0.048	0.038	---	0.01
268	22.33	0.07	0.032	0.038	0.029	0.00
269	22.42	0.07	0.032	0.038	0.029	0.00
270	22.50	0.07	0.032	0.038	0.029	0.00
271	22.58	0.07	0.032	0.038	0.029	0.00
272	22.67	0.07	0.032	0.038	0.029	0.00
273	22.75	0.07	0.032	0.037	0.029	0.00
274	22.83	0.07	0.032	0.037	0.029	0.00
275	22.92	0.07	0.032	0.037	0.029	0.00
276	23.00	0.07	0.032	0.037	0.029	0.00
277	23.08	0.07	0.032	0.037	0.029	0.00
278	23.17	0.07	0.032	0.037	0.029	0.00
279	23.25	0.07	0.032	0.037	0.029	0.00
280	23.33	0.07	0.032	0.037	0.029	0.00
281	23.42	0.07	0.032	0.037	0.029	0.00
282	23.50	0.07	0.032	0.037	0.029	0.00
283	23.58	0.07	0.032	0.037	0.029	0.00
284	23.67	0.07	0.032	0.037	0.029	0.00
285	23.75	0.07	0.032	0.036	0.029	0.00
286	23.83	0.07	0.032	0.036	0.029	0.00
287	23.92	0.07	0.032	0.036	0.029	0.00
288	24.00	0.07	0.032	0.036	0.029	0.00
	Sum =	100.0			Sum =	30.4

Flood volume = Effective rainfall 2.53(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 12.7(Ac.Ft)
Total soil loss = 1.47(In)
Total soil loss = 7.355(Ac.Ft)
Total rainfall = 4.00(In)
Flood volume = 553912.5 Cubic Feet
Total soil loss = 320379.1 Cubic Feet

Peak flow rate of this hydrograph = 28.277(CFS)

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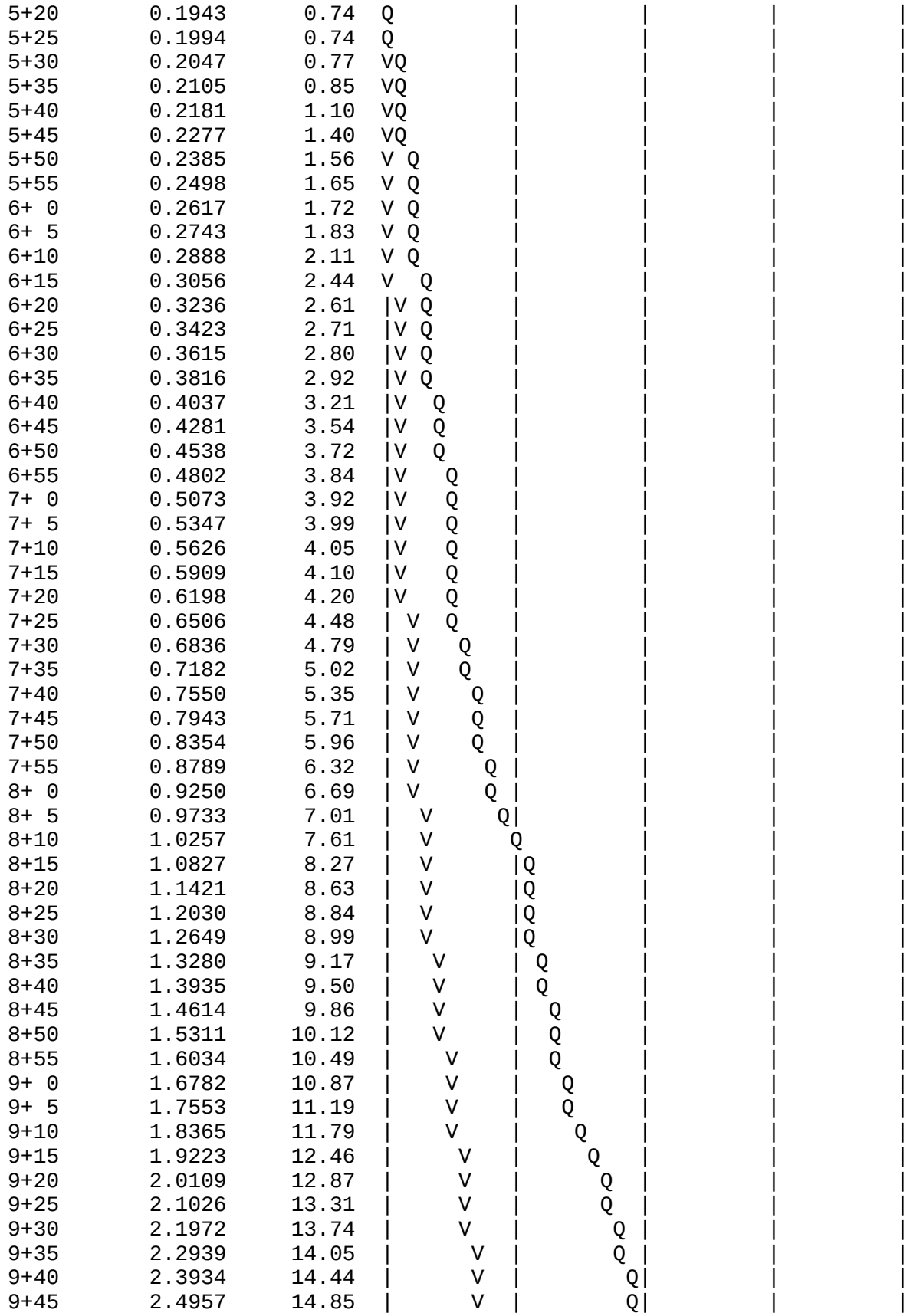
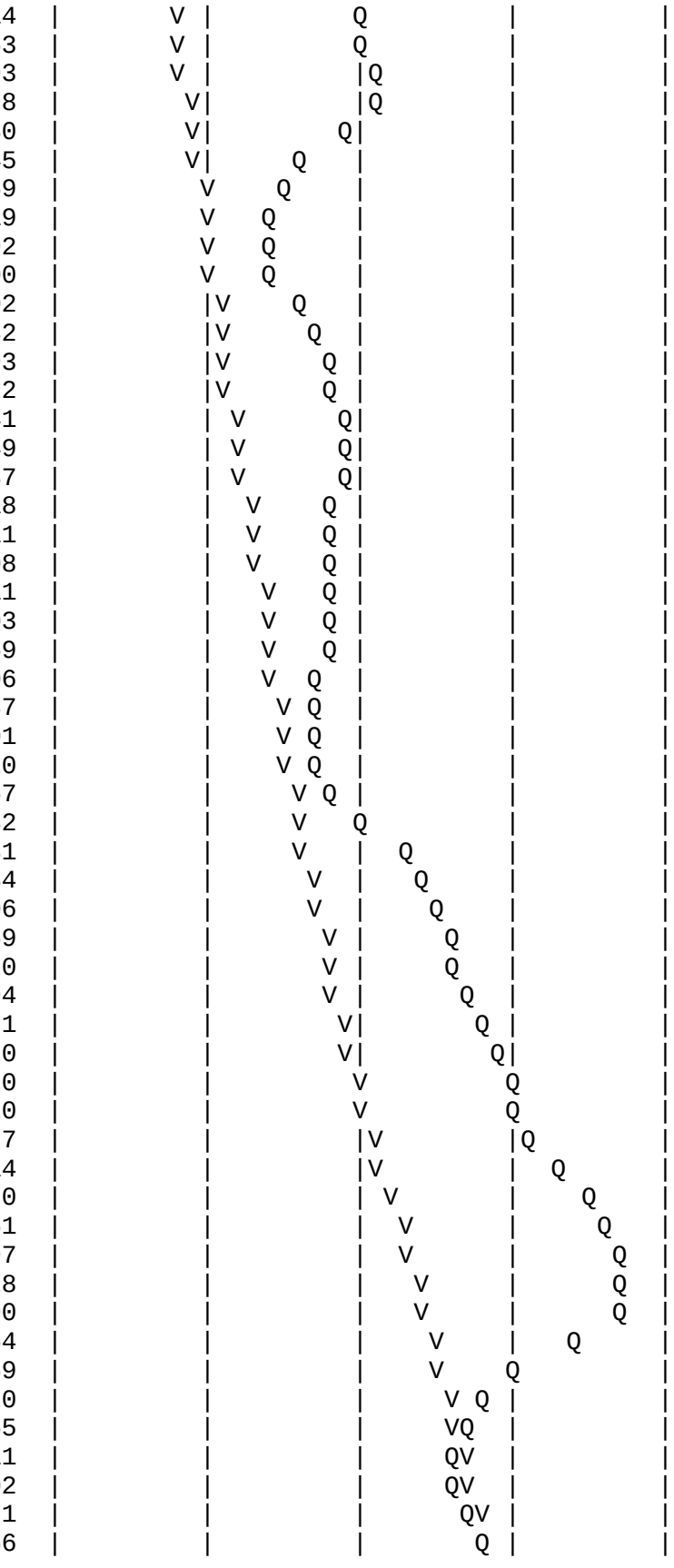
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

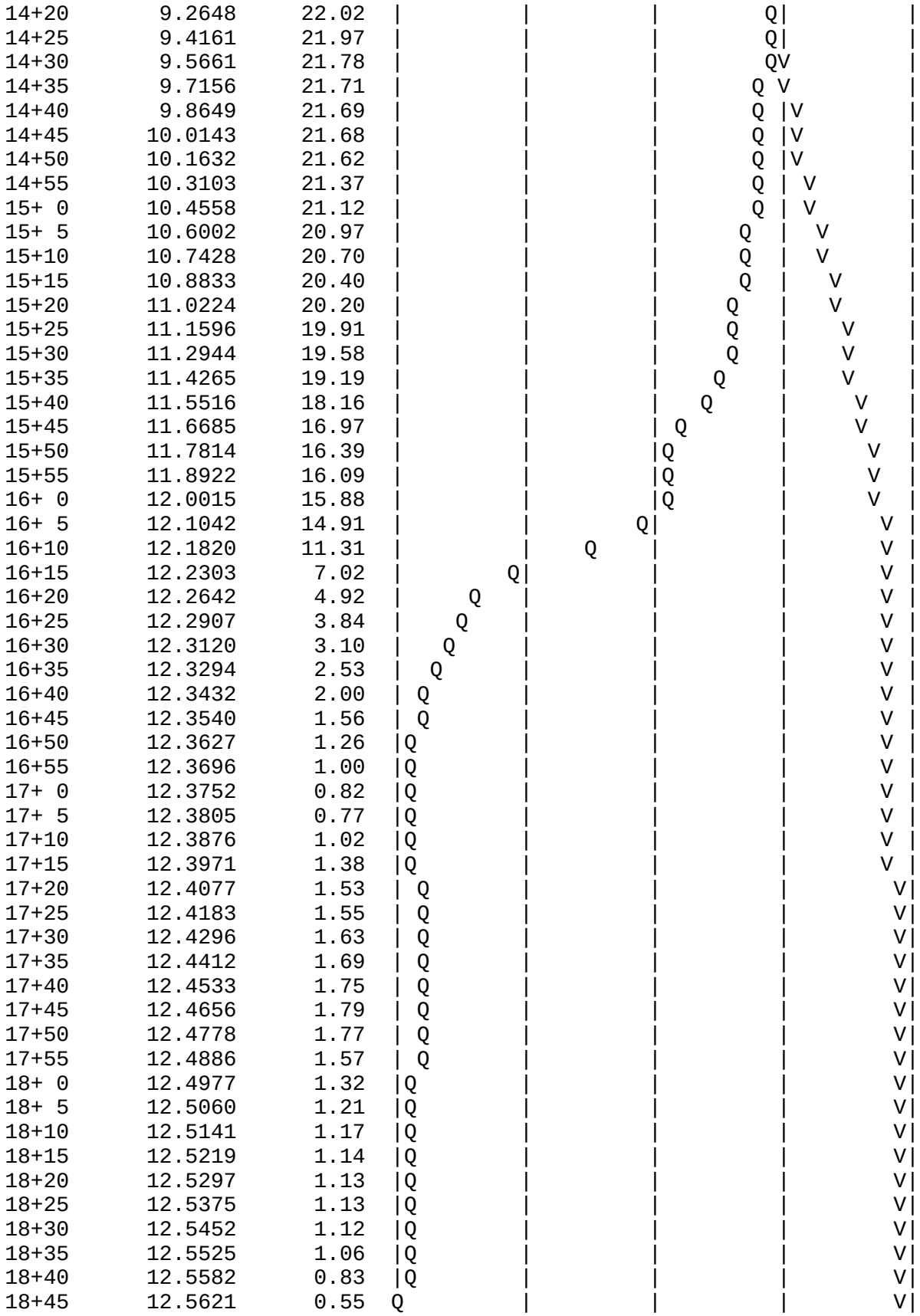
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5	30.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0005	0.06	Q	|	|	|	|
0+15	0.0013	0.11	Q	|	|	|	|
0+20	0.0023	0.15	Q	|	|	|	|
0+25	0.0035	0.18	Q	|	|	|	|
0+30	0.0050	0.22	Q	|	|	|	|
0+35	0.0067	0.24	Q	|	|	|	|
0+40	0.0084	0.25	Q	|	|	|	|
0+45	0.0103	0.26	Q	|	|	|	|

0+50	0.0121	0.27	Q				
0+55	0.0142	0.30	Q				
1+ 0	0.0165	0.33	Q				
1+ 5	0.0189	0.35	Q				
1+10	0.0212	0.33	Q				
1+15	0.0234	0.31	Q				
1+20	0.0254	0.30	Q				
1+25	0.0275	0.30	Q				
1+30	0.0296	0.30	Q				
1+35	0.0316	0.30	Q				
1+40	0.0336	0.30	Q				
1+45	0.0357	0.30	Q				
1+50	0.0377	0.30	Q				
1+55	0.0400	0.32	Q				
2+ 0	0.0424	0.35	Q				
2+ 5	0.0449	0.36	Q				
2+10	0.0474	0.37	Q				
2+15	0.0500	0.37	Q				
2+20	0.0526	0.38	Q				
2+25	0.0552	0.38	Q				
2+30	0.0579	0.38	Q				
2+35	0.0605	0.39	Q				
2+40	0.0634	0.41	Q				
2+45	0.0664	0.44	Q				
2+50	0.0696	0.46	Q				
2+55	0.0728	0.46	Q				
3+ 0	0.0760	0.47	Q				
3+ 5	0.0793	0.47	Q				
3+10	0.0825	0.48	Q				
3+15	0.0858	0.48	Q				
3+20	0.0891	0.48	Q				
3+25	0.0925	0.48	Q				
3+30	0.0958	0.48	Q				
3+35	0.0991	0.48	Q				
3+40	0.1024	0.48	Q				
3+45	0.1058	0.48	Q				
3+50	0.1092	0.49	Q				
3+55	0.1127	0.51	Q				
4+ 0	0.1164	0.54	Q				
4+ 5	0.1203	0.56	Q				
4+10	0.1242	0.56	Q				
4+15	0.1281	0.57	Q				
4+20	0.1319	0.56	Q				
4+25	0.1356	0.53	Q				
4+30	0.1390	0.50	Q				
4+35	0.1424	0.49	Q				
4+40	0.1459	0.50	Q				
4+45	0.1495	0.52	Q				
4+50	0.1536	0.59	Q				
4+55	0.1594	0.85	VQ				
5+ 0	0.1673	1.15	VQ				
5+ 5	0.1759	1.25	VQ				
5+10	0.1833	1.08	VQ				
5+15	0.1891	0.84	VQ				



9+50	2.6000	15.14	
9+55	2.7070	15.53	
10+ 0	2.8167	15.93	
10+ 5	2.9254	15.78	
10+10	3.0239	14.30	
10+15	3.1096	12.45	
10+20	3.1894	11.59	
10+25	3.2665	11.19	
10+30	3.3416	10.92	
10+35	3.4174	11.00	
10+40	3.5002	12.02	
10+45	3.5920	13.32	
10+50	3.6879	13.93	
10+55	3.7858	14.22	
11+ 0	3.8851	14.41	
11+ 5	3.9849	14.49	
11+10	4.0839	14.37	
11+15	4.1815	14.18	
11+20	4.2787	14.11	
11+25	4.3757	14.08	
11+30	4.4728	14.11	
11+35	4.5695	14.03	
11+40	4.6631	13.59	
11+45	4.7530	13.06	
11+50	4.8417	12.87	
11+55	4.9313	13.01	
12+ 0	5.0222	13.20	
12+ 5	5.1163	13.67	
12+10	5.2218	15.32	
12+15	5.3410	17.31	
12+20	5.4673	18.34	
12+25	5.5986	19.06	
12+30	5.7342	19.69	
12+35	5.8734	20.20	
12+40	6.0176	20.94	
12+45	6.1671	21.71	
12+50	6.3200	22.20	
12+55	6.4763	22.70	
13+ 0	6.6360	23.20	
13+ 5	6.7998	23.77	
13+10	6.9729	25.14	
13+15	7.1568	26.70	
13+20	7.3463	27.51	
13+25	7.5389	27.97	
13+30	7.7337	28.28	
13+35	7.9259	27.90	
13+40	8.1017	25.54	
13+45	8.2573	22.59	
13+50	8.4033	21.20	
13+55	8.5449	20.55	
14+ 0	8.6834	20.11	
14+ 5	8.8212	20.02	
14+10	8.9639	20.71	
14+15	9.1131	21.66	



18+50	12.5650	0.42	Q	|	|	|	V|
18+55	12.5675	0.37	Q	|	|	|	V|
19+ 0	12.5698	0.33	Q	|	|	|	V|
19+ 5	12.5718	0.30	Q	|	|	|	V|
19+10	12.5737	0.28	Q	|	|	|	V|
19+15	12.5756	0.27	Q	|	|	|	V|
19+20	12.5778	0.32	Q	|	|	|	V|
19+25	12.5816	0.55	Q	|	|	|	V|
19+30	12.5874	0.84	|Q	|	|	|	V|
19+35	12.5937	0.92	|Q	|	|	|	V|
19+40	12.5990	0.76	|Q	|	|	|	V|
19+45	12.6027	0.54	Q	|	|	|	V|
19+50	12.6057	0.44	Q	|	|	|	V|
19+55	12.6082	0.37	Q	|	|	|	V|
20+ 0	12.6104	0.31	Q	|	|	|	V|
20+ 5	12.6123	0.29	Q	|	|	|	V|
20+10	12.6145	0.31	Q	|	|	|	V|
20+15	12.6169	0.35	Q	|	|	|	V|
20+20	12.6194	0.37	Q	|	|	|	V|
20+25	12.6220	0.38	Q	|	|	|	V|
20+30	12.6246	0.39	Q	|	|	|	V|
20+35	12.6274	0.40	Q	|	|	|	V|
20+40	12.6302	0.41	Q	|	|	|	V|
20+45	12.6331	0.42	Q	|	|	|	V|
20+50	12.6359	0.41	Q	|	|	|	V|
20+55	12.6383	0.35	Q	|	|	|	V|
21+ 0	12.6402	0.28	Q	|	|	|	V|
21+ 5	12.6421	0.27	Q	|	|	|	V|
21+10	12.6443	0.32	Q	|	|	|	V|
21+15	12.6471	0.40	Q	|	|	|	V|
21+20	12.6500	0.42	Q	|	|	|	V|
21+25	12.6525	0.37	Q	|	|	|	V|
21+30	12.6545	0.29	Q	|	|	|	V|
21+35	12.6564	0.27	Q	|	|	|	V|
21+40	12.6587	0.34	Q	|	|	|	V|
21+45	12.6617	0.43	Q	|	|	|	V|
21+50	12.6648	0.46	Q	|	|	|	V|
21+55	12.6675	0.39	Q	|	|	|	V|
22+ 0	12.6696	0.30	Q	|	|	|	V|
22+ 5	12.6715	0.28	Q	|	|	|	V|
22+10	12.6740	0.36	Q	|	|	|	V|
22+15	12.6772	0.46	Q	|	|	|	V|
22+20	12.6806	0.49	Q	|	|	|	V|
22+25	12.6835	0.42	Q	|	|	|	V|
22+30	12.6856	0.32	Q	|	|	|	V|
22+35	12.6875	0.27	Q	|	|	|	V|
22+40	12.6892	0.25	Q	|	|	|	V|
22+45	12.6908	0.24	Q	|	|	|	V|
22+50	12.6924	0.23	Q	|	|	|	V|
22+55	12.6939	0.22	Q	|	|	|	V|
23+ 0	12.6954	0.21	Q	|	|	|	V|
23+ 5	12.6968	0.21	Q	|	|	|	V|
23+10	12.6982	0.20	Q	|	|	|	V|
23+15	12.6996	0.20	Q	|	|	|	V|

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   23+20      12.7010      0.20  Q          |          |          |         V|
   23+25      12.7024      0.20  Q          |          |          |         V|
   23+30      12.7038      0.20  Q          |          |          |         V|
   23+35      12.7051      0.20  Q          |          |          |         V|
   23+40      12.7065      0.19  Q          |          |          |         V|
   23+45      12.7078      0.19  Q          |          |          |         V|
   23+50      12.7092      0.19  Q          |          |          |         V|
   23+55      12.7105      0.19  Q          |          |          |         V|
   24+ 0      12.7118      0.19  Q          |          |          |         V|
   24+ 5      12.7131      0.18  Q          |          |          |         V|
   24+10      12.7140      0.14  Q          |          |          |         V|
   24+15      12.7146      0.08  Q          |          |          |         V|
   24+20      12.7150      0.05  Q          |          |          |         V|
   24+25      12.7152      0.04  Q          |          |          |         V|
   24+30      12.7154      0.03  Q          |          |          |         V|
   24+35      12.7156      0.02  Q          |          |          |         V|
   24+40      12.7157      0.02  Q          |          |          |         V|
   24+45      12.7158      0.01  Q          |          |          |         V|
   24+50      12.7159      0.01  Q          |          |          |         V|
   24+55      12.7160      0.01  Q          |          |          |         V|
   25+ 0      12.7160      0.01  Q          |          |          |         V|
   25+ 5      12.7160      0.00  Q          |          |          |         V|
   25+10      12.7161      0.00  Q          |          |          |         V|
   25+15      12.7161      0.00  Q          |          |          |         V|
   25+20      12.7161      0.00  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163UHE1241.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 1 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA B-1
4163UHE1.UM1

Drainage Area = 66.49(Ac.) = 0.104 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 66.49(Ac.) = 0.104 Sq. Mi.
Length along longest watercourse = 2220.00(Ft.)
Length along longest watercourse measured to centroid = 1350.00(Ft.)
Length along longest watercourse = 0.420 Mi.
Length along longest watercourse measured to centroid = 0.256 Mi.
Difference in elevation = 10.20(Ft.)
Slope along watercourse = 24.2595 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.168 Hr.
Lag time = 10.10 Min.
25% of lag time = 2.52 Min.
40% of lag time = 4.04 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	1.60	106.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	4.00	265.96

STORM EVENT (YEAR) = 1.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.175(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.175(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
66.490	86.00	0.000

Total Area Entered = 66.49(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	49.508	6.033	4.043
2	0.167	99.016	25.729	17.241
3	0.250	148.524	28.891	19.360
4	0.333	198.032	13.134	8.801
5	0.417	247.539	6.843	4.586
6	0.500	297.047	4.752	3.184
7	0.583	346.555	3.424	2.295
8	0.667	396.063	2.629	1.761
9	0.750	445.571	1.929	1.292
10	0.833	495.079	1.545	1.035
11	0.917	544.587	1.325	0.888
12	1.000	594.095	1.013	0.679
13	1.083	643.603	0.816	0.546
14	1.167	693.111	0.619	0.415
15	1.250	742.618	0.497	0.333
16	1.333	792.126	0.495	0.332

17	1.417	841.634	0.326		0.219
			Sum = 100.000	Sum=	67.009

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.009	0.608	0.008	0.00
2	0.17	0.07	0.009	0.606	0.008	0.00
3	0.25	0.07	0.009	0.604	0.008	0.00
4	0.33	0.10	0.014	0.601	0.013	0.00
5	0.42	0.10	0.014	0.599	0.013	0.00
6	0.50	0.10	0.014	0.597	0.013	0.00
7	0.58	0.10	0.014	0.594	0.013	0.00
8	0.67	0.10	0.014	0.592	0.013	0.00
9	0.75	0.10	0.014	0.590	0.013	0.00
10	0.83	0.13	0.019	0.587	0.017	0.00
11	0.92	0.13	0.019	0.585	0.017	0.00
12	1.00	0.13	0.019	0.583	0.017	0.00
13	1.08	0.10	0.014	0.580	0.013	0.00
14	1.17	0.10	0.014	0.578	0.013	0.00
15	1.25	0.10	0.014	0.576	0.013	0.00
16	1.33	0.10	0.014	0.573	0.013	0.00
17	1.42	0.10	0.014	0.571	0.013	0.00
18	1.50	0.10	0.014	0.569	0.013	0.00
19	1.58	0.10	0.014	0.567	0.013	0.00
20	1.67	0.10	0.014	0.564	0.013	0.00
21	1.75	0.10	0.014	0.562	0.013	0.00
22	1.83	0.13	0.019	0.560	0.017	0.00
23	1.92	0.13	0.019	0.558	0.017	0.00
24	2.00	0.13	0.019	0.555	0.017	0.00
25	2.08	0.13	0.019	0.553	0.017	0.00
26	2.17	0.13	0.019	0.551	0.017	0.00
27	2.25	0.13	0.019	0.549	0.017	0.00
28	2.33	0.13	0.019	0.546	0.017	0.00
29	2.42	0.13	0.019	0.544	0.017	0.00
30	2.50	0.13	0.019	0.542	0.017	0.00
31	2.58	0.17	0.023	0.540	0.021	0.00
32	2.67	0.17	0.023	0.537	0.021	0.00
33	2.75	0.17	0.023	0.535	0.021	0.00
34	2.83	0.17	0.023	0.533	0.021	0.00
35	2.92	0.17	0.023	0.531	0.021	0.00
36	3.00	0.17	0.023	0.529	0.021	0.00
37	3.08	0.17	0.023	0.526	0.021	0.00
38	3.17	0.17	0.023	0.524	0.021	0.00
39	3.25	0.17	0.023	0.522	0.021	0.00
40	3.33	0.17	0.023	0.520	0.021	0.00
41	3.42	0.17	0.023	0.518	0.021	0.00
42	3.50	0.17	0.023	0.516	0.021	0.00
43	3.58	0.17	0.023	0.513	0.021	0.00
44	3.67	0.17	0.023	0.511	0.021	0.00
45	3.75	0.17	0.023	0.509	0.021	0.00
46	3.83	0.20	0.028	0.507	0.025	0.00
47	3.92	0.20	0.028	0.505	0.025	0.00

48	4.00	0.20	0.028	0.503	0.025	0.00
49	4.08	0.20	0.028	0.501	0.025	0.00
50	4.17	0.20	0.028	0.498	0.025	0.00
51	4.25	0.20	0.028	0.496	0.025	0.00
52	4.33	0.23	0.033	0.494	0.030	0.00
53	4.42	0.23	0.033	0.492	0.030	0.00
54	4.50	0.23	0.033	0.490	0.030	0.00
55	4.58	0.23	0.033	0.488	0.030	0.00
56	4.67	0.23	0.033	0.486	0.030	0.00
57	4.75	0.23	0.033	0.484	0.030	0.00
58	4.83	0.27	0.038	0.482	0.034	0.00
59	4.92	0.27	0.038	0.480	0.034	0.00
60	5.00	0.27	0.038	0.477	0.034	0.00
61	5.08	0.20	0.028	0.475	0.025	0.00
62	5.17	0.20	0.028	0.473	0.025	0.00
63	5.25	0.20	0.028	0.471	0.025	0.00
64	5.33	0.23	0.033	0.469	0.030	0.00
65	5.42	0.23	0.033	0.467	0.030	0.00
66	5.50	0.23	0.033	0.465	0.030	0.00
67	5.58	0.27	0.038	0.463	0.034	0.00
68	5.67	0.27	0.038	0.461	0.034	0.00
69	5.75	0.27	0.038	0.459	0.034	0.00
70	5.83	0.27	0.038	0.457	0.034	0.00
71	5.92	0.27	0.038	0.455	0.034	0.00
72	6.00	0.27	0.038	0.453	0.034	0.00
73	6.08	0.30	0.042	0.451	0.038	0.00
74	6.17	0.30	0.042	0.449	0.038	0.00
75	6.25	0.30	0.042	0.447	0.038	0.00
76	6.33	0.30	0.042	0.445	0.038	0.00
77	6.42	0.30	0.042	0.443	0.038	0.00
78	6.50	0.30	0.042	0.441	0.038	0.00
79	6.58	0.33	0.047	0.439	0.042	0.00
80	6.67	0.33	0.047	0.437	0.042	0.00
81	6.75	0.33	0.047	0.435	0.042	0.00
82	6.83	0.33	0.047	0.433	0.042	0.00
83	6.92	0.33	0.047	0.431	0.042	0.00
84	7.00	0.33	0.047	0.429	0.042	0.00
85	7.08	0.33	0.047	0.427	0.042	0.00
86	7.17	0.33	0.047	0.425	0.042	0.00
87	7.25	0.33	0.047	0.423	0.042	0.00
88	7.33	0.37	0.052	0.421	0.047	0.01
89	7.42	0.37	0.052	0.419	0.047	0.01
90	7.50	0.37	0.052	0.417	0.047	0.01
91	7.58	0.40	0.056	0.416	0.051	0.01
92	7.67	0.40	0.056	0.414	0.051	0.01
93	7.75	0.40	0.056	0.412	0.051	0.01
94	7.83	0.43	0.061	0.410	0.055	0.01
95	7.92	0.43	0.061	0.408	0.055	0.01
96	8.00	0.43	0.061	0.406	0.055	0.01
97	8.08	0.50	0.070	0.404	0.063	0.01
98	8.17	0.50	0.070	0.402	0.063	0.01
99	8.25	0.50	0.070	0.400	0.063	0.01
100	8.33	0.50	0.070	0.399	0.063	0.01
101	8.42	0.50	0.070	0.397	0.063	0.01

102	8.50	0.50	0.070	0.395	0.063	0.01
103	8.58	0.53	0.075	0.393	0.068	0.01
104	8.67	0.53	0.075	0.391	0.068	0.01
105	8.75	0.53	0.075	0.389	0.068	0.01
106	8.83	0.57	0.080	0.387	0.072	0.01
107	8.92	0.57	0.080	0.386	0.072	0.01
108	9.00	0.57	0.080	0.384	0.072	0.01
109	9.08	0.63	0.089	0.382	0.080	0.01
110	9.17	0.63	0.089	0.380	0.080	0.01
111	9.25	0.63	0.089	0.378	0.080	0.01
112	9.33	0.67	0.094	0.377	0.085	0.01
113	9.42	0.67	0.094	0.375	0.085	0.01
114	9.50	0.67	0.094	0.373	0.085	0.01
115	9.58	0.70	0.099	0.371	0.089	0.01
116	9.67	0.70	0.099	0.369	0.089	0.01
117	9.75	0.70	0.099	0.368	0.089	0.01
118	9.83	0.73	0.103	0.366	0.093	0.01
119	9.92	0.73	0.103	0.364	0.093	0.01
120	10.00	0.73	0.103	0.362	0.093	0.01
121	10.08	0.50	0.070	0.361	0.063	0.01
122	10.17	0.50	0.070	0.359	0.063	0.01
123	10.25	0.50	0.070	0.357	0.063	0.01
124	10.33	0.50	0.070	0.355	0.063	0.01
125	10.42	0.50	0.070	0.354	0.063	0.01
126	10.50	0.50	0.070	0.352	0.063	0.01
127	10.58	0.67	0.094	0.350	0.085	0.01
128	10.67	0.67	0.094	0.348	0.085	0.01
129	10.75	0.67	0.094	0.347	0.085	0.01
130	10.83	0.67	0.094	0.345	0.085	0.01
131	10.92	0.67	0.094	0.343	0.085	0.01
132	11.00	0.67	0.094	0.342	0.085	0.01
133	11.08	0.63	0.089	0.340	0.080	0.01
134	11.17	0.63	0.089	0.338	0.080	0.01
135	11.25	0.63	0.089	0.337	0.080	0.01
136	11.33	0.63	0.089	0.335	0.080	0.01
137	11.42	0.63	0.089	0.333	0.080	0.01
138	11.50	0.63	0.089	0.332	0.080	0.01
139	11.58	0.57	0.080	0.330	0.072	0.01
140	11.67	0.57	0.080	0.328	0.072	0.01
141	11.75	0.57	0.080	0.327	0.072	0.01
142	11.83	0.60	0.085	0.325	0.076	0.01
143	11.92	0.60	0.085	0.324	0.076	0.01
144	12.00	0.60	0.085	0.322	0.076	0.01
145	12.08	0.83	0.117	0.320	0.106	0.01
146	12.17	0.83	0.117	0.319	0.106	0.01
147	12.25	0.83	0.117	0.317	0.106	0.01
148	12.33	0.87	0.122	0.316	0.110	0.01
149	12.42	0.87	0.122	0.314	0.110	0.01
150	12.50	0.87	0.122	0.312	0.110	0.01
151	12.58	0.93	0.132	0.311	0.118	0.01
152	12.67	0.93	0.132	0.309	0.118	0.01
153	12.75	0.93	0.132	0.308	0.118	0.01
154	12.83	0.97	0.136	0.306	0.123	0.01
155	12.92	0.97	0.136	0.305	0.123	0.01

156	13.00	0.97	0.136	0.303	0.123	0.01
157	13.08	1.13	0.160	0.301	0.144	0.02
158	13.17	1.13	0.160	0.300	0.144	0.02
159	13.25	1.13	0.160	0.298	0.144	0.02
160	13.33	1.13	0.160	0.297	0.144	0.02
161	13.42	1.13	0.160	0.295	0.144	0.02
162	13.50	1.13	0.160	0.294	0.144	0.02
163	13.58	0.77	0.108	0.292	0.097	0.01
164	13.67	0.77	0.108	0.291	0.097	0.01
165	13.75	0.77	0.108	0.289	0.097	0.01
166	13.83	0.77	0.108	0.288	0.097	0.01
167	13.92	0.77	0.108	0.286	0.097	0.01
168	14.00	0.77	0.108	0.285	0.097	0.01
169	14.08	0.90	0.127	0.284	0.114	0.01
170	14.17	0.90	0.127	0.282	0.114	0.01
171	14.25	0.90	0.127	0.281	0.114	0.01
172	14.33	0.87	0.122	0.279	0.110	0.01
173	14.42	0.87	0.122	0.278	0.110	0.01
174	14.50	0.87	0.122	0.276	0.110	0.01
175	14.58	0.87	0.122	0.275	0.110	0.01
176	14.67	0.87	0.122	0.274	0.110	0.01
177	14.75	0.87	0.122	0.272	0.110	0.01
178	14.83	0.83	0.117	0.271	0.106	0.01
179	14.92	0.83	0.117	0.269	0.106	0.01
180	15.00	0.83	0.117	0.268	0.106	0.01
181	15.08	0.80	0.113	0.267	0.101	0.01
182	15.17	0.80	0.113	0.265	0.101	0.01
183	15.25	0.80	0.113	0.264	0.101	0.01
184	15.33	0.77	0.108	0.263	0.097	0.01
185	15.42	0.77	0.108	0.261	0.097	0.01
186	15.50	0.77	0.108	0.260	0.097	0.01
187	15.58	0.63	0.089	0.259	0.080	0.01
188	15.67	0.63	0.089	0.257	0.080	0.01
189	15.75	0.63	0.089	0.256	0.080	0.01
190	15.83	0.63	0.089	0.255	0.080	0.01
191	15.92	0.63	0.089	0.253	0.080	0.01
192	16.00	0.63	0.089	0.252	0.080	0.01
193	16.08	0.13	0.019	0.251	0.017	0.00
194	16.17	0.13	0.019	0.249	0.017	0.00
195	16.25	0.13	0.019	0.248	0.017	0.00
196	16.33	0.13	0.019	0.247	0.017	0.00
197	16.42	0.13	0.019	0.246	0.017	0.00
198	16.50	0.13	0.019	0.244	0.017	0.00
199	16.58	0.10	0.014	0.243	0.013	0.00
200	16.67	0.10	0.014	0.242	0.013	0.00
201	16.75	0.10	0.014	0.241	0.013	0.00
202	16.83	0.10	0.014	0.239	0.013	0.00
203	16.92	0.10	0.014	0.238	0.013	0.00
204	17.00	0.10	0.014	0.237	0.013	0.00
205	17.08	0.17	0.023	0.236	0.021	0.00
206	17.17	0.17	0.023	0.235	0.021	0.00
207	17.25	0.17	0.023	0.233	0.021	0.00
208	17.33	0.17	0.023	0.232	0.021	0.00
209	17.42	0.17	0.023	0.231	0.021	0.00

210	17.50	0.17	0.023	0.230	0.021	0.00
211	17.58	0.17	0.023	0.229	0.021	0.00
212	17.67	0.17	0.023	0.228	0.021	0.00
213	17.75	0.17	0.023	0.227	0.021	0.00
214	17.83	0.13	0.019	0.225	0.017	0.00
215	17.92	0.13	0.019	0.224	0.017	0.00
216	18.00	0.13	0.019	0.223	0.017	0.00
217	18.08	0.13	0.019	0.222	0.017	0.00
218	18.17	0.13	0.019	0.221	0.017	0.00
219	18.25	0.13	0.019	0.220	0.017	0.00
220	18.33	0.13	0.019	0.219	0.017	0.00
221	18.42	0.13	0.019	0.218	0.017	0.00
222	18.50	0.13	0.019	0.217	0.017	0.00
223	18.58	0.10	0.014	0.216	0.013	0.00
224	18.67	0.10	0.014	0.215	0.013	0.00
225	18.75	0.10	0.014	0.214	0.013	0.00
226	18.83	0.07	0.009	0.213	0.008	0.00
227	18.92	0.07	0.009	0.212	0.008	0.00
228	19.00	0.07	0.009	0.211	0.008	0.00
229	19.08	0.10	0.014	0.210	0.013	0.00
230	19.17	0.10	0.014	0.209	0.013	0.00
231	19.25	0.10	0.014	0.208	0.013	0.00
232	19.33	0.13	0.019	0.207	0.017	0.00
233	19.42	0.13	0.019	0.206	0.017	0.00
234	19.50	0.13	0.019	0.205	0.017	0.00
235	19.58	0.10	0.014	0.204	0.013	0.00
236	19.67	0.10	0.014	0.203	0.013	0.00
237	19.75	0.10	0.014	0.202	0.013	0.00
238	19.83	0.07	0.009	0.201	0.008	0.00
239	19.92	0.07	0.009	0.200	0.008	0.00
240	20.00	0.07	0.009	0.199	0.008	0.00
241	20.08	0.10	0.014	0.198	0.013	0.00
242	20.17	0.10	0.014	0.197	0.013	0.00
243	20.25	0.10	0.014	0.197	0.013	0.00
244	20.33	0.10	0.014	0.196	0.013	0.00
245	20.42	0.10	0.014	0.195	0.013	0.00
246	20.50	0.10	0.014	0.194	0.013	0.00
247	20.58	0.10	0.014	0.193	0.013	0.00
248	20.67	0.10	0.014	0.192	0.013	0.00
249	20.75	0.10	0.014	0.192	0.013	0.00
250	20.83	0.07	0.009	0.191	0.008	0.00
251	20.92	0.07	0.009	0.190	0.008	0.00
252	21.00	0.07	0.009	0.189	0.008	0.00
253	21.08	0.10	0.014	0.189	0.013	0.00
254	21.17	0.10	0.014	0.188	0.013	0.00
255	21.25	0.10	0.014	0.187	0.013	0.00
256	21.33	0.07	0.009	0.186	0.008	0.00
257	21.42	0.07	0.009	0.186	0.008	0.00
258	21.50	0.07	0.009	0.185	0.008	0.00
259	21.58	0.10	0.014	0.184	0.013	0.00
260	21.67	0.10	0.014	0.184	0.013	0.00
261	21.75	0.10	0.014	0.183	0.013	0.00
262	21.83	0.07	0.009	0.182	0.008	0.00
263	21.92	0.07	0.009	0.182	0.008	0.00

264	22.00	0.07	0.009	0.181	0.008	0.00
265	22.08	0.10	0.014	0.181	0.013	0.00
266	22.17	0.10	0.014	0.180	0.013	0.00
267	22.25	0.10	0.014	0.179	0.013	0.00
268	22.33	0.07	0.009	0.179	0.008	0.00
269	22.42	0.07	0.009	0.178	0.008	0.00
270	22.50	0.07	0.009	0.178	0.008	0.00
271	22.58	0.07	0.009	0.177	0.008	0.00
272	22.67	0.07	0.009	0.177	0.008	0.00
273	22.75	0.07	0.009	0.176	0.008	0.00
274	22.83	0.07	0.009	0.176	0.008	0.00
275	22.92	0.07	0.009	0.175	0.008	0.00
276	23.00	0.07	0.009	0.175	0.008	0.00
277	23.08	0.07	0.009	0.175	0.008	0.00
278	23.17	0.07	0.009	0.174	0.008	0.00
279	23.25	0.07	0.009	0.174	0.008	0.00
280	23.33	0.07	0.009	0.173	0.008	0.00
281	23.42	0.07	0.009	0.173	0.008	0.00
282	23.50	0.07	0.009	0.173	0.008	0.00
283	23.58	0.07	0.009	0.173	0.008	0.00
284	23.67	0.07	0.009	0.172	0.008	0.00
285	23.75	0.07	0.009	0.172	0.008	0.00
286	23.83	0.07	0.009	0.172	0.008	0.00
287	23.92	0.07	0.009	0.172	0.008	0.00
288	24.00	0.07	0.009	0.172	0.008	0.00
	Sum =	100.0			Sum =	1.4

Flood volume = Effective rainfall 0.12(In)
times area 66.5(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)
Total soil loss = 1.06(In)
Total soil loss = 5.857(Ac.Ft)
Total rainfall = 1.17(In)
Flood volume = 28350.1 Cubic Feet
Total soil loss = 255151.3 Cubic Feet

Peak flow rate of this hydrograph = 1.044(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0002	0.02	Q	|	|	|	|
0+15	0.0004	0.04	Q	|	|	|	|
0+20	0.0008	0.05	Q	|	|	|	|
0+25	0.0012	0.06	Q	|	|	|	|
0+30	0.0017	0.07	Q	|	|	|	|
0+35	0.0022	0.08	Q	|	|	|	|
0+40	0.0028	0.08	Q	|	|	|	|
0+45	0.0034	0.09	Q	|	|	|	|

0+50	0.0040	0.09	Q	|	|	|	|
0+55	0.0047	0.10	Q	|	|	|	|
1+ 0	0.0054	0.11	Q	|	|	|	|
1+ 5	0.0062	0.11	Q	|	|	|	|
1+10	0.0070	0.11	Q	|	|	|	|
1+15	0.0077	0.10	Q	|	|	|	|
1+20	0.0083	0.10	Q	|	|	|	|
1+25	0.0090	0.10	Q	|	|	|	|
1+30	0.0097	0.10	Q	|	|	|	|
1+35	0.0103	0.10	Q	|	|	|	|
1+40	0.0110	0.10	Q	|	|	|	|
1+45	0.0117	0.10	Q	|	|	|	|
1+50	0.0123	0.10	Q	|	|	|	|
1+55	0.0131	0.11	Q	|	|	|	|
2+ 0	0.0138	0.11	Q	|	|	|	|
2+ 5	0.0147	0.12	Q	|	|	|	|
2+10	0.0155	0.12	Q	|	|	|	|
2+15	0.0163	0.12	QV	|	|	|	|
2+20	0.0172	0.12	QV	|	|	|	|
2+25	0.0180	0.12	QV	|	|	|	|
2+30	0.0189	0.12	QV	|	|	|	|
2+35	0.0197	0.13	QV	|	|	|	|
2+40	0.0207	0.13	QV	|	|	|	|
2+45	0.0217	0.14	QV	|	|	|	|
2+50	0.0227	0.15	QV	|	|	|	|
2+55	0.0237	0.15	QV	|	|	|	|
3+ 0	0.0248	0.15	QV	|	|	|	|
3+ 5	0.0258	0.15	QV	|	|	|	|
3+10	0.0269	0.15	QV	|	|	|	|
3+15	0.0280	0.16	QV	|	|	|	|
3+20	0.0290	0.16	QV	|	|	|	|
3+25	0.0301	0.16	QV	|	|	|	|
3+30	0.0312	0.16	QV	|	|	|	|
3+35	0.0323	0.16	QV	|	|	|	|
3+40	0.0334	0.16	Q V	|	|	|	|
3+45	0.0344	0.16	Q V	|	|	|	|
3+50	0.0355	0.16	Q V	|	|	|	|
3+55	0.0367	0.17	Q V	|	|	|	|
4+ 0	0.0379	0.18	Q V	|	|	|	|
4+ 5	0.0392	0.18	Q V	|	|	|	|
4+10	0.0404	0.18	Q V	|	|	|	|
4+15	0.0417	0.18	Q V	|	|	|	|
4+20	0.0430	0.19	Q V	|	|	|	|
4+25	0.0443	0.20	Q V	|	|	|	|
4+30	0.0458	0.21	Q V	|	|	|	|
4+35	0.0472	0.21	Q V	|	|	|	|
4+40	0.0487	0.21	Q V	|	|	|	|
4+45	0.0502	0.22	Q V	|	|	|	|
4+50	0.0517	0.22	Q V	|	|	|	|
4+55	0.0532	0.23	Q V	|	|	|	|
5+ 0	0.0549	0.24	Q V	|	|	|	|
5+ 5	0.0565	0.24	Q V	|	|	|	|
5+10	0.0580	0.22	Q V	|	|	|	|
5+15	0.0595	0.21	Q V	|	|	|	|

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5+20       0.0609      0.20  Q  V      |          |          |          |
5+25       0.0623      0.21  Q  V      |          |          |          |
5+30       0.0638      0.21  Q  V      |          |          |          |
5+35       0.0653      0.22  Q   V     |          |          |          |
5+40       0.0669      0.23  Q   V     |          |          |          |
5+45       0.0685      0.24  Q   V     |          |          |          |
5+50       0.0702      0.24  Q   V     |          |          |          |
5+55       0.0719      0.25  Q   V     |          |          |          |
6+ 0       0.0736      0.25  Q   V     |          |          |          |
6+ 5       0.0753      0.25  Q   V     |          |          |          |
6+10       0.0771      0.26  |Q  V     |          |          |          |
6+15       0.0789      0.27  |Q  V     |          |          |          |
6+20       0.0808      0.27  |Q  V     |          |          |          |
6+25       0.0827      0.28  |Q   V    |          |          |          |
6+30       0.0846      0.28  |Q   V    |          |          |          |
6+35       0.0866      0.28  |Q   V    |          |          |          |
6+40       0.0886      0.29  |Q   V    |          |          |          |
6+45       0.0906      0.30  |Q   V    |          |          |          |
6+50       0.0927      0.31  |Q   V    |          |          |          |
6+55       0.0949      0.31  |Q   V    |          |          |          |
7+ 0       0.0970      0.31  |Q   V    |          |          |          |
7+ 5       0.0991      0.31  |Q    V   |          |          |          |
7+10       0.1013      0.31  |Q    V   |          |          |          |
7+15       0.1034      0.31  |Q    V   |          |          |          |
7+20       0.1056      0.32  |Q    V   |          |          |          |
7+25       0.1078      0.32  |Q    V   |          |          |          |
7+30       0.1101      0.33  |Q    V   |          |          |          |
7+35       0.1125      0.34  |Q    V   |          |          |          |
7+40       0.1149      0.35  |Q     V  |          |          |          |
7+45       0.1174      0.36  |Q     V  |          |          |          |
7+50       0.1199      0.37  |Q     V  |          |          |          |
7+55       0.1225      0.38  |Q     V  |          |          |          |
8+ 0       0.1252      0.39  |Q     V  |          |          |          |
8+ 5       0.1279      0.40  |Q     V  |          |          |          |
8+10       0.1308      0.42  |Q      V |          |          |          |
8+15       0.1339      0.44  |Q      V |          |          |          |
8+20       0.1370      0.45  |Q      V |          |          |          |
8+25       0.1401      0.46  |Q      V |          |          |          |
8+30       0.1433      0.46  |Q      V |          |          |          |
8+35       0.1465      0.47  |Q       V|          |          |          |
8+40       0.1498      0.48  |Q       V|          |          |          |
8+45       0.1531      0.49  |Q       V|          |          |          |
8+50       0.1565      0.49  |Q       V|          |          |          |
8+55       0.1600      0.51  | Q      V|          |          |          |
9+ 0       0.1635      0.52  | Q       V          |          |          |
9+ 5       0.1672      0.53  | Q       V          |          |          |
9+10       0.1709      0.55  | Q       V          |          |          |
9+15       0.1748      0.57  | Q       V          |          |          |
9+20       0.1788      0.58  | Q       V          |          |          |
9+25       0.1829      0.59  | Q       |V         |          |          |
9+30       0.1871      0.61  | Q       |V         |          |          |
9+35       0.1913      0.61  | Q       |V         |          |          |
9+40       0.1956      0.63  | Q       | V        |          |          |
9+45       0.2000      0.64  | Q       | V        |          |          |
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9+50	0.2045	0.65	Q	V			
9+55	0.2090	0.66	Q	V			
10+ 0	0.2136	0.67	Q	V			
10+ 5	0.2182	0.66	Q	V			
10+10	0.2224	0.61	Q	V			
10+15	0.2262	0.55	Q	V			
10+20	0.2298	0.52	Q	V			
10+25	0.2334	0.51	Q	V			
10+30	0.2368	0.50	Q	V			
10+35	0.2403	0.50	Q	V			
10+40	0.2440	0.54	Q	V			
10+45	0.2480	0.58	Q	V			
10+50	0.2521	0.60	Q	V			
10+55	0.2563	0.61	Q	V			
11+ 0	0.2605	0.61	Q	V			
11+ 5	0.2648	0.61	Q	V			
11+10	0.2690	0.61	Q	V			
11+15	0.2731	0.60	Q	V			
11+20	0.2773	0.60	Q	V			
11+25	0.2814	0.60	Q	V			
11+30	0.2855	0.60	Q	V			
11+35	0.2896	0.60	Q	V			
11+40	0.2936	0.58	Q	V			
11+45	0.2975	0.56	Q	V			
11+50	0.3013	0.56	Q	V			
11+55	0.3051	0.56	Q	V			
12+ 0	0.3090	0.56	Q	V			
12+ 5	0.3130	0.58	Q	V			
12+10	0.3174	0.64	Q	V			
12+15	0.3222	0.70	Q	V			
12+20	0.3273	0.73	Q	V			
12+25	0.3324	0.75	Q	V			
12+30	0.3378	0.77	Q	V			
12+35	0.3432	0.79	Q	V			
12+40	0.3488	0.81	Q	V			
12+45	0.3546	0.84	Q	V			
12+50	0.3605	0.85	Q	V			
12+55	0.3664	0.87	Q	V			
13+ 0	0.3725	0.88	Q	V			
13+ 5	0.3787	0.90	Q	V			
13+10	0.3853	0.95	Q	V			
13+15	0.3921	1.00	Q	V			
13+20	0.3992	1.02	Q	V			
13+25	0.4063	1.04	Q	V			
13+30	0.4135	1.04	Q	V			
13+35	0.4206	1.03	Q	V			
13+40	0.4271	0.95	Q	V			
13+45	0.4329	0.85	Q	V			
13+50	0.4385	0.81	Q	V			
13+55	0.4439	0.79	Q	V			
14+ 0	0.4492	0.77	Q	V			
14+ 5	0.4545	0.77	Q	V			
14+10	0.4599	0.79	Q	V			
14+15	0.4656	0.82	Q	V			

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14+20       0.4713      0.83  |  Q      |          |       V |          |
14+25       0.4771      0.83  |  Q      |          |        V|          |
14+30       0.4827      0.82  |  Q      |          |        V|          |
14+35       0.4884      0.82  |  Q      |          |         V          |
14+40       0.4940      0.82  |  Q      |          |         V          |
14+45       0.4996      0.82  |  Q      |          |         V          |
14+50       0.5053      0.82  |  Q      |          |         |V         |
14+55       0.5108      0.81  |  Q      |          |         |V         |
15+ 0       0.5163      0.80  |  Q      |          |         |V         |
15+ 5       0.5218      0.79  |  Q      |          |         | V        |
15+10       0.5272      0.78  |  Q      |          |         | V        |
15+15       0.5325      0.77  |  Q      |          |         | V        |
15+20       0.5378      0.77  |  Q      |          |         |  V       |
15+25       0.5430      0.76  |  Q      |          |         |  V       |
15+30       0.5481      0.74  | Q       |          |         |  V       |
15+35       0.5531      0.73  | Q       |          |         |  V       |
15+40       0.5579      0.69  | Q       |          |         |   V      |
15+45       0.5624      0.66  | Q       |          |         |   V      |
15+50       0.5668      0.64  | Q       |          |         |   V      |
15+55       0.5711      0.63  | Q       |          |         |    V     |
16+ 0       0.5754      0.62  | Q       |          |         |    V     |
16+ 5       0.5794      0.59  | Q       |          |         |    V     |
16+10       0.5826      0.46  |Q        |          |         |    V     |
16+15       0.5848      0.32  |Q        |          |         |    V     |
16+20       0.5866      0.26  |Q        |          |         |     V    |
16+25       0.5881      0.22  Q         |          |         |     V    |
16+30       0.5895      0.20  Q         |          |         |     V    |
16+35       0.5907      0.18  Q         |          |         |     V    |
16+40       0.5918      0.16  Q         |          |         |     V    |
16+45       0.5928      0.14  Q         |          |         |     V    |
16+50       0.5937      0.13  Q         |          |         |     V    |
16+55       0.5945      0.12  Q         |          |         |     V    |
17+ 0       0.5952      0.11  Q         |          |         |     V    |
17+ 5       0.5960      0.11  Q         |          |         |     V    |
17+10       0.5969      0.12  Q         |          |         |     V    |
17+15       0.5978      0.14  Q         |          |         |     V    |
17+20       0.5988      0.14  Q         |          |         |     V    |
17+25       0.5998      0.15  Q         |          |         |     V    |
17+30       0.6008      0.15  Q         |          |         |     V    |
17+35       0.6019      0.15  Q         |          |         |     V    |
17+40       0.6029      0.15  Q         |          |         |      V   |
17+45       0.6040      0.15  Q         |          |         |      V   |
17+50       0.6050      0.15  Q         |          |         |      V   |
17+55       0.6060      0.15  Q         |          |         |      V   |
18+ 0       0.6070      0.14  Q         |          |         |      V   |
18+ 5       0.6079      0.13  Q         |          |         |      V   |
18+10       0.6088      0.13  Q         |          |         |      V   |
18+15       0.6097      0.13  Q         |          |         |      V   |
18+20       0.6106      0.13  Q         |          |         |      V   |
18+25       0.6115      0.13  Q         |          |         |      V   |
18+30       0.6124      0.13  Q         |          |         |      V   |
18+35       0.6132      0.13  Q         |          |         |      V   |
18+40       0.6140      0.12  Q         |          |         |      V   |
18+45       0.6148      0.11  Q         |          |         |      V   |
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18+50	0.6155	0.10	Q	|	|	|	V |
18+55	0.6161	0.09	Q	|	|	|	V |
19+ 0	0.6167	0.08	Q	|	|	|	V |
19+ 5	0.6172	0.08	Q	|	|	|	V |
19+10	0.6177	0.08	Q	|	|	|	V |
19+15	0.6184	0.09	Q	|	|	|	V |
19+20	0.6190	0.09	Q	|	|	|	V |
19+25	0.6197	0.10	Q	|	|	|	V |
19+30	0.6205	0.11	Q	|	|	|	V |
19+35	0.6213	0.11	Q	|	|	|	V |
19+40	0.6220	0.11	Q	|	|	|	V |
19+45	0.6227	0.10	Q	|	|	|	V |
19+50	0.6234	0.10	Q	|	|	|	V |
19+55	0.6240	0.09	Q	|	|	|	V |
20+ 0	0.6245	0.08	Q	|	|	|	V |
20+ 5	0.6250	0.07	Q	|	|	|	V |
20+10	0.6256	0.08	Q	|	|	|	V |
20+15	0.6262	0.09	Q	|	|	|	V |
20+20	0.6268	0.09	Q	|	|	|	V |
20+25	0.6274	0.09	Q	|	|	|	V |
20+30	0.6281	0.09	Q	|	|	|	V |
20+35	0.6287	0.09	Q	|	|	|	V |
20+40	0.6294	0.09	Q	|	|	|	V |
20+45	0.6300	0.09	Q	|	|	|	V |
20+50	0.6306	0.09	Q	|	|	|	V |
20+55	0.6312	0.08	Q	|	|	|	V |
21+ 0	0.6317	0.07	Q	|	|	|	V |
21+ 5	0.6322	0.07	Q	|	|	|	V |
21+10	0.6328	0.08	Q	|	|	|	V |
21+15	0.6334	0.09	Q	|	|	|	V |
21+20	0.6340	0.09	Q	|	|	|	V |
21+25	0.6345	0.08	Q	|	|	|	V |
21+30	0.6350	0.07	Q	|	|	|	V|
21+35	0.6355	0.07	Q	|	|	|	V|
21+40	0.6361	0.08	Q	|	|	|	V|
21+45	0.6366	0.09	Q	|	|	|	V|
21+50	0.6372	0.09	Q	|	|	|	V|
21+55	0.6378	0.08	Q	|	|	|	V|
22+ 0	0.6383	0.07	Q	|	|	|	V|
22+ 5	0.6388	0.07	Q	|	|	|	V|
22+10	0.6393	0.08	Q	|	|	|	V|
22+15	0.6399	0.09	Q	|	|	|	V|
22+20	0.6405	0.09	Q	|	|	|	V|
22+25	0.6410	0.08	Q	|	|	|	V|
22+30	0.6415	0.07	Q	|	|	|	V|
22+35	0.6420	0.07	Q	|	|	|	V|
22+40	0.6425	0.07	Q	|	|	|	V|
22+45	0.6429	0.07	Q	|	|	|	V|
22+50	0.6434	0.07	Q	|	|	|	V|
22+55	0.6438	0.06	Q	|	|	|	V|
23+ 0	0.6443	0.06	Q	|	|	|	V|
23+ 5	0.6447	0.06	Q	|	|	|	V|
23+10	0.6452	0.06	Q	|	|	|	V|
23+15	0.6456	0.06	Q	|	|	|	V|

23+20	0.6460	0.06	Q	|	|	|	V|
23+25	0.6465	0.06	Q	|	|	|	V|
23+30	0.6469	0.06	Q	|	|	|	V|
23+35	0.6473	0.06	Q	|	|	|	V|
23+40	0.6478	0.06	Q	|	|	|	V|
23+45	0.6482	0.06	Q	|	|	|	V|
23+50	0.6486	0.06	Q	|	|	|	V|
23+55	0.6491	0.06	Q	|	|	|	V|
24+ 0	0.6495	0.06	Q	|	|	|	V|
24+ 5	0.6499	0.06	Q	|	|	|	V|
24+10	0.6502	0.04	Q	|	|	|	V|
24+15	0.6504	0.02	Q	|	|	|	V|
24+20	0.6505	0.02	Q	|	|	|	V|
24+25	0.6506	0.01	Q	|	|	|	V|
24+30	0.6506	0.01	Q	|	|	|	V|
24+35	0.6507	0.01	Q	|	|	|	V|
24+40	0.6507	0.01	Q	|	|	|	V|
24+45	0.6508	0.00	Q	|	|	|	V|
24+50	0.6508	0.00	Q	|	|	|	V|
24+55	0.6508	0.00	Q	|	|	|	V|
25+ 0	0.6508	0.00	Q	|	|	|	V|
25+ 5	0.6508	0.00	Q	|	|	|	V|
25+10	0.6508	0.00	Q	|	|	|	V|
25+15	0.6508	0.00	Q	|	|	|	V|
25+20	0.6508	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163UHE2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 2 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA B-1
4163UHE2.UM1

Drainage Area = 66.49(Ac.) = 0.104 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 66.49(Ac.) = 0.104 Sq. Mi.
Length along longest watercourse = 2220.00(Ft.)
Length along longest watercourse measured to centroid = 1350.00(Ft.)
Length along longest watercourse = 0.420 Mi.
Length along longest watercourse measured to centroid = 0.256 Mi.
Difference in elevation = 10.20(Ft.)
Slope along watercourse = 24.2595 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.168 Hr.
Lag time = 10.10 Min.
25% of lag time = 2.52 Min.
40% of lag time = 4.04 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	1.60	106.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	4.00	265.96

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
66.490	86.00	0.000

Total Area Entered = 66.49(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	49.508	6.033	4.043
2	0.167	99.016	25.729	17.241
3	0.250	148.524	28.891	19.360
4	0.333	198.032	13.134	8.801
5	0.417	247.539	6.843	4.586
6	0.500	297.047	4.752	3.184
7	0.583	346.555	3.424	2.295
8	0.667	396.063	2.629	1.761
9	0.750	445.571	1.929	1.292
10	0.833	495.079	1.545	1.035
11	0.917	544.587	1.325	0.888
12	1.000	594.095	1.013	0.679
13	1.083	643.603	0.816	0.546
14	1.167	693.111	0.619	0.415
15	1.250	742.618	0.497	0.333
16	1.333	792.126	0.495	0.332

17	1.417	841.634	0.326		0.219
			Sum = 100.000	Sum=	67.009

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.013	0.608	0.012	0.00
2	0.17	0.07	0.013	0.606	0.012	0.00
3	0.25	0.07	0.013	0.604	0.012	0.00
4	0.33	0.10	0.019	0.601	0.017	0.00
5	0.42	0.10	0.019	0.599	0.017	0.00
6	0.50	0.10	0.019	0.597	0.017	0.00
7	0.58	0.10	0.019	0.594	0.017	0.00
8	0.67	0.10	0.019	0.592	0.017	0.00
9	0.75	0.10	0.019	0.590	0.017	0.00
10	0.83	0.13	0.026	0.587	0.023	0.00
11	0.92	0.13	0.026	0.585	0.023	0.00
12	1.00	0.13	0.026	0.583	0.023	0.00
13	1.08	0.10	0.019	0.580	0.017	0.00
14	1.17	0.10	0.019	0.578	0.017	0.00
15	1.25	0.10	0.019	0.576	0.017	0.00
16	1.33	0.10	0.019	0.573	0.017	0.00
17	1.42	0.10	0.019	0.571	0.017	0.00
18	1.50	0.10	0.019	0.569	0.017	0.00
19	1.58	0.10	0.019	0.567	0.017	0.00
20	1.67	0.10	0.019	0.564	0.017	0.00
21	1.75	0.10	0.019	0.562	0.017	0.00
22	1.83	0.13	0.026	0.560	0.023	0.00
23	1.92	0.13	0.026	0.558	0.023	0.00
24	2.00	0.13	0.026	0.555	0.023	0.00
25	2.08	0.13	0.026	0.553	0.023	0.00
26	2.17	0.13	0.026	0.551	0.023	0.00
27	2.25	0.13	0.026	0.549	0.023	0.00
28	2.33	0.13	0.026	0.546	0.023	0.00
29	2.42	0.13	0.026	0.544	0.023	0.00
30	2.50	0.13	0.026	0.542	0.023	0.00
31	2.58	0.17	0.032	0.540	0.029	0.00
32	2.67	0.17	0.032	0.537	0.029	0.00
33	2.75	0.17	0.032	0.535	0.029	0.00
34	2.83	0.17	0.032	0.533	0.029	0.00
35	2.92	0.17	0.032	0.531	0.029	0.00
36	3.00	0.17	0.032	0.529	0.029	0.00
37	3.08	0.17	0.032	0.526	0.029	0.00
38	3.17	0.17	0.032	0.524	0.029	0.00
39	3.25	0.17	0.032	0.522	0.029	0.00
40	3.33	0.17	0.032	0.520	0.029	0.00
41	3.42	0.17	0.032	0.518	0.029	0.00
42	3.50	0.17	0.032	0.516	0.029	0.00
43	3.58	0.17	0.032	0.513	0.029	0.00
44	3.67	0.17	0.032	0.511	0.029	0.00
45	3.75	0.17	0.032	0.509	0.029	0.00
46	3.83	0.20	0.038	0.507	0.035	0.00
47	3.92	0.20	0.038	0.505	0.035	0.00

48	4.00	0.20	0.038	0.503	0.035	0.00
49	4.08	0.20	0.038	0.501	0.035	0.00
50	4.17	0.20	0.038	0.498	0.035	0.00
51	4.25	0.20	0.038	0.496	0.035	0.00
52	4.33	0.23	0.045	0.494	0.040	0.00
53	4.42	0.23	0.045	0.492	0.040	0.00
54	4.50	0.23	0.045	0.490	0.040	0.00
55	4.58	0.23	0.045	0.488	0.040	0.00
56	4.67	0.23	0.045	0.486	0.040	0.00
57	4.75	0.23	0.045	0.484	0.040	0.00
58	4.83	0.27	0.051	0.482	0.046	0.01
59	4.92	0.27	0.051	0.480	0.046	0.01
60	5.00	0.27	0.051	0.477	0.046	0.01
61	5.08	0.20	0.038	0.475	0.035	0.00
62	5.17	0.20	0.038	0.473	0.035	0.00
63	5.25	0.20	0.038	0.471	0.035	0.00
64	5.33	0.23	0.045	0.469	0.040	0.00
65	5.42	0.23	0.045	0.467	0.040	0.00
66	5.50	0.23	0.045	0.465	0.040	0.00
67	5.58	0.27	0.051	0.463	0.046	0.01
68	5.67	0.27	0.051	0.461	0.046	0.01
69	5.75	0.27	0.051	0.459	0.046	0.01
70	5.83	0.27	0.051	0.457	0.046	0.01
71	5.92	0.27	0.051	0.455	0.046	0.01
72	6.00	0.27	0.051	0.453	0.046	0.01
73	6.08	0.30	0.058	0.451	0.052	0.01
74	6.17	0.30	0.058	0.449	0.052	0.01
75	6.25	0.30	0.058	0.447	0.052	0.01
76	6.33	0.30	0.058	0.445	0.052	0.01
77	6.42	0.30	0.058	0.443	0.052	0.01
78	6.50	0.30	0.058	0.441	0.052	0.01
79	6.58	0.33	0.064	0.439	0.058	0.01
80	6.67	0.33	0.064	0.437	0.058	0.01
81	6.75	0.33	0.064	0.435	0.058	0.01
82	6.83	0.33	0.064	0.433	0.058	0.01
83	6.92	0.33	0.064	0.431	0.058	0.01
84	7.00	0.33	0.064	0.429	0.058	0.01
85	7.08	0.33	0.064	0.427	0.058	0.01
86	7.17	0.33	0.064	0.425	0.058	0.01
87	7.25	0.33	0.064	0.423	0.058	0.01
88	7.33	0.37	0.070	0.421	0.063	0.01
89	7.42	0.37	0.070	0.419	0.063	0.01
90	7.50	0.37	0.070	0.417	0.063	0.01
91	7.58	0.40	0.077	0.416	0.069	0.01
92	7.67	0.40	0.077	0.414	0.069	0.01
93	7.75	0.40	0.077	0.412	0.069	0.01
94	7.83	0.43	0.083	0.410	0.075	0.01
95	7.92	0.43	0.083	0.408	0.075	0.01
96	8.00	0.43	0.083	0.406	0.075	0.01
97	8.08	0.50	0.096	0.404	0.086	0.01
98	8.17	0.50	0.096	0.402	0.086	0.01
99	8.25	0.50	0.096	0.400	0.086	0.01
100	8.33	0.50	0.096	0.399	0.086	0.01
101	8.42	0.50	0.096	0.397	0.086	0.01

102	8.50	0.50	0.096	0.395	0.086	0.01
103	8.58	0.53	0.102	0.393	0.092	0.01
104	8.67	0.53	0.102	0.391	0.092	0.01
105	8.75	0.53	0.102	0.389	0.092	0.01
106	8.83	0.57	0.109	0.387	0.098	0.01
107	8.92	0.57	0.109	0.386	0.098	0.01
108	9.00	0.57	0.109	0.384	0.098	0.01
109	9.08	0.63	0.122	0.382	0.109	0.01
110	9.17	0.63	0.122	0.380	0.109	0.01
111	9.25	0.63	0.122	0.378	0.109	0.01
112	9.33	0.67	0.128	0.377	0.115	0.01
113	9.42	0.67	0.128	0.375	0.115	0.01
114	9.50	0.67	0.128	0.373	0.115	0.01
115	9.58	0.70	0.134	0.371	0.121	0.01
116	9.67	0.70	0.134	0.369	0.121	0.01
117	9.75	0.70	0.134	0.368	0.121	0.01
118	9.83	0.73	0.141	0.366	0.127	0.01
119	9.92	0.73	0.141	0.364	0.127	0.01
120	10.00	0.73	0.141	0.362	0.127	0.01
121	10.08	0.50	0.096	0.361	0.086	0.01
122	10.17	0.50	0.096	0.359	0.086	0.01
123	10.25	0.50	0.096	0.357	0.086	0.01
124	10.33	0.50	0.096	0.355	0.086	0.01
125	10.42	0.50	0.096	0.354	0.086	0.01
126	10.50	0.50	0.096	0.352	0.086	0.01
127	10.58	0.67	0.128	0.350	0.115	0.01
128	10.67	0.67	0.128	0.348	0.115	0.01
129	10.75	0.67	0.128	0.347	0.115	0.01
130	10.83	0.67	0.128	0.345	0.115	0.01
131	10.92	0.67	0.128	0.343	0.115	0.01
132	11.00	0.67	0.128	0.342	0.115	0.01
133	11.08	0.63	0.122	0.340	0.109	0.01
134	11.17	0.63	0.122	0.338	0.109	0.01
135	11.25	0.63	0.122	0.337	0.109	0.01
136	11.33	0.63	0.122	0.335	0.109	0.01
137	11.42	0.63	0.122	0.333	0.109	0.01
138	11.50	0.63	0.122	0.332	0.109	0.01
139	11.58	0.57	0.109	0.330	0.098	0.01
140	11.67	0.57	0.109	0.328	0.098	0.01
141	11.75	0.57	0.109	0.327	0.098	0.01
142	11.83	0.60	0.115	0.325	0.104	0.01
143	11.92	0.60	0.115	0.324	0.104	0.01
144	12.00	0.60	0.115	0.322	0.104	0.01
145	12.08	0.83	0.160	0.320	0.144	0.02
146	12.17	0.83	0.160	0.319	0.144	0.02
147	12.25	0.83	0.160	0.317	0.144	0.02
148	12.33	0.87	0.166	0.316	0.150	0.02
149	12.42	0.87	0.166	0.314	0.150	0.02
150	12.50	0.87	0.166	0.312	0.150	0.02
151	12.58	0.93	0.179	0.311	0.161	0.02
152	12.67	0.93	0.179	0.309	0.161	0.02
153	12.75	0.93	0.179	0.308	0.161	0.02
154	12.83	0.97	0.186	0.306	0.167	0.02
155	12.92	0.97	0.186	0.305	0.167	0.02

156	13.00	0.97	0.186	0.303	0.167	0.02
157	13.08	1.13	0.218	0.301	0.196	0.02
158	13.17	1.13	0.218	0.300	0.196	0.02
159	13.25	1.13	0.218	0.298	0.196	0.02
160	13.33	1.13	0.218	0.297	0.196	0.02
161	13.42	1.13	0.218	0.295	0.196	0.02
162	13.50	1.13	0.218	0.294	0.196	0.02
163	13.58	0.77	0.147	0.292	0.132	0.01
164	13.67	0.77	0.147	0.291	0.132	0.01
165	13.75	0.77	0.147	0.289	0.132	0.01
166	13.83	0.77	0.147	0.288	0.132	0.01
167	13.92	0.77	0.147	0.286	0.132	0.01
168	14.00	0.77	0.147	0.285	0.132	0.01
169	14.08	0.90	0.173	0.284	0.155	0.02
170	14.17	0.90	0.173	0.282	0.155	0.02
171	14.25	0.90	0.173	0.281	0.155	0.02
172	14.33	0.87	0.166	0.279	0.150	0.02
173	14.42	0.87	0.166	0.278	0.150	0.02
174	14.50	0.87	0.166	0.276	0.150	0.02
175	14.58	0.87	0.166	0.275	0.150	0.02
176	14.67	0.87	0.166	0.274	0.150	0.02
177	14.75	0.87	0.166	0.272	0.150	0.02
178	14.83	0.83	0.160	0.271	0.144	0.02
179	14.92	0.83	0.160	0.269	0.144	0.02
180	15.00	0.83	0.160	0.268	0.144	0.02
181	15.08	0.80	0.154	0.267	0.138	0.02
182	15.17	0.80	0.154	0.265	0.138	0.02
183	15.25	0.80	0.154	0.264	0.138	0.02
184	15.33	0.77	0.147	0.263	0.132	0.01
185	15.42	0.77	0.147	0.261	0.132	0.01
186	15.50	0.77	0.147	0.260	0.132	0.01
187	15.58	0.63	0.122	0.259	0.109	0.01
188	15.67	0.63	0.122	0.257	0.109	0.01
189	15.75	0.63	0.122	0.256	0.109	0.01
190	15.83	0.63	0.122	0.255	0.109	0.01
191	15.92	0.63	0.122	0.253	0.109	0.01
192	16.00	0.63	0.122	0.252	0.109	0.01
193	16.08	0.13	0.026	0.251	0.023	0.00
194	16.17	0.13	0.026	0.249	0.023	0.00
195	16.25	0.13	0.026	0.248	0.023	0.00
196	16.33	0.13	0.026	0.247	0.023	0.00
197	16.42	0.13	0.026	0.246	0.023	0.00
198	16.50	0.13	0.026	0.244	0.023	0.00
199	16.58	0.10	0.019	0.243	0.017	0.00
200	16.67	0.10	0.019	0.242	0.017	0.00
201	16.75	0.10	0.019	0.241	0.017	0.00
202	16.83	0.10	0.019	0.239	0.017	0.00
203	16.92	0.10	0.019	0.238	0.017	0.00
204	17.00	0.10	0.019	0.237	0.017	0.00
205	17.08	0.17	0.032	0.236	0.029	0.00
206	17.17	0.17	0.032	0.235	0.029	0.00
207	17.25	0.17	0.032	0.233	0.029	0.00
208	17.33	0.17	0.032	0.232	0.029	0.00
209	17.42	0.17	0.032	0.231	0.029	0.00

210	17.50	0.17	0.032	0.230	0.029	0.00
211	17.58	0.17	0.032	0.229	0.029	0.00
212	17.67	0.17	0.032	0.228	0.029	0.00
213	17.75	0.17	0.032	0.227	0.029	0.00
214	17.83	0.13	0.026	0.225	0.023	0.00
215	17.92	0.13	0.026	0.224	0.023	0.00
216	18.00	0.13	0.026	0.223	0.023	0.00
217	18.08	0.13	0.026	0.222	0.023	0.00
218	18.17	0.13	0.026	0.221	0.023	0.00
219	18.25	0.13	0.026	0.220	0.023	0.00
220	18.33	0.13	0.026	0.219	0.023	0.00
221	18.42	0.13	0.026	0.218	0.023	0.00
222	18.50	0.13	0.026	0.217	0.023	0.00
223	18.58	0.10	0.019	0.216	0.017	0.00
224	18.67	0.10	0.019	0.215	0.017	0.00
225	18.75	0.10	0.019	0.214	0.017	0.00
226	18.83	0.07	0.013	0.213	0.012	0.00
227	18.92	0.07	0.013	0.212	0.012	0.00
228	19.00	0.07	0.013	0.211	0.012	0.00
229	19.08	0.10	0.019	0.210	0.017	0.00
230	19.17	0.10	0.019	0.209	0.017	0.00
231	19.25	0.10	0.019	0.208	0.017	0.00
232	19.33	0.13	0.026	0.207	0.023	0.00
233	19.42	0.13	0.026	0.206	0.023	0.00
234	19.50	0.13	0.026	0.205	0.023	0.00
235	19.58	0.10	0.019	0.204	0.017	0.00
236	19.67	0.10	0.019	0.203	0.017	0.00
237	19.75	0.10	0.019	0.202	0.017	0.00
238	19.83	0.07	0.013	0.201	0.012	0.00
239	19.92	0.07	0.013	0.200	0.012	0.00
240	20.00	0.07	0.013	0.199	0.012	0.00
241	20.08	0.10	0.019	0.198	0.017	0.00
242	20.17	0.10	0.019	0.197	0.017	0.00
243	20.25	0.10	0.019	0.197	0.017	0.00
244	20.33	0.10	0.019	0.196	0.017	0.00
245	20.42	0.10	0.019	0.195	0.017	0.00
246	20.50	0.10	0.019	0.194	0.017	0.00
247	20.58	0.10	0.019	0.193	0.017	0.00
248	20.67	0.10	0.019	0.192	0.017	0.00
249	20.75	0.10	0.019	0.192	0.017	0.00
250	20.83	0.07	0.013	0.191	0.012	0.00
251	20.92	0.07	0.013	0.190	0.012	0.00
252	21.00	0.07	0.013	0.189	0.012	0.00
253	21.08	0.10	0.019	0.189	0.017	0.00
254	21.17	0.10	0.019	0.188	0.017	0.00
255	21.25	0.10	0.019	0.187	0.017	0.00
256	21.33	0.07	0.013	0.186	0.012	0.00
257	21.42	0.07	0.013	0.186	0.012	0.00
258	21.50	0.07	0.013	0.185	0.012	0.00
259	21.58	0.10	0.019	0.184	0.017	0.00
260	21.67	0.10	0.019	0.184	0.017	0.00
261	21.75	0.10	0.019	0.183	0.017	0.00
262	21.83	0.07	0.013	0.182	0.012	0.00
263	21.92	0.07	0.013	0.182	0.012	0.00

264	22.00	0.07	0.013	0.181	0.012	0.00
265	22.08	0.10	0.019	0.181	0.017	0.00
266	22.17	0.10	0.019	0.180	0.017	0.00
267	22.25	0.10	0.019	0.179	0.017	0.00
268	22.33	0.07	0.013	0.179	0.012	0.00
269	22.42	0.07	0.013	0.178	0.012	0.00
270	22.50	0.07	0.013	0.178	0.012	0.00
271	22.58	0.07	0.013	0.177	0.012	0.00
272	22.67	0.07	0.013	0.177	0.012	0.00
273	22.75	0.07	0.013	0.176	0.012	0.00
274	22.83	0.07	0.013	0.176	0.012	0.00
275	22.92	0.07	0.013	0.175	0.012	0.00
276	23.00	0.07	0.013	0.175	0.012	0.00
277	23.08	0.07	0.013	0.175	0.012	0.00
278	23.17	0.07	0.013	0.174	0.012	0.00
279	23.25	0.07	0.013	0.174	0.012	0.00
280	23.33	0.07	0.013	0.173	0.012	0.00
281	23.42	0.07	0.013	0.173	0.012	0.00
282	23.50	0.07	0.013	0.173	0.012	0.00
283	23.58	0.07	0.013	0.173	0.012	0.00
284	23.67	0.07	0.013	0.172	0.012	0.00
285	23.75	0.07	0.013	0.172	0.012	0.00
286	23.83	0.07	0.013	0.172	0.012	0.00
287	23.92	0.07	0.013	0.172	0.012	0.00
288	24.00	0.07	0.013	0.172	0.012	0.00
	Sum =	100.0			Sum =	1.9

Flood volume = Effective rainfall 0.16(In)
times area 66.5(Ac.)/[(In)/(Ft.)] = 0.9(Ac.Ft)
Total soil loss = 1.44(In)
Total soil loss = 7.978(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 38612.4 Cubic Feet
Total soil loss = 347511.4 Cubic Feet

Peak flow rate of this hydrograph = 1.422(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q	|	|	|	|
0+10	0.0002	0.03	Q	|	|	|	|
0+15	0.0006	0.05	Q	|	|	|	|
0+20	0.0010	0.07	Q	|	|	|	|
0+25	0.0016	0.08	Q	|	|	|	|
0+30	0.0023	0.10	Q	|	|	|	|
0+35	0.0030	0.11	Q	|	|	|	|
0+40	0.0038	0.11	Q	|	|	|	|
0+45	0.0046	0.12	Q	|	|	|	|

0+50	0.0055	0.12	Q	|	|	|	|
0+55	0.0064	0.14	Q	|	|	|	|
1+ 0	0.0074	0.15	Q	|	|	|	|
1+ 5	0.0085	0.15	Q	|	|	|	|
1+10	0.0095	0.15	Q	|	|	|	|
1+15	0.0104	0.14	Q	|	|	|	|
1+20	0.0114	0.13	Q	|	|	|	|
1+25	0.0123	0.13	Q	|	|	|	|
1+30	0.0132	0.13	Q	|	|	|	|
1+35	0.0141	0.13	Q	|	|	|	|
1+40	0.0150	0.13	Q	|	|	|	|
1+45	0.0159	0.13	Q	|	|	|	|
1+50	0.0168	0.13	Q	|	|	|	|
1+55	0.0178	0.14	Q	|	|	|	|
2+ 0	0.0189	0.16	Q	|	|	|	|
2+ 5	0.0200	0.16	Q	|	|	|	|
2+10	0.0211	0.16	Q	|	|	|	|
2+15	0.0222	0.17	QV	|	|	|	|
2+20	0.0234	0.17	QV	|	|	|	|
2+25	0.0245	0.17	QV	|	|	|	|
2+30	0.0257	0.17	QV	|	|	|	|
2+35	0.0269	0.17	QV	|	|	|	|
2+40	0.0282	0.18	QV	|	|	|	|
2+45	0.0295	0.20	QV	|	|	|	|
2+50	0.0309	0.20	QV	|	|	|	|
2+55	0.0323	0.21	QV	|	|	|	|
3+ 0	0.0337	0.21	QV	|	|	|	|
3+ 5	0.0352	0.21	QV	|	|	|	|
3+10	0.0366	0.21	QV	|	|	|	|
3+15	0.0381	0.21	QV	|	|	|	|
3+20	0.0396	0.21	QV	|	|	|	|
3+25	0.0410	0.21	QV	|	|	|	|
3+30	0.0425	0.21	QV	|	|	|	|
3+35	0.0440	0.21	QV	|	|	|	|
3+40	0.0454	0.21	Q V	|	|	|	|
3+45	0.0469	0.21	Q V	|	|	|	|
3+50	0.0484	0.22	Q V	|	|	|	|
3+55	0.0500	0.23	Q V	|	|	|	|
4+ 0	0.0516	0.24	Q V	|	|	|	|
4+ 5	0.0533	0.25	Q V	|	|	|	|
4+10	0.0551	0.25	Q V	|	|	|	|
4+15	0.0568	0.25	|QV	|	|	|	|
4+20	0.0585	0.26	|QV	|	|	|	|
4+25	0.0604	0.27	|QV	|	|	|	|
4+30	0.0623	0.28	|QV	|	|	|	|
4+35	0.0643	0.29	|QV	|	|	|	|
4+40	0.0663	0.29	|QV	|	|	|	|
4+45	0.0683	0.29	|Q V	|	|	|	|
4+50	0.0704	0.30	|Q V	|	|	|	|
4+55	0.0725	0.31	|Q V	|	|	|	|
5+ 0	0.0747	0.32	|Q V	|	|	|	|
5+ 5	0.0769	0.32	|Q V	|	|	|	|
5+10	0.0791	0.31	|Q V	|	|	|	|
5+15	0.0810	0.28	|Q V	|	|	|	|

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5+20       0.0829      0.28  |Q V       |          |          |          |
5+25       0.0849      0.28  |Q V       |          |          |          |
5+30       0.0869      0.29  |Q V       |          |          |          |
5+35       0.0889      0.30  |Q  V      |          |          |          |
5+40       0.0911      0.31  |Q  V      |          |          |          |
5+45       0.0933      0.32  |Q  V      |          |          |          |
5+50       0.0956      0.33  |Q  V      |          |          |          |
5+55       0.0979      0.33  |Q  V      |          |          |          |
6+ 0       0.1002      0.34  |Q  V      |          |          |          |
6+ 5       0.1026      0.34  |Q  V      |          |          |          |
6+10       0.1050      0.35  |Q  V      |          |          |          |
6+15       0.1075      0.37  |Q  V      |          |          |          |
6+20       0.1101      0.37  |Q  V      |          |          |          |
6+25       0.1127      0.38  |Q   V     |          |          |          |
6+30       0.1153      0.38  |Q   V     |          |          |          |
6+35       0.1179      0.38  |Q   V     |          |          |          |
6+40       0.1206      0.40  |Q   V     |          |          |          |
6+45       0.1234      0.41  |Q   V     |          |          |          |
6+50       0.1263      0.42  |Q   V     |          |          |          |
6+55       0.1292      0.42  |Q   V     |          |          |          |
7+ 0       0.1321      0.42  |Q   V     |          |          |          |
7+ 5       0.1350      0.42  |Q    V    |          |          |          |
7+10       0.1379      0.42  |Q    V    |          |          |          |
7+15       0.1409      0.43  |Q    V    |          |          |          |
7+20       0.1438      0.43  |Q    V    |          |          |          |
7+25       0.1469      0.44  |Q    V    |          |          |          |
7+30       0.1500      0.45  |Q    V    |          |          |          |
7+35       0.1532      0.46  |Q    V    |          |          |          |
7+40       0.1565      0.48  |Q     V   |          |          |          |
7+45       0.1598      0.49  |Q     V   |          |          |          |
7+50       0.1633      0.50  | Q    V   |          |          |          |
7+55       0.1668      0.52  | Q    V   |          |          |          |
8+ 0       0.1705      0.53  | Q    V   |          |          |          |
8+ 5       0.1743      0.54  | Q    V   |          |          |          |
8+10       0.1782      0.57  | Q     V  |          |          |          |
8+15       0.1823      0.60  | Q     V  |          |          |          |
8+20       0.1865      0.61  | Q     V  |          |          |          |
8+25       0.1908      0.62  | Q     V  |          |          |          |
8+30       0.1951      0.63  | Q     V  |          |          |          |
8+35       0.1995      0.63  | Q      V |          |          |          |
8+40       0.2040      0.65  | Q      V |          |          |          |
8+45       0.2085      0.66  | Q      V |          |          |          |
8+50       0.2132      0.67  | Q      V |          |          |          |
8+55       0.2179      0.69  | Q      V |          |          |          |
9+ 0       0.2227      0.70  | Q       V          |          |          |
9+ 5       0.2277      0.72  | Q       V          |          |          |
9+10       0.2328      0.74  | Q       V          |          |          |
9+15       0.2381      0.77  |  Q      V          |          |          |
9+20       0.2435      0.79  |  Q      V          |          |          |
9+25       0.2491      0.81  |  Q      |V         |          |          |
9+30       0.2548      0.82  |  Q      |V         |          |          |
9+35       0.2605      0.84  |  Q      |V         |          |          |
9+40       0.2664      0.85  |  Q      | V        |          |          |
9+45       0.2724      0.87  |  Q      | V        |          |          |
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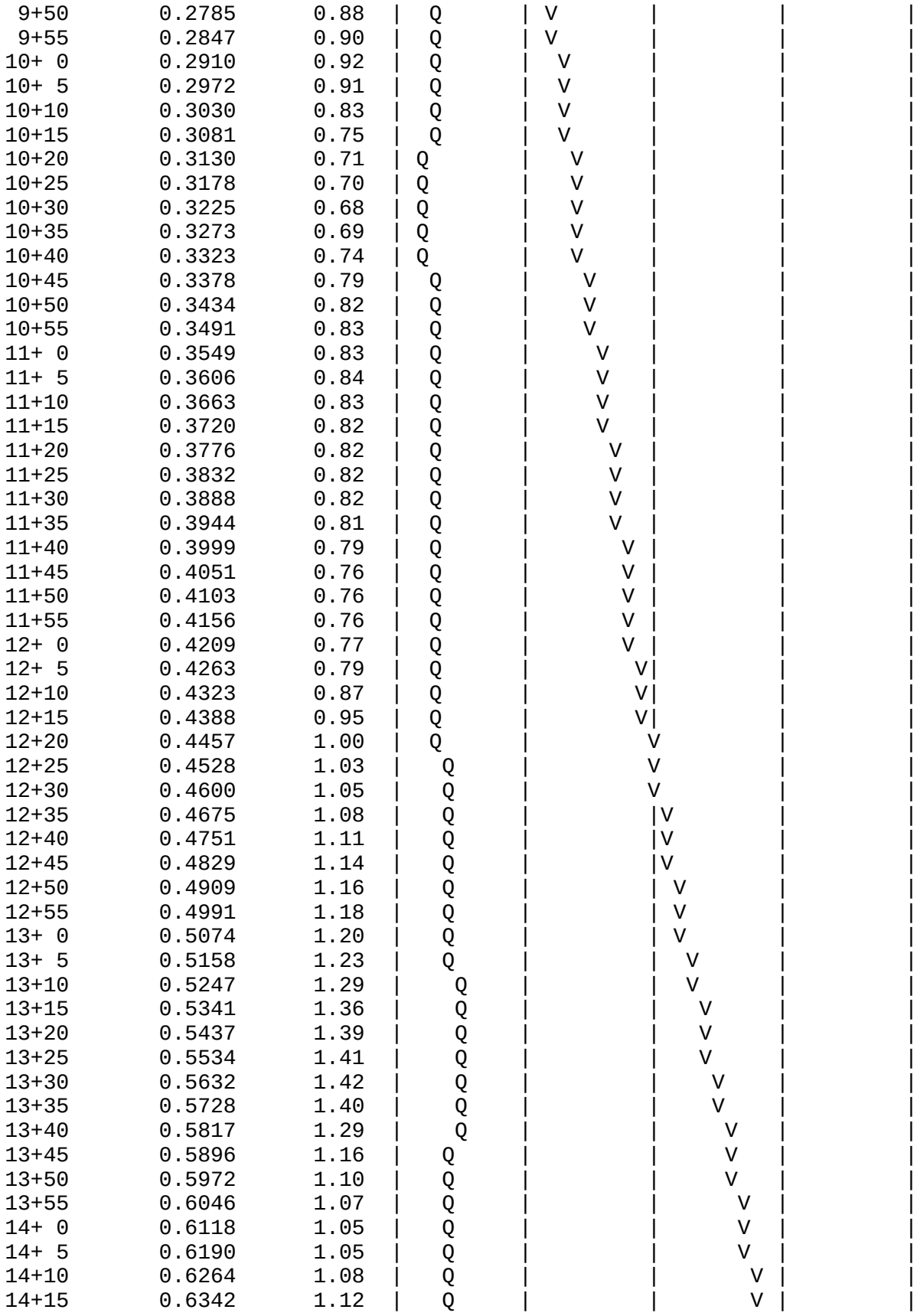

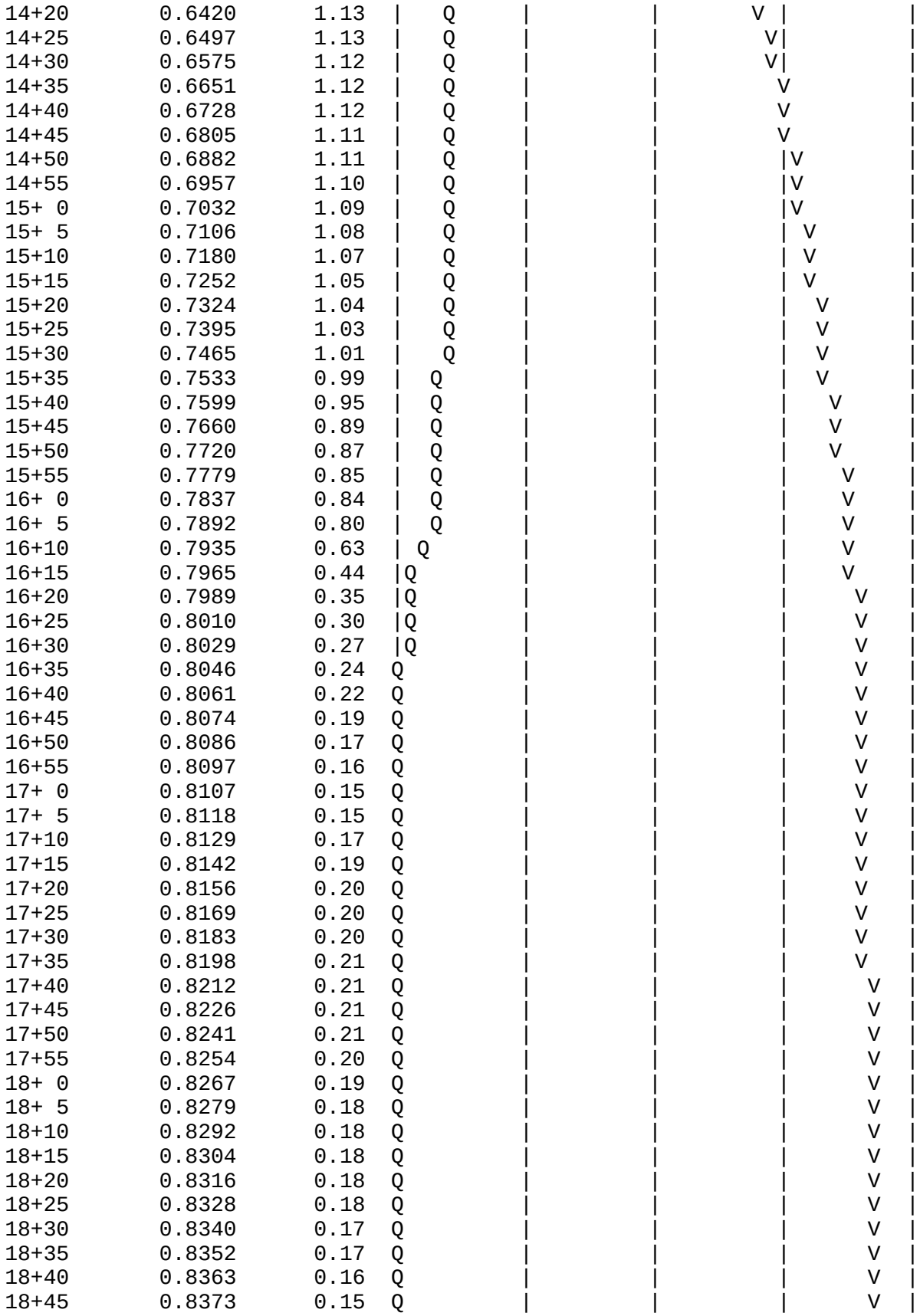
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14+30 0.6575 1.12
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14+50 0.6882 1.11
14+55 0.6957 1.10
15+ 0 0.7032 1.09
15+ 5 0.7106 1.08
15+10 0.7180 1.07
15+15 0.7252 1.05
15+20 0.7324 1.04
15+25 0.7395 1.03
15+30 0.7465 1.01
15+35 0.7533 0.99
15+40 0.7599 0.95
15+45 0.7660 0.89
15+50 0.7720 0.87
15+55 0.7779 0.85
16+ 0 0.7837 0.84
16+ 5 0.7892 0.80
16+10 0.7935 0.63
16+15 0.7965 0.44
16+20 0.7989 0.35
16+25 0.8010 0.30
16+30 0.8029 0.27
16+35 0.8046 0.24
16+40 0.8061 0.22
16+45 0.8074 0.19
16+50 0.8086 0.17
16+55 0.8097 0.16
17+ 0 0.8107 0.15
17+ 5 0.8118 0.15
17+10 0.8129 0.17
17+15 0.8142 0.19
17+20 0.8156 0.20
17+25 0.8169 0.20
17+30 0.8183 0.20
17+35 0.8198 0.21
17+40 0.8212 0.21
17+45 0.8226 0.21
17+50 0.8241 0.21
17+55 0.8254 0.20
18+ 0 0.8267 0.19
18+ 5 0.8279 0.18
18+10 0.8292 0.18
18+15 0.8304 0.18
18+20 0.8316 0.18
18+25 0.8328 0.18
18+30 0.8340 0.17
18+35 0.8352 0.17
18+40 0.8363 0.16
18+45 0.8373 0.15

18+50	0.8383	0.14	Q	|	|	|	V |
18+55	0.8391	0.12	Q	|	|	|	V |
19+ 0	0.8399	0.11	Q	|	|	|	V |
19+ 5	0.8406	0.10	Q	|	|	|	V |
19+10	0.8414	0.11	Q	|	|	|	V |
19+15	0.8422	0.12	Q	|	|	|	V |
19+20	0.8431	0.13	Q	|	|	|	V |
19+25	0.8440	0.14	Q	|	|	|	V |
19+30	0.8451	0.15	Q	|	|	|	V |
19+35	0.8461	0.16	Q	|	|	|	V |
19+40	0.8472	0.15	Q	|	|	|	V |
19+45	0.8481	0.14	Q	|	|	|	V |
19+50	0.8490	0.13	Q	|	|	|	V |
19+55	0.8498	0.12	Q	|	|	|	V |
20+ 0	0.8506	0.11	Q	|	|	|	V |
20+ 5	0.8513	0.10	Q	|	|	|	V |
20+10	0.8520	0.11	Q	|	|	|	V |
20+15	0.8528	0.12	Q	|	|	|	V |
20+20	0.8537	0.12	Q	|	|	|	V |
20+25	0.8546	0.13	Q	|	|	|	V |
20+30	0.8554	0.13	Q	|	|	|	V |
20+35	0.8563	0.13	Q	|	|	|	V |
20+40	0.8572	0.13	Q	|	|	|	V |
20+45	0.8580	0.13	Q	|	|	|	V |
20+50	0.8589	0.12	Q	|	|	|	V |
20+55	0.8597	0.11	Q	|	|	|	V |
21+ 0	0.8604	0.10	Q	|	|	|	V |
21+ 5	0.8611	0.10	Q	|	|	|	V |
21+10	0.8618	0.11	Q	|	|	|	V |
21+15	0.8626	0.12	Q	|	|	|	V |
21+20	0.8635	0.12	Q	|	|	|	V |
21+25	0.8642	0.11	Q	|	|	|	V |
21+30	0.8649	0.10	Q	|	|	|	V|
21+35	0.8656	0.10	Q	|	|	|	V|
21+40	0.8663	0.11	Q	|	|	|	V|
21+45	0.8671	0.12	Q	|	|	|	V|
21+50	0.8679	0.12	Q	|	|	|	V|
21+55	0.8687	0.11	Q	|	|	|	V|
22+ 0	0.8693	0.10	Q	|	|	|	V|
22+ 5	0.8700	0.10	Q	|	|	|	V|
22+10	0.8707	0.11	Q	|	|	|	V|
22+15	0.8715	0.12	Q	|	|	|	V|
22+20	0.8723	0.12	Q	|	|	|	V|
22+25	0.8731	0.11	Q	|	|	|	V|
22+30	0.8738	0.10	Q	|	|	|	V|
22+35	0.8744	0.09	Q	|	|	|	V|
22+40	0.8750	0.09	Q	|	|	|	V|
22+45	0.8757	0.09	Q	|	|	|	V|
22+50	0.8763	0.09	Q	|	|	|	V|
22+55	0.8769	0.09	Q	|	|	|	V|
23+ 0	0.8775	0.09	Q	|	|	|	V|
23+ 5	0.8781	0.09	Q	|	|	|	V|
23+10	0.8787	0.09	Q	|	|	|	V|
23+15	0.8793	0.09	Q	|	|	|	V|

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   23+20       0.8799      0.09  Q          |           |           |         V|
   23+25       0.8805      0.09  Q          |           |           |         V|
   23+30       0.8811      0.09  Q          |           |           |         V|
   23+35       0.8817      0.09  Q          |           |           |         V|
   23+40       0.8823      0.09  Q          |           |           |         V|
   23+45       0.8828      0.09  Q          |           |           |         V|
   23+50       0.8834      0.09  Q          |           |           |         V|
   23+55       0.8840      0.09  Q          |           |           |         V|
   24+ 0       0.8846      0.09  Q          |           |           |         V|
   24+ 5       0.8852      0.08  Q          |           |           |         V|
   24+10       0.8856      0.06  Q          |           |           |         V|
   24+15       0.8858      0.03  Q          |           |           |         V|
   24+20       0.8860      0.02  Q          |           |           |         V|
   24+25       0.8861      0.02  Q          |           |           |         V|
   24+30       0.8862      0.01  Q          |           |           |         V|
   24+35       0.8862      0.01  Q          |           |           |         V|
   24+40       0.8863      0.01  Q          |           |           |         V|
   24+45       0.8863      0.01  Q          |           |           |         V|
   24+50       0.8864      0.00  Q          |           |           |         V|
   24+55       0.8864      0.00  Q          |           |           |         V|
   25+ 0       0.8864      0.00  Q          |           |           |         V|
   25+ 5       0.8864      0.00  Q          |           |           |         V|
   25+10       0.8864      0.00  Q          |           |           |         V|
   25+15       0.8864      0.00  Q          |           |           |         V|
   25+20       0.8864      0.00  Q          |           |           |         V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163UHE5245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 5 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA B-1
4163UHE5.UM1

Drainage Area = 66.49(Ac.) = 0.104 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 66.49(Ac.) = 0.104 Sq. Mi.
Length along longest watercourse = 2220.00(Ft.)
Length along longest watercourse measured to centroid = 1350.00(Ft.)
Length along longest watercourse = 0.420 Mi.
Length along longest watercourse measured to centroid = 0.256 Mi.
Difference in elevation = 10.20(Ft.)
Slope along watercourse = 24.2595 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.168 Hr.
Lag time = 10.10 Min.
25% of lag time = 2.52 Min.
40% of lag time = 4.04 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	1.60	106.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	4.00	265.96

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.162(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.162(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
66.490	86.00	0.000

Total Area Entered = 66.49(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	49.508	6.033	4.043
2	0.167	99.016	25.729	17.241
3	0.250	148.524	28.891	19.360
4	0.333	198.032	13.134	8.801
5	0.417	247.539	6.843	4.586
6	0.500	297.047	4.752	3.184
7	0.583	346.555	3.424	2.295
8	0.667	396.063	2.629	1.761
9	0.750	445.571	1.929	1.292
10	0.833	495.079	1.545	1.035
11	0.917	544.587	1.325	0.888
12	1.000	594.095	1.013	0.679
13	1.083	643.603	0.816	0.546
14	1.167	693.111	0.619	0.415
15	1.250	742.618	0.497	0.333
16	1.333	792.126	0.495	0.332

17	1.417	841.634	0.326		0.219
			Sum = 100.000	Sum=	67.009

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.017	0.608	0.016	0.00
2	0.17	0.07	0.017	0.606	0.016	0.00
3	0.25	0.07	0.017	0.604	0.016	0.00
4	0.33	0.10	0.026	0.601	0.023	0.00
5	0.42	0.10	0.026	0.599	0.023	0.00
6	0.50	0.10	0.026	0.597	0.023	0.00
7	0.58	0.10	0.026	0.594	0.023	0.00
8	0.67	0.10	0.026	0.592	0.023	0.00
9	0.75	0.10	0.026	0.590	0.023	0.00
10	0.83	0.13	0.035	0.587	0.031	0.00
11	0.92	0.13	0.035	0.585	0.031	0.00
12	1.00	0.13	0.035	0.583	0.031	0.00
13	1.08	0.10	0.026	0.580	0.023	0.00
14	1.17	0.10	0.026	0.578	0.023	0.00
15	1.25	0.10	0.026	0.576	0.023	0.00
16	1.33	0.10	0.026	0.573	0.023	0.00
17	1.42	0.10	0.026	0.571	0.023	0.00
18	1.50	0.10	0.026	0.569	0.023	0.00
19	1.58	0.10	0.026	0.567	0.023	0.00
20	1.67	0.10	0.026	0.564	0.023	0.00
21	1.75	0.10	0.026	0.562	0.023	0.00
22	1.83	0.13	0.035	0.560	0.031	0.00
23	1.92	0.13	0.035	0.558	0.031	0.00
24	2.00	0.13	0.035	0.555	0.031	0.00
25	2.08	0.13	0.035	0.553	0.031	0.00
26	2.17	0.13	0.035	0.551	0.031	0.00
27	2.25	0.13	0.035	0.549	0.031	0.00
28	2.33	0.13	0.035	0.546	0.031	0.00
29	2.42	0.13	0.035	0.544	0.031	0.00
30	2.50	0.13	0.035	0.542	0.031	0.00
31	2.58	0.17	0.043	0.540	0.039	0.00
32	2.67	0.17	0.043	0.537	0.039	0.00
33	2.75	0.17	0.043	0.535	0.039	0.00
34	2.83	0.17	0.043	0.533	0.039	0.00
35	2.92	0.17	0.043	0.531	0.039	0.00
36	3.00	0.17	0.043	0.529	0.039	0.00
37	3.08	0.17	0.043	0.526	0.039	0.00
38	3.17	0.17	0.043	0.524	0.039	0.00
39	3.25	0.17	0.043	0.522	0.039	0.00
40	3.33	0.17	0.043	0.520	0.039	0.00
41	3.42	0.17	0.043	0.518	0.039	0.00
42	3.50	0.17	0.043	0.516	0.039	0.00
43	3.58	0.17	0.043	0.513	0.039	0.00
44	3.67	0.17	0.043	0.511	0.039	0.00
45	3.75	0.17	0.043	0.509	0.039	0.00
46	3.83	0.20	0.052	0.507	0.047	0.01
47	3.92	0.20	0.052	0.505	0.047	0.01

48	4.00	0.20	0.052	0.503	0.047	0.01
49	4.08	0.20	0.052	0.501	0.047	0.01
50	4.17	0.20	0.052	0.498	0.047	0.01
51	4.25	0.20	0.052	0.496	0.047	0.01
52	4.33	0.23	0.061	0.494	0.054	0.01
53	4.42	0.23	0.061	0.492	0.054	0.01
54	4.50	0.23	0.061	0.490	0.054	0.01
55	4.58	0.23	0.061	0.488	0.054	0.01
56	4.67	0.23	0.061	0.486	0.054	0.01
57	4.75	0.23	0.061	0.484	0.054	0.01
58	4.83	0.27	0.069	0.482	0.062	0.01
59	4.92	0.27	0.069	0.480	0.062	0.01
60	5.00	0.27	0.069	0.477	0.062	0.01
61	5.08	0.20	0.052	0.475	0.047	0.01
62	5.17	0.20	0.052	0.473	0.047	0.01
63	5.25	0.20	0.052	0.471	0.047	0.01
64	5.33	0.23	0.061	0.469	0.054	0.01
65	5.42	0.23	0.061	0.467	0.054	0.01
66	5.50	0.23	0.061	0.465	0.054	0.01
67	5.58	0.27	0.069	0.463	0.062	0.01
68	5.67	0.27	0.069	0.461	0.062	0.01
69	5.75	0.27	0.069	0.459	0.062	0.01
70	5.83	0.27	0.069	0.457	0.062	0.01
71	5.92	0.27	0.069	0.455	0.062	0.01
72	6.00	0.27	0.069	0.453	0.062	0.01
73	6.08	0.30	0.078	0.451	0.070	0.01
74	6.17	0.30	0.078	0.449	0.070	0.01
75	6.25	0.30	0.078	0.447	0.070	0.01
76	6.33	0.30	0.078	0.445	0.070	0.01
77	6.42	0.30	0.078	0.443	0.070	0.01
78	6.50	0.30	0.078	0.441	0.070	0.01
79	6.58	0.33	0.086	0.439	0.078	0.01
80	6.67	0.33	0.086	0.437	0.078	0.01
81	6.75	0.33	0.086	0.435	0.078	0.01
82	6.83	0.33	0.086	0.433	0.078	0.01
83	6.92	0.33	0.086	0.431	0.078	0.01
84	7.00	0.33	0.086	0.429	0.078	0.01
85	7.08	0.33	0.086	0.427	0.078	0.01
86	7.17	0.33	0.086	0.425	0.078	0.01
87	7.25	0.33	0.086	0.423	0.078	0.01
88	7.33	0.37	0.095	0.421	0.086	0.01
89	7.42	0.37	0.095	0.419	0.086	0.01
90	7.50	0.37	0.095	0.417	0.086	0.01
91	7.58	0.40	0.104	0.416	0.093	0.01
92	7.67	0.40	0.104	0.414	0.093	0.01
93	7.75	0.40	0.104	0.412	0.093	0.01
94	7.83	0.43	0.112	0.410	0.101	0.01
95	7.92	0.43	0.112	0.408	0.101	0.01
96	8.00	0.43	0.112	0.406	0.101	0.01
97	8.08	0.50	0.130	0.404	0.117	0.01
98	8.17	0.50	0.130	0.402	0.117	0.01
99	8.25	0.50	0.130	0.400	0.117	0.01
100	8.33	0.50	0.130	0.399	0.117	0.01
101	8.42	0.50	0.130	0.397	0.117	0.01

102	8.50	0.50	0.130	0.395	0.117	0.01
103	8.58	0.53	0.138	0.393	0.125	0.01
104	8.67	0.53	0.138	0.391	0.125	0.01
105	8.75	0.53	0.138	0.389	0.125	0.01
106	8.83	0.57	0.147	0.387	0.132	0.01
107	8.92	0.57	0.147	0.386	0.132	0.01
108	9.00	0.57	0.147	0.384	0.132	0.01
109	9.08	0.63	0.164	0.382	0.148	0.02
110	9.17	0.63	0.164	0.380	0.148	0.02
111	9.25	0.63	0.164	0.378	0.148	0.02
112	9.33	0.67	0.173	0.377	0.156	0.02
113	9.42	0.67	0.173	0.375	0.156	0.02
114	9.50	0.67	0.173	0.373	0.156	0.02
115	9.58	0.70	0.182	0.371	0.163	0.02
116	9.67	0.70	0.182	0.369	0.163	0.02
117	9.75	0.70	0.182	0.368	0.163	0.02
118	9.83	0.73	0.190	0.366	0.171	0.02
119	9.92	0.73	0.190	0.364	0.171	0.02
120	10.00	0.73	0.190	0.362	0.171	0.02
121	10.08	0.50	0.130	0.361	0.117	0.01
122	10.17	0.50	0.130	0.359	0.117	0.01
123	10.25	0.50	0.130	0.357	0.117	0.01
124	10.33	0.50	0.130	0.355	0.117	0.01
125	10.42	0.50	0.130	0.354	0.117	0.01
126	10.50	0.50	0.130	0.352	0.117	0.01
127	10.58	0.67	0.173	0.350	0.156	0.02
128	10.67	0.67	0.173	0.348	0.156	0.02
129	10.75	0.67	0.173	0.347	0.156	0.02
130	10.83	0.67	0.173	0.345	0.156	0.02
131	10.92	0.67	0.173	0.343	0.156	0.02
132	11.00	0.67	0.173	0.342	0.156	0.02
133	11.08	0.63	0.164	0.340	0.148	0.02
134	11.17	0.63	0.164	0.338	0.148	0.02
135	11.25	0.63	0.164	0.337	0.148	0.02
136	11.33	0.63	0.164	0.335	0.148	0.02
137	11.42	0.63	0.164	0.333	0.148	0.02
138	11.50	0.63	0.164	0.332	0.148	0.02
139	11.58	0.57	0.147	0.330	0.132	0.01
140	11.67	0.57	0.147	0.328	0.132	0.01
141	11.75	0.57	0.147	0.327	0.132	0.01
142	11.83	0.60	0.156	0.325	0.140	0.02
143	11.92	0.60	0.156	0.324	0.140	0.02
144	12.00	0.60	0.156	0.322	0.140	0.02
145	12.08	0.83	0.216	0.320	0.195	0.02
146	12.17	0.83	0.216	0.319	0.195	0.02
147	12.25	0.83	0.216	0.317	0.195	0.02
148	12.33	0.87	0.225	0.316	0.202	0.02
149	12.42	0.87	0.225	0.314	0.202	0.02
150	12.50	0.87	0.225	0.312	0.202	0.02
151	12.58	0.93	0.242	0.311	0.218	0.02
152	12.67	0.93	0.242	0.309	0.218	0.02
153	12.75	0.93	0.242	0.308	0.218	0.02
154	12.83	0.97	0.251	0.306	0.226	0.03
155	12.92	0.97	0.251	0.305	0.226	0.03

156	13.00	0.97	0.251	0.303	0.226	0.03
157	13.08	1.13	0.294	0.301	0.265	0.03
158	13.17	1.13	0.294	0.300	0.265	0.03
159	13.25	1.13	0.294	0.298	0.265	0.03
160	13.33	1.13	0.294	0.297	0.265	0.03
161	13.42	1.13	0.294	0.295	0.265	0.03
162	13.50	1.13	0.294	0.294	---	0.00
163	13.58	0.77	0.199	0.292	0.179	0.02
164	13.67	0.77	0.199	0.291	0.179	0.02
165	13.75	0.77	0.199	0.289	0.179	0.02
166	13.83	0.77	0.199	0.288	0.179	0.02
167	13.92	0.77	0.199	0.286	0.179	0.02
168	14.00	0.77	0.199	0.285	0.179	0.02
169	14.08	0.90	0.233	0.284	0.210	0.02
170	14.17	0.90	0.233	0.282	0.210	0.02
171	14.25	0.90	0.233	0.281	0.210	0.02
172	14.33	0.87	0.225	0.279	0.202	0.02
173	14.42	0.87	0.225	0.278	0.202	0.02
174	14.50	0.87	0.225	0.276	0.202	0.02
175	14.58	0.87	0.225	0.275	0.202	0.02
176	14.67	0.87	0.225	0.274	0.202	0.02
177	14.75	0.87	0.225	0.272	0.202	0.02
178	14.83	0.83	0.216	0.271	0.195	0.02
179	14.92	0.83	0.216	0.269	0.195	0.02
180	15.00	0.83	0.216	0.268	0.195	0.02
181	15.08	0.80	0.208	0.267	0.187	0.02
182	15.17	0.80	0.208	0.265	0.187	0.02
183	15.25	0.80	0.208	0.264	0.187	0.02
184	15.33	0.77	0.199	0.263	0.179	0.02
185	15.42	0.77	0.199	0.261	0.179	0.02
186	15.50	0.77	0.199	0.260	0.179	0.02
187	15.58	0.63	0.164	0.259	0.148	0.02
188	15.67	0.63	0.164	0.257	0.148	0.02
189	15.75	0.63	0.164	0.256	0.148	0.02
190	15.83	0.63	0.164	0.255	0.148	0.02
191	15.92	0.63	0.164	0.253	0.148	0.02
192	16.00	0.63	0.164	0.252	0.148	0.02
193	16.08	0.13	0.035	0.251	0.031	0.00
194	16.17	0.13	0.035	0.249	0.031	0.00
195	16.25	0.13	0.035	0.248	0.031	0.00
196	16.33	0.13	0.035	0.247	0.031	0.00
197	16.42	0.13	0.035	0.246	0.031	0.00
198	16.50	0.13	0.035	0.244	0.031	0.00
199	16.58	0.10	0.026	0.243	0.023	0.00
200	16.67	0.10	0.026	0.242	0.023	0.00
201	16.75	0.10	0.026	0.241	0.023	0.00
202	16.83	0.10	0.026	0.239	0.023	0.00
203	16.92	0.10	0.026	0.238	0.023	0.00
204	17.00	0.10	0.026	0.237	0.023	0.00
205	17.08	0.17	0.043	0.236	0.039	0.00
206	17.17	0.17	0.043	0.235	0.039	0.00
207	17.25	0.17	0.043	0.233	0.039	0.00
208	17.33	0.17	0.043	0.232	0.039	0.00
209	17.42	0.17	0.043	0.231	0.039	0.00

210	17.50	0.17	0.043	0.230	0.039	0.00
211	17.58	0.17	0.043	0.229	0.039	0.00
212	17.67	0.17	0.043	0.228	0.039	0.00
213	17.75	0.17	0.043	0.227	0.039	0.00
214	17.83	0.13	0.035	0.225	0.031	0.00
215	17.92	0.13	0.035	0.224	0.031	0.00
216	18.00	0.13	0.035	0.223	0.031	0.00
217	18.08	0.13	0.035	0.222	0.031	0.00
218	18.17	0.13	0.035	0.221	0.031	0.00
219	18.25	0.13	0.035	0.220	0.031	0.00
220	18.33	0.13	0.035	0.219	0.031	0.00
221	18.42	0.13	0.035	0.218	0.031	0.00
222	18.50	0.13	0.035	0.217	0.031	0.00
223	18.58	0.10	0.026	0.216	0.023	0.00
224	18.67	0.10	0.026	0.215	0.023	0.00
225	18.75	0.10	0.026	0.214	0.023	0.00
226	18.83	0.07	0.017	0.213	0.016	0.00
227	18.92	0.07	0.017	0.212	0.016	0.00
228	19.00	0.07	0.017	0.211	0.016	0.00
229	19.08	0.10	0.026	0.210	0.023	0.00
230	19.17	0.10	0.026	0.209	0.023	0.00
231	19.25	0.10	0.026	0.208	0.023	0.00
232	19.33	0.13	0.035	0.207	0.031	0.00
233	19.42	0.13	0.035	0.206	0.031	0.00
234	19.50	0.13	0.035	0.205	0.031	0.00
235	19.58	0.10	0.026	0.204	0.023	0.00
236	19.67	0.10	0.026	0.203	0.023	0.00
237	19.75	0.10	0.026	0.202	0.023	0.00
238	19.83	0.07	0.017	0.201	0.016	0.00
239	19.92	0.07	0.017	0.200	0.016	0.00
240	20.00	0.07	0.017	0.199	0.016	0.00
241	20.08	0.10	0.026	0.198	0.023	0.00
242	20.17	0.10	0.026	0.197	0.023	0.00
243	20.25	0.10	0.026	0.197	0.023	0.00
244	20.33	0.10	0.026	0.196	0.023	0.00
245	20.42	0.10	0.026	0.195	0.023	0.00
246	20.50	0.10	0.026	0.194	0.023	0.00
247	20.58	0.10	0.026	0.193	0.023	0.00
248	20.67	0.10	0.026	0.192	0.023	0.00
249	20.75	0.10	0.026	0.192	0.023	0.00
250	20.83	0.07	0.017	0.191	0.016	0.00
251	20.92	0.07	0.017	0.190	0.016	0.00
252	21.00	0.07	0.017	0.189	0.016	0.00
253	21.08	0.10	0.026	0.189	0.023	0.00
254	21.17	0.10	0.026	0.188	0.023	0.00
255	21.25	0.10	0.026	0.187	0.023	0.00
256	21.33	0.07	0.017	0.186	0.016	0.00
257	21.42	0.07	0.017	0.186	0.016	0.00
258	21.50	0.07	0.017	0.185	0.016	0.00
259	21.58	0.10	0.026	0.184	0.023	0.00
260	21.67	0.10	0.026	0.184	0.023	0.00
261	21.75	0.10	0.026	0.183	0.023	0.00
262	21.83	0.07	0.017	0.182	0.016	0.00
263	21.92	0.07	0.017	0.182	0.016	0.00

264	22.00	0.07	0.017	0.181	0.016	0.00
265	22.08	0.10	0.026	0.181	0.023	0.00
266	22.17	0.10	0.026	0.180	0.023	0.00
267	22.25	0.10	0.026	0.179	0.023	0.00
268	22.33	0.07	0.017	0.179	0.016	0.00
269	22.42	0.07	0.017	0.178	0.016	0.00
270	22.50	0.07	0.017	0.178	0.016	0.00
271	22.58	0.07	0.017	0.177	0.016	0.00
272	22.67	0.07	0.017	0.177	0.016	0.00
273	22.75	0.07	0.017	0.176	0.016	0.00
274	22.83	0.07	0.017	0.176	0.016	0.00
275	22.92	0.07	0.017	0.175	0.016	0.00
276	23.00	0.07	0.017	0.175	0.016	0.00
277	23.08	0.07	0.017	0.175	0.016	0.00
278	23.17	0.07	0.017	0.174	0.016	0.00
279	23.25	0.07	0.017	0.174	0.016	0.00
280	23.33	0.07	0.017	0.173	0.016	0.00
281	23.42	0.07	0.017	0.173	0.016	0.00
282	23.50	0.07	0.017	0.173	0.016	0.00
283	23.58	0.07	0.017	0.173	0.016	0.00
284	23.67	0.07	0.017	0.172	0.016	0.00
285	23.75	0.07	0.017	0.172	0.016	0.00
286	23.83	0.07	0.017	0.172	0.016	0.00
287	23.92	0.07	0.017	0.172	0.016	0.00
288	24.00	0.07	0.017	0.172	0.016	0.00
	Sum =	100.0			Sum =	2.6

Flood volume = Effective rainfall 0.21(In)
times area 66.5(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)
Total soil loss = 1.95(In)
Total soil loss = 10.794(Ac.Ft)
Total rainfall = 2.16(In)
Flood volume = 51589.4 Cubic Feet
Total soil loss = 470193.7 Cubic Feet

Peak flow rate of this hydrograph = 1.905(CFS)

++

24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

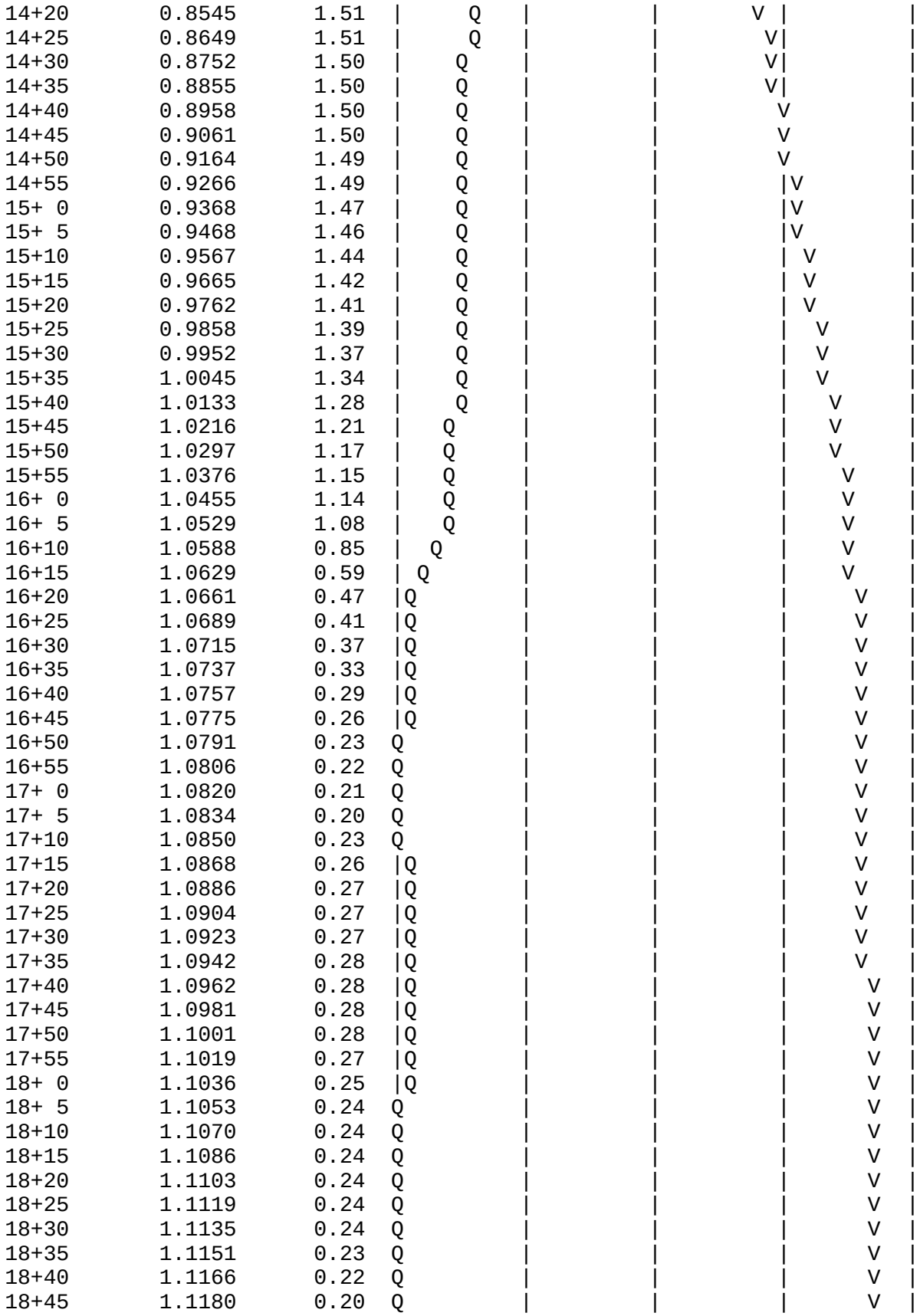
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q	|	|	|	|
0+10	0.0003	0.04	Q	|	|	|	|
0+15	0.0008	0.07	Q	|	|	|	|
0+20	0.0014	0.09	Q	|	|	|	|
0+25	0.0022	0.11	Q	|	|	|	|
0+30	0.0031	0.13	Q	|	|	|	|
0+35	0.0041	0.15	Q	|	|	|	|
0+40	0.0052	0.15	Q	|	|	|	|
0+45	0.0062	0.16	Q	|	|	|	|

0+50	0.0074	0.17	Q	|	|	|	|
0+55	0.0086	0.18	Q	|	|	|	|
1+ 0	0.0100	0.20	Q	|	|	|	|
1+ 5	0.0115	0.21	Q	|	|	|	|
1+10	0.0128	0.20	Q	|	|	|	|
1+15	0.0141	0.19	Q	|	|	|	|
1+20	0.0154	0.18	Q	|	|	|	|
1+25	0.0166	0.18	Q	|	|	|	|
1+30	0.0178	0.18	Q	|	|	|	|
1+35	0.0190	0.18	Q	|	|	|	|
1+40	0.0203	0.18	Q	|	|	|	|
1+45	0.0215	0.18	Q	|	|	|	|
1+50	0.0227	0.18	Q	|	|	|	|
1+55	0.0240	0.19	Q	|	|	|	|
2+ 0	0.0255	0.21	Q	|	|	|	|
2+ 5	0.0270	0.22	Q	|	|	|	|
2+10	0.0285	0.22	Q	|	|	|	|
2+15	0.0300	0.22	QV	|	|	|	|
2+20	0.0316	0.23	QV	|	|	|	|
2+25	0.0332	0.23	QV	|	|	|	|
2+30	0.0347	0.23	QV	|	|	|	|
2+35	0.0363	0.23	QV	|	|	|	|
2+40	0.0380	0.25	QV	|	|	|	|
2+45	0.0399	0.27	|Q	|	|	|	|
2+50	0.0418	0.27	|Q	|	|	|	|
2+55	0.0437	0.28	|Q	|	|	|	|
3+ 0	0.0456	0.28	|Q	|	|	|	|
3+ 5	0.0476	0.28	|Q	|	|	|	|
3+10	0.0495	0.28	|Q	|	|	|	|
3+15	0.0515	0.29	|Q	|	|	|	|
3+20	0.0535	0.29	|Q	|	|	|	|
3+25	0.0554	0.29	|Q	|	|	|	|
3+30	0.0574	0.29	|Q	|	|	|	|
3+35	0.0594	0.29	|QV	|	|	|	|
3+40	0.0614	0.29	|QV	|	|	|	|
3+45	0.0634	0.29	|QV	|	|	|	|
3+50	0.0654	0.29	|QV	|	|	|	|
3+55	0.0675	0.31	|QV	|	|	|	|
4+ 0	0.0698	0.33	|QV	|	|	|	|
4+ 5	0.0721	0.33	|QV	|	|	|	|
4+10	0.0744	0.34	|QV	|	|	|	|
4+15	0.0767	0.34	|QV	|	|	|	|
4+20	0.0791	0.34	|QV	|	|	|	|
4+25	0.0816	0.36	|QV	|	|	|	|
4+30	0.0842	0.38	|QV	|	|	|	|
4+35	0.0869	0.39	|QV	|	|	|	|
4+40	0.0896	0.39	|Q V	|	|	|	|
4+45	0.0923	0.40	|Q V	|	|	|	|
4+50	0.0951	0.40	|Q V	|	|	|	|
4+55	0.0980	0.42	|Q V	|	|	|	|
5+ 0	0.1010	0.44	|Q V	|	|	|	|
5+ 5	0.1040	0.44	|Q V	|	|	|	|
5+10	0.1068	0.41	|Q V	|	|	|	|
5+15	0.1095	0.38	|Q V	|	|	|	|

5+20	0.1120	0.37	Q V			
5+25	0.1147	0.38	Q V			
5+30	0.1174	0.40	Q V			
5+35	0.1202	0.40	Q V			
5+40	0.1231	0.42	Q V			
5+45	0.1261	0.44	Q V			
5+50	0.1292	0.45	Q V			
5+55	0.1323	0.45	Q V			
6+ 0	0.1354	0.45	Q V			
6+ 5	0.1386	0.46	Q V			
6+10	0.1419	0.48	Q V			
6+15	0.1453	0.49	Q V			
6+20	0.1487	0.50	Q V			
6+25	0.1522	0.51	Q V			
6+30	0.1558	0.51	Q V			
6+35	0.1593	0.52	Q V			
6+40	0.1630	0.53	Q V			
6+45	0.1668	0.55	Q V			
6+50	0.1707	0.56	Q V			
6+55	0.1746	0.57	Q V			
7+ 0	0.1785	0.57	Q V			
7+ 5	0.1824	0.57	Q V			
7+10	0.1864	0.57	Q V			
7+15	0.1904	0.58	Q V			
7+20	0.1944	0.58	Q V			
7+25	0.1985	0.60	Q V			
7+30	0.2027	0.61	Q V			
7+35	0.2070	0.62	Q V			
7+40	0.2114	0.64	Q V			
7+45	0.2160	0.66	Q V			
7+50	0.2207	0.68	Q V			
7+55	0.2255	0.70	Q V			
8+ 0	0.2304	0.72	Q V			
8+ 5	0.2355	0.74	Q V			
8+10	0.2408	0.77	Q V			
8+15	0.2464	0.81	Q V			
8+20	0.2521	0.83	Q V			
8+25	0.2579	0.84	Q V			
8+30	0.2637	0.85	Q V			
8+35	0.2696	0.86	Q V			
8+40	0.2756	0.88	Q V			
8+45	0.2818	0.90	Q V			
8+50	0.2880	0.91	Q V			
8+55	0.2944	0.93	Q V			
9+ 0	0.3010	0.95	Q V			
9+ 5	0.3077	0.97	Q V			
9+10	0.3146	1.00	Q V			
9+15	0.3218	1.04	Q V			
9+20	0.3291	1.06	Q V			
9+25	0.3366	1.09	Q V			
9+30	0.3443	1.11	Q V			
9+35	0.3521	1.13	Q V			
9+40	0.3600	1.15	Q V			
9+45	0.3681	1.18	Q V			

9+50	0.3763	1.19	Q	V			
9+55	0.3847	1.21	Q	V			
10+ 0	0.3932	1.24	Q	V			
10+ 5	0.4016	1.22	Q	V			
10+10	0.4094	1.13	Q	V			
10+15	0.4164	1.01	Q	V			
10+20	0.4230	0.97	Q	V			
10+25	0.4295	0.94	Q	V			
10+30	0.4359	0.92	Q	V			
10+35	0.4423	0.93	Q	V			
10+40	0.4491	0.99	Q	V			
10+45	0.4565	1.07	Q	V			
10+50	0.4641	1.10	Q	V			
10+55	0.4718	1.12	Q	V			
11+ 0	0.4795	1.13	Q	V			
11+ 5	0.4873	1.13	Q	V			
11+10	0.4950	1.12	Q	V			
11+15	0.5027	1.11	Q	V			
11+20	0.5103	1.10	Q	V			
11+25	0.5179	1.10	Q	V			
11+30	0.5255	1.10	Q	V			
11+35	0.5330	1.10	Q	V			
11+40	0.5403	1.07	Q	V			
11+45	0.5475	1.03	Q	V			
11+50	0.5545	1.02	Q	V			
11+55	0.5616	1.03	Q	V			
12+ 0	0.5687	1.04	Q	V			
12+ 5	0.5761	1.07	Q	V			
12+10	0.5842	1.17	Q	V			
12+15	0.5930	1.29	Q	V			
12+20	0.6023	1.35	Q	V			
12+25	0.6119	1.39	Q	V			
12+30	0.6217	1.42	Q	V			
12+35	0.6317	1.45	Q	V			
12+40	0.6420	1.50	Q	V			
12+45	0.6526	1.54	Q	V			
12+50	0.6634	1.57	Q	V			
12+55	0.6744	1.60	Q	V			
13+ 0	0.6856	1.63	Q	V			
13+ 5	0.6971	1.66	Q	V			
13+10	0.7091	1.74	Q	V			
13+15	0.7217	1.84	Q	V			
13+20	0.7347	1.88	Q	V			
13+25	0.7478	1.90	Q	V			
13+30	0.7602	1.80	Q	V			
13+35	0.7698	1.39	Q	V			
13+40	0.7779	1.17	Q	V			
13+45	0.7868	1.30	Q	V			
13+50	0.7961	1.35	Q	V			
13+55	0.8054	1.35	Q	V			
14+ 0	0.8148	1.35	Q	V			
14+ 5	0.8241	1.36	Q	V			
14+10	0.8339	1.42	Q	V			
14+15	0.8441	1.48	Q	V			



18+50	1.1193	0.19	Q	|	|	|	V |
18+55	1.1204	0.17	Q	|	|	|	V |
19+ 0	1.1214	0.15	Q	|	|	|	V |
19+ 5	1.1224	0.14	Q	|	|	|	V |
19+10	1.1234	0.15	Q	|	|	|	V |
19+15	1.1246	0.16	Q	|	|	|	V |
19+20	1.1257	0.17	Q	|	|	|	V |
19+25	1.1270	0.19	Q	|	|	|	V |
19+30	1.1285	0.21	Q	|	|	|	V |
19+35	1.1299	0.21	Q	|	|	|	V |
19+40	1.1313	0.20	Q	|	|	|	V |
19+45	1.1326	0.19	Q	|	|	|	V |
19+50	1.1338	0.18	Q	|	|	|	V |
19+55	1.1349	0.16	Q	|	|	|	V |
20+ 0	1.1359	0.14	Q	|	|	|	V |
20+ 5	1.1368	0.14	Q	|	|	|	V |
20+10	1.1378	0.15	Q	|	|	|	V |
20+15	1.1390	0.16	Q	|	|	|	V |
20+20	1.1401	0.17	Q	|	|	|	V |
20+25	1.1413	0.17	Q	|	|	|	V |
20+30	1.1424	0.17	Q	|	|	|	V |
20+35	1.1436	0.17	Q	|	|	|	V |
20+40	1.1448	0.17	Q	|	|	|	V |
20+45	1.1460	0.17	Q	|	|	|	V |
20+50	1.1472	0.17	Q	|	|	|	V |
20+55	1.1482	0.15	Q	|	|	|	V |
21+ 0	1.1492	0.14	Q	|	|	|	V |
21+ 5	1.1501	0.13	Q	|	|	|	V |
21+10	1.1511	0.14	Q	|	|	|	V |
21+15	1.1522	0.16	Q	|	|	|	V |
21+20	1.1533	0.16	Q	|	|	|	V |
21+25	1.1543	0.15	Q	|	|	|	V |
21+30	1.1552	0.13	Q	|	|	|	V|
21+35	1.1561	0.13	Q	|	|	|	V|
21+40	1.1571	0.14	Q	|	|	|	V|
21+45	1.1582	0.16	Q	|	|	|	V|
21+50	1.1593	0.16	Q	|	|	|	V|
21+55	1.1603	0.15	Q	|	|	|	V|
22+ 0	1.1612	0.13	Q	|	|	|	V|
22+ 5	1.1621	0.13	Q	|	|	|	V|
22+10	1.1631	0.14	Q	|	|	|	V|
22+15	1.1642	0.16	Q	|	|	|	V|
22+20	1.1653	0.16	Q	|	|	|	V|
22+25	1.1663	0.15	Q	|	|	|	V|
22+30	1.1672	0.13	Q	|	|	|	V|
22+35	1.1681	0.13	Q	|	|	|	V|
22+40	1.1690	0.12	Q	|	|	|	V|
22+45	1.1698	0.12	Q	|	|	|	V|
22+50	1.1706	0.12	Q	|	|	|	V|
22+55	1.1715	0.12	Q	|	|	|	V|
23+ 0	1.1723	0.12	Q	|	|	|	V|
23+ 5	1.1731	0.12	Q	|	|	|	V|
23+10	1.1739	0.12	Q	|	|	|	V|
23+15	1.1747	0.12	Q	|	|	|	V|

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   23+20       1.1755      0.12  Q          |           |           |         V|
   23+25       1.1763      0.12  Q          |           |           |         V|
   23+30       1.1771      0.12  Q          |           |           |         V|
   23+35       1.1779      0.12  Q          |           |           |         V|
   23+40       1.1787      0.12  Q          |           |           |         V|
   23+45       1.1795      0.12  Q          |           |           |         V|
   23+50       1.1803      0.12  Q          |           |           |         V|
   23+55       1.1811      0.12  Q          |           |           |         V|
   24+ 0       1.1819      0.12  Q          |           |           |         V|
   24+ 5       1.1827      0.11  Q          |           |           |         V|
   24+10       1.1832      0.08  Q          |           |           |         V|
   24+15       1.1835      0.05  Q          |           |           |         V|
   24+20       1.1837      0.03  Q          |           |           |         V|
   24+25       1.1839      0.02  Q          |           |           |         V|
   24+30       1.1840      0.02  Q          |           |           |         V|
   24+35       1.1841      0.01  Q          |           |           |         V|
   24+40       1.1841      0.01  Q          |           |           |         V|
   24+45       1.1842      0.01  Q          |           |           |         V|
   24+50       1.1842      0.01  Q          |           |           |         V|
   24+55       1.1843      0.00  Q          |           |           |         V|
   25+ 0       1.1843      0.00  Q          |           |           |         V|
   25+ 5       1.1843      0.00  Q          |           |           |         V|
   25+10       1.1843      0.00  Q          |           |           |         V|
   25+15       1.1843      0.00  Q          |           |           |         V|
   25+20       1.1843      0.00  Q          |           |           |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/29/19 File: 4163UHE102410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 5 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA B-1
4163UHE5.UM1

Drainage Area = 66.49(Ac.) = 0.104 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 66.49(Ac.) = 0.104 Sq. Mi.
Length along longest watercourse = 2220.00(Ft.)
Length along longest watercourse measured to centroid = 1350.00(Ft.)
Length along longest watercourse = 0.420 Mi.
Length along longest watercourse measured to centroid = 0.256 Mi.
Difference in elevation = 10.20(Ft.)
Slope along watercourse = 24.2595 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.168 Hr.
Lag time = 10.10 Min.
25% of lag time = 2.52 Min.
40% of lag time = 4.04 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	1.60	106.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	4.00	265.96

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.587(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.587(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
66.490	86.00	0.000

Total Area Entered = 66.49(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.000	0.176	1.000	0.176
					Sum (F) =	0.176

Area averaged mean soil loss (F) (In/Hr) = 0.176
Minimum soil loss rate ((In/Hr)) = 0.088
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	49.508	6.033	4.043
2	0.167	99.016	25.729	17.241
3	0.250	148.524	28.891	19.360
4	0.333	198.032	13.134	8.801
5	0.417	247.539	6.843	4.586
6	0.500	297.047	4.752	3.184
7	0.583	346.555	3.424	2.295
8	0.667	396.063	2.629	1.761
9	0.750	445.571	1.929	1.292
10	0.833	495.079	1.545	1.035
11	0.917	544.587	1.325	0.888
12	1.000	594.095	1.013	0.679
13	1.083	643.603	0.816	0.546
14	1.167	693.111	0.619	0.415
15	1.250	742.618	0.497	0.333
16	1.333	792.126	0.495	0.332

17	1.417	841.634	0.326		0.219
			Sum = 100.000	Sum=	67.009

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.021	0.311	0.019	0.00
2	0.17	0.07	0.021	0.310	0.019	0.00
3	0.25	0.07	0.021	0.309	0.019	0.00
4	0.33	0.10	0.031	0.308	0.028	0.00
5	0.42	0.10	0.031	0.306	0.028	0.00
6	0.50	0.10	0.031	0.305	0.028	0.00
7	0.58	0.10	0.031	0.304	0.028	0.00
8	0.67	0.10	0.031	0.303	0.028	0.00
9	0.75	0.10	0.031	0.302	0.028	0.00
10	0.83	0.13	0.041	0.301	0.037	0.00
11	0.92	0.13	0.041	0.299	0.037	0.00
12	1.00	0.13	0.041	0.298	0.037	0.00
13	1.08	0.10	0.031	0.297	0.028	0.00
14	1.17	0.10	0.031	0.296	0.028	0.00
15	1.25	0.10	0.031	0.295	0.028	0.00
16	1.33	0.10	0.031	0.293	0.028	0.00
17	1.42	0.10	0.031	0.292	0.028	0.00
18	1.50	0.10	0.031	0.291	0.028	0.00
19	1.58	0.10	0.031	0.290	0.028	0.00
20	1.67	0.10	0.031	0.289	0.028	0.00
21	1.75	0.10	0.031	0.288	0.028	0.00
22	1.83	0.13	0.041	0.287	0.037	0.00
23	1.92	0.13	0.041	0.285	0.037	0.00
24	2.00	0.13	0.041	0.284	0.037	0.00
25	2.08	0.13	0.041	0.283	0.037	0.00
26	2.17	0.13	0.041	0.282	0.037	0.00
27	2.25	0.13	0.041	0.281	0.037	0.00
28	2.33	0.13	0.041	0.280	0.037	0.00
29	2.42	0.13	0.041	0.278	0.037	0.00
30	2.50	0.13	0.041	0.277	0.037	0.00
31	2.58	0.17	0.052	0.276	0.047	0.01
32	2.67	0.17	0.052	0.275	0.047	0.01
33	2.75	0.17	0.052	0.274	0.047	0.01
34	2.83	0.17	0.052	0.273	0.047	0.01
35	2.92	0.17	0.052	0.272	0.047	0.01
36	3.00	0.17	0.052	0.271	0.047	0.01
37	3.08	0.17	0.052	0.269	0.047	0.01
38	3.17	0.17	0.052	0.268	0.047	0.01
39	3.25	0.17	0.052	0.267	0.047	0.01
40	3.33	0.17	0.052	0.266	0.047	0.01
41	3.42	0.17	0.052	0.265	0.047	0.01
42	3.50	0.17	0.052	0.264	0.047	0.01
43	3.58	0.17	0.052	0.263	0.047	0.01
44	3.67	0.17	0.052	0.262	0.047	0.01
45	3.75	0.17	0.052	0.261	0.047	0.01
46	3.83	0.20	0.062	0.259	0.056	0.01
47	3.92	0.20	0.062	0.258	0.056	0.01

48	4.00	0.20	0.062	0.257	0.056	0.01
49	4.08	0.20	0.062	0.256	0.056	0.01
50	4.17	0.20	0.062	0.255	0.056	0.01
51	4.25	0.20	0.062	0.254	0.056	0.01
52	4.33	0.23	0.072	0.253	0.065	0.01
53	4.42	0.23	0.072	0.252	0.065	0.01
54	4.50	0.23	0.072	0.251	0.065	0.01
55	4.58	0.23	0.072	0.250	0.065	0.01
56	4.67	0.23	0.072	0.249	0.065	0.01
57	4.75	0.23	0.072	0.248	0.065	0.01
58	4.83	0.27	0.083	0.246	0.075	0.01
59	4.92	0.27	0.083	0.245	0.075	0.01
60	5.00	0.27	0.083	0.244	0.075	0.01
61	5.08	0.20	0.062	0.243	0.056	0.01
62	5.17	0.20	0.062	0.242	0.056	0.01
63	5.25	0.20	0.062	0.241	0.056	0.01
64	5.33	0.23	0.072	0.240	0.065	0.01
65	5.42	0.23	0.072	0.239	0.065	0.01
66	5.50	0.23	0.072	0.238	0.065	0.01
67	5.58	0.27	0.083	0.237	0.075	0.01
68	5.67	0.27	0.083	0.236	0.075	0.01
69	5.75	0.27	0.083	0.235	0.075	0.01
70	5.83	0.27	0.083	0.234	0.075	0.01
71	5.92	0.27	0.083	0.233	0.075	0.01
72	6.00	0.27	0.083	0.232	0.075	0.01
73	6.08	0.30	0.093	0.231	0.084	0.01
74	6.17	0.30	0.093	0.230	0.084	0.01
75	6.25	0.30	0.093	0.229	0.084	0.01
76	6.33	0.30	0.093	0.228	0.084	0.01
77	6.42	0.30	0.093	0.227	0.084	0.01
78	6.50	0.30	0.093	0.226	0.084	0.01
79	6.58	0.33	0.103	0.225	0.093	0.01
80	6.67	0.33	0.103	0.224	0.093	0.01
81	6.75	0.33	0.103	0.223	0.093	0.01
82	6.83	0.33	0.103	0.222	0.093	0.01
83	6.92	0.33	0.103	0.221	0.093	0.01
84	7.00	0.33	0.103	0.220	0.093	0.01
85	7.08	0.33	0.103	0.219	0.093	0.01
86	7.17	0.33	0.103	0.218	0.093	0.01
87	7.25	0.33	0.103	0.217	0.093	0.01
88	7.33	0.37	0.114	0.216	0.102	0.01
89	7.42	0.37	0.114	0.215	0.102	0.01
90	7.50	0.37	0.114	0.214	0.102	0.01
91	7.58	0.40	0.124	0.213	0.112	0.01
92	7.67	0.40	0.124	0.212	0.112	0.01
93	7.75	0.40	0.124	0.211	0.112	0.01
94	7.83	0.43	0.135	0.210	0.121	0.01
95	7.92	0.43	0.135	0.209	0.121	0.01
96	8.00	0.43	0.135	0.208	0.121	0.01
97	8.08	0.50	0.155	0.207	0.140	0.02
98	8.17	0.50	0.155	0.206	0.140	0.02
99	8.25	0.50	0.155	0.205	0.140	0.02
100	8.33	0.50	0.155	0.204	0.140	0.02
101	8.42	0.50	0.155	0.203	0.140	0.02

102	8.50	0.50	0.155	0.202	0.140	0.02
103	8.58	0.53	0.166	0.201	0.149	0.02
104	8.67	0.53	0.166	0.200	0.149	0.02
105	8.75	0.53	0.166	0.199	0.149	0.02
106	8.83	0.57	0.176	0.198	0.158	0.02
107	8.92	0.57	0.176	0.197	0.158	0.02
108	9.00	0.57	0.176	0.196	0.158	0.02
109	9.08	0.63	0.197	0.195	---	0.00
110	9.17	0.63	0.197	0.195	---	0.00
111	9.25	0.63	0.197	0.194	---	0.00
112	9.33	0.67	0.207	0.193	---	0.01
113	9.42	0.67	0.207	0.192	---	0.02
114	9.50	0.67	0.207	0.191	---	0.02
115	9.58	0.70	0.217	0.190	---	0.03
116	9.67	0.70	0.217	0.189	---	0.03
117	9.75	0.70	0.217	0.188	---	0.03
118	9.83	0.73	0.228	0.187	---	0.04
119	9.92	0.73	0.228	0.186	---	0.04
120	10.00	0.73	0.228	0.185	---	0.04
121	10.08	0.50	0.155	0.185	0.140	0.02
122	10.17	0.50	0.155	0.184	0.140	0.02
123	10.25	0.50	0.155	0.183	0.140	0.02
124	10.33	0.50	0.155	0.182	0.140	0.02
125	10.42	0.50	0.155	0.181	0.140	0.02
126	10.50	0.50	0.155	0.180	0.140	0.02
127	10.58	0.67	0.207	0.179	---	0.03
128	10.67	0.67	0.207	0.178	---	0.03
129	10.75	0.67	0.207	0.177	---	0.03
130	10.83	0.67	0.207	0.177	---	0.03
131	10.92	0.67	0.207	0.176	---	0.03
132	11.00	0.67	0.207	0.175	---	0.03
133	11.08	0.63	0.197	0.174	---	0.02
134	11.17	0.63	0.197	0.173	---	0.02
135	11.25	0.63	0.197	0.172	---	0.02
136	11.33	0.63	0.197	0.171	---	0.03
137	11.42	0.63	0.197	0.171	---	0.03
138	11.50	0.63	0.197	0.170	---	0.03
139	11.58	0.57	0.176	0.169	---	0.01
140	11.67	0.57	0.176	0.168	---	0.01
141	11.75	0.57	0.176	0.167	---	0.01
142	11.83	0.60	0.186	0.166	---	0.02
143	11.92	0.60	0.186	0.166	---	0.02
144	12.00	0.60	0.186	0.165	---	0.02
145	12.08	0.83	0.259	0.164	---	0.09
146	12.17	0.83	0.259	0.163	---	0.10
147	12.25	0.83	0.259	0.162	---	0.10
148	12.33	0.87	0.269	0.161	---	0.11
149	12.42	0.87	0.269	0.161	---	0.11
150	12.50	0.87	0.269	0.160	---	0.11
151	12.58	0.93	0.290	0.159	---	0.13
152	12.67	0.93	0.290	0.158	---	0.13
153	12.75	0.93	0.290	0.157	---	0.13
154	12.83	0.97	0.300	0.157	---	0.14
155	12.92	0.97	0.300	0.156	---	0.14

156	13.00	0.97	0.300	0.155	---	0.15
157	13.08	1.13	0.352	0.154	---	0.20
158	13.17	1.13	0.352	0.154	---	0.20
159	13.25	1.13	0.352	0.153	---	0.20
160	13.33	1.13	0.352	0.152	---	0.20
161	13.42	1.13	0.352	0.151	---	0.20
162	13.50	1.13	0.352	0.150	---	0.20
163	13.58	0.77	0.238	0.150	---	0.09
164	13.67	0.77	0.238	0.149	---	0.09
165	13.75	0.77	0.238	0.148	---	0.09
166	13.83	0.77	0.238	0.147	---	0.09
167	13.92	0.77	0.238	0.147	---	0.09
168	14.00	0.77	0.238	0.146	---	0.09
169	14.08	0.90	0.279	0.145	---	0.13
170	14.17	0.90	0.279	0.144	---	0.14
171	14.25	0.90	0.279	0.144	---	0.14
172	14.33	0.87	0.269	0.143	---	0.13
173	14.42	0.87	0.269	0.142	---	0.13
174	14.50	0.87	0.269	0.141	---	0.13
175	14.58	0.87	0.269	0.141	---	0.13
176	14.67	0.87	0.269	0.140	---	0.13
177	14.75	0.87	0.269	0.139	---	0.13
178	14.83	0.83	0.259	0.139	---	0.12
179	14.92	0.83	0.259	0.138	---	0.12
180	15.00	0.83	0.259	0.137	---	0.12
181	15.08	0.80	0.248	0.136	---	0.11
182	15.17	0.80	0.248	0.136	---	0.11
183	15.25	0.80	0.248	0.135	---	0.11
184	15.33	0.77	0.238	0.134	---	0.10
185	15.42	0.77	0.238	0.134	---	0.10
186	15.50	0.77	0.238	0.133	---	0.11
187	15.58	0.63	0.197	0.132	---	0.06
188	15.67	0.63	0.197	0.132	---	0.06
189	15.75	0.63	0.197	0.131	---	0.07
190	15.83	0.63	0.197	0.130	---	0.07
191	15.92	0.63	0.197	0.130	---	0.07
192	16.00	0.63	0.197	0.129	---	0.07
193	16.08	0.13	0.041	0.128	0.037	0.00
194	16.17	0.13	0.041	0.128	0.037	0.00
195	16.25	0.13	0.041	0.127	0.037	0.00
196	16.33	0.13	0.041	0.126	0.037	0.00
197	16.42	0.13	0.041	0.126	0.037	0.00
198	16.50	0.13	0.041	0.125	0.037	0.00
199	16.58	0.10	0.031	0.124	0.028	0.00
200	16.67	0.10	0.031	0.124	0.028	0.00
201	16.75	0.10	0.031	0.123	0.028	0.00
202	16.83	0.10	0.031	0.123	0.028	0.00
203	16.92	0.10	0.031	0.122	0.028	0.00
204	17.00	0.10	0.031	0.121	0.028	0.00
205	17.08	0.17	0.052	0.121	0.047	0.01
206	17.17	0.17	0.052	0.120	0.047	0.01
207	17.25	0.17	0.052	0.119	0.047	0.01
208	17.33	0.17	0.052	0.119	0.047	0.01
209	17.42	0.17	0.052	0.118	0.047	0.01

210	17.50	0.17	0.052	0.118	0.047	0.01
211	17.58	0.17	0.052	0.117	0.047	0.01
212	17.67	0.17	0.052	0.117	0.047	0.01
213	17.75	0.17	0.052	0.116	0.047	0.01
214	17.83	0.13	0.041	0.115	0.037	0.00
215	17.92	0.13	0.041	0.115	0.037	0.00
216	18.00	0.13	0.041	0.114	0.037	0.00
217	18.08	0.13	0.041	0.114	0.037	0.00
218	18.17	0.13	0.041	0.113	0.037	0.00
219	18.25	0.13	0.041	0.113	0.037	0.00
220	18.33	0.13	0.041	0.112	0.037	0.00
221	18.42	0.13	0.041	0.111	0.037	0.00
222	18.50	0.13	0.041	0.111	0.037	0.00
223	18.58	0.10	0.031	0.110	0.028	0.00
224	18.67	0.10	0.031	0.110	0.028	0.00
225	18.75	0.10	0.031	0.109	0.028	0.00
226	18.83	0.07	0.021	0.109	0.019	0.00
227	18.92	0.07	0.021	0.108	0.019	0.00
228	19.00	0.07	0.021	0.108	0.019	0.00
229	19.08	0.10	0.031	0.107	0.028	0.00
230	19.17	0.10	0.031	0.107	0.028	0.00
231	19.25	0.10	0.031	0.106	0.028	0.00
232	19.33	0.13	0.041	0.106	0.037	0.00
233	19.42	0.13	0.041	0.105	0.037	0.00
234	19.50	0.13	0.041	0.105	0.037	0.00
235	19.58	0.10	0.031	0.104	0.028	0.00
236	19.67	0.10	0.031	0.104	0.028	0.00
237	19.75	0.10	0.031	0.103	0.028	0.00
238	19.83	0.07	0.021	0.103	0.019	0.00
239	19.92	0.07	0.021	0.102	0.019	0.00
240	20.00	0.07	0.021	0.102	0.019	0.00
241	20.08	0.10	0.031	0.102	0.028	0.00
242	20.17	0.10	0.031	0.101	0.028	0.00
243	20.25	0.10	0.031	0.101	0.028	0.00
244	20.33	0.10	0.031	0.100	0.028	0.00
245	20.42	0.10	0.031	0.100	0.028	0.00
246	20.50	0.10	0.031	0.099	0.028	0.00
247	20.58	0.10	0.031	0.099	0.028	0.00
248	20.67	0.10	0.031	0.099	0.028	0.00
249	20.75	0.10	0.031	0.098	0.028	0.00
250	20.83	0.07	0.021	0.098	0.019	0.00
251	20.92	0.07	0.021	0.097	0.019	0.00
252	21.00	0.07	0.021	0.097	0.019	0.00
253	21.08	0.10	0.031	0.097	0.028	0.00
254	21.17	0.10	0.031	0.096	0.028	0.00
255	21.25	0.10	0.031	0.096	0.028	0.00
256	21.33	0.07	0.021	0.095	0.019	0.00
257	21.42	0.07	0.021	0.095	0.019	0.00
258	21.50	0.07	0.021	0.095	0.019	0.00
259	21.58	0.10	0.031	0.094	0.028	0.00
260	21.67	0.10	0.031	0.094	0.028	0.00
261	21.75	0.10	0.031	0.094	0.028	0.00
262	21.83	0.07	0.021	0.093	0.019	0.00
263	21.92	0.07	0.021	0.093	0.019	0.00

264	22.00	0.07	0.021	0.093	0.019	0.00
265	22.08	0.10	0.031	0.092	0.028	0.00
266	22.17	0.10	0.031	0.092	0.028	0.00
267	22.25	0.10	0.031	0.092	0.028	0.00
268	22.33	0.07	0.021	0.092	0.019	0.00
269	22.42	0.07	0.021	0.091	0.019	0.00
270	22.50	0.07	0.021	0.091	0.019	0.00
271	22.58	0.07	0.021	0.091	0.019	0.00
272	22.67	0.07	0.021	0.090	0.019	0.00
273	22.75	0.07	0.021	0.090	0.019	0.00
274	22.83	0.07	0.021	0.090	0.019	0.00
275	22.92	0.07	0.021	0.090	0.019	0.00
276	23.00	0.07	0.021	0.090	0.019	0.00
277	23.08	0.07	0.021	0.089	0.019	0.00
278	23.17	0.07	0.021	0.089	0.019	0.00
279	23.25	0.07	0.021	0.089	0.019	0.00
280	23.33	0.07	0.021	0.089	0.019	0.00
281	23.42	0.07	0.021	0.089	0.019	0.00
282	23.50	0.07	0.021	0.088	0.019	0.00
283	23.58	0.07	0.021	0.088	0.019	0.00
284	23.67	0.07	0.021	0.088	0.019	0.00
285	23.75	0.07	0.021	0.088	0.019	0.00
286	23.83	0.07	0.021	0.088	0.019	0.00
287	23.92	0.07	0.021	0.088	0.019	0.00
288	24.00	0.07	0.021	0.088	0.019	0.00
	Sum =	100.0			Sum =	7.7

Flood volume = Effective rainfall 0.64(In)
times area 66.5(Ac.)/[(In)/(Ft.)] = 3.5(Ac.Ft)
Total soil loss = 1.95(In)
Total soil loss = 10.799(Ac.Ft)
Total rainfall = 2.59(In)
Flood volume = 154011.8 Cubic Feet
Total soil loss = 470393.6 Cubic Feet

Peak flow rate of this hydrograph = 12.749(CFS)

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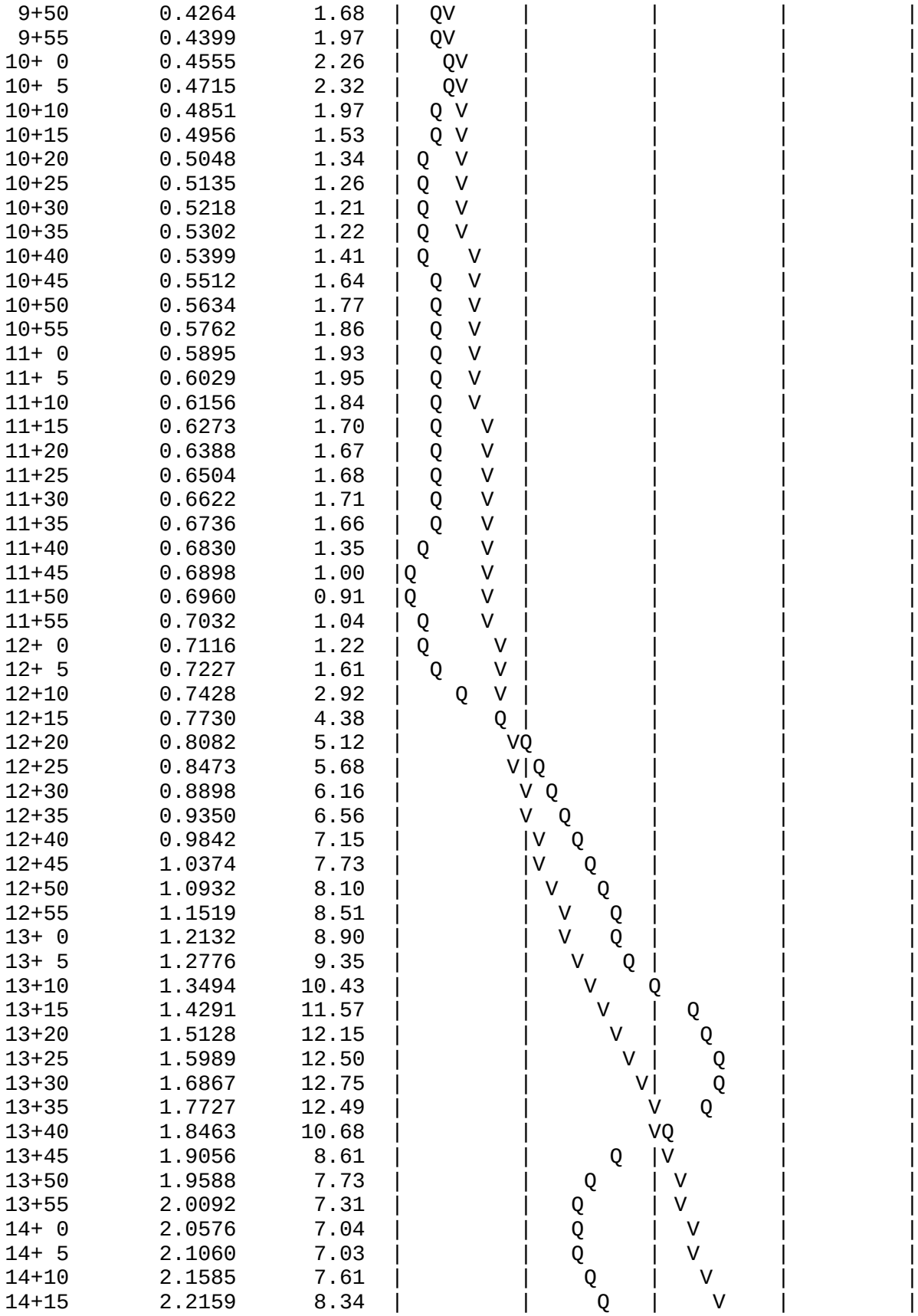
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

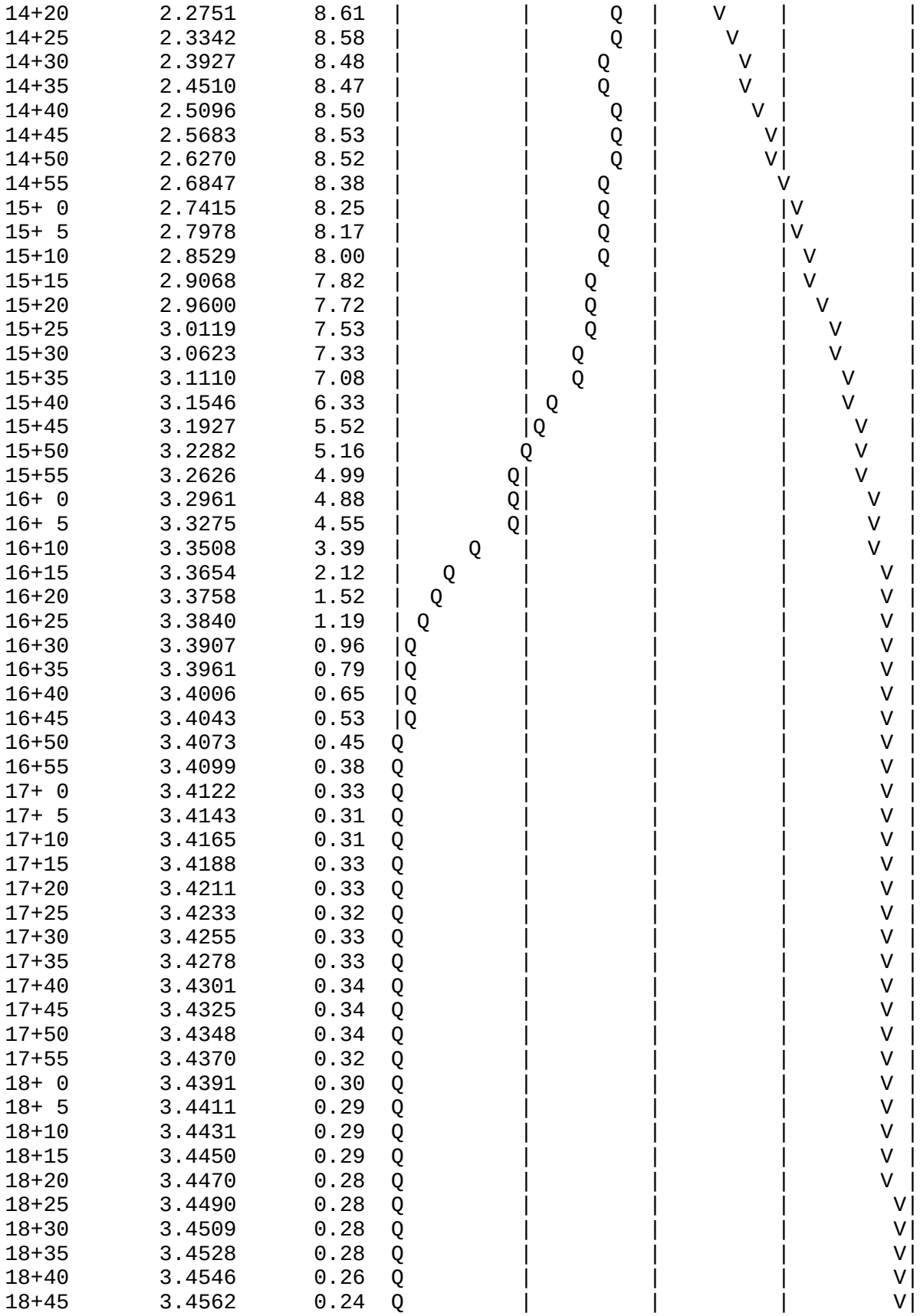
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0004	0.04	Q	|	|	|	|
0+15	0.0009	0.08	Q	|	|	|	|
0+20	0.0017	0.11	Q	|	|	|	|
0+25	0.0026	0.13	Q	|	|	|	|
0+30	0.0037	0.16	Q	|	|	|	|
0+35	0.0049	0.17	Q	|	|	|	|
0+40	0.0062	0.18	Q	|	|	|	|
0+45	0.0075	0.19	Q	|	|	|	|

0+50	0.0088	0.20	Q	|	|	|	|
0+55	0.0103	0.22	Q	|	|	|	|
1+ 0	0.0120	0.24	Q	|	|	|	|
1+ 5	0.0137	0.25	Q	|	|	|	|
1+10	0.0153	0.24	Q	|	|	|	|
1+15	0.0169	0.22	Q	|	|	|	|
1+20	0.0184	0.22	Q	|	|	|	|
1+25	0.0198	0.21	Q	|	|	|	|
1+30	0.0213	0.21	Q	|	|	|	|
1+35	0.0228	0.21	Q	|	|	|	|
1+40	0.0242	0.21	Q	|	|	|	|
1+45	0.0257	0.21	Q	|	|	|	|
1+50	0.0272	0.21	Q	|	|	|	|
1+55	0.0288	0.23	Q	|	|	|	|
2+ 0	0.0305	0.25	Q	|	|	|	|
2+ 5	0.0323	0.26	Q	|	|	|	|
2+10	0.0341	0.26	Q	|	|	|	|
2+15	0.0360	0.27	Q	|	|	|	|
2+20	0.0378	0.27	Q	|	|	|	|
2+25	0.0397	0.27	Q	|	|	|	|
2+30	0.0416	0.27	Q	|	|	|	|
2+35	0.0435	0.28	Q	|	|	|	|
2+40	0.0455	0.30	Q	|	|	|	|
2+45	0.0477	0.32	Q	|	|	|	|
2+50	0.0500	0.33	Q	|	|	|	|
2+55	0.0523	0.33	Q	|	|	|	|
3+ 0	0.0546	0.34	Q	|	|	|	|
3+ 5	0.0569	0.34	Q	|	|	|	|
3+10	0.0593	0.34	Q	|	|	|	|
3+15	0.0616	0.34	Q	|	|	|	|
3+20	0.0640	0.34	Q	|	|	|	|
3+25	0.0664	0.34	Q	|	|	|	|
3+30	0.0687	0.34	Q	|	|	|	|
3+35	0.0711	0.35	Q	|	|	|	|
3+40	0.0735	0.35	Q	|	|	|	|
3+45	0.0759	0.35	Q	|	|	|	|
3+50	0.0783	0.35	Q	|	|	|	|
3+55	0.0808	0.37	Q	|	|	|	|
4+ 0	0.0835	0.39	Q	|	|	|	|
4+ 5	0.0863	0.40	Q	|	|	|	|
4+10	0.0890	0.40	QV	|	|	|	|
4+15	0.0918	0.41	QV	|	|	|	|
4+20	0.0947	0.41	QV	|	|	|	|
4+25	0.0976	0.43	QV	|	|	|	|
4+30	0.1008	0.45	QV	|	|	|	|
4+35	0.1040	0.46	QV	|	|	|	|
4+40	0.1072	0.47	QV	|	|	|	|
4+45	0.1105	0.47	QV	|	|	|	|
4+50	0.1138	0.48	QV	|	|	|	|
4+55	0.1172	0.50	|Q	|	|	|	|
5+ 0	0.1208	0.52	|Q	|	|	|	|
5+ 5	0.1244	0.52	|Q	|	|	|	|
5+10	0.1278	0.49	QV	|	|	|	|
5+15	0.1310	0.46	QV	|	|	|	|

5+20	0.1341	0.45	QV	|	|	|	|
5+25	0.1372	0.46	QV	|	|	|	|
5+30	0.1405	0.47	QV	|	|	|	|
5+35	0.1438	0.48	QV	|	|	|	|
5+40	0.1473	0.50	|Q	|	|	|	|
5+45	0.1509	0.52	|Q	|	|	|	|
5+50	0.1546	0.53	|Q	|	|	|	|
5+55	0.1583	0.54	|Q	|	|	|	|
6+ 0	0.1621	0.54	|Q	|	|	|	|
6+ 5	0.1658	0.55	|Q	|	|	|	|
6+10	0.1698	0.57	|Q	|	|	|	|
6+15	0.1739	0.59	|Q	|	|	|	|
6+20	0.1780	0.60	|QV	|	|	|	|
6+25	0.1822	0.61	|QV	|	|	|	|
6+30	0.1864	0.61	|QV	|	|	|	|
6+35	0.1907	0.62	|QV	|	|	|	|
6+40	0.1951	0.64	|QV	|	|	|	|
6+45	0.1996	0.66	|QV	|	|	|	|
6+50	0.2042	0.67	|QV	|	|	|	|
6+55	0.2089	0.68	|QV	|	|	|	|
7+ 0	0.2136	0.68	|QV	|	|	|	|
7+ 5	0.2183	0.68	|QV	|	|	|	|
7+10	0.2231	0.69	|QV	|	|	|	|
7+15	0.2278	0.69	|QV	|	|	|	|
7+20	0.2326	0.69	|QV	|	|	|	|
7+25	0.2375	0.71	|QV	|	|	|	|
7+30	0.2425	0.73	|QV	|	|	|	|
7+35	0.2477	0.75	|QV	|	|	|	|
7+40	0.2530	0.77	|QV	|	|	|	|
7+45	0.2585	0.79	|QV	|	|	|	|
7+50	0.2641	0.81	|QV	|	|	|	|
7+55	0.2698	0.84	|Q V	|	|	|	|
8+ 0	0.2757	0.86	|Q V	|	|	|	|
8+ 5	0.2818	0.88	|Q V	|	|	|	|
8+10	0.2882	0.92	|Q V	|	|	|	|
8+15	0.2948	0.97	|Q V	|	|	|	|
8+20	0.3017	0.99	|Q V	|	|	|	|
8+25	0.3086	1.00	| QV	|	|	|	|
8+30	0.3156	1.01	| QV	|	|	|	|
8+35	0.3226	1.02	| QV	|	|	|	|
8+40	0.3298	1.05	| QV	|	|	|	|
8+45	0.3372	1.07	| QV	|	|	|	|
8+50	0.3447	1.09	| QV	|	|	|	|
8+55	0.3524	1.11	| QV	|	|	|	|
9+ 0	0.3602	1.14	| Q V	|	|	|	|
9+ 5	0.3677	1.08	| Q V	|	|	|	|
9+10	0.3732	0.81	|Q V	|	|	|	|
9+15	0.3768	0.52	|Q V	|	|	|	|
9+20	0.3800	0.46	Q V	|	|	|	|
9+25	0.3841	0.61	|Q V	|	|	|	|
9+30	0.3897	0.81	|Q V	|	|	|	|
9+35	0.3963	0.96	|Q V	|	|	|	|
9+40	0.4046	1.21	| Q V	|	|	|	|
9+45	0.4148	1.48	| Q V	|	|	|	|





18+50	3.4578	0.22	Q	|	|	|	V|
18+55	3.4591	0.20	Q	|	|	|	V|
19+ 0	3.4604	0.18	Q	|	|	|	V|
19+ 5	3.4615	0.17	Q	|	|	|	V|
19+10	3.4628	0.18	Q	|	|	|	V|
19+15	3.4641	0.20	Q	|	|	|	V|
19+20	3.4655	0.21	Q	|	|	|	V|
19+25	3.4671	0.23	Q	|	|	|	V|
19+30	3.4688	0.25	Q	|	|	|	V|
19+35	3.4705	0.25	Q	|	|	|	V|
19+40	3.4722	0.24	Q	|	|	|	V|
19+45	3.4737	0.22	Q	|	|	|	V|
19+50	3.4752	0.21	Q	|	|	|	V|
19+55	3.4765	0.19	Q	|	|	|	V|
20+ 0	3.4777	0.17	Q	|	|	|	V|
20+ 5	3.4788	0.16	Q	|	|	|	V|
20+10	3.4800	0.18	Q	|	|	|	V|
20+15	3.4813	0.19	Q	|	|	|	V|
20+20	3.4827	0.20	Q	|	|	|	V|
20+25	3.4841	0.20	Q	|	|	|	V|
20+30	3.4855	0.20	Q	|	|	|	V|
20+35	3.4869	0.21	Q	|	|	|	V|
20+40	3.4883	0.21	Q	|	|	|	V|
20+45	3.4897	0.21	Q	|	|	|	V|
20+50	3.4911	0.20	Q	|	|	|	V|
20+55	3.4924	0.18	Q	|	|	|	V|
21+ 0	3.4935	0.16	Q	|	|	|	V|
21+ 5	3.4946	0.16	Q	|	|	|	V|
21+10	3.4958	0.17	Q	|	|	|	V|
21+15	3.4972	0.19	Q	|	|	|	V|
21+20	3.4985	0.19	Q	|	|	|	V|
21+25	3.4997	0.18	Q	|	|	|	V|
21+30	3.5008	0.16	Q	|	|	|	V|
21+35	3.5019	0.16	Q	|	|	|	V|
21+40	3.5031	0.17	Q	|	|	|	V|
21+45	3.5044	0.19	Q	|	|	|	V|
21+50	3.5057	0.19	Q	|	|	|	V|
21+55	3.5069	0.18	Q	|	|	|	V|
22+ 0	3.5080	0.16	Q	|	|	|	V|
22+ 5	3.5091	0.16	Q	|	|	|	V|
22+10	3.5102	0.17	Q	|	|	|	V|
22+15	3.5115	0.19	Q	|	|	|	V|
22+20	3.5129	0.19	Q	|	|	|	V|
22+25	3.5141	0.18	Q	|	|	|	V|
22+30	3.5152	0.16	Q	|	|	|	V|
22+35	3.5162	0.15	Q	|	|	|	V|
22+40	3.5172	0.15	Q	|	|	|	V|
22+45	3.5182	0.15	Q	|	|	|	V|
22+50	3.5192	0.14	Q	|	|	|	V|
22+55	3.5202	0.14	Q	|	|	|	V|
23+ 0	3.5212	0.14	Q	|	|	|	V|
23+ 5	3.5222	0.14	Q	|	|	|	V|
23+10	3.5231	0.14	Q	|	|	|	V|
23+15	3.5241	0.14	Q	|	|	|	V|

23+20	3.5251	0.14	Q	|	|	|	V|
23+25	3.5260	0.14	Q	|	|	|	V|
23+30	3.5270	0.14	Q	|	|	|	V|
23+35	3.5279	0.14	Q	|	|	|	V|
23+40	3.5289	0.14	Q	|	|	|	V|
23+45	3.5299	0.14	Q	|	|	|	V|
23+50	3.5308	0.14	Q	|	|	|	V|
23+55	3.5318	0.14	Q	|	|	|	V|
24+ 0	3.5327	0.14	Q	|	|	|	V|
24+ 5	3.5336	0.13	Q	|	|	|	V|
24+10	3.5343	0.09	Q	|	|	|	V|
24+15	3.5346	0.05	Q	|	|	|	V|
24+20	3.5349	0.04	Q	|	|	|	V|
24+25	3.5351	0.03	Q	|	|	|	V|
24+30	3.5352	0.02	Q	|	|	|	V|
24+35	3.5353	0.02	Q	|	|	|	V|
24+40	3.5354	0.01	Q	|	|	|	V|
24+45	3.5355	0.01	Q	|	|	|	V|
24+50	3.5355	0.01	Q	|	|	|	V|
24+55	3.5356	0.01	Q	|	|	|	V|
25+ 0	3.5356	0.00	Q	|	|	|	V|
25+ 5	3.5356	0.00	Q	|	|	|	V|
25+10	3.5356	0.00	Q	|	|	|	V|
25+15	3.5356	0.00	Q	|	|	|	V|
25+20	3.5356	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/29/19 File: 4163UHE252425.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 25 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA B-1
4163UHE25.UM1

Drainage Area = 66.49(Ac.) = 0.104 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 66.49(Ac.) = 0.104 Sq. Mi.
Length along longest watercourse = 2220.00(Ft.)
Length along longest watercourse measured to centroid = 1350.00(Ft.)
Length along longest watercourse = 0.420 Mi.
Length along longest watercourse measured to centroid = 0.256 Mi.
Difference in elevation = 10.20(Ft.)
Slope along watercourse = 24.2595 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.168 Hr.
Lag time = 10.10 Min.
25% of lag time = 2.52 Min.
40% of lag time = 4.04 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	1.60	106.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	4.00	265.96

STORM EVENT (YEAR) = 25.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.149(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
66.490	86.00	0.000

Total Area Entered = 66.49(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.000	0.176	1.000	0.176
					Sum (F) =	0.176

Area averaged mean soil loss (F) (In/Hr) = 0.176
Minimum soil loss rate ((In/Hr)) = 0.088
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	49.508	6.033	4.043
2	0.167	99.016	25.729	17.241
3	0.250	148.524	28.891	19.360
4	0.333	198.032	13.134	8.801
5	0.417	247.539	6.843	4.586
6	0.500	297.047	4.752	3.184
7	0.583	346.555	3.424	2.295
8	0.667	396.063	2.629	1.761
9	0.750	445.571	1.929	1.292
10	0.833	495.079	1.545	1.035
11	0.917	544.587	1.325	0.888
12	1.000	594.095	1.013	0.679
13	1.083	643.603	0.816	0.546
14	1.167	693.111	0.619	0.415
15	1.250	742.618	0.497	0.333
16	1.333	792.126	0.495	0.332

17	1.417	841.634	0.326		0.219
			Sum = 100.000	Sum=	67.009

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.025	0.311	0.023	0.00
2	0.17	0.07	0.025	0.310	0.023	0.00
3	0.25	0.07	0.025	0.309	0.023	0.00
4	0.33	0.10	0.038	0.308	0.034	0.00
5	0.42	0.10	0.038	0.306	0.034	0.00
6	0.50	0.10	0.038	0.305	0.034	0.00
7	0.58	0.10	0.038	0.304	0.034	0.00
8	0.67	0.10	0.038	0.303	0.034	0.00
9	0.75	0.10	0.038	0.302	0.034	0.00
10	0.83	0.13	0.050	0.301	0.045	0.01
11	0.92	0.13	0.050	0.299	0.045	0.01
12	1.00	0.13	0.050	0.298	0.045	0.01
13	1.08	0.10	0.038	0.297	0.034	0.00
14	1.17	0.10	0.038	0.296	0.034	0.00
15	1.25	0.10	0.038	0.295	0.034	0.00
16	1.33	0.10	0.038	0.293	0.034	0.00
17	1.42	0.10	0.038	0.292	0.034	0.00
18	1.50	0.10	0.038	0.291	0.034	0.00
19	1.58	0.10	0.038	0.290	0.034	0.00
20	1.67	0.10	0.038	0.289	0.034	0.00
21	1.75	0.10	0.038	0.288	0.034	0.00
22	1.83	0.13	0.050	0.287	0.045	0.01
23	1.92	0.13	0.050	0.285	0.045	0.01
24	2.00	0.13	0.050	0.284	0.045	0.01
25	2.08	0.13	0.050	0.283	0.045	0.01
26	2.17	0.13	0.050	0.282	0.045	0.01
27	2.25	0.13	0.050	0.281	0.045	0.01
28	2.33	0.13	0.050	0.280	0.045	0.01
29	2.42	0.13	0.050	0.278	0.045	0.01
30	2.50	0.13	0.050	0.277	0.045	0.01
31	2.58	0.17	0.063	0.276	0.057	0.01
32	2.67	0.17	0.063	0.275	0.057	0.01
33	2.75	0.17	0.063	0.274	0.057	0.01
34	2.83	0.17	0.063	0.273	0.057	0.01
35	2.92	0.17	0.063	0.272	0.057	0.01
36	3.00	0.17	0.063	0.271	0.057	0.01
37	3.08	0.17	0.063	0.269	0.057	0.01
38	3.17	0.17	0.063	0.268	0.057	0.01
39	3.25	0.17	0.063	0.267	0.057	0.01
40	3.33	0.17	0.063	0.266	0.057	0.01
41	3.42	0.17	0.063	0.265	0.057	0.01
42	3.50	0.17	0.063	0.264	0.057	0.01
43	3.58	0.17	0.063	0.263	0.057	0.01
44	3.67	0.17	0.063	0.262	0.057	0.01
45	3.75	0.17	0.063	0.261	0.057	0.01
46	3.83	0.20	0.076	0.259	0.068	0.01
47	3.92	0.20	0.076	0.258	0.068	0.01

48	4.00	0.20	0.076	0.257	0.068	0.01
49	4.08	0.20	0.076	0.256	0.068	0.01
50	4.17	0.20	0.076	0.255	0.068	0.01
51	4.25	0.20	0.076	0.254	0.068	0.01
52	4.33	0.23	0.088	0.253	0.079	0.01
53	4.42	0.23	0.088	0.252	0.079	0.01
54	4.50	0.23	0.088	0.251	0.079	0.01
55	4.58	0.23	0.088	0.250	0.079	0.01
56	4.67	0.23	0.088	0.249	0.079	0.01
57	4.75	0.23	0.088	0.248	0.079	0.01
58	4.83	0.27	0.101	0.246	0.091	0.01
59	4.92	0.27	0.101	0.245	0.091	0.01
60	5.00	0.27	0.101	0.244	0.091	0.01
61	5.08	0.20	0.076	0.243	0.068	0.01
62	5.17	0.20	0.076	0.242	0.068	0.01
63	5.25	0.20	0.076	0.241	0.068	0.01
64	5.33	0.23	0.088	0.240	0.079	0.01
65	5.42	0.23	0.088	0.239	0.079	0.01
66	5.50	0.23	0.088	0.238	0.079	0.01
67	5.58	0.27	0.101	0.237	0.091	0.01
68	5.67	0.27	0.101	0.236	0.091	0.01
69	5.75	0.27	0.101	0.235	0.091	0.01
70	5.83	0.27	0.101	0.234	0.091	0.01
71	5.92	0.27	0.101	0.233	0.091	0.01
72	6.00	0.27	0.101	0.232	0.091	0.01
73	6.08	0.30	0.113	0.231	0.102	0.01
74	6.17	0.30	0.113	0.230	0.102	0.01
75	6.25	0.30	0.113	0.229	0.102	0.01
76	6.33	0.30	0.113	0.228	0.102	0.01
77	6.42	0.30	0.113	0.227	0.102	0.01
78	6.50	0.30	0.113	0.226	0.102	0.01
79	6.58	0.33	0.126	0.225	0.113	0.01
80	6.67	0.33	0.126	0.224	0.113	0.01
81	6.75	0.33	0.126	0.223	0.113	0.01
82	6.83	0.33	0.126	0.222	0.113	0.01
83	6.92	0.33	0.126	0.221	0.113	0.01
84	7.00	0.33	0.126	0.220	0.113	0.01
85	7.08	0.33	0.126	0.219	0.113	0.01
86	7.17	0.33	0.126	0.218	0.113	0.01
87	7.25	0.33	0.126	0.217	0.113	0.01
88	7.33	0.37	0.139	0.216	0.125	0.01
89	7.42	0.37	0.139	0.215	0.125	0.01
90	7.50	0.37	0.139	0.214	0.125	0.01
91	7.58	0.40	0.151	0.213	0.136	0.02
92	7.67	0.40	0.151	0.212	0.136	0.02
93	7.75	0.40	0.151	0.211	0.136	0.02
94	7.83	0.43	0.164	0.210	0.147	0.02
95	7.92	0.43	0.164	0.209	0.147	0.02
96	8.00	0.43	0.164	0.208	0.147	0.02
97	8.08	0.50	0.189	0.207	0.170	0.02
98	8.17	0.50	0.189	0.206	0.170	0.02
99	8.25	0.50	0.189	0.205	0.170	0.02
100	8.33	0.50	0.189	0.204	0.170	0.02
101	8.42	0.50	0.189	0.203	0.170	0.02

102	8.50	0.50	0.189	0.202	0.170	0.02
103	8.58	0.53	0.202	0.201	---	0.00
104	8.67	0.53	0.202	0.200	---	0.00
105	8.75	0.53	0.202	0.199	---	0.00
106	8.83	0.57	0.214	0.198	---	0.02
107	8.92	0.57	0.214	0.197	---	0.02
108	9.00	0.57	0.214	0.196	---	0.02
109	9.08	0.63	0.239	0.195	---	0.04
110	9.17	0.63	0.239	0.195	---	0.04
111	9.25	0.63	0.239	0.194	---	0.05
112	9.33	0.67	0.252	0.193	---	0.06
113	9.42	0.67	0.252	0.192	---	0.06
114	9.50	0.67	0.252	0.191	---	0.06
115	9.58	0.70	0.265	0.190	---	0.07
116	9.67	0.70	0.265	0.189	---	0.08
117	9.75	0.70	0.265	0.188	---	0.08
118	9.83	0.73	0.277	0.187	---	0.09
119	9.92	0.73	0.277	0.186	---	0.09
120	10.00	0.73	0.277	0.185	---	0.09
121	10.08	0.50	0.189	0.185	---	0.00
122	10.17	0.50	0.189	0.184	---	0.01
123	10.25	0.50	0.189	0.183	---	0.01
124	10.33	0.50	0.189	0.182	---	0.01
125	10.42	0.50	0.189	0.181	---	0.01
126	10.50	0.50	0.189	0.180	---	0.01
127	10.58	0.67	0.252	0.179	---	0.07
128	10.67	0.67	0.252	0.178	---	0.07
129	10.75	0.67	0.252	0.177	---	0.07
130	10.83	0.67	0.252	0.177	---	0.08
131	10.92	0.67	0.252	0.176	---	0.08
132	11.00	0.67	0.252	0.175	---	0.08
133	11.08	0.63	0.239	0.174	---	0.07
134	11.17	0.63	0.239	0.173	---	0.07
135	11.25	0.63	0.239	0.172	---	0.07
136	11.33	0.63	0.239	0.171	---	0.07
137	11.42	0.63	0.239	0.171	---	0.07
138	11.50	0.63	0.239	0.170	---	0.07
139	11.58	0.57	0.214	0.169	---	0.05
140	11.67	0.57	0.214	0.168	---	0.05
141	11.75	0.57	0.214	0.167	---	0.05
142	11.83	0.60	0.227	0.166	---	0.06
143	11.92	0.60	0.227	0.166	---	0.06
144	12.00	0.60	0.227	0.165	---	0.06
145	12.08	0.83	0.315	0.164	---	0.15
146	12.17	0.83	0.315	0.163	---	0.15
147	12.25	0.83	0.315	0.162	---	0.15
148	12.33	0.87	0.328	0.161	---	0.17
149	12.42	0.87	0.328	0.161	---	0.17
150	12.50	0.87	0.328	0.160	---	0.17
151	12.58	0.93	0.353	0.159	---	0.19
152	12.67	0.93	0.353	0.158	---	0.19
153	12.75	0.93	0.353	0.157	---	0.20
154	12.83	0.97	0.365	0.157	---	0.21
155	12.92	0.97	0.365	0.156	---	0.21

156	13.00	0.97	0.365	0.155	---	0.21
157	13.08	1.13	0.428	0.154	---	0.27
158	13.17	1.13	0.428	0.154	---	0.27
159	13.25	1.13	0.428	0.153	---	0.28
160	13.33	1.13	0.428	0.152	---	0.28
161	13.42	1.13	0.428	0.151	---	0.28
162	13.50	1.13	0.428	0.150	---	0.28
163	13.58	0.77	0.290	0.150	---	0.14
164	13.67	0.77	0.290	0.149	---	0.14
165	13.75	0.77	0.290	0.148	---	0.14
166	13.83	0.77	0.290	0.147	---	0.14
167	13.92	0.77	0.290	0.147	---	0.14
168	14.00	0.77	0.290	0.146	---	0.14
169	14.08	0.90	0.340	0.145	---	0.19
170	14.17	0.90	0.340	0.144	---	0.20
171	14.25	0.90	0.340	0.144	---	0.20
172	14.33	0.87	0.328	0.143	---	0.18
173	14.42	0.87	0.328	0.142	---	0.19
174	14.50	0.87	0.328	0.141	---	0.19
175	14.58	0.87	0.328	0.141	---	0.19
176	14.67	0.87	0.328	0.140	---	0.19
177	14.75	0.87	0.328	0.139	---	0.19
178	14.83	0.83	0.315	0.139	---	0.18
179	14.92	0.83	0.315	0.138	---	0.18
180	15.00	0.83	0.315	0.137	---	0.18
181	15.08	0.80	0.302	0.136	---	0.17
182	15.17	0.80	0.302	0.136	---	0.17
183	15.25	0.80	0.302	0.135	---	0.17
184	15.33	0.77	0.290	0.134	---	0.16
185	15.42	0.77	0.290	0.134	---	0.16
186	15.50	0.77	0.290	0.133	---	0.16
187	15.58	0.63	0.239	0.132	---	0.11
188	15.67	0.63	0.239	0.132	---	0.11
189	15.75	0.63	0.239	0.131	---	0.11
190	15.83	0.63	0.239	0.130	---	0.11
191	15.92	0.63	0.239	0.130	---	0.11
192	16.00	0.63	0.239	0.129	---	0.11
193	16.08	0.13	0.050	0.128	0.045	0.01
194	16.17	0.13	0.050	0.128	0.045	0.01
195	16.25	0.13	0.050	0.127	0.045	0.01
196	16.33	0.13	0.050	0.126	0.045	0.01
197	16.42	0.13	0.050	0.126	0.045	0.01
198	16.50	0.13	0.050	0.125	0.045	0.01
199	16.58	0.10	0.038	0.124	0.034	0.00
200	16.67	0.10	0.038	0.124	0.034	0.00
201	16.75	0.10	0.038	0.123	0.034	0.00
202	16.83	0.10	0.038	0.123	0.034	0.00
203	16.92	0.10	0.038	0.122	0.034	0.00
204	17.00	0.10	0.038	0.121	0.034	0.00
205	17.08	0.17	0.063	0.121	0.057	0.01
206	17.17	0.17	0.063	0.120	0.057	0.01
207	17.25	0.17	0.063	0.119	0.057	0.01
208	17.33	0.17	0.063	0.119	0.057	0.01
209	17.42	0.17	0.063	0.118	0.057	0.01

210	17.50	0.17	0.063	0.118	0.057	0.01
211	17.58	0.17	0.063	0.117	0.057	0.01
212	17.67	0.17	0.063	0.117	0.057	0.01
213	17.75	0.17	0.063	0.116	0.057	0.01
214	17.83	0.13	0.050	0.115	0.045	0.01
215	17.92	0.13	0.050	0.115	0.045	0.01
216	18.00	0.13	0.050	0.114	0.045	0.01
217	18.08	0.13	0.050	0.114	0.045	0.01
218	18.17	0.13	0.050	0.113	0.045	0.01
219	18.25	0.13	0.050	0.113	0.045	0.01
220	18.33	0.13	0.050	0.112	0.045	0.01
221	18.42	0.13	0.050	0.111	0.045	0.01
222	18.50	0.13	0.050	0.111	0.045	0.01
223	18.58	0.10	0.038	0.110	0.034	0.00
224	18.67	0.10	0.038	0.110	0.034	0.00
225	18.75	0.10	0.038	0.109	0.034	0.00
226	18.83	0.07	0.025	0.109	0.023	0.00
227	18.92	0.07	0.025	0.108	0.023	0.00
228	19.00	0.07	0.025	0.108	0.023	0.00
229	19.08	0.10	0.038	0.107	0.034	0.00
230	19.17	0.10	0.038	0.107	0.034	0.00
231	19.25	0.10	0.038	0.106	0.034	0.00
232	19.33	0.13	0.050	0.106	0.045	0.01
233	19.42	0.13	0.050	0.105	0.045	0.01
234	19.50	0.13	0.050	0.105	0.045	0.01
235	19.58	0.10	0.038	0.104	0.034	0.00
236	19.67	0.10	0.038	0.104	0.034	0.00
237	19.75	0.10	0.038	0.103	0.034	0.00
238	19.83	0.07	0.025	0.103	0.023	0.00
239	19.92	0.07	0.025	0.102	0.023	0.00
240	20.00	0.07	0.025	0.102	0.023	0.00
241	20.08	0.10	0.038	0.102	0.034	0.00
242	20.17	0.10	0.038	0.101	0.034	0.00
243	20.25	0.10	0.038	0.101	0.034	0.00
244	20.33	0.10	0.038	0.100	0.034	0.00
245	20.42	0.10	0.038	0.100	0.034	0.00
246	20.50	0.10	0.038	0.099	0.034	0.00
247	20.58	0.10	0.038	0.099	0.034	0.00
248	20.67	0.10	0.038	0.099	0.034	0.00
249	20.75	0.10	0.038	0.098	0.034	0.00
250	20.83	0.07	0.025	0.098	0.023	0.00
251	20.92	0.07	0.025	0.097	0.023	0.00
252	21.00	0.07	0.025	0.097	0.023	0.00
253	21.08	0.10	0.038	0.097	0.034	0.00
254	21.17	0.10	0.038	0.096	0.034	0.00
255	21.25	0.10	0.038	0.096	0.034	0.00
256	21.33	0.07	0.025	0.095	0.023	0.00
257	21.42	0.07	0.025	0.095	0.023	0.00
258	21.50	0.07	0.025	0.095	0.023	0.00
259	21.58	0.10	0.038	0.094	0.034	0.00
260	21.67	0.10	0.038	0.094	0.034	0.00
261	21.75	0.10	0.038	0.094	0.034	0.00
262	21.83	0.07	0.025	0.093	0.023	0.00
263	21.92	0.07	0.025	0.093	0.023	0.00

264	22.00	0.07	0.025	0.093	0.023	0.00
265	22.08	0.10	0.038	0.092	0.034	0.00
266	22.17	0.10	0.038	0.092	0.034	0.00
267	22.25	0.10	0.038	0.092	0.034	0.00
268	22.33	0.07	0.025	0.092	0.023	0.00
269	22.42	0.07	0.025	0.091	0.023	0.00
270	22.50	0.07	0.025	0.091	0.023	0.00
271	22.58	0.07	0.025	0.091	0.023	0.00
272	22.67	0.07	0.025	0.090	0.023	0.00
273	22.75	0.07	0.025	0.090	0.023	0.00
274	22.83	0.07	0.025	0.090	0.023	0.00
275	22.92	0.07	0.025	0.090	0.023	0.00
276	23.00	0.07	0.025	0.090	0.023	0.00
277	23.08	0.07	0.025	0.089	0.023	0.00
278	23.17	0.07	0.025	0.089	0.023	0.00
279	23.25	0.07	0.025	0.089	0.023	0.00
280	23.33	0.07	0.025	0.089	0.023	0.00
281	23.42	0.07	0.025	0.089	0.023	0.00
282	23.50	0.07	0.025	0.088	0.023	0.00
283	23.58	0.07	0.025	0.088	0.023	0.00
284	23.67	0.07	0.025	0.088	0.023	0.00
285	23.75	0.07	0.025	0.088	0.023	0.00
286	23.83	0.07	0.025	0.088	0.023	0.00
287	23.92	0.07	0.025	0.088	0.023	0.00
288	24.00	0.07	0.025	0.088	0.023	0.00
	Sum =	100.0			Sum =	11.9

Flood volume = Effective rainfall 0.99(In)
times area 66.5(Ac.)/[(In)/(Ft.)] = 5.5(Ac.Ft)
Total soil loss = 2.16(In)
Total soil loss = 11.969(Ac.Ft)
Total rainfall = 3.15(In)
Flood volume = 238673.9 Cubic Feet
Total soil loss = 521390.9 Cubic Feet

Peak flow rate of this hydrograph = 17.745(CFS)

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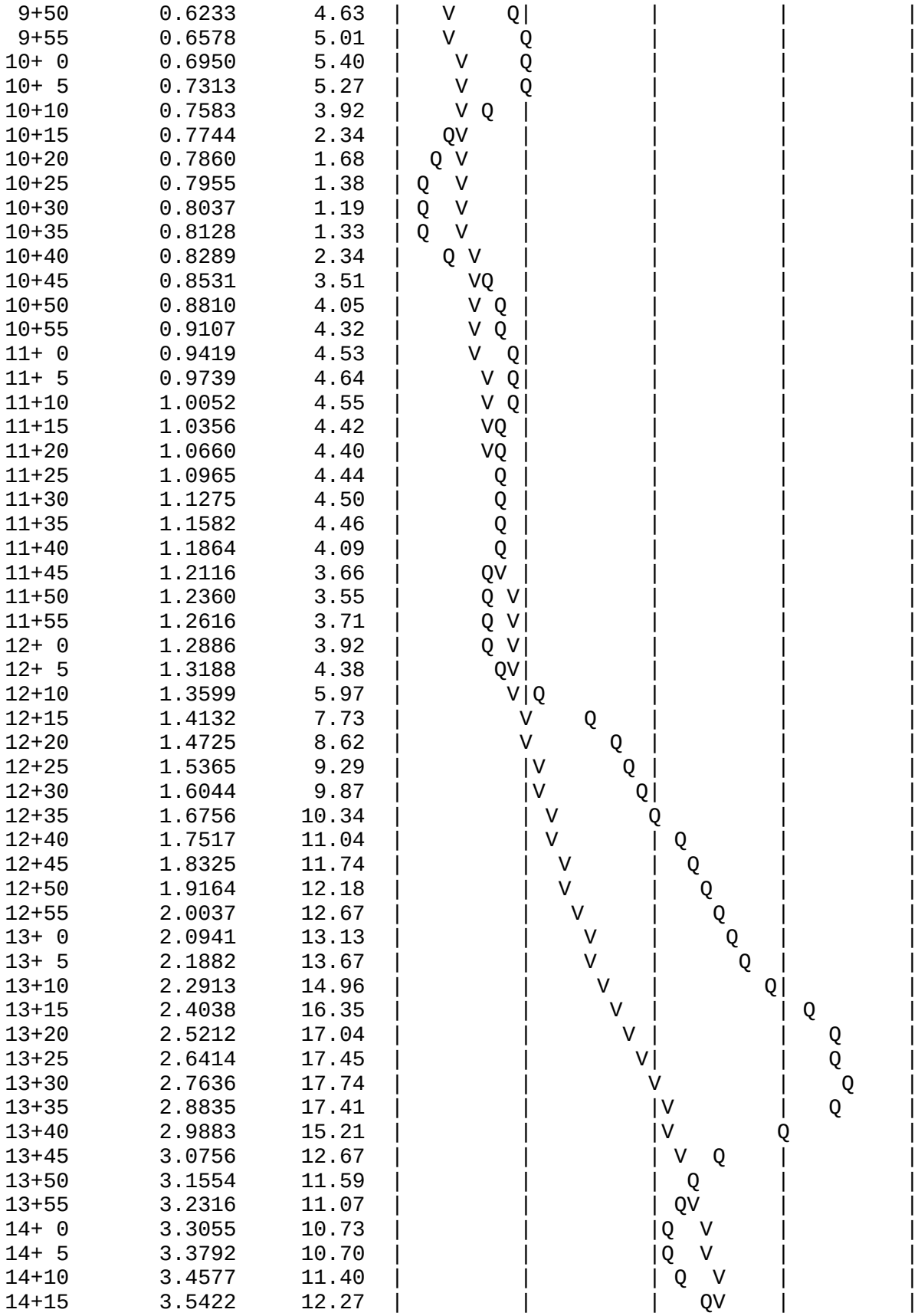
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

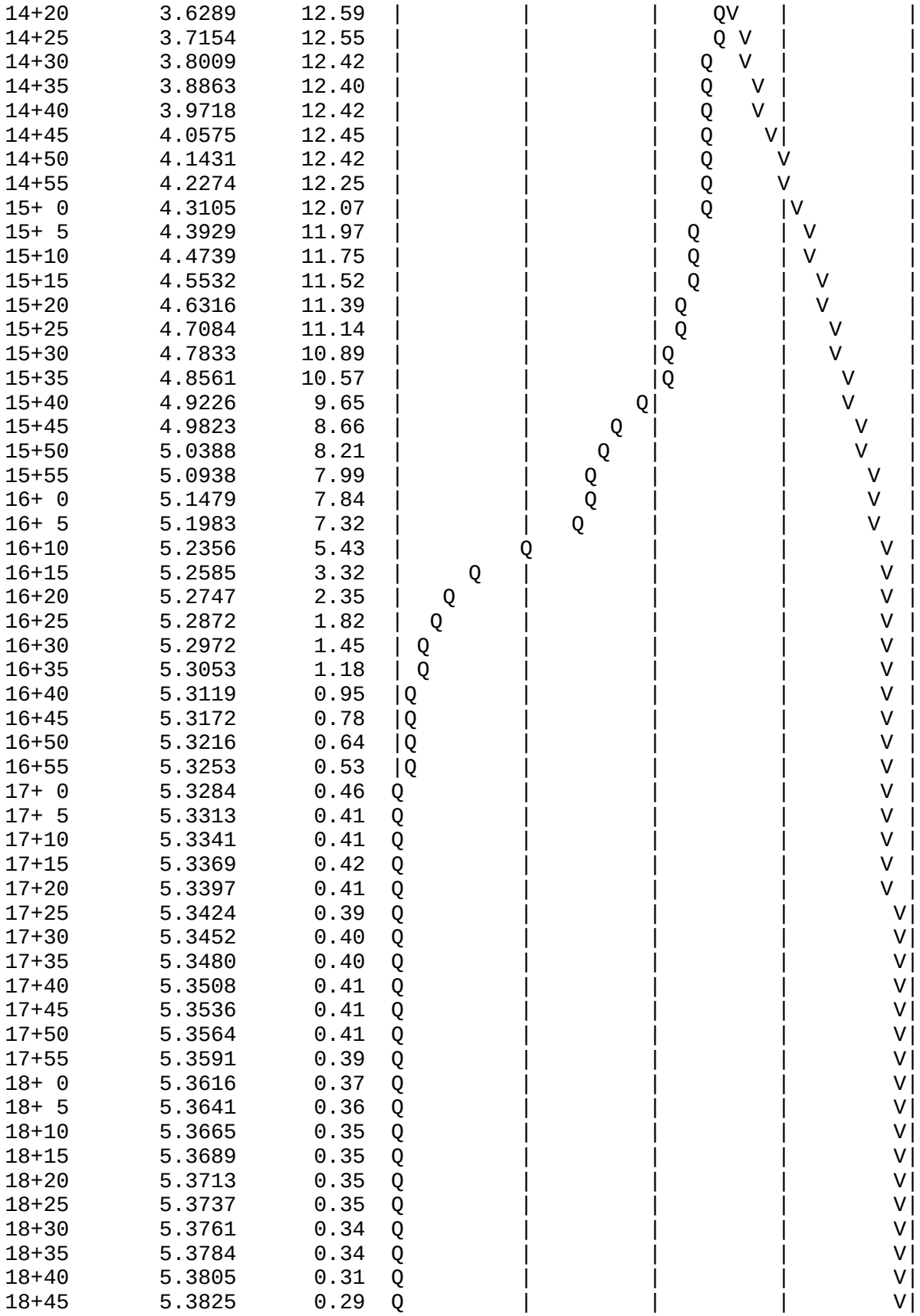
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0004	0.05	Q	|	|	|	|
0+15	0.0011	0.10	Q	|	|	|	|
0+20	0.0020	0.13	Q	|	|	|	|
0+25	0.0032	0.16	Q	|	|	|	|
0+30	0.0045	0.20	Q	|	|	|	|
0+35	0.0060	0.21	Q	|	|	|	|
0+40	0.0075	0.22	Q	|	|	|	|
0+45	0.0091	0.23	Q	|	|	|	|

0+50	0.0107	0.24	Q	|	|	|	|
0+55	0.0126	0.27	Q	|	|	|	|
1+ 0	0.0146	0.29	Q	|	|	|	|
1+ 5	0.0167	0.30	Q	|	|	|	|
1+10	0.0187	0.29	Q	|	|	|	|
1+15	0.0205	0.27	Q	|	|	|	|
1+20	0.0224	0.26	Q	|	|	|	|
1+25	0.0242	0.26	Q	|	|	|	|
1+30	0.0259	0.26	Q	|	|	|	|
1+35	0.0277	0.26	Q	|	|	|	|
1+40	0.0295	0.26	Q	|	|	|	|
1+45	0.0313	0.26	Q	|	|	|	|
1+50	0.0331	0.26	Q	|	|	|	|
1+55	0.0350	0.28	Q	|	|	|	|
2+ 0	0.0371	0.31	Q	|	|	|	|
2+ 5	0.0393	0.32	Q	|	|	|	|
2+10	0.0415	0.32	Q	|	|	|	|
2+15	0.0438	0.33	Q	|	|	|	|
2+20	0.0460	0.33	Q	|	|	|	|
2+25	0.0483	0.33	Q	|	|	|	|
2+30	0.0506	0.33	Q	|	|	|	|
2+35	0.0529	0.34	Q	|	|	|	|
2+40	0.0554	0.36	Q	|	|	|	|
2+45	0.0581	0.39	Q	|	|	|	|
2+50	0.0608	0.40	Q	|	|	|	|
2+55	0.0636	0.40	Q	|	|	|	|
3+ 0	0.0664	0.41	Q	|	|	|	|
3+ 5	0.0693	0.41	Q	|	|	|	|
3+10	0.0721	0.42	Q	|	|	|	|
3+15	0.0750	0.42	Q	|	|	|	|
3+20	0.0779	0.42	Q	|	|	|	|
3+25	0.0808	0.42	Q	|	|	|	|
3+30	0.0837	0.42	Q	|	|	|	|
3+35	0.0866	0.42	Q	|	|	|	|
3+40	0.0895	0.42	Q	|	|	|	|
3+45	0.0924	0.42	Q	|	|	|	|
3+50	0.0953	0.43	Q	|	|	|	|
3+55	0.0984	0.45	Q	|	|	|	|
4+ 0	0.1017	0.47	Q	|	|	|	|
4+ 5	0.1050	0.48	Q	|	|	|	|
4+10	0.1084	0.49	Q	|	|	|	|
4+15	0.1118	0.49	Q	|	|	|	|
4+20	0.1152	0.50	VQ	|	|	|	|
4+25	0.1189	0.53	VQ	|	|	|	|
4+30	0.1227	0.55	VQ	|	|	|	|
4+35	0.1266	0.56	VQ	|	|	|	|
4+40	0.1305	0.57	VQ	|	|	|	|
4+45	0.1345	0.58	VQ	|	|	|	|
4+50	0.1385	0.59	|Q	|	|	|	|
4+55	0.1427	0.61	|Q	|	|	|	|
5+ 0	0.1471	0.64	|Q	|	|	|	|
5+ 5	0.1515	0.64	|Q	|	|	|	|
5+10	0.1556	0.60	|Q	|	|	|	|
5+15	0.1595	0.56	|Q	|	|	|	|

```
5+20       0.1632      0.54  |Q         |          |          |          |
5+25       0.1671      0.56  |Q         |          |          |          |
5+30       0.1710      0.58  |Q         |          |          |          |
5+35       0.1751      0.59  |Q         |          |          |          |
5+40       0.1793      0.61  |Q         |          |          |          |
5+45       0.1837      0.64  |Q         |          |          |          |
5+50       0.1882      0.65  |Q         |          |          |          |
5+55       0.1927      0.66  |Q         |          |          |          |
6+ 0       0.1973      0.66  |Q         |          |          |          |
6+ 5       0.2019      0.67  |Q         |          |          |          |
6+10       0.2067      0.69  |Q         |          |          |          |
6+15       0.2116      0.72  |Q         |          |          |          |
6+20       0.2167      0.73  |Q         |          |          |          |
6+25       0.2218      0.74  |Q         |          |          |          |
6+30       0.2269      0.74  |Q         |          |          |          |
6+35       0.2321      0.75  |Q         |          |          |          |
6+40       0.2374      0.78  |Q         |          |          |          |
6+45       0.2430      0.80  |Q         |          |          |          |
6+50       0.2486      0.82  |Q         |          |          |          |
6+55       0.2543      0.82  |Q         |          |          |          |
7+ 0       0.2600      0.83  |Q         |          |          |          |
7+ 5       0.2658      0.83  |Q         |          |          |          |
7+10       0.2715      0.84  |Q         |          |          |          |
7+15       0.2773      0.84  |QV        |          |          |          |
7+20       0.2831      0.85  |QV        |          |          |          |
7+25       0.2891      0.87  |QV        |          |          |          |
7+30       0.2952      0.89  |QV        |          |          |          |
7+35       0.3015      0.91  |QV        |          |          |          |
7+40       0.3080      0.94  |QV        |          |          |          |
7+45       0.3146      0.97  |QV        |          |          |          |
7+50       0.3214      0.99  |QV        |          |          |          |
7+55       0.3284      1.02  | Q        |          |          |          |
8+ 0       0.3356      1.05  | Q        |          |          |          |
8+ 5       0.3430      1.07  | Q        |          |          |          |
8+10       0.3508      1.12  | Q        |          |          |          |
8+15       0.3589      1.18  | Q        |          |          |          |
8+20       0.3672      1.21  | Q        |          |          |          |
8+25       0.3756      1.22  | Q        |          |          |          |
8+30       0.3841      1.23  | Q        |          |          |          |
8+35       0.3922      1.17  | Q        |          |          |          |
8+40       0.3981      0.86  |QV        |          |          |          |
8+45       0.4017      0.53  |QV        |          |          |          |
8+50       0.4048      0.46  Q V        |          |          |          |
8+55       0.4092      0.64  |QV        |          |          |          |
9+ 0       0.4153      0.88  |Q V       |          |          |          |
9+ 5       0.4228      1.10  | QV       |          |          |          |
9+10       0.4340      1.62  |  Q       |          |          |          |
9+15       0.4490      2.18  |  VQ      |          |          |          |
9+20       0.4664      2.52  |  V Q     |          |          |          |
9+25       0.4865      2.92  |  V Q     |          |          |          |
9+30       0.5093      3.31  |  V  Q    |          |          |          |
9+35       0.5340      3.59  |  V   Q   |          |          |          |
9+40       0.5614      3.97  |   V  Q   |          |          |          |
9+45       0.5914      4.35  |   V   Q  |          |          |          |
```


9+50 0.6233 4.63
9+55 0.6578 5.01
10+ 0 0.6950 5.40
10+ 5 0.7313 5.27
10+10 0.7583 3.92
10+15 0.7744 2.34
10+20 0.7860 1.68
10+25 0.7955 1.38
10+30 0.8037 1.19
10+35 0.8128 1.33
10+40 0.8289 2.34
10+45 0.8531 3.51
10+50 0.8810 4.05
10+55 0.9107 4.32
11+ 0 0.9419 4.53
11+ 5 0.9739 4.64
11+10 1.0052 4.55
11+15 1.0356 4.42
11+20 1.0660 4.40
11+25 1.0965 4.44
11+30 1.1275 4.50
11+35 1.1582 4.46
11+40 1.1864 4.09
11+45 1.2116 3.66
11+50 1.2360 3.55
11+55 1.2616 3.71
12+ 0 1.2886 3.92
12+ 5 1.3188 4.38
12+10 1.3599 5.97
12+15 1.4132 7.73
12+20 1.4725 8.62
12+25 1.5365 9.29
12+30 1.6044 9.87
12+35 1.6756 10.34
12+40 1.7517 11.04
12+45 1.8325 11.74
12+50 1.9164 12.18
12+55 2.0037 12.67
13+ 0 2.0941 13.13
13+ 5 2.1882 13.67
13+10 2.2913 14.96
13+15 2.4038 16.35
13+20 2.5212 17.04
13+25 2.6414 17.45
13+30 2.7636 17.74
13+35 2.8835 17.41
13+40 2.9883 15.21
13+45 3.0756 12.67
13+50 3.1554 11.59
13+55 3.2316 11.07
14+ 0 3.3055 10.73
14+ 5 3.3792 10.70
14+10 3.4577 11.40
14+15 3.5422 12.27



18+50	5.3844	0.27	Q	|	|	|	V|
18+55	5.3861	0.24	Q	|	|	|	V|
19+ 0	5.3876	0.22	Q	|	|	|	V|
19+ 5	5.3890	0.21	Q	|	|	|	V|
19+10	5.3905	0.22	Q	|	|	|	V|
19+15	5.3921	0.24	Q	|	|	|	V|
19+20	5.3939	0.25	Q	|	|	|	V|
19+25	5.3957	0.27	Q	|	|	|	V|
19+30	5.3978	0.30	Q	|	|	|	V|
19+35	5.3999	0.31	Q	|	|	|	V|
19+40	5.4019	0.29	Q	|	|	|	V|
19+45	5.4038	0.27	Q	|	|	|	V|
19+50	5.4056	0.26	Q	|	|	|	V|
19+55	5.4072	0.23	Q	|	|	|	V|
20+ 0	5.4086	0.21	Q	|	|	|	V|
20+ 5	5.4100	0.20	Q	|	|	|	V|
20+10	5.4115	0.22	Q	|	|	|	V|
20+15	5.4131	0.24	Q	|	|	|	V|
20+20	5.4148	0.24	Q	|	|	|	V|
20+25	5.4165	0.25	Q	|	|	|	V|
20+30	5.4182	0.25	Q	|	|	|	V|
20+35	5.4199	0.25	Q	|	|	|	V|
20+40	5.4216	0.25	Q	|	|	|	V|
20+45	5.4234	0.25	Q	|	|	|	V|
20+50	5.4250	0.25	Q	|	|	|	V|
20+55	5.4266	0.22	Q	|	|	|	V|
21+ 0	5.4280	0.20	Q	|	|	|	V|
21+ 5	5.4293	0.19	Q	|	|	|	V|
21+10	5.4308	0.21	Q	|	|	|	V|
21+15	5.4324	0.23	Q	|	|	|	V|
21+20	5.4340	0.24	Q	|	|	|	V|
21+25	5.4355	0.22	Q	|	|	|	V|
21+30	5.4368	0.20	Q	|	|	|	V|
21+35	5.4381	0.19	Q	|	|	|	V|
21+40	5.4396	0.21	Q	|	|	|	V|
21+45	5.4412	0.23	Q	|	|	|	V|
21+50	5.4428	0.23	Q	|	|	|	V|
21+55	5.4442	0.22	Q	|	|	|	V|
22+ 0	5.4456	0.19	Q	|	|	|	V|
22+ 5	5.4469	0.19	Q	|	|	|	V|
22+10	5.4483	0.21	Q	|	|	|	V|
22+15	5.4499	0.23	Q	|	|	|	V|
22+20	5.4515	0.23	Q	|	|	|	V|
22+25	5.4530	0.22	Q	|	|	|	V|
22+30	5.4543	0.19	Q	|	|	|	V|
22+35	5.4556	0.18	Q	|	|	|	V|
22+40	5.4568	0.18	Q	|	|	|	V|
22+45	5.4580	0.18	Q	|	|	|	V|
22+50	5.4592	0.18	Q	|	|	|	V|
22+55	5.4604	0.17	Q	|	|	|	V|
23+ 0	5.4616	0.17	Q	|	|	|	V|
23+ 5	5.4628	0.17	Q	|	|	|	V|
23+10	5.4640	0.17	Q	|	|	|	V|
23+15	5.4652	0.17	Q	|	|	|	V|

23+20	5.4663	0.17	Q	|	|	|	V|
23+25	5.4675	0.17	Q	|	|	|	V|
23+30	5.4687	0.17	Q	|	|	|	V|
23+35	5.4698	0.17	Q	|	|	|	V|
23+40	5.4710	0.17	Q	|	|	|	V|
23+45	5.4722	0.17	Q	|	|	|	V|
23+50	5.4733	0.17	Q	|	|	|	V|
23+55	5.4745	0.17	Q	|	|	|	V|
24+ 0	5.4757	0.17	Q	|	|	|	V|
24+ 5	5.4768	0.16	Q	|	|	|	V|
24+10	5.4775	0.12	Q	|	|	|	V|
24+15	5.4780	0.07	Q	|	|	|	V|
24+20	5.4783	0.04	Q	|	|	|	V|
24+25	5.4785	0.03	Q	|	|	|	V|
24+30	5.4787	0.02	Q	|	|	|	V|
24+35	5.4788	0.02	Q	|	|	|	V|
24+40	5.4789	0.01	Q	|	|	|	V|
24+45	5.4790	0.01	Q	|	|	|	V|
24+50	5.4791	0.01	Q	|	|	|	V|
24+55	5.4791	0.01	Q	|	|	|	V|
25+ 0	5.4791	0.00	Q	|	|	|	V|
25+ 5	5.4792	0.00	Q	|	|	|	V|
25+10	5.4792	0.00	Q	|	|	|	V|
25+15	5.4792	0.00	Q	|	|	|	V|
25+20	5.4792	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163UHE10024100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING 100 YEAR UNIT HYDROGRAPH
MJPA 304163
AREA B-1
4163UHE100.UM1

Drainage Area = 66.49(Ac.) = 0.104 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 66.49(Ac.) = 0.104 Sq. Mi.
Length along longest watercourse = 2220.00(Ft.)
Length along longest watercourse measured to centroid = 1350.00(Ft.)
Length along longest watercourse = 0.420 Mi.
Length along longest watercourse measured to centroid = 0.256 Mi.
Difference in elevation = 10.20(Ft.)
Slope along watercourse = 24.2595 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.168 Hr.
Lag time = 10.10 Min.
25% of lag time = 2.52 Min.
40% of lag time = 4.04 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	1.60	106.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
66.49	4.00	265.96

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 4.000(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
66.490	86.00	0.000

Total Area Entered = 66.49(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	94.4	0.073	0.000	0.073	1.000	0.073
					Sum (F) =	0.073

Area averaged mean soil loss (F) (In/Hr) = 0.073
Minimum soil loss rate ((In/Hr)) = 0.036
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	49.508	6.033	4.043
2	0.167	99.016	25.729	17.241
3	0.250	148.524	28.891	19.360
4	0.333	198.032	13.134	8.801
5	0.417	247.539	6.843	4.586
6	0.500	297.047	4.752	3.184
7	0.583	346.555	3.424	2.295
8	0.667	396.063	2.629	1.761
9	0.750	445.571	1.929	1.292
10	0.833	495.079	1.545	1.035
11	0.917	544.587	1.325	0.888
12	1.000	594.095	1.013	0.679
13	1.083	643.603	0.816	0.546
14	1.167	693.111	0.619	0.415
15	1.250	742.618	0.497	0.333
16	1.333	792.126	0.495	0.332

17	1.417	841.634	0.326		0.219
			Sum = 100.000	Sum=	67.009

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.032	0.129	0.029	0.00
2	0.17	0.07	0.032	0.129	0.029	0.00
3	0.25	0.07	0.032	0.128	0.029	0.00
4	0.33	0.10	0.048	0.128	0.043	0.00
5	0.42	0.10	0.048	0.127	0.043	0.00
6	0.50	0.10	0.048	0.127	0.043	0.00
7	0.58	0.10	0.048	0.126	0.043	0.00
8	0.67	0.10	0.048	0.126	0.043	0.00
9	0.75	0.10	0.048	0.125	0.043	0.00
10	0.83	0.13	0.064	0.125	0.058	0.01
11	0.92	0.13	0.064	0.124	0.058	0.01
12	1.00	0.13	0.064	0.124	0.058	0.01
13	1.08	0.10	0.048	0.123	0.043	0.00
14	1.17	0.10	0.048	0.123	0.043	0.00
15	1.25	0.10	0.048	0.122	0.043	0.00
16	1.33	0.10	0.048	0.122	0.043	0.00
17	1.42	0.10	0.048	0.121	0.043	0.00
18	1.50	0.10	0.048	0.121	0.043	0.00
19	1.58	0.10	0.048	0.120	0.043	0.00
20	1.67	0.10	0.048	0.120	0.043	0.00
21	1.75	0.10	0.048	0.119	0.043	0.00
22	1.83	0.13	0.064	0.119	0.058	0.01
23	1.92	0.13	0.064	0.118	0.058	0.01
24	2.00	0.13	0.064	0.118	0.058	0.01
25	2.08	0.13	0.064	0.117	0.058	0.01
26	2.17	0.13	0.064	0.117	0.058	0.01
27	2.25	0.13	0.064	0.116	0.058	0.01
28	2.33	0.13	0.064	0.116	0.058	0.01
29	2.42	0.13	0.064	0.115	0.058	0.01
30	2.50	0.13	0.064	0.115	0.058	0.01
31	2.58	0.17	0.080	0.115	0.072	0.01
32	2.67	0.17	0.080	0.114	0.072	0.01
33	2.75	0.17	0.080	0.114	0.072	0.01
34	2.83	0.17	0.080	0.113	0.072	0.01
35	2.92	0.17	0.080	0.113	0.072	0.01
36	3.00	0.17	0.080	0.112	0.072	0.01
37	3.08	0.17	0.080	0.112	0.072	0.01
38	3.17	0.17	0.080	0.111	0.072	0.01
39	3.25	0.17	0.080	0.111	0.072	0.01
40	3.33	0.17	0.080	0.110	0.072	0.01
41	3.42	0.17	0.080	0.110	0.072	0.01
42	3.50	0.17	0.080	0.109	0.072	0.01
43	3.58	0.17	0.080	0.109	0.072	0.01
44	3.67	0.17	0.080	0.108	0.072	0.01
45	3.75	0.17	0.080	0.108	0.072	0.01
46	3.83	0.20	0.096	0.108	0.086	0.01
47	3.92	0.20	0.096	0.107	0.086	0.01

48	4.00	0.20	0.096	0.107	0.086	0.01
49	4.08	0.20	0.096	0.106	0.086	0.01
50	4.17	0.20	0.096	0.106	0.086	0.01
51	4.25	0.20	0.096	0.105	0.086	0.01
52	4.33	0.23	0.112	0.105	---	0.01
53	4.42	0.23	0.112	0.104	---	0.01
54	4.50	0.23	0.112	0.104	---	0.01
55	4.58	0.23	0.112	0.104	---	0.01
56	4.67	0.23	0.112	0.103	---	0.01
57	4.75	0.23	0.112	0.103	---	0.01
58	4.83	0.27	0.128	0.102	---	0.03
59	4.92	0.27	0.128	0.102	---	0.03
60	5.00	0.27	0.128	0.101	---	0.03
61	5.08	0.20	0.096	0.101	0.086	0.01
62	5.17	0.20	0.096	0.100	0.086	0.01
63	5.25	0.20	0.096	0.100	0.086	0.01
64	5.33	0.23	0.112	0.100	---	0.01
65	5.42	0.23	0.112	0.099	---	0.01
66	5.50	0.23	0.112	0.099	---	0.01
67	5.58	0.27	0.128	0.098	---	0.03
68	5.67	0.27	0.128	0.098	---	0.03
69	5.75	0.27	0.128	0.097	---	0.03
70	5.83	0.27	0.128	0.097	---	0.03
71	5.92	0.27	0.128	0.097	---	0.03
72	6.00	0.27	0.128	0.096	---	0.03
73	6.08	0.30	0.144	0.096	---	0.05
74	6.17	0.30	0.144	0.095	---	0.05
75	6.25	0.30	0.144	0.095	---	0.05
76	6.33	0.30	0.144	0.094	---	0.05
77	6.42	0.30	0.144	0.094	---	0.05
78	6.50	0.30	0.144	0.094	---	0.05
79	6.58	0.33	0.160	0.093	---	0.07
80	6.67	0.33	0.160	0.093	---	0.07
81	6.75	0.33	0.160	0.092	---	0.07
82	6.83	0.33	0.160	0.092	---	0.07
83	6.92	0.33	0.160	0.091	---	0.07
84	7.00	0.33	0.160	0.091	---	0.07
85	7.08	0.33	0.160	0.091	---	0.07
86	7.17	0.33	0.160	0.090	---	0.07
87	7.25	0.33	0.160	0.090	---	0.07
88	7.33	0.37	0.176	0.089	---	0.09
89	7.42	0.37	0.176	0.089	---	0.09
90	7.50	0.37	0.176	0.089	---	0.09
91	7.58	0.40	0.192	0.088	---	0.10
92	7.67	0.40	0.192	0.088	---	0.10
93	7.75	0.40	0.192	0.087	---	0.10
94	7.83	0.43	0.208	0.087	---	0.12
95	7.92	0.43	0.208	0.087	---	0.12
96	8.00	0.43	0.208	0.086	---	0.12
97	8.08	0.50	0.240	0.086	---	0.15
98	8.17	0.50	0.240	0.085	---	0.15
99	8.25	0.50	0.240	0.085	---	0.16
100	8.33	0.50	0.240	0.085	---	0.16
101	8.42	0.50	0.240	0.084	---	0.16

102	8.50	0.50	0.240	0.084	---	0.16
103	8.58	0.53	0.256	0.083	---	0.17
104	8.67	0.53	0.256	0.083	---	0.17
105	8.75	0.53	0.256	0.083	---	0.17
106	8.83	0.57	0.272	0.082	---	0.19
107	8.92	0.57	0.272	0.082	---	0.19
108	9.00	0.57	0.272	0.081	---	0.19
109	9.08	0.63	0.304	0.081	---	0.22
110	9.17	0.63	0.304	0.081	---	0.22
111	9.25	0.63	0.304	0.080	---	0.22
112	9.33	0.67	0.320	0.080	---	0.24
113	9.42	0.67	0.320	0.080	---	0.24
114	9.50	0.67	0.320	0.079	---	0.24
115	9.58	0.70	0.336	0.079	---	0.26
116	9.67	0.70	0.336	0.078	---	0.26
117	9.75	0.70	0.336	0.078	---	0.26
118	9.83	0.73	0.352	0.078	---	0.27
119	9.92	0.73	0.352	0.077	---	0.27
120	10.00	0.73	0.352	0.077	---	0.28
121	10.08	0.50	0.240	0.077	---	0.16
122	10.17	0.50	0.240	0.076	---	0.16
123	10.25	0.50	0.240	0.076	---	0.16
124	10.33	0.50	0.240	0.075	---	0.16
125	10.42	0.50	0.240	0.075	---	0.16
126	10.50	0.50	0.240	0.075	---	0.17
127	10.58	0.67	0.320	0.074	---	0.25
128	10.67	0.67	0.320	0.074	---	0.25
129	10.75	0.67	0.320	0.074	---	0.25
130	10.83	0.67	0.320	0.073	---	0.25
131	10.92	0.67	0.320	0.073	---	0.25
132	11.00	0.67	0.320	0.072	---	0.25
133	11.08	0.63	0.304	0.072	---	0.23
134	11.17	0.63	0.304	0.072	---	0.23
135	11.25	0.63	0.304	0.071	---	0.23
136	11.33	0.63	0.304	0.071	---	0.23
137	11.42	0.63	0.304	0.071	---	0.23
138	11.50	0.63	0.304	0.070	---	0.23
139	11.58	0.57	0.272	0.070	---	0.20
140	11.67	0.57	0.272	0.070	---	0.20
141	11.75	0.57	0.272	0.069	---	0.20
142	11.83	0.60	0.288	0.069	---	0.22
143	11.92	0.60	0.288	0.069	---	0.22
144	12.00	0.60	0.288	0.068	---	0.22
145	12.08	0.83	0.400	0.068	---	0.33
146	12.17	0.83	0.400	0.068	---	0.33
147	12.25	0.83	0.400	0.067	---	0.33
148	12.33	0.87	0.416	0.067	---	0.35
149	12.42	0.87	0.416	0.067	---	0.35
150	12.50	0.87	0.416	0.066	---	0.35
151	12.58	0.93	0.448	0.066	---	0.38
152	12.67	0.93	0.448	0.066	---	0.38
153	12.75	0.93	0.448	0.065	---	0.38
154	12.83	0.97	0.464	0.065	---	0.40
155	12.92	0.97	0.464	0.065	---	0.40

156	13.00	0.97	0.464	0.064	---	0.40
157	13.08	1.13	0.544	0.064	---	0.48
158	13.17	1.13	0.544	0.064	---	0.48
159	13.25	1.13	0.544	0.063	---	0.48
160	13.33	1.13	0.544	0.063	---	0.48
161	13.42	1.13	0.544	0.063	---	0.48
162	13.50	1.13	0.544	0.062	---	0.48
163	13.58	0.77	0.368	0.062	---	0.31
164	13.67	0.77	0.368	0.062	---	0.31
165	13.75	0.77	0.368	0.061	---	0.31
166	13.83	0.77	0.368	0.061	---	0.31
167	13.92	0.77	0.368	0.061	---	0.31
168	14.00	0.77	0.368	0.060	---	0.31
169	14.08	0.90	0.432	0.060	---	0.37
170	14.17	0.90	0.432	0.060	---	0.37
171	14.25	0.90	0.432	0.060	---	0.37
172	14.33	0.87	0.416	0.059	---	0.36
173	14.42	0.87	0.416	0.059	---	0.36
174	14.50	0.87	0.416	0.059	---	0.36
175	14.58	0.87	0.416	0.058	---	0.36
176	14.67	0.87	0.416	0.058	---	0.36
177	14.75	0.87	0.416	0.058	---	0.36
178	14.83	0.83	0.400	0.057	---	0.34
179	14.92	0.83	0.400	0.057	---	0.34
180	15.00	0.83	0.400	0.057	---	0.34
181	15.08	0.80	0.384	0.057	---	0.33
182	15.17	0.80	0.384	0.056	---	0.33
183	15.25	0.80	0.384	0.056	---	0.33
184	15.33	0.77	0.368	0.056	---	0.31
185	15.42	0.77	0.368	0.055	---	0.31
186	15.50	0.77	0.368	0.055	---	0.31
187	15.58	0.63	0.304	0.055	---	0.25
188	15.67	0.63	0.304	0.055	---	0.25
189	15.75	0.63	0.304	0.054	---	0.25
190	15.83	0.63	0.304	0.054	---	0.25
191	15.92	0.63	0.304	0.054	---	0.25
192	16.00	0.63	0.304	0.053	---	0.25
193	16.08	0.13	0.064	0.053	---	0.01
194	16.17	0.13	0.064	0.053	---	0.01
195	16.25	0.13	0.064	0.053	---	0.01
196	16.33	0.13	0.064	0.052	---	0.01
197	16.42	0.13	0.064	0.052	---	0.01
198	16.50	0.13	0.064	0.052	---	0.01
199	16.58	0.10	0.048	0.052	0.043	0.00
200	16.67	0.10	0.048	0.051	0.043	0.00
201	16.75	0.10	0.048	0.051	0.043	0.00
202	16.83	0.10	0.048	0.051	0.043	0.00
203	16.92	0.10	0.048	0.051	0.043	0.00
204	17.00	0.10	0.048	0.050	0.043	0.00
205	17.08	0.17	0.080	0.050	---	0.03
206	17.17	0.17	0.080	0.050	---	0.03
207	17.25	0.17	0.080	0.050	---	0.03
208	17.33	0.17	0.080	0.049	---	0.03
209	17.42	0.17	0.080	0.049	---	0.03

210	17.50	0.17	0.080	0.049	---	0.03
211	17.58	0.17	0.080	0.049	---	0.03
212	17.67	0.17	0.080	0.048	---	0.03
213	17.75	0.17	0.080	0.048	---	0.03
214	17.83	0.13	0.064	0.048	---	0.02
215	17.92	0.13	0.064	0.048	---	0.02
216	18.00	0.13	0.064	0.047	---	0.02
217	18.08	0.13	0.064	0.047	---	0.02
218	18.17	0.13	0.064	0.047	---	0.02
219	18.25	0.13	0.064	0.047	---	0.02
220	18.33	0.13	0.064	0.046	---	0.02
221	18.42	0.13	0.064	0.046	---	0.02
222	18.50	0.13	0.064	0.046	---	0.02
223	18.58	0.10	0.048	0.046	---	0.00
224	18.67	0.10	0.048	0.046	---	0.00
225	18.75	0.10	0.048	0.045	---	0.00
226	18.83	0.07	0.032	0.045	0.029	0.00
227	18.92	0.07	0.032	0.045	0.029	0.00
228	19.00	0.07	0.032	0.045	0.029	0.00
229	19.08	0.10	0.048	0.044	---	0.00
230	19.17	0.10	0.048	0.044	---	0.00
231	19.25	0.10	0.048	0.044	---	0.00
232	19.33	0.13	0.064	0.044	---	0.02
233	19.42	0.13	0.064	0.044	---	0.02
234	19.50	0.13	0.064	0.043	---	0.02
235	19.58	0.10	0.048	0.043	---	0.00
236	19.67	0.10	0.048	0.043	---	0.00
237	19.75	0.10	0.048	0.043	---	0.01
238	19.83	0.07	0.032	0.043	0.029	0.00
239	19.92	0.07	0.032	0.042	0.029	0.00
240	20.00	0.07	0.032	0.042	0.029	0.00
241	20.08	0.10	0.048	0.042	---	0.01
242	20.17	0.10	0.048	0.042	---	0.01
243	20.25	0.10	0.048	0.042	---	0.01
244	20.33	0.10	0.048	0.042	---	0.01
245	20.42	0.10	0.048	0.041	---	0.01
246	20.50	0.10	0.048	0.041	---	0.01
247	20.58	0.10	0.048	0.041	---	0.01
248	20.67	0.10	0.048	0.041	---	0.01
249	20.75	0.10	0.048	0.041	---	0.01
250	20.83	0.07	0.032	0.041	0.029	0.00
251	20.92	0.07	0.032	0.040	0.029	0.00
252	21.00	0.07	0.032	0.040	0.029	0.00
253	21.08	0.10	0.048	0.040	---	0.01
254	21.17	0.10	0.048	0.040	---	0.01
255	21.25	0.10	0.048	0.040	---	0.01
256	21.33	0.07	0.032	0.040	0.029	0.00
257	21.42	0.07	0.032	0.039	0.029	0.00
258	21.50	0.07	0.032	0.039	0.029	0.00
259	21.58	0.10	0.048	0.039	---	0.01
260	21.67	0.10	0.048	0.039	---	0.01
261	21.75	0.10	0.048	0.039	---	0.01
262	21.83	0.07	0.032	0.039	0.029	0.00
263	21.92	0.07	0.032	0.039	0.029	0.00

264	22.00	0.07	0.032	0.038	0.029	0.00
265	22.08	0.10	0.048	0.038	---	0.01
266	22.17	0.10	0.048	0.038	---	0.01
267	22.25	0.10	0.048	0.038	---	0.01
268	22.33	0.07	0.032	0.038	0.029	0.00
269	22.42	0.07	0.032	0.038	0.029	0.00
270	22.50	0.07	0.032	0.038	0.029	0.00
271	22.58	0.07	0.032	0.038	0.029	0.00
272	22.67	0.07	0.032	0.038	0.029	0.00
273	22.75	0.07	0.032	0.037	0.029	0.00
274	22.83	0.07	0.032	0.037	0.029	0.00
275	22.92	0.07	0.032	0.037	0.029	0.00
276	23.00	0.07	0.032	0.037	0.029	0.00
277	23.08	0.07	0.032	0.037	0.029	0.00
278	23.17	0.07	0.032	0.037	0.029	0.00
279	23.25	0.07	0.032	0.037	0.029	0.00
280	23.33	0.07	0.032	0.037	0.029	0.00
281	23.42	0.07	0.032	0.037	0.029	0.00
282	23.50	0.07	0.032	0.037	0.029	0.00
283	23.58	0.07	0.032	0.037	0.029	0.00
284	23.67	0.07	0.032	0.037	0.029	0.00
285	23.75	0.07	0.032	0.036	0.029	0.00
286	23.83	0.07	0.032	0.036	0.029	0.00
287	23.92	0.07	0.032	0.036	0.029	0.00
288	24.00	0.07	0.032	0.036	0.029	0.00
	Sum =	100.0			Sum =	30.4

Flood volume = Effective rainfall 2.53(In)
times area 66.5(Ac.)/[(In)/(Ft.)] = 14.0(Ac.Ft)
Total soil loss = 1.47(In)
Total soil loss = 8.121(Ac.Ft)
Total rainfall = 4.00(In)
Flood volume = 611574.1 Cubic Feet
Total soil loss = 353735.3 Cubic Feet

Peak flow rate of this hydrograph = 31.298(CFS)

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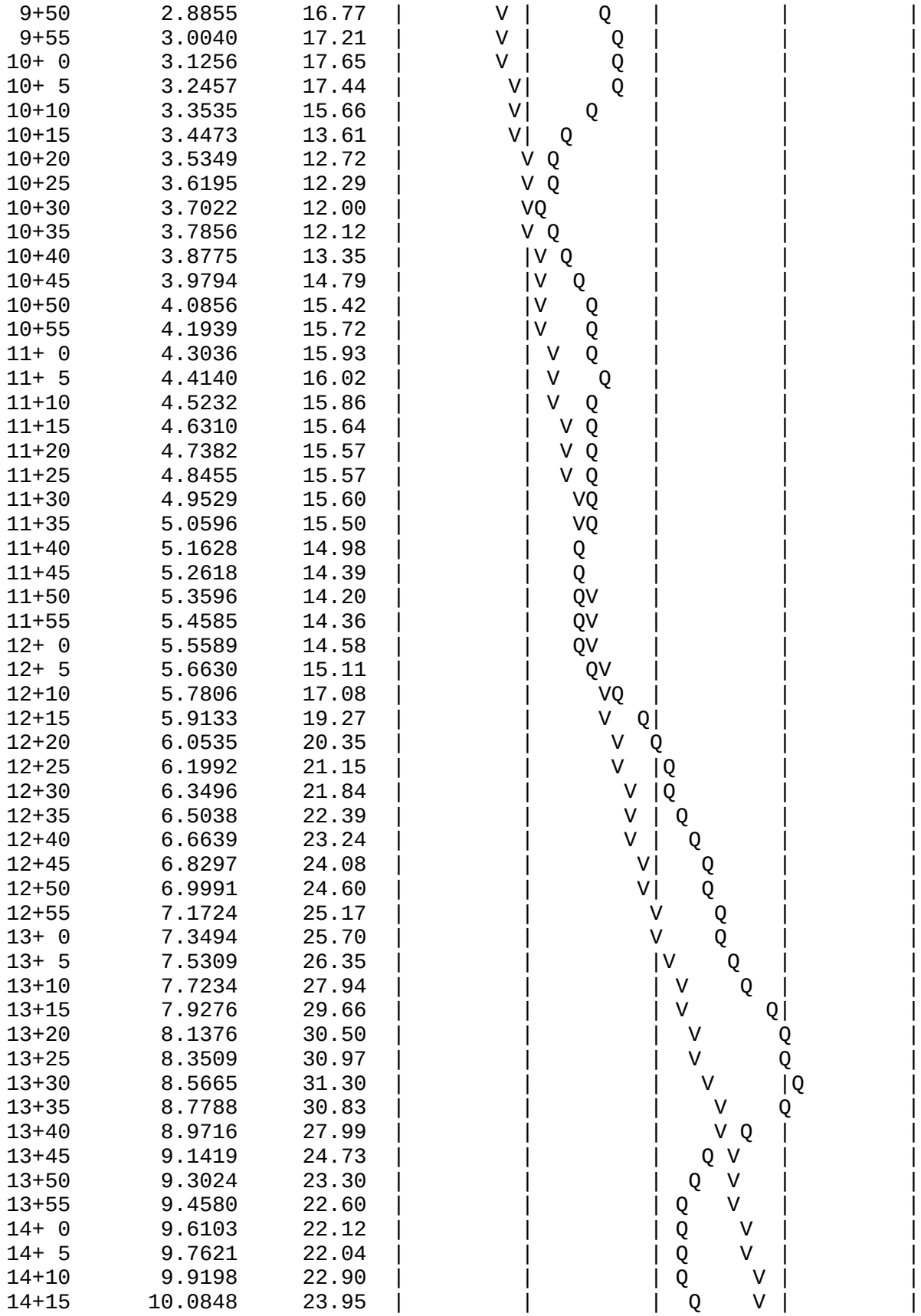
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

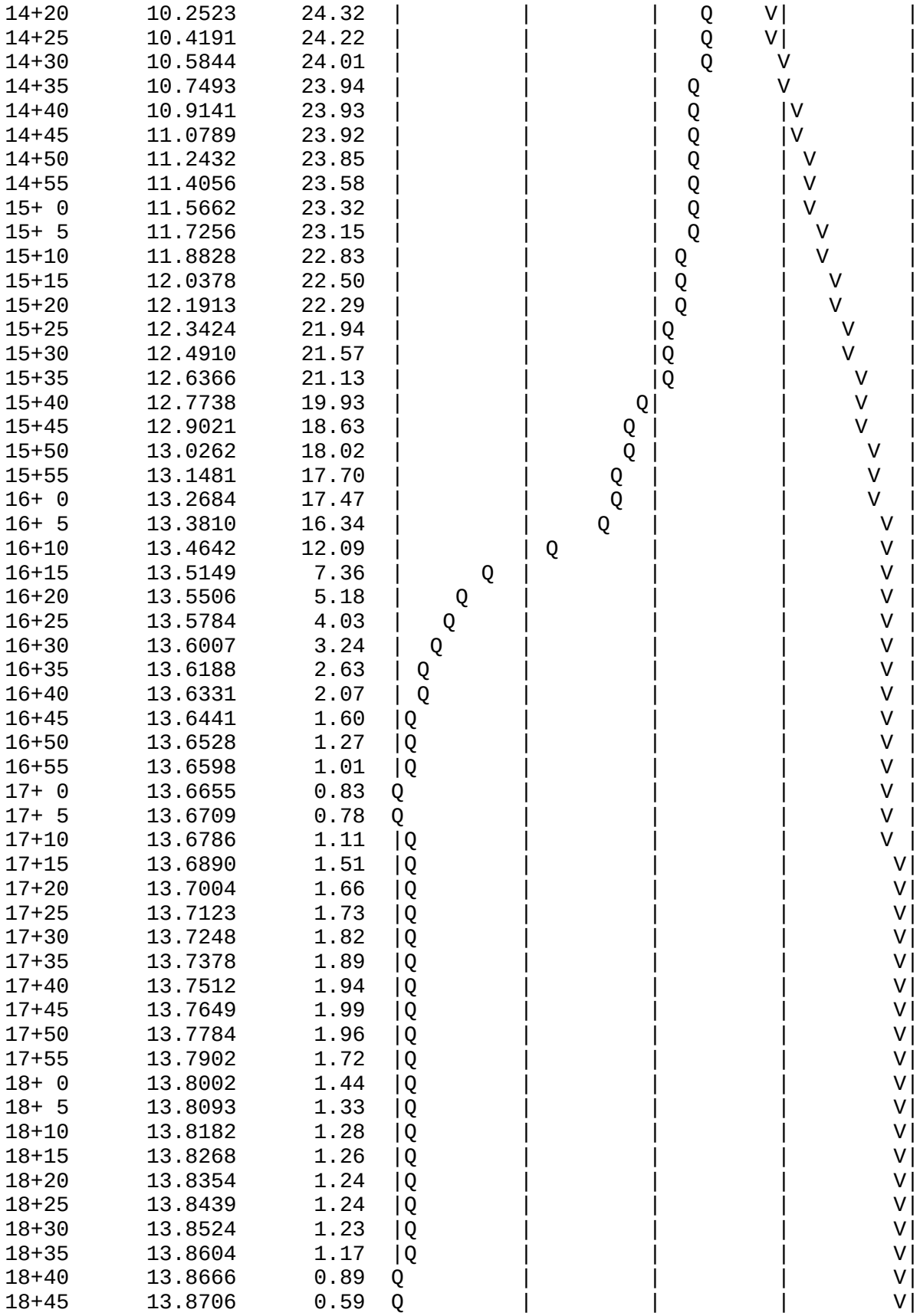
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	10.0	20.0	30.0	40.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0006	0.07	Q	|	|	|	|
0+15	0.0015	0.13	Q	|	|	|	|
0+20	0.0026	0.16	Q	|	|	|	|
0+25	0.0040	0.21	Q	|	|	|	|
0+30	0.0057	0.25	Q	|	|	|	|
0+35	0.0076	0.27	Q	|	|	|	|
0+40	0.0095	0.28	Q	|	|	|	|
0+45	0.0115	0.29	Q	|	|	|	|

0+50	0.0136	0.31	Q	|	|	|	|
0+55	0.0160	0.34	Q	|	|	|	|
1+ 0	0.0185	0.37	Q	|	|	|	|
1+ 5	0.0212	0.38	Q	|	|	|	|
1+10	0.0237	0.37	Q	|	|	|	|
1+15	0.0261	0.34	Q	|	|	|	|
1+20	0.0284	0.34	Q	|	|	|	|
1+25	0.0307	0.33	Q	|	|	|	|
1+30	0.0330	0.33	Q	|	|	|	|
1+35	0.0352	0.33	Q	|	|	|	|
1+40	0.0375	0.33	Q	|	|	|	|
1+45	0.0397	0.33	Q	|	|	|	|
1+50	0.0420	0.33	Q	|	|	|	|
1+55	0.0445	0.36	Q	|	|	|	|
2+ 0	0.0471	0.39	Q	|	|	|	|
2+ 5	0.0499	0.40	Q	|	|	|	|
2+10	0.0527	0.41	Q	|	|	|	|
2+15	0.0556	0.41	Q	|	|	|	|
2+20	0.0585	0.42	Q	|	|	|	|
2+25	0.0614	0.42	Q	|	|	|	|
2+30	0.0643	0.42	Q	|	|	|	|
2+35	0.0672	0.43	Q	|	|	|	|
2+40	0.0704	0.46	Q	|	|	|	|
2+45	0.0738	0.49	Q	|	|	|	|
2+50	0.0773	0.51	Q	|	|	|	|
2+55	0.0808	0.51	Q	|	|	|	|
3+ 0	0.0844	0.52	Q	|	|	|	|
3+ 5	0.0880	0.52	Q	|	|	|	|
3+10	0.0916	0.53	Q	|	|	|	|
3+15	0.0953	0.53	Q	|	|	|	|
3+20	0.0989	0.53	Q	|	|	|	|
3+25	0.1026	0.53	Q	|	|	|	|
3+30	0.1062	0.53	Q	|	|	|	|
3+35	0.1099	0.53	Q	|	|	|	|
3+40	0.1136	0.53	Q	|	|	|	|
3+45	0.1173	0.54	Q	|	|	|	|
3+50	0.1210	0.54	Q	|	|	|	|
3+55	0.1250	0.57	Q	|	|	|	|
4+ 0	0.1291	0.60	Q	|	|	|	|
4+ 5	0.1333	0.62	Q	|	|	|	|
4+10	0.1376	0.62	Q	|	|	|	|
4+15	0.1420	0.63	Q	|	|	|	|
4+20	0.1462	0.62	Q	|	|	|	|
4+25	0.1503	0.58	Q	|	|	|	|
4+30	0.1540	0.55	Q	|	|	|	|
4+35	0.1578	0.55	Q	|	|	|	|
4+40	0.1616	0.56	Q	|	|	|	|
4+45	0.1656	0.57	Q	|	|	|	|
4+50	0.1701	0.66	Q	|	|	|	|
4+55	0.1767	0.96	Q	|	|	|	|
5+ 0	0.1856	1.29	VQ	|	|	|	|
5+ 5	0.1952	1.39	VQ	|	|	|	|
5+10	0.2034	1.18	VQ	|	|	|	|
5+15	0.2097	0.91	Q	|	|	|	|

5+20	0.2153	0.82	Q	|	|	|	|
5+25	0.2209	0.82	Q	|	|	|	|
5+30	0.2268	0.86	Q	|	|	|	|
5+35	0.2333	0.94	Q	|	|	|	|
5+40	0.2419	1.24	VQ	|	|	|	|
5+45	0.2527	1.57	VQ	|	|	|	|
5+50	0.2646	1.74	VQ	|	|	|	|
5+55	0.2773	1.83	VQ	|	|	|	|
6+ 0	0.2904	1.91	VQ	|	|	|	|
6+ 5	0.3044	2.04	V Q	|	|	|	|
6+10	0.3207	2.37	V Q	|	|	|	|
6+15	0.3395	2.72	V Q	|	|	|	|
6+20	0.3595	2.90	|VQ	|	|	|	|
6+25	0.3803	3.02	|V Q	|	|	|	|
6+30	0.4017	3.11	|V Q	|	|	|	|
6+35	0.4240	3.25	|V Q	|	|	|	|
6+40	0.4487	3.59	|V Q	|	|	|	|
6+45	0.4759	3.95	|V Q	|	|	|	|
6+50	0.5044	4.14	|V Q	|	|	|	|
6+55	0.5338	4.26	|V Q	|	|	|	|
7+ 0	0.5637	4.35	|V Q	|	|	|	|
7+ 5	0.5942	4.42	|V Q	|	|	|	|
7+10	0.6251	4.49	|V Q	|	|	|	|
7+15	0.6564	4.54	|V Q	|	|	|	|
7+20	0.6884	4.65	|V Q	|	|	|	|
7+25	0.7227	4.98	| V Q	|	|	|	|
7+30	0.7594	5.32	| V Q	|	|	|	|
7+35	0.7977	5.57	| V Q	|	|	|	|
7+40	0.8387	5.95	| V Q	|	|	|	|
7+45	0.8824	6.34	| V Q	|	|	|	|
7+50	0.9279	6.62	| V Q	|	|	|	|
7+55	0.9763	7.03	| V Q	|	|	|	|
8+ 0	1.0275	7.43	| V Q	|	|	|	|
8+ 5	1.0811	7.79	| V Q	|	|	|	|
8+10	1.1396	8.48	| V Q |	|	|	|
8+15	1.2030	9.21	| V Q|	|	|	|
8+20	1.2690	9.58	| V Q|	|	|	|
8+25	1.3365	9.80	| V Q|	|	|	|
8+30	1.4051	9.97	| V Q|	|	|	|
8+35	1.4751	10.16	| V Q	|	|	|
8+40	1.5477	10.55	| V Q	|	|	|
8+45	1.6231	10.94	| V Q	|	|	|
8+50	1.7004	11.22	| V |Q	|	|	|
8+55	1.7805	11.63	| V |Q	|	|	|
9+ 0	1.8635	12.05	| V | Q	|	|	|
9+ 5	1.9489	12.40	| V | Q	|	|	|
9+10	2.0391	13.10	| V | Q	|	|	|
9+15	2.1343	13.83	| V | Q	|	|	|
9+20	2.2326	14.26	| V | Q	|	|	|
9+25	2.3343	14.76	| V | Q	|	|	|
9+30	2.4392	15.23	| V | Q	|	|	|
9+35	2.5463	15.56	| V | Q	|	|	|
9+40	2.6566	16.01	| V | Q	|	|	|
9+45	2.7700	16.46	| V | Q	|	|	|





18+50	13.8737	0.45	Q	|	|	|	V|
18+55	13.8764	0.39	Q	|	|	|	V|
19+ 0	13.8788	0.35	Q	|	|	|	V|
19+ 5	13.8810	0.32	Q	|	|	|	V|
19+10	13.8831	0.30	Q	|	|	|	V|
19+15	13.8851	0.29	Q	|	|	|	V|
19+20	13.8876	0.36	Q	|	|	|	V|
19+25	13.8919	0.63	Q	|	|	|	V|
19+30	13.8984	0.94	Q	|	|	|	V|
19+35	13.9055	1.02	|Q	|	|	|	V|
19+40	13.9112	0.83	Q	|	|	|	V|
19+45	13.9152	0.58	Q	|	|	|	V|
19+50	13.9184	0.47	Q	|	|	|	V|
19+55	13.9212	0.40	Q	|	|	|	V|
20+ 0	13.9235	0.34	Q	|	|	|	V|
20+ 5	13.9257	0.31	Q	|	|	|	V|
20+10	13.9280	0.34	Q	|	|	|	V|
20+15	13.9307	0.38	Q	|	|	|	V|
20+20	13.9335	0.40	Q	|	|	|	V|
20+25	13.9363	0.42	Q	|	|	|	V|
20+30	13.9393	0.43	Q	|	|	|	V|
20+35	13.9423	0.44	Q	|	|	|	V|
20+40	13.9454	0.45	Q	|	|	|	V|
20+45	13.9486	0.46	Q	|	|	|	V|
20+50	13.9516	0.45	Q	|	|	|	V|
20+55	13.9543	0.38	Q	|	|	|	V|
21+ 0	13.9564	0.31	Q	|	|	|	V|
21+ 5	13.9584	0.29	Q	|	|	|	V|
21+10	13.9609	0.36	Q	|	|	|	V|
21+15	13.9640	0.45	Q	|	|	|	V|
21+20	13.9672	0.47	Q	|	|	|	V|
21+25	13.9700	0.40	Q	|	|	|	V|
21+30	13.9721	0.31	Q	|	|	|	V|
21+35	13.9742	0.30	Q	|	|	|	V|
21+40	13.9768	0.38	Q	|	|	|	V|
21+45	13.9801	0.48	Q	|	|	|	V|
21+50	13.9836	0.51	Q	|	|	|	V|
21+55	13.9866	0.43	Q	|	|	|	V|
22+ 0	13.9888	0.33	Q	|	|	|	V|
22+ 5	13.9910	0.31	Q	|	|	|	V|
22+10	13.9937	0.40	Q	|	|	|	V|
22+15	13.9973	0.52	Q	|	|	|	V|
22+20	14.0011	0.54	Q	|	|	|	V|
22+25	14.0042	0.46	Q	|	|	|	V|
22+30	14.0066	0.34	Q	|	|	|	V|
22+35	14.0086	0.29	Q	|	|	|	V|
22+40	14.0105	0.27	Q	|	|	|	V|
22+45	14.0122	0.26	Q	|	|	|	V|
22+50	14.0139	0.25	Q	|	|	|	V|
22+55	14.0156	0.24	Q	|	|	|	V|
23+ 0	14.0172	0.24	Q	|	|	|	V|
23+ 5	14.0188	0.23	Q	|	|	|	V|
23+10	14.0204	0.23	Q	|	|	|	V|
23+15	14.0219	0.22	Q	|	|	|	V|

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   23+20      14.0234      0.22  Q          |          |          |         V|
   23+25      14.0249      0.22  Q          |          |          |         V|
   23+30      14.0264      0.22  Q          |          |          |         V|
   23+35      14.0279      0.22  Q          |          |          |         V|
   23+40      14.0294      0.21  Q          |          |          |         V|
   23+45      14.0309      0.21  Q          |          |          |         V|
   23+50      14.0324      0.21  Q          |          |          |         V|
   23+55      14.0338      0.21  Q          |          |          |         V|
   24+ 0      14.0353      0.21  Q          |          |          |         V|
   24+ 5      14.0367      0.20  Q          |          |          |         V|
   24+10      14.0377      0.15  Q          |          |          |         V|
   24+15      14.0383      0.08  Q          |          |          |         V|
   24+20      14.0387      0.06  Q          |          |          |         V|
   24+25      14.0390      0.04  Q          |          |          |         V|
   24+30      14.0392      0.03  Q          |          |          |         V|
   24+35      14.0393      0.02  Q          |          |          |         V|
   24+40      14.0395      0.02  Q          |          |          |         V|
   24+45      14.0396      0.01  Q          |          |          |         V|
   24+50      14.0396      0.01  Q          |          |          |         V|
   24+55      14.0397      0.01  Q          |          |          |         V|
   25+ 0      14.0397      0.01  Q          |          |          |         V|
   25+ 5      14.0398      0.00  Q          |          |          |         V|
   25+10      14.0398      0.00  Q          |          |          |         V|
   25+15      14.0398      0.00  Q          |          |          |         V|
   25+20      14.0398      0.00  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
Study date 10/28/19 File: 4163uhp1241.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 1 YEAR UNIT HYDROGRAPH
MJPA 304163
BUILDING 1
4163uhp1.um1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 3510.00(Ft.)
Length along longest watercourse measured to centroid = 1990.00(Ft.)
Length along longest watercourse = 0.665 Mi.
Length along longest watercourse measured to centroid = 0.377 Mi.
Difference in elevation = 28.65(Ft.)
Slope along watercourse = 43.0974 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.104 Hr.
Lag time = 6.24 Min.
25% of lag time = 1.56 Min.
40% of lag time = 2.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 1.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.175(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.175(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	69.00	0.900

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	80.072	13.320	8.084
2	0.167	160.145	44.445	26.974
3	0.250	240.217	19.915	12.086
4	0.333	320.290	8.240	5.001
5	0.417	400.362	4.947	3.002
6	0.500	480.434	3.115	1.891
7	0.583	560.507	2.247	1.364
8	0.667	640.579	1.540	0.935
9	0.750	720.652	1.035	0.628
10	0.833	800.724	1.196	0.726
			Sum = 100.000	Sum= 60.690

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.009	0.193	0.002	0.01
2	0.17	0.07	0.009	0.193	0.002	0.01
3	0.25	0.07	0.009	0.192	0.002	0.01
4	0.33	0.10	0.014	0.191	0.003	0.01
5	0.42	0.10	0.014	0.190	0.003	0.01
6	0.50	0.10	0.014	0.190	0.003	0.01
7	0.58	0.10	0.014	0.189	0.003	0.01
8	0.67	0.10	0.014	0.188	0.003	0.01
9	0.75	0.10	0.014	0.187	0.003	0.01
10	0.83	0.13	0.019	0.187	0.003	0.02
11	0.92	0.13	0.019	0.186	0.003	0.02
12	1.00	0.13	0.019	0.185	0.003	0.02
13	1.08	0.10	0.014	0.184	0.003	0.01
14	1.17	0.10	0.014	0.184	0.003	0.01
15	1.25	0.10	0.014	0.183	0.003	0.01
16	1.33	0.10	0.014	0.182	0.003	0.01
17	1.42	0.10	0.014	0.182	0.003	0.01
18	1.50	0.10	0.014	0.181	0.003	0.01
19	1.58	0.10	0.014	0.180	0.003	0.01
20	1.67	0.10	0.014	0.179	0.003	0.01
21	1.75	0.10	0.014	0.179	0.003	0.01
22	1.83	0.13	0.019	0.178	0.003	0.02
23	1.92	0.13	0.019	0.177	0.003	0.02
24	2.00	0.13	0.019	0.176	0.003	0.02
25	2.08	0.13	0.019	0.176	0.003	0.02
26	2.17	0.13	0.019	0.175	0.003	0.02
27	2.25	0.13	0.019	0.174	0.003	0.02
28	2.33	0.13	0.019	0.174	0.003	0.02
29	2.42	0.13	0.019	0.173	0.003	0.02
30	2.50	0.13	0.019	0.172	0.003	0.02
31	2.58	0.17	0.023	0.172	0.004	0.02
32	2.67	0.17	0.023	0.171	0.004	0.02
33	2.75	0.17	0.023	0.170	0.004	0.02
34	2.83	0.17	0.023	0.169	0.004	0.02
35	2.92	0.17	0.023	0.169	0.004	0.02
36	3.00	0.17	0.023	0.168	0.004	0.02
37	3.08	0.17	0.023	0.167	0.004	0.02
38	3.17	0.17	0.023	0.167	0.004	0.02
39	3.25	0.17	0.023	0.166	0.004	0.02
40	3.33	0.17	0.023	0.165	0.004	0.02
41	3.42	0.17	0.023	0.165	0.004	0.02
42	3.50	0.17	0.023	0.164	0.004	0.02
43	3.58	0.17	0.023	0.163	0.004	0.02
44	3.67	0.17	0.023	0.162	0.004	0.02
45	3.75	0.17	0.023	0.162	0.004	0.02
46	3.83	0.20	0.028	0.161	0.005	0.02
47	3.92	0.20	0.028	0.160	0.005	0.02
48	4.00	0.20	0.028	0.160	0.005	0.02
49	4.08	0.20	0.028	0.159	0.005	0.02
50	4.17	0.20	0.028	0.158	0.005	0.02
51	4.25	0.20	0.028	0.158	0.005	0.02
52	4.33	0.23	0.033	0.157	0.006	0.03
53	4.42	0.23	0.033	0.156	0.006	0.03
54	4.50	0.23	0.033	0.156	0.006	0.03

55	4.58	0.23	0.033	0.155	0.006	0.03
56	4.67	0.23	0.033	0.154	0.006	0.03
57	4.75	0.23	0.033	0.154	0.006	0.03
58	4.83	0.27	0.038	0.153	0.007	0.03
59	4.92	0.27	0.038	0.152	0.007	0.03
60	5.00	0.27	0.038	0.152	0.007	0.03
61	5.08	0.20	0.028	0.151	0.005	0.02
62	5.17	0.20	0.028	0.150	0.005	0.02
63	5.25	0.20	0.028	0.150	0.005	0.02
64	5.33	0.23	0.033	0.149	0.006	0.03
65	5.42	0.23	0.033	0.148	0.006	0.03
66	5.50	0.23	0.033	0.148	0.006	0.03
67	5.58	0.27	0.038	0.147	0.007	0.03
68	5.67	0.27	0.038	0.147	0.007	0.03
69	5.75	0.27	0.038	0.146	0.007	0.03
70	5.83	0.27	0.038	0.145	0.007	0.03
71	5.92	0.27	0.038	0.145	0.007	0.03
72	6.00	0.27	0.038	0.144	0.007	0.03
73	6.08	0.30	0.042	0.143	0.008	0.03
74	6.17	0.30	0.042	0.143	0.008	0.03
75	6.25	0.30	0.042	0.142	0.008	0.03
76	6.33	0.30	0.042	0.141	0.008	0.03
77	6.42	0.30	0.042	0.141	0.008	0.03
78	6.50	0.30	0.042	0.140	0.008	0.03
79	6.58	0.33	0.047	0.140	0.008	0.04
80	6.67	0.33	0.047	0.139	0.008	0.04
81	6.75	0.33	0.047	0.138	0.008	0.04
82	6.83	0.33	0.047	0.138	0.008	0.04
83	6.92	0.33	0.047	0.137	0.008	0.04
84	7.00	0.33	0.047	0.136	0.008	0.04
85	7.08	0.33	0.047	0.136	0.008	0.04
86	7.17	0.33	0.047	0.135	0.008	0.04
87	7.25	0.33	0.047	0.135	0.008	0.04
88	7.33	0.37	0.052	0.134	0.009	0.04
89	7.42	0.37	0.052	0.133	0.009	0.04
90	7.50	0.37	0.052	0.133	0.009	0.04
91	7.58	0.40	0.056	0.132	0.010	0.05
92	7.67	0.40	0.056	0.131	0.010	0.05
93	7.75	0.40	0.056	0.131	0.010	0.05
94	7.83	0.43	0.061	0.130	0.011	0.05
95	7.92	0.43	0.061	0.130	0.011	0.05
96	8.00	0.43	0.061	0.129	0.011	0.05
97	8.08	0.50	0.070	0.128	0.013	0.06
98	8.17	0.50	0.070	0.128	0.013	0.06
99	8.25	0.50	0.070	0.127	0.013	0.06
100	8.33	0.50	0.070	0.127	0.013	0.06
101	8.42	0.50	0.070	0.126	0.013	0.06
102	8.50	0.50	0.070	0.125	0.013	0.06
103	8.58	0.53	0.075	0.125	0.014	0.06
104	8.67	0.53	0.075	0.124	0.014	0.06
105	8.75	0.53	0.075	0.124	0.014	0.06
106	8.83	0.57	0.080	0.123	0.014	0.07
107	8.92	0.57	0.080	0.123	0.014	0.07
108	9.00	0.57	0.080	0.122	0.014	0.07

109	9.08	0.63	0.089	0.121	0.016	0.07
110	9.17	0.63	0.089	0.121	0.016	0.07
111	9.25	0.63	0.089	0.120	0.016	0.07
112	9.33	0.67	0.094	0.120	0.017	0.08
113	9.42	0.67	0.094	0.119	0.017	0.08
114	9.50	0.67	0.094	0.119	0.017	0.08
115	9.58	0.70	0.099	0.118	0.018	0.08
116	9.67	0.70	0.099	0.117	0.018	0.08
117	9.75	0.70	0.099	0.117	0.018	0.08
118	9.83	0.73	0.103	0.116	0.019	0.08
119	9.92	0.73	0.103	0.116	0.019	0.08
120	10.00	0.73	0.103	0.115	0.019	0.08
121	10.08	0.50	0.070	0.115	0.013	0.06
122	10.17	0.50	0.070	0.114	0.013	0.06
123	10.25	0.50	0.070	0.113	0.013	0.06
124	10.33	0.50	0.070	0.113	0.013	0.06
125	10.42	0.50	0.070	0.112	0.013	0.06
126	10.50	0.50	0.070	0.112	0.013	0.06
127	10.58	0.67	0.094	0.111	0.017	0.08
128	10.67	0.67	0.094	0.111	0.017	0.08
129	10.75	0.67	0.094	0.110	0.017	0.08
130	10.83	0.67	0.094	0.110	0.017	0.08
131	10.92	0.67	0.094	0.109	0.017	0.08
132	11.00	0.67	0.094	0.109	0.017	0.08
133	11.08	0.63	0.089	0.108	0.016	0.07
134	11.17	0.63	0.089	0.108	0.016	0.07
135	11.25	0.63	0.089	0.107	0.016	0.07
136	11.33	0.63	0.089	0.106	0.016	0.07
137	11.42	0.63	0.089	0.106	0.016	0.07
138	11.50	0.63	0.089	0.105	0.016	0.07
139	11.58	0.57	0.080	0.105	0.014	0.07
140	11.67	0.57	0.080	0.104	0.014	0.07
141	11.75	0.57	0.080	0.104	0.014	0.07
142	11.83	0.60	0.085	0.103	0.015	0.07
143	11.92	0.60	0.085	0.103	0.015	0.07
144	12.00	0.60	0.085	0.102	0.015	0.07
145	12.08	0.83	0.117	0.102	---	0.02
146	12.17	0.83	0.117	0.101	---	0.02
147	12.25	0.83	0.117	0.101	---	0.02
148	12.33	0.87	0.122	0.100	---	0.02
149	12.42	0.87	0.122	0.100	---	0.02
150	12.50	0.87	0.122	0.099	---	0.02
151	12.58	0.93	0.132	0.099	---	0.03
152	12.67	0.93	0.132	0.098	---	0.03
153	12.75	0.93	0.132	0.098	---	0.03
154	12.83	0.97	0.136	0.097	---	0.04
155	12.92	0.97	0.136	0.097	---	0.04
156	13.00	0.97	0.136	0.096	---	0.04
157	13.08	1.13	0.160	0.096	---	0.06
158	13.17	1.13	0.160	0.095	---	0.06
159	13.25	1.13	0.160	0.095	---	0.06
160	13.33	1.13	0.160	0.094	---	0.07
161	13.42	1.13	0.160	0.094	---	0.07
162	13.50	1.13	0.160	0.093	---	0.07

163	13.58	0.77	0.108	0.093	---	0.02
164	13.67	0.77	0.108	0.092	---	0.02
165	13.75	0.77	0.108	0.092	---	0.02
166	13.83	0.77	0.108	0.092	---	0.02
167	13.92	0.77	0.108	0.091	---	0.02
168	14.00	0.77	0.108	0.091	---	0.02
169	14.08	0.90	0.127	0.090	---	0.04
170	14.17	0.90	0.127	0.090	---	0.04
171	14.25	0.90	0.127	0.089	---	0.04
172	14.33	0.87	0.122	0.089	---	0.03
173	14.42	0.87	0.122	0.088	---	0.03
174	14.50	0.87	0.122	0.088	---	0.03
175	14.58	0.87	0.122	0.087	---	0.03
176	14.67	0.87	0.122	0.087	---	0.04
177	14.75	0.87	0.122	0.086	---	0.04
178	14.83	0.83	0.117	0.086	---	0.03
179	14.92	0.83	0.117	0.086	---	0.03
180	15.00	0.83	0.117	0.085	---	0.03
181	15.08	0.80	0.113	0.085	---	0.03
182	15.17	0.80	0.113	0.084	---	0.03
183	15.25	0.80	0.113	0.084	---	0.03
184	15.33	0.77	0.108	0.083	---	0.02
185	15.42	0.77	0.108	0.083	---	0.03
186	15.50	0.77	0.108	0.083	---	0.03
187	15.58	0.63	0.089	0.082	---	0.01
188	15.67	0.63	0.089	0.082	---	0.01
189	15.75	0.63	0.089	0.081	---	0.01
190	15.83	0.63	0.089	0.081	---	0.01
191	15.92	0.63	0.089	0.080	---	0.01
192	16.00	0.63	0.089	0.080	---	0.01
193	16.08	0.13	0.019	0.080	0.003	0.02
194	16.17	0.13	0.019	0.079	0.003	0.02
195	16.25	0.13	0.019	0.079	0.003	0.02
196	16.33	0.13	0.019	0.078	0.003	0.02
197	16.42	0.13	0.019	0.078	0.003	0.02
198	16.50	0.13	0.019	0.078	0.003	0.02
199	16.58	0.10	0.014	0.077	0.003	0.01
200	16.67	0.10	0.014	0.077	0.003	0.01
201	16.75	0.10	0.014	0.076	0.003	0.01
202	16.83	0.10	0.014	0.076	0.003	0.01
203	16.92	0.10	0.014	0.076	0.003	0.01
204	17.00	0.10	0.014	0.075	0.003	0.01
205	17.08	0.17	0.023	0.075	0.004	0.02
206	17.17	0.17	0.023	0.075	0.004	0.02
207	17.25	0.17	0.023	0.074	0.004	0.02
208	17.33	0.17	0.023	0.074	0.004	0.02
209	17.42	0.17	0.023	0.073	0.004	0.02
210	17.50	0.17	0.023	0.073	0.004	0.02
211	17.58	0.17	0.023	0.073	0.004	0.02
212	17.67	0.17	0.023	0.072	0.004	0.02
213	17.75	0.17	0.023	0.072	0.004	0.02
214	17.83	0.13	0.019	0.072	0.003	0.02
215	17.92	0.13	0.019	0.071	0.003	0.02
216	18.00	0.13	0.019	0.071	0.003	0.02

217	18.08	0.13	0.019	0.071	0.003	0.02
218	18.17	0.13	0.019	0.070	0.003	0.02
219	18.25	0.13	0.019	0.070	0.003	0.02
220	18.33	0.13	0.019	0.070	0.003	0.02
221	18.42	0.13	0.019	0.069	0.003	0.02
222	18.50	0.13	0.019	0.069	0.003	0.02
223	18.58	0.10	0.014	0.069	0.003	0.01
224	18.67	0.10	0.014	0.068	0.003	0.01
225	18.75	0.10	0.014	0.068	0.003	0.01
226	18.83	0.07	0.009	0.068	0.002	0.01
227	18.92	0.07	0.009	0.067	0.002	0.01
228	19.00	0.07	0.009	0.067	0.002	0.01
229	19.08	0.10	0.014	0.067	0.003	0.01
230	19.17	0.10	0.014	0.066	0.003	0.01
231	19.25	0.10	0.014	0.066	0.003	0.01
232	19.33	0.13	0.019	0.066	0.003	0.02
233	19.42	0.13	0.019	0.065	0.003	0.02
234	19.50	0.13	0.019	0.065	0.003	0.02
235	19.58	0.10	0.014	0.065	0.003	0.01
236	19.67	0.10	0.014	0.064	0.003	0.01
237	19.75	0.10	0.014	0.064	0.003	0.01
238	19.83	0.07	0.009	0.064	0.002	0.01
239	19.92	0.07	0.009	0.064	0.002	0.01
240	20.00	0.07	0.009	0.063	0.002	0.01
241	20.08	0.10	0.014	0.063	0.003	0.01
242	20.17	0.10	0.014	0.063	0.003	0.01
243	20.25	0.10	0.014	0.062	0.003	0.01
244	20.33	0.10	0.014	0.062	0.003	0.01
245	20.42	0.10	0.014	0.062	0.003	0.01
246	20.50	0.10	0.014	0.062	0.003	0.01
247	20.58	0.10	0.014	0.061	0.003	0.01
248	20.67	0.10	0.014	0.061	0.003	0.01
249	20.75	0.10	0.014	0.061	0.003	0.01
250	20.83	0.07	0.009	0.061	0.002	0.01
251	20.92	0.07	0.009	0.060	0.002	0.01
252	21.00	0.07	0.009	0.060	0.002	0.01
253	21.08	0.10	0.014	0.060	0.003	0.01
254	21.17	0.10	0.014	0.060	0.003	0.01
255	21.25	0.10	0.014	0.059	0.003	0.01
256	21.33	0.07	0.009	0.059	0.002	0.01
257	21.42	0.07	0.009	0.059	0.002	0.01
258	21.50	0.07	0.009	0.059	0.002	0.01
259	21.58	0.10	0.014	0.059	0.003	0.01
260	21.67	0.10	0.014	0.058	0.003	0.01
261	21.75	0.10	0.014	0.058	0.003	0.01
262	21.83	0.07	0.009	0.058	0.002	0.01
263	21.92	0.07	0.009	0.058	0.002	0.01
264	22.00	0.07	0.009	0.058	0.002	0.01
265	22.08	0.10	0.014	0.057	0.003	0.01
266	22.17	0.10	0.014	0.057	0.003	0.01
267	22.25	0.10	0.014	0.057	0.003	0.01
268	22.33	0.07	0.009	0.057	0.002	0.01
269	22.42	0.07	0.009	0.057	0.002	0.01
270	22.50	0.07	0.009	0.057	0.002	0.01

271	22.58	0.07	0.009	0.056	0.002	0.01
272	22.67	0.07	0.009	0.056	0.002	0.01
273	22.75	0.07	0.009	0.056	0.002	0.01
274	22.83	0.07	0.009	0.056	0.002	0.01
275	22.92	0.07	0.009	0.056	0.002	0.01
276	23.00	0.07	0.009	0.056	0.002	0.01
277	23.08	0.07	0.009	0.055	0.002	0.01
278	23.17	0.07	0.009	0.055	0.002	0.01
279	23.25	0.07	0.009	0.055	0.002	0.01
280	23.33	0.07	0.009	0.055	0.002	0.01
281	23.42	0.07	0.009	0.055	0.002	0.01
282	23.50	0.07	0.009	0.055	0.002	0.01
283	23.58	0.07	0.009	0.055	0.002	0.01
284	23.67	0.07	0.009	0.055	0.002	0.01
285	23.75	0.07	0.009	0.055	0.002	0.01
286	23.83	0.07	0.009	0.055	0.002	0.01
287	23.92	0.07	0.009	0.055	0.002	0.01
288	24.00	0.07	0.009	0.055	0.002	0.01
Sum =	100.0				Sum =	8.3

Flood volume = Effective rainfall 0.69(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 3.5(Ac.Ft)
Total soil loss = 0.49(In)
Total soil loss = 2.443(Ac.Ft)
Total rainfall = 1.17(In)
Flood volume = 150365.0 Cubic Feet
Total soil loss = 106405.4 Cubic Feet

Peak flow rate of this hydrograph = 5.078(CFS)

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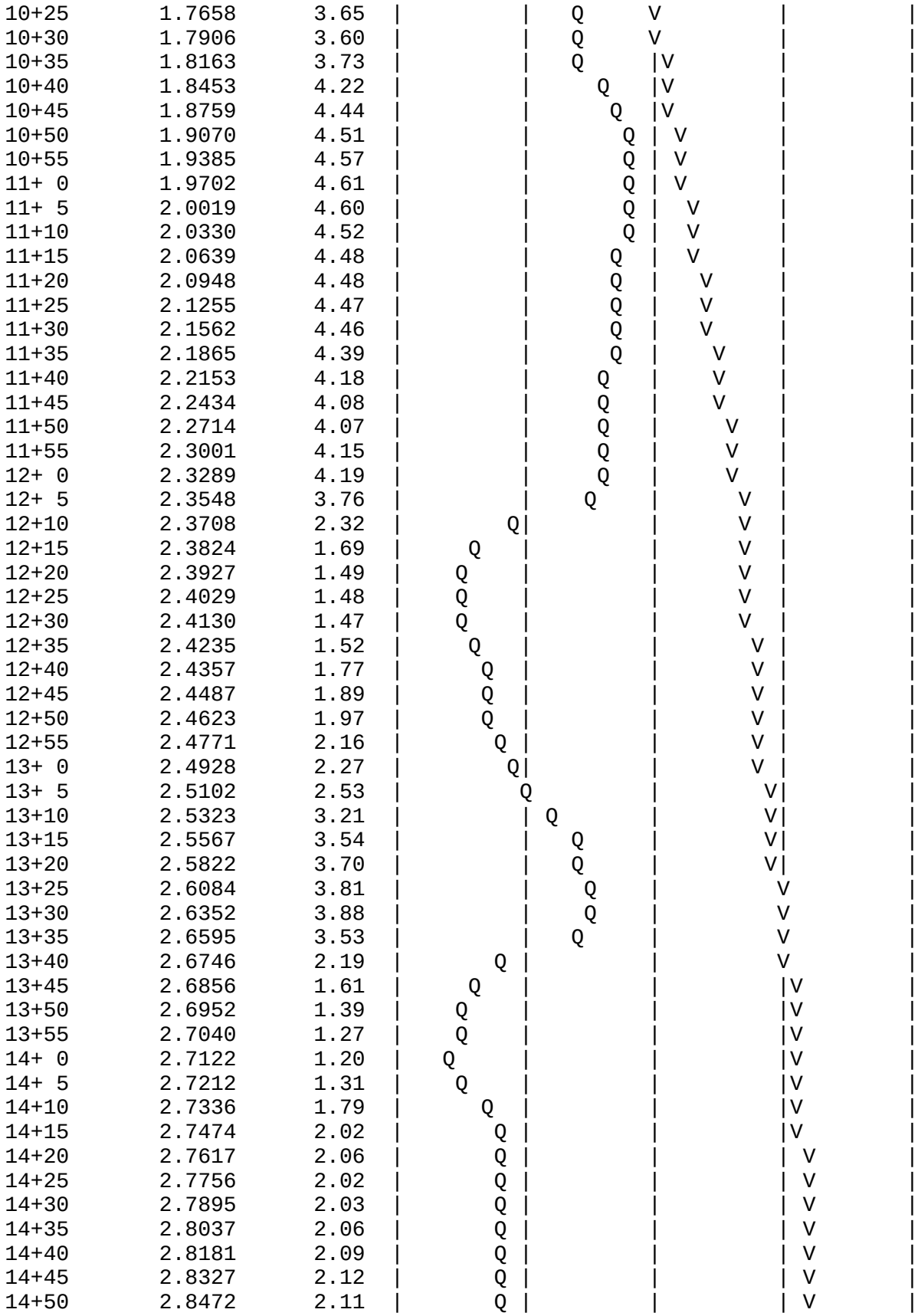
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.06	Q	|	|	|	|
0+10	0.0023	0.27	VQ	|	|	|	|
0+15	0.0048	0.36	VQ	|	|	|	|
0+20	0.0078	0.43	VQ	|	|	|	|
0+25	0.0116	0.56	V Q	|	|	|	|
0+30	0.0159	0.62	V Q	|	|	|	|
0+35	0.0204	0.65	V Q	|	|	|	|
0+40	0.0250	0.67	V Q	|	|	|	|
0+45	0.0297	0.68	V Q	|	|	|	|
0+50	0.0347	0.72	V Q	|	|	|	|
0+55	0.0404	0.83	V Q	|	|	|	|
1+ 0	0.0465	0.88	V Q	|	|	|	|
1+ 5	0.0525	0.87	V Q	|	|	|	|
1+10	0.0579	0.78	V Q	|	|	|	|
1+15	0.0630	0.74	V Q	|	|	|	|
1+20	0.0680	0.73	V Q	|	|	|	|

1+25	0.0729	0.72	V Q	|	|	|	|
1+30	0.0778	0.71	V Q	|	|	|	|
1+35	0.0827	0.71	V Q	|	|	|	|
1+40	0.0876	0.71	|VQ	|	|	|	|
1+45	0.0924	0.70	|VQ	|	|	|	|
1+50	0.0975	0.73	|VQ	|	|	|	|
1+55	0.1032	0.84	|V Q	|	|	|	|
2+ 0	0.1093	0.88	|V Q	|	|	|	|
2+ 5	0.1156	0.90	|V Q	|	|	|	|
2+10	0.1218	0.91	|V Q	|	|	|	|
2+15	0.1282	0.92	|V Q	|	|	|	|
2+20	0.1346	0.93	|V Q	|	|	|	|
2+25	0.1410	0.93	|V Q	|	|	|	|
2+30	0.1474	0.93	|V Q	|	|	|	|
2+35	0.1541	0.97	|V Q	|	|	|	|
2+40	0.1614	1.07	|V Q	|	|	|	|
2+45	0.1691	1.12	|V Q	|	|	|	|
2+50	0.1770	1.14	| V Q	|	|	|	|
2+55	0.1849	1.15	| V Q	|	|	|	|
3+ 0	0.1928	1.16	| V Q	|	|	|	|
3+ 5	0.2008	1.16	| V Q	|	|	|	|
3+10	0.2089	1.16	| V Q	|	|	|	|
3+15	0.2169	1.17	| V Q	|	|	|	|
3+20	0.2250	1.17	| V Q	|	|	|	|
3+25	0.2330	1.17	| V Q	|	|	|	|
3+30	0.2411	1.17	| V Q	|	|	|	|
3+35	0.2491	1.17	| V Q	|	|	|	|
3+40	0.2572	1.17	| V Q	|	|	|	|
3+45	0.2652	1.17	| VQ	|	|	|	|
3+50	0.2735	1.20	| VQ	|	|	|	|
3+55	0.2825	1.30	| V Q	|	|	|	|
4+ 0	0.2918	1.35	| V Q	|	|	|	|
4+ 5	0.3012	1.37	| V Q	|	|	|	|
4+10	0.3108	1.38	| V Q	|	|	|	|
4+15	0.3203	1.39	| V Q	|	|	|	|
4+20	0.3301	1.43	| V Q	|	|	|	|
4+25	0.3407	1.53	| V Q	|	|	|	|
4+30	0.3516	1.58	| V Q	|	|	|	|
4+35	0.3627	1.60	| V Q	|	|	|	|
4+40	0.3738	1.62	| V Q	|	|	|	|
4+45	0.3850	1.62	| V Q	|	|	|	|
4+50	0.3964	1.66	| V Q	|	|	|	|
4+55	0.4086	1.77	| V Q	|	|	|	|
5+ 0	0.4211	1.82	| V Q	|	|	|	|
5+ 5	0.4333	1.78	| V Q	|	|	|	|
5+10	0.4442	1.58	| VQ	|	|	|	|
5+15	0.4545	1.49	| Q	|	|	|	|
5+20	0.4648	1.49	| Q	|	|	|	|
5+25	0.4756	1.58	| VQ	|	|	|	|
5+30	0.4867	1.61	| VQ	|	|	|	|
5+35	0.4981	1.65	| VQ	|	|	|	|
5+40	0.5102	1.76	| V Q	|	|	|	|
5+45	0.5227	1.81	| VQ	|	|	|	|
5+50	0.5353	1.83	| VQ	|	|	|	|

5+55	0.5480	1.84	VQ				
6+ 0	0.5608	1.85	VQ				
6+ 5	0.5738	1.89	VQ				
6+10	0.5876	2.00	V Q				
6+15	0.6017	2.05	V Q				
6+20	0.6160	2.07	VQ				
6+25	0.6304	2.08	VQ				
6+30	0.6448	2.09	VQ				
6+35	0.6594	2.13	VQ				
6+40	0.6748	2.24	VQ				
6+45	0.6906	2.28	VQ				
6+50	0.7064	2.31	VQ				
6+55	0.7224	2.32	VQ				
7+ 0	0.7384	2.33	VQ				
7+ 5	0.7545	2.33	VQ				
7+10	0.7705	2.33	VQ				
7+15	0.7866	2.34	Q				
7+20	0.8030	2.37	Q				
7+25	0.8200	2.47	Q				
7+30	0.8374	2.52	VQ				
7+35	0.8551	2.57	VQ				
7+40	0.8736	2.69	Q				
7+45	0.8925	2.74	Q				
7+50	0.9117	2.80	VQ				
7+55	0.9318	2.92	VQ				
8+ 0	0.9523	2.97	Q				
8+ 5	0.9734	3.06	VQ				
8+10	0.9960	3.28	V Q				
8+15	1.0193	3.39	V Q				
8+20	1.0430	3.43	VQ				
8+25	1.0668	3.46	VQ				
8+30	1.0908	3.48	VQ				
8+35	1.1150	3.52	V Q				
8+40	1.1401	3.63	VQ				
8+45	1.1654	3.69	VQ				
8+50	1.1912	3.74	VQ				
8+55	1.2178	3.86	VQ				
9+ 0	1.2447	3.91	VQ				
9+ 5	1.2722	4.00	VQ				
9+10	1.3013	4.22	VQ				
9+15	1.3311	4.32	V Q				
9+20	1.3614	4.40	V Q				
9+25	1.3926	4.53	V Q				
9+30	1.4243	4.60	V Q				
9+35	1.4564	4.66	V Q				
9+40	1.4893	4.78	V Q				
9+45	1.5226	4.84	V Q				
9+50	1.5564	4.90	VQ				
9+55	1.5910	5.02	V Q				
10+ 0	1.6259	5.08	V Q				
10+ 5	1.6596	4.89	Q				
10+10	1.6883	4.17	Q V				
10+15	1.7149	3.86	Q V				
10+20	1.7406	3.73	Q V				



14+55	2.8611	2.01		Q			V
15+ 0	2.8747	1.98		Q			V
15+ 5	2.8880	1.94		Q			V
15+10	2.9006	1.82		Q			V
15+15	2.9129	1.79		Q			V
15+20	2.9249	1.74		Q			V
15+25	2.9361	1.63		Q			V
15+30	2.9470	1.58		Q			V
15+35	2.9568	1.42		Q			V
15+40	2.9632	0.92	Q				V
15+45	2.9681	0.71	Q				V
15+50	2.9724	0.63	Q				V
15+55	2.9765	0.60	Q				V
16+ 0	2.9805	0.58	Q				V
16+ 5	2.9848	0.63	Q				V
16+10	2.9903	0.79	Q				V
16+15	2.9961	0.86	Q				V
16+20	3.0022	0.88	Q				V
16+25	3.0084	0.90	Q				V
16+30	3.0146	0.91	Q				V
16+35	3.0208	0.89	Q				V
16+40	3.0262	0.79	Q				V
16+45	3.0314	0.75	Q				V
16+50	3.0365	0.73	Q				V
16+55	3.0414	0.72	Q				V
17+ 0	3.0464	0.72	Q				V
17+ 5	3.0517	0.77	Q				V
17+10	3.0584	0.98	Q				V
17+15	3.0658	1.07	Q				V
17+20	3.0734	1.10	Q				V
17+25	3.0811	1.13	Q				V
17+30	3.0890	1.14	Q				V
17+35	3.0969	1.15	Q				V
17+40	3.1049	1.16	Q				V
17+45	3.1129	1.16	Q				V
17+50	3.1208	1.14	Q				V
17+55	3.1279	1.03	Q				V
18+ 0	3.1347	0.99	Q				V
18+ 5	3.1414	0.97	Q				V
18+10	3.1480	0.96	Q				V
18+15	3.1545	0.95	Q				V
18+20	3.1610	0.94	Q				V
18+25	3.1675	0.94	Q				V
18+30	3.1740	0.94	Q				V
18+35	3.1802	0.90	Q				V
18+40	3.1857	0.80	Q				V
18+45	3.1909	0.75	Q				V
18+50	3.1957	0.70	Q				V
18+55	3.1998	0.59	Q				V
19+ 0	3.2035	0.53	Q				V
19+ 5	3.2072	0.54	Q				V
19+10	3.2115	0.63	Q				V
19+15	3.2161	0.67	Q				V
19+20	3.2210	0.71	Q				V

19+25	3.2267	0.82	| Q	|	|	|	V |
19+30	3.2327	0.87	| Q	|	|	|	V |
19+35	3.2386	0.86	| Q	|	|	|	V |
19+40	3.2439	0.77	| Q	|	|	|	V |
19+45	3.2490	0.74	| Q	|	|	|	V |
19+50	3.2538	0.69	| Q	|	|	|	V |
19+55	3.2578	0.58	| Q	|	|	|	V |
20+ 0	3.2615	0.53	| Q	|	|	|	V |
20+ 5	3.2652	0.54	| Q	|	|	|	V |
20+10	3.2695	0.63	| Q	|	|	|	V |
20+15	3.2741	0.67	| Q	|	|	|	V |
20+20	3.2788	0.68	| Q	|	|	|	V |
20+25	3.2835	0.69	| Q	|	|	|	V |
20+30	3.2883	0.69	| Q	|	|	|	V |
20+35	3.2930	0.69	| Q	|	|	|	V |
20+40	3.2978	0.70	| Q	|	|	|	V |
20+45	3.3027	0.70	| Q	|	|	|	V |
20+50	3.3073	0.67	| Q	|	|	|	V |
20+55	3.3112	0.57	| Q	|	|	|	V |
21+ 0	3.3148	0.52	| Q	|	|	|	V |
21+ 5	3.3184	0.53	| Q	|	|	|	V |
21+10	3.3227	0.62	| Q	|	|	|	V |
21+15	3.3273	0.66	| Q	|	|	|	V |
21+20	3.3318	0.65	| Q	|	|	|	V |
21+25	3.3355	0.55	| Q	|	|	|	V |
21+30	3.3390	0.51	| Q	|	|	|	V |
21+35	3.3427	0.52	| Q	|	|	|	V |
21+40	3.3469	0.62	| Q	|	|	|	V |
21+45	3.3515	0.66	| Q	|	|	|	V |
21+50	3.3559	0.65	| Q	|	|	|	V |
21+55	3.3597	0.55	| Q	|	|	|	V |
22+ 0	3.3632	0.51	| Q	|	|	|	V |
22+ 5	3.3668	0.52	| Q	|	|	|	V|
22+10	3.3711	0.62	| Q	|	|	|	V|
22+15	3.3756	0.66	| Q	|	|	|	V|
22+20	3.3801	0.65	| Q	|	|	|	V|
22+25	3.3839	0.55	| Q	|	|	|	V|
22+30	3.3874	0.51	| Q	|	|	|	V|
22+35	3.3908	0.49	|Q	|	|	|	V|
22+40	3.3941	0.48	|Q	|	|	|	V|
22+45	3.3974	0.48	|Q	|	|	|	V|
22+50	3.4007	0.48	|Q	|	|	|	V|
22+55	3.4039	0.47	|Q	|	|	|	V|
23+ 0	3.4072	0.47	|Q	|	|	|	V|
23+ 5	3.4104	0.47	|Q	|	|	|	V|
23+10	3.4136	0.47	|Q	|	|	|	V|
23+15	3.4169	0.47	|Q	|	|	|	V|
23+20	3.4201	0.47	|Q	|	|	|	V|
23+25	3.4233	0.47	|Q	|	|	|	V|
23+30	3.4265	0.47	|Q	|	|	|	V|
23+35	3.4297	0.47	|Q	|	|	|	V|
23+40	3.4330	0.47	|Q	|	|	|	V|
23+45	3.4362	0.47	|Q	|	|	|	V|
23+50	3.4394	0.47	|Q	|	|	|	V|

```
   23+55       3.4426      0.47  |Q        |         |         |        V|
   24+ 0       3.4459      0.47  |Q        |         |         |        V|
   24+ 5       3.4487      0.41  |Q        |         |         |        V|
   24+10       3.4500      0.20  Q         |         |         |        V|
   24+15       3.4507      0.10  Q         |         |         |        V|
   24+20       3.4512      0.07  Q         |         |         |        V|
   24+25       3.4515      0.04  Q         |         |         |        V|
   24+30       3.4517      0.03  Q         |         |         |        V|
   24+35       3.4518      0.02  Q         |         |         |        V|
   24+40       3.4519      0.01  Q         |         |         |        V|
   24+45       3.4519      0.01  Q         |         |         |         V
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163uhp2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 2 YEAR UNIT HYDROGRAPH
MJPA 304163
BUILDING 1
4163uhp2.um1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 3510.00(Ft.)
Length along longest watercourse measured to centroid = 1990.00(Ft.)
Length along longest watercourse = 0.665 Mi.
Length along longest watercourse measured to centroid = 0.377 Mi.
Difference in elevation = 28.65(Ft.)
Slope along watercourse = 43.0974 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.104 Hr.
Lag time = 6.24 Min.
25% of lag time = 1.56 Min.
40% of lag time = 2.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	69.00	0.900

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	80.072	13.320	8.084
2	0.167	160.145	44.445	26.974
3	0.250	240.217	19.915	12.086
4	0.333	320.290	8.240	5.001
5	0.417	400.362	4.947	3.002
6	0.500	480.434	3.115	1.891
7	0.583	560.507	2.247	1.364
8	0.667	640.579	1.540	0.935
9	0.750	720.652	1.035	0.628
10	0.833	800.724	1.196	0.726
			Sum = 100.000	Sum= 60.690

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.013	0.193	0.002	0.01
2	0.17	0.07	0.013	0.193	0.002	0.01
3	0.25	0.07	0.013	0.192	0.002	0.01
4	0.33	0.10	0.019	0.191	0.003	0.02
5	0.42	0.10	0.019	0.190	0.003	0.02
6	0.50	0.10	0.019	0.190	0.003	0.02
7	0.58	0.10	0.019	0.189	0.003	0.02
8	0.67	0.10	0.019	0.188	0.003	0.02
9	0.75	0.10	0.019	0.187	0.003	0.02
10	0.83	0.13	0.026	0.187	0.005	0.02
11	0.92	0.13	0.026	0.186	0.005	0.02
12	1.00	0.13	0.026	0.185	0.005	0.02
13	1.08	0.10	0.019	0.184	0.003	0.02
14	1.17	0.10	0.019	0.184	0.003	0.02
15	1.25	0.10	0.019	0.183	0.003	0.02
16	1.33	0.10	0.019	0.182	0.003	0.02
17	1.42	0.10	0.019	0.182	0.003	0.02
18	1.50	0.10	0.019	0.181	0.003	0.02
19	1.58	0.10	0.019	0.180	0.003	0.02
20	1.67	0.10	0.019	0.179	0.003	0.02
21	1.75	0.10	0.019	0.179	0.003	0.02
22	1.83	0.13	0.026	0.178	0.005	0.02
23	1.92	0.13	0.026	0.177	0.005	0.02
24	2.00	0.13	0.026	0.176	0.005	0.02
25	2.08	0.13	0.026	0.176	0.005	0.02
26	2.17	0.13	0.026	0.175	0.005	0.02
27	2.25	0.13	0.026	0.174	0.005	0.02
28	2.33	0.13	0.026	0.174	0.005	0.02
29	2.42	0.13	0.026	0.173	0.005	0.02
30	2.50	0.13	0.026	0.172	0.005	0.02
31	2.58	0.17	0.032	0.172	0.006	0.03
32	2.67	0.17	0.032	0.171	0.006	0.03
33	2.75	0.17	0.032	0.170	0.006	0.03
34	2.83	0.17	0.032	0.169	0.006	0.03
35	2.92	0.17	0.032	0.169	0.006	0.03
36	3.00	0.17	0.032	0.168	0.006	0.03
37	3.08	0.17	0.032	0.167	0.006	0.03
38	3.17	0.17	0.032	0.167	0.006	0.03
39	3.25	0.17	0.032	0.166	0.006	0.03
40	3.33	0.17	0.032	0.165	0.006	0.03
41	3.42	0.17	0.032	0.165	0.006	0.03
42	3.50	0.17	0.032	0.164	0.006	0.03
43	3.58	0.17	0.032	0.163	0.006	0.03
44	3.67	0.17	0.032	0.162	0.006	0.03
45	3.75	0.17	0.032	0.162	0.006	0.03
46	3.83	0.20	0.038	0.161	0.007	0.03
47	3.92	0.20	0.038	0.160	0.007	0.03
48	4.00	0.20	0.038	0.160	0.007	0.03
49	4.08	0.20	0.038	0.159	0.007	0.03
50	4.17	0.20	0.038	0.158	0.007	0.03
51	4.25	0.20	0.038	0.158	0.007	0.03
52	4.33	0.23	0.045	0.157	0.008	0.04
53	4.42	0.23	0.045	0.156	0.008	0.04
54	4.50	0.23	0.045	0.156	0.008	0.04

55	4.58	0.23	0.045	0.155	0.008	0.04
56	4.67	0.23	0.045	0.154	0.008	0.04
57	4.75	0.23	0.045	0.154	0.008	0.04
58	4.83	0.27	0.051	0.153	0.009	0.04
59	4.92	0.27	0.051	0.152	0.009	0.04
60	5.00	0.27	0.051	0.152	0.009	0.04
61	5.08	0.20	0.038	0.151	0.007	0.03
62	5.17	0.20	0.038	0.150	0.007	0.03
63	5.25	0.20	0.038	0.150	0.007	0.03
64	5.33	0.23	0.045	0.149	0.008	0.04
65	5.42	0.23	0.045	0.148	0.008	0.04
66	5.50	0.23	0.045	0.148	0.008	0.04
67	5.58	0.27	0.051	0.147	0.009	0.04
68	5.67	0.27	0.051	0.147	0.009	0.04
69	5.75	0.27	0.051	0.146	0.009	0.04
70	5.83	0.27	0.051	0.145	0.009	0.04
71	5.92	0.27	0.051	0.145	0.009	0.04
72	6.00	0.27	0.051	0.144	0.009	0.04
73	6.08	0.30	0.058	0.143	0.010	0.05
74	6.17	0.30	0.058	0.143	0.010	0.05
75	6.25	0.30	0.058	0.142	0.010	0.05
76	6.33	0.30	0.058	0.141	0.010	0.05
77	6.42	0.30	0.058	0.141	0.010	0.05
78	6.50	0.30	0.058	0.140	0.010	0.05
79	6.58	0.33	0.064	0.140	0.012	0.05
80	6.67	0.33	0.064	0.139	0.012	0.05
81	6.75	0.33	0.064	0.138	0.012	0.05
82	6.83	0.33	0.064	0.138	0.012	0.05
83	6.92	0.33	0.064	0.137	0.012	0.05
84	7.00	0.33	0.064	0.136	0.012	0.05
85	7.08	0.33	0.064	0.136	0.012	0.05
86	7.17	0.33	0.064	0.135	0.012	0.05
87	7.25	0.33	0.064	0.135	0.012	0.05
88	7.33	0.37	0.070	0.134	0.013	0.06
89	7.42	0.37	0.070	0.133	0.013	0.06
90	7.50	0.37	0.070	0.133	0.013	0.06
91	7.58	0.40	0.077	0.132	0.014	0.06
92	7.67	0.40	0.077	0.131	0.014	0.06
93	7.75	0.40	0.077	0.131	0.014	0.06
94	7.83	0.43	0.083	0.130	0.015	0.07
95	7.92	0.43	0.083	0.130	0.015	0.07
96	8.00	0.43	0.083	0.129	0.015	0.07
97	8.08	0.50	0.096	0.128	0.017	0.08
98	8.17	0.50	0.096	0.128	0.017	0.08
99	8.25	0.50	0.096	0.127	0.017	0.08
100	8.33	0.50	0.096	0.127	0.017	0.08
101	8.42	0.50	0.096	0.126	0.017	0.08
102	8.50	0.50	0.096	0.125	0.017	0.08
103	8.58	0.53	0.102	0.125	0.018	0.08
104	8.67	0.53	0.102	0.124	0.018	0.08
105	8.75	0.53	0.102	0.124	0.018	0.08
106	8.83	0.57	0.109	0.123	0.020	0.09
107	8.92	0.57	0.109	0.123	0.020	0.09
108	9.00	0.57	0.109	0.122	0.020	0.09

109	9.08	0.63	0.122	0.121	---	0.00
110	9.17	0.63	0.122	0.121	---	0.00
111	9.25	0.63	0.122	0.120	---	0.00
112	9.33	0.67	0.128	0.120	---	0.01
113	9.42	0.67	0.128	0.119	---	0.01
114	9.50	0.67	0.128	0.119	---	0.01
115	9.58	0.70	0.134	0.118	---	0.02
116	9.67	0.70	0.134	0.117	---	0.02
117	9.75	0.70	0.134	0.117	---	0.02
118	9.83	0.73	0.141	0.116	---	0.02
119	9.92	0.73	0.141	0.116	---	0.03
120	10.00	0.73	0.141	0.115	---	0.03
121	10.08	0.50	0.096	0.115	0.017	0.08
122	10.17	0.50	0.096	0.114	0.017	0.08
123	10.25	0.50	0.096	0.113	0.017	0.08
124	10.33	0.50	0.096	0.113	0.017	0.08
125	10.42	0.50	0.096	0.112	0.017	0.08
126	10.50	0.50	0.096	0.112	0.017	0.08
127	10.58	0.67	0.128	0.111	---	0.02
128	10.67	0.67	0.128	0.111	---	0.02
129	10.75	0.67	0.128	0.110	---	0.02
130	10.83	0.67	0.128	0.110	---	0.02
131	10.92	0.67	0.128	0.109	---	0.02
132	11.00	0.67	0.128	0.109	---	0.02
133	11.08	0.63	0.122	0.108	---	0.01
134	11.17	0.63	0.122	0.108	---	0.01
135	11.25	0.63	0.122	0.107	---	0.01
136	11.33	0.63	0.122	0.106	---	0.02
137	11.42	0.63	0.122	0.106	---	0.02
138	11.50	0.63	0.122	0.105	---	0.02
139	11.58	0.57	0.109	0.105	---	0.00
140	11.67	0.57	0.109	0.104	---	0.00
141	11.75	0.57	0.109	0.104	---	0.00
142	11.83	0.60	0.115	0.103	---	0.01
143	11.92	0.60	0.115	0.103	---	0.01
144	12.00	0.60	0.115	0.102	---	0.01
145	12.08	0.83	0.160	0.102	---	0.06
146	12.17	0.83	0.160	0.101	---	0.06
147	12.25	0.83	0.160	0.101	---	0.06
148	12.33	0.87	0.166	0.100	---	0.07
149	12.42	0.87	0.166	0.100	---	0.07
150	12.50	0.87	0.166	0.099	---	0.07
151	12.58	0.93	0.179	0.099	---	0.08
152	12.67	0.93	0.179	0.098	---	0.08
153	12.75	0.93	0.179	0.098	---	0.08
154	12.83	0.97	0.186	0.097	---	0.09
155	12.92	0.97	0.186	0.097	---	0.09
156	13.00	0.97	0.186	0.096	---	0.09
157	13.08	1.13	0.218	0.096	---	0.12
158	13.17	1.13	0.218	0.095	---	0.12
159	13.25	1.13	0.218	0.095	---	0.12
160	13.33	1.13	0.218	0.094	---	0.12
161	13.42	1.13	0.218	0.094	---	0.12
162	13.50	1.13	0.218	0.093	---	0.12

163	13.58	0.77	0.147	0.093	---	0.05
164	13.67	0.77	0.147	0.092	---	0.05
165	13.75	0.77	0.147	0.092	---	0.06
166	13.83	0.77	0.147	0.092	---	0.06
167	13.92	0.77	0.147	0.091	---	0.06
168	14.00	0.77	0.147	0.091	---	0.06
169	14.08	0.90	0.173	0.090	---	0.08
170	14.17	0.90	0.173	0.090	---	0.08
171	14.25	0.90	0.173	0.089	---	0.08
172	14.33	0.87	0.166	0.089	---	0.08
173	14.42	0.87	0.166	0.088	---	0.08
174	14.50	0.87	0.166	0.088	---	0.08
175	14.58	0.87	0.166	0.087	---	0.08
176	14.67	0.87	0.166	0.087	---	0.08
177	14.75	0.87	0.166	0.086	---	0.08
178	14.83	0.83	0.160	0.086	---	0.07
179	14.92	0.83	0.160	0.086	---	0.07
180	15.00	0.83	0.160	0.085	---	0.07
181	15.08	0.80	0.154	0.085	---	0.07
182	15.17	0.80	0.154	0.084	---	0.07
183	15.25	0.80	0.154	0.084	---	0.07
184	15.33	0.77	0.147	0.083	---	0.06
185	15.42	0.77	0.147	0.083	---	0.06
186	15.50	0.77	0.147	0.083	---	0.06
187	15.58	0.63	0.122	0.082	---	0.04
188	15.67	0.63	0.122	0.082	---	0.04
189	15.75	0.63	0.122	0.081	---	0.04
190	15.83	0.63	0.122	0.081	---	0.04
191	15.92	0.63	0.122	0.080	---	0.04
192	16.00	0.63	0.122	0.080	---	0.04
193	16.08	0.13	0.026	0.080	0.005	0.02
194	16.17	0.13	0.026	0.079	0.005	0.02
195	16.25	0.13	0.026	0.079	0.005	0.02
196	16.33	0.13	0.026	0.078	0.005	0.02
197	16.42	0.13	0.026	0.078	0.005	0.02
198	16.50	0.13	0.026	0.078	0.005	0.02
199	16.58	0.10	0.019	0.077	0.003	0.02
200	16.67	0.10	0.019	0.077	0.003	0.02
201	16.75	0.10	0.019	0.076	0.003	0.02
202	16.83	0.10	0.019	0.076	0.003	0.02
203	16.92	0.10	0.019	0.076	0.003	0.02
204	17.00	0.10	0.019	0.075	0.003	0.02
205	17.08	0.17	0.032	0.075	0.006	0.03
206	17.17	0.17	0.032	0.075	0.006	0.03
207	17.25	0.17	0.032	0.074	0.006	0.03
208	17.33	0.17	0.032	0.074	0.006	0.03
209	17.42	0.17	0.032	0.073	0.006	0.03
210	17.50	0.17	0.032	0.073	0.006	0.03
211	17.58	0.17	0.032	0.073	0.006	0.03
212	17.67	0.17	0.032	0.072	0.006	0.03
213	17.75	0.17	0.032	0.072	0.006	0.03
214	17.83	0.13	0.026	0.072	0.005	0.02
215	17.92	0.13	0.026	0.071	0.005	0.02
216	18.00	0.13	0.026	0.071	0.005	0.02

217	18.08	0.13	0.026	0.071	0.005	0.02
218	18.17	0.13	0.026	0.070	0.005	0.02
219	18.25	0.13	0.026	0.070	0.005	0.02
220	18.33	0.13	0.026	0.070	0.005	0.02
221	18.42	0.13	0.026	0.069	0.005	0.02
222	18.50	0.13	0.026	0.069	0.005	0.02
223	18.58	0.10	0.019	0.069	0.003	0.02
224	18.67	0.10	0.019	0.068	0.003	0.02
225	18.75	0.10	0.019	0.068	0.003	0.02
226	18.83	0.07	0.013	0.068	0.002	0.01
227	18.92	0.07	0.013	0.067	0.002	0.01
228	19.00	0.07	0.013	0.067	0.002	0.01
229	19.08	0.10	0.019	0.067	0.003	0.02
230	19.17	0.10	0.019	0.066	0.003	0.02
231	19.25	0.10	0.019	0.066	0.003	0.02
232	19.33	0.13	0.026	0.066	0.005	0.02
233	19.42	0.13	0.026	0.065	0.005	0.02
234	19.50	0.13	0.026	0.065	0.005	0.02
235	19.58	0.10	0.019	0.065	0.003	0.02
236	19.67	0.10	0.019	0.064	0.003	0.02
237	19.75	0.10	0.019	0.064	0.003	0.02
238	19.83	0.07	0.013	0.064	0.002	0.01
239	19.92	0.07	0.013	0.064	0.002	0.01
240	20.00	0.07	0.013	0.063	0.002	0.01
241	20.08	0.10	0.019	0.063	0.003	0.02
242	20.17	0.10	0.019	0.063	0.003	0.02
243	20.25	0.10	0.019	0.062	0.003	0.02
244	20.33	0.10	0.019	0.062	0.003	0.02
245	20.42	0.10	0.019	0.062	0.003	0.02
246	20.50	0.10	0.019	0.062	0.003	0.02
247	20.58	0.10	0.019	0.061	0.003	0.02
248	20.67	0.10	0.019	0.061	0.003	0.02
249	20.75	0.10	0.019	0.061	0.003	0.02
250	20.83	0.07	0.013	0.061	0.002	0.01
251	20.92	0.07	0.013	0.060	0.002	0.01
252	21.00	0.07	0.013	0.060	0.002	0.01
253	21.08	0.10	0.019	0.060	0.003	0.02
254	21.17	0.10	0.019	0.060	0.003	0.02
255	21.25	0.10	0.019	0.059	0.003	0.02
256	21.33	0.07	0.013	0.059	0.002	0.01
257	21.42	0.07	0.013	0.059	0.002	0.01
258	21.50	0.07	0.013	0.059	0.002	0.01
259	21.58	0.10	0.019	0.059	0.003	0.02
260	21.67	0.10	0.019	0.058	0.003	0.02
261	21.75	0.10	0.019	0.058	0.003	0.02
262	21.83	0.07	0.013	0.058	0.002	0.01
263	21.92	0.07	0.013	0.058	0.002	0.01
264	22.00	0.07	0.013	0.058	0.002	0.01
265	22.08	0.10	0.019	0.057	0.003	0.02
266	22.17	0.10	0.019	0.057	0.003	0.02
267	22.25	0.10	0.019	0.057	0.003	0.02
268	22.33	0.07	0.013	0.057	0.002	0.01
269	22.42	0.07	0.013	0.057	0.002	0.01
270	22.50	0.07	0.013	0.057	0.002	0.01

271	22.58	0.07	0.013	0.056	0.002	0.01
272	22.67	0.07	0.013	0.056	0.002	0.01
273	22.75	0.07	0.013	0.056	0.002	0.01
274	22.83	0.07	0.013	0.056	0.002	0.01
275	22.92	0.07	0.013	0.056	0.002	0.01
276	23.00	0.07	0.013	0.056	0.002	0.01
277	23.08	0.07	0.013	0.055	0.002	0.01
278	23.17	0.07	0.013	0.055	0.002	0.01
279	23.25	0.07	0.013	0.055	0.002	0.01
280	23.33	0.07	0.013	0.055	0.002	0.01
281	23.42	0.07	0.013	0.055	0.002	0.01
282	23.50	0.07	0.013	0.055	0.002	0.01
283	23.58	0.07	0.013	0.055	0.002	0.01
284	23.67	0.07	0.013	0.055	0.002	0.01
285	23.75	0.07	0.013	0.055	0.002	0.01
286	23.83	0.07	0.013	0.055	0.002	0.01
287	23.92	0.07	0.013	0.055	0.002	0.01
288	24.00	0.07	0.013	0.055	0.002	0.01
Sum =	100.0				Sum =	10.1

Flood volume = Effective rainfall 0.85(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 4.2(Ac.Ft)
Total soil loss = 0.75(In)
Total soil loss = 3.784(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 184872.6 Cubic Feet
Total soil loss = 164844.0 Cubic Feet

Peak flow rate of this hydrograph = 7.363(CFS)

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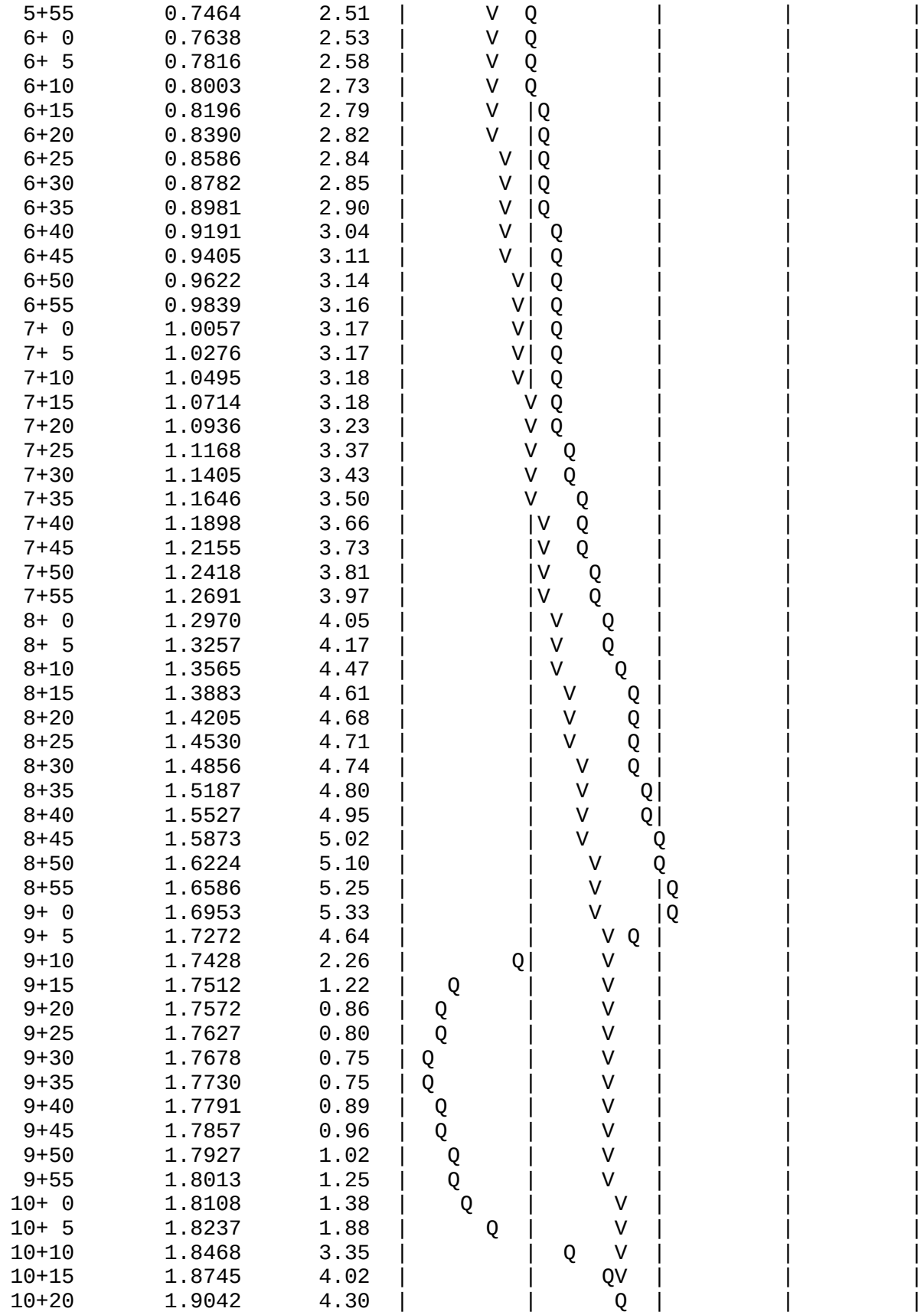
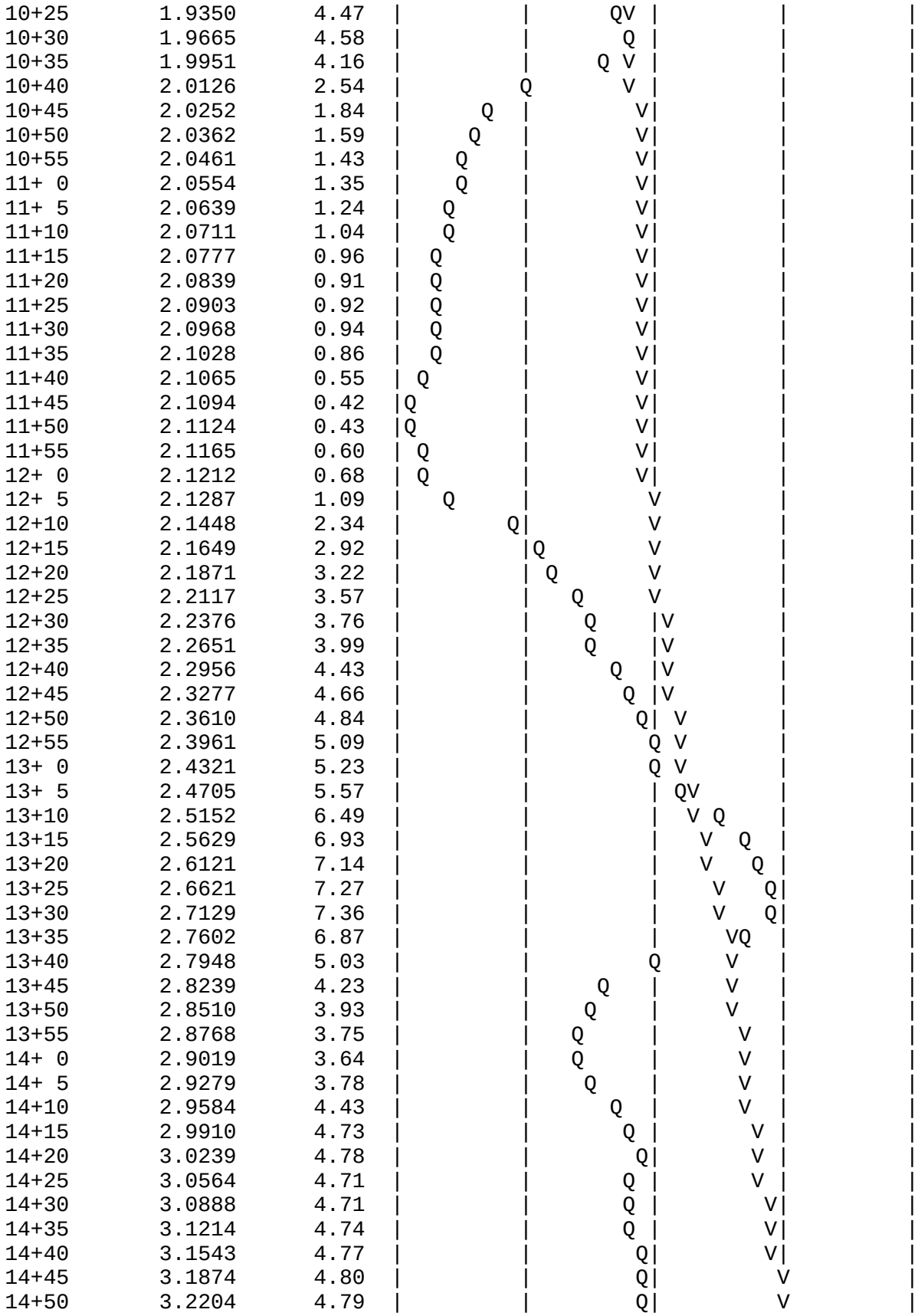
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

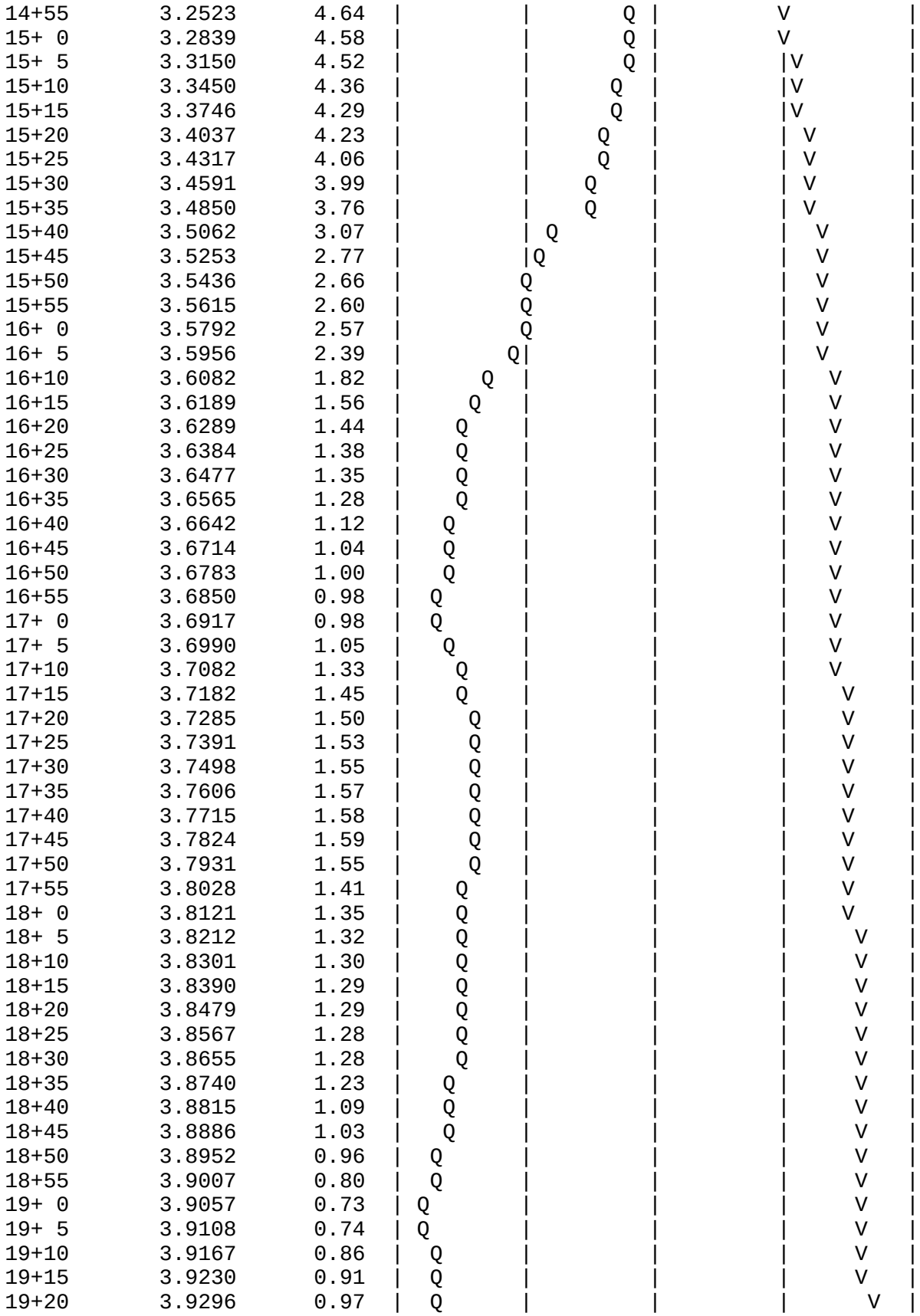
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0006	0.08	Q	|	|	|	|
0+10	0.0031	0.37	VQ	|	|	|	|
0+15	0.0065	0.50	VQ	|	|	|	|
0+20	0.0106	0.59	V Q	|	|	|	|
0+25	0.0158	0.76	V Q	|	|	|	|
0+30	0.0217	0.85	V Q	|	|	|	|
0+35	0.0278	0.89	V Q	|	|	|	|
0+40	0.0341	0.91	V Q	|	|	|	|
0+45	0.0405	0.93	V Q	|	|	|	|
0+50	0.0473	0.99	V Q	|	|	|	|
0+55	0.0551	1.13	V Q	|	|	|	|
1+ 0	0.0633	1.20	V Q	|	|	|	|
1+ 5	0.0715	1.19	V Q	|	|	|	|
1+10	0.0788	1.06	V Q	|	|	|	|
1+15	0.0858	1.01	V Q	|	|	|	|
1+20	0.0926	0.99	V Q	|	|	|	|

1+25	0.0993	0.98	V Q	|	|	|
1+30	0.1060	0.97	V Q	|	|	|
1+35	0.1127	0.97	|V Q	|	|	|
1+40	0.1193	0.96	|V Q	|	|	|
1+45	0.1259	0.96	|V Q	|	|	|
1+50	0.1328	1.00	|V Q	|	|	|
1+55	0.1406	1.14	|V Q	|	|	|
2+ 0	0.1489	1.20	|V Q	|	|	|
2+ 5	0.1574	1.23	|V Q	|	|	|
2+10	0.1660	1.25	|V Q	|	|	|
2+15	0.1746	1.26	|V Q	|	|	|
2+20	0.1833	1.26	|V Q	|	|	|
2+25	0.1920	1.27	|V Q	|	|	|
2+30	0.2008	1.27	|V Q	|	|	|
2+35	0.2098	1.32	|V Q	|	|	|
2+40	0.2199	1.46	| V Q	|	|	|
2+45	0.2304	1.52	| V Q	|	|	|
2+50	0.2410	1.55	| V Q	|	|	|
2+55	0.2518	1.56	| V Q	|	|	|
3+ 0	0.2626	1.57	| V Q	|	|	|
3+ 5	0.2735	1.58	| V Q	|	|	|
3+10	0.2845	1.59	| V Q	|	|	|
3+15	0.2954	1.59	| V Q	|	|	|
3+20	0.3064	1.59	| V Q	|	|	|
3+25	0.3174	1.59	| V Q	|	|	|
3+30	0.3283	1.59	| V Q	|	|	|
3+35	0.3393	1.59	| V Q	|	|	|
3+40	0.3503	1.59	| V Q	|	|	|
3+45	0.3612	1.59	| V Q	|	|	|
3+50	0.3725	1.64	| V Q	|	|	|
3+55	0.3847	1.78	| V Q	|	|	|
4+ 0	0.3974	1.84	| V Q	|	|	|
4+ 5	0.4103	1.87	| V Q	|	|	|
4+10	0.4232	1.88	| V Q	|	|	|
4+15	0.4363	1.89	| V Q	|	|	|
4+20	0.4497	1.94	| V Q	|	|	|
4+25	0.4640	2.09	| V Q	|	|	|
4+30	0.4789	2.16	| V Q	|	|	|
4+35	0.4939	2.19	| V Q	|	|	|
4+40	0.5091	2.20	| V Q	|	|	|
4+45	0.5243	2.21	| V Q	|	|	|
4+50	0.5399	2.26	| V Q|	|	|	|
4+55	0.5565	2.41	| V Q|	|	|	|
5+ 0	0.5735	2.47	| V Q|	|	|	|
5+ 5	0.5902	2.42	| V Q|	|	|	|
5+10	0.6050	2.15	| V Q |	|	|	|
5+15	0.6190	2.03	| V Q |	|	|	|
5+20	0.6330	2.03	| V Q |	|	|	|
5+25	0.6478	2.15	| V Q |	|	|	|
5+30	0.6629	2.19	| V Q |	|	|	|
5+35	0.6784	2.25	| V Q|	|	|	|
5+40	0.6949	2.40	| V Q|	|	|	|
5+45	0.7119	2.47	| V Q|	|	|	|
5+50	0.7291	2.49	| V Q|	|	|	|







19+25	3.9373	1.12		Q			V
19+30	3.9455	1.19		Q			V
19+35	3.9536	1.18		Q			V
19+40	3.9608	1.05		Q			V
19+45	3.9678	1.00		Q			V
19+50	3.9743	0.95		Q			V
19+55	3.9797	0.79		Q			V
20+ 0	3.9847	0.72	Q				V
20+ 5	3.9898	0.74	Q				V
20+10	3.9957	0.86		Q			V
20+15	4.0020	0.91		Q			V
20+20	4.0083	0.92		Q			V
20+25	4.0148	0.93		Q			V
20+30	4.0212	0.94		Q			V
20+35	4.0277	0.94		Q			V
20+40	4.0343	0.95		Q			V
20+45	4.0408	0.95		Q			V
20+50	4.0471	0.91		Q			V
20+55	4.0524	0.77		Q			V
21+ 0	4.0573	0.71	Q				V
21+ 5	4.0623	0.72	Q				V
21+10	4.0682	0.85		Q			V
21+15	4.0744	0.90		Q			V
21+20	4.0804	0.88		Q			V
21+25	4.0856	0.75	Q				V
21+30	4.0904	0.69	Q				V
21+35	4.0953	0.71	Q				V
21+40	4.1011	0.84		Q			V
21+45	4.1073	0.90		Q			V
21+50	4.1134	0.88		Q			V
21+55	4.1185	0.75	Q				V
22+ 0	4.1233	0.69	Q				V
22+ 5	4.1282	0.71	Q				V
22+10	4.1340	0.84		Q			V
22+15	4.1402	0.90		Q			V
22+20	4.1463	0.88		Q			V
22+25	4.1514	0.75	Q				V
22+30	4.1562	0.69	Q				V
22+35	4.1608	0.67	Q				V
22+40	4.1654	0.66	Q				V
22+45	4.1699	0.65	Q				V
22+50	4.1743	0.65	Q				V
22+55	4.1788	0.64	Q				V
23+ 0	4.1832	0.64	Q				V
23+ 5	4.1876	0.64	Q				V
23+10	4.1920	0.64	Q				V
23+15	4.1964	0.64	Q				V
23+20	4.2007	0.64	Q				V
23+25	4.2051	0.64	Q				V
23+30	4.2095	0.64	Q				V
23+35	4.2139	0.64	Q				V
23+40	4.2183	0.64	Q				V
23+45	4.2227	0.64	Q				V
23+50	4.2271	0.64	Q				V

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   23+55       4.2315      0.64  | Q       |         |         |        V|
   24+ 0       4.2359      0.64  | Q       |         |         |        V|
   24+ 5       4.2397      0.55  | Q       |         |         |        V|
   24+10       4.2415      0.27  |Q        |         |         |        V|
   24+15       4.2425      0.14  Q         |         |         |        V|
   24+20       4.2431      0.09  Q         |         |         |        V|
   24+25       4.2435      0.06  Q         |         |         |        V|
   24+30       4.2438      0.04  Q         |         |         |        V|
   24+35       4.2439      0.02  Q         |         |         |        V|
   24+40       4.2440      0.01  Q         |         |         |        V|
   24+45       4.2441      0.01  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163uhp5245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 5 YEAR UNIT HYDROGRAPH
MJPA 304163
BUILDING 1
4163uhp5.um1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 3510.00(Ft.)
Length along longest watercourse measured to centroid = 1990.00(Ft.)
Length along longest watercourse = 0.665 Mi.
Length along longest watercourse measured to centroid = 0.377 Mi.
Difference in elevation = 28.65(Ft.)
Slope along watercourse = 43.0974 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.104 Hr.
Lag time = 6.24 Min.
25% of lag time = 1.56 Min.
40% of lag time = 2.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.162(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.162(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	69.00	0.900

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	80.072	13.320	8.084
2	0.167	160.145	44.445	26.974
3	0.250	240.217	19.915	12.086
4	0.333	320.290	8.240	5.001
5	0.417	400.362	4.947	3.002
6	0.500	480.434	3.115	1.891
7	0.583	560.507	2.247	1.364
8	0.667	640.579	1.540	0.935
9	0.750	720.652	1.035	0.628
10	0.833	800.724	1.196	0.726
			Sum = 100.000	Sum= 60.690

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.017	0.193	0.003	0.01
2	0.17	0.07	0.017	0.193	0.003	0.01
3	0.25	0.07	0.017	0.192	0.003	0.01
4	0.33	0.10	0.026	0.191	0.005	0.02
5	0.42	0.10	0.026	0.190	0.005	0.02
6	0.50	0.10	0.026	0.190	0.005	0.02
7	0.58	0.10	0.026	0.189	0.005	0.02
8	0.67	0.10	0.026	0.188	0.005	0.02
9	0.75	0.10	0.026	0.187	0.005	0.02
10	0.83	0.13	0.035	0.187	0.006	0.03
11	0.92	0.13	0.035	0.186	0.006	0.03
12	1.00	0.13	0.035	0.185	0.006	0.03
13	1.08	0.10	0.026	0.184	0.005	0.02
14	1.17	0.10	0.026	0.184	0.005	0.02
15	1.25	0.10	0.026	0.183	0.005	0.02
16	1.33	0.10	0.026	0.182	0.005	0.02
17	1.42	0.10	0.026	0.182	0.005	0.02
18	1.50	0.10	0.026	0.181	0.005	0.02
19	1.58	0.10	0.026	0.180	0.005	0.02
20	1.67	0.10	0.026	0.179	0.005	0.02
21	1.75	0.10	0.026	0.179	0.005	0.02
22	1.83	0.13	0.035	0.178	0.006	0.03
23	1.92	0.13	0.035	0.177	0.006	0.03
24	2.00	0.13	0.035	0.176	0.006	0.03
25	2.08	0.13	0.035	0.176	0.006	0.03
26	2.17	0.13	0.035	0.175	0.006	0.03
27	2.25	0.13	0.035	0.174	0.006	0.03
28	2.33	0.13	0.035	0.174	0.006	0.03
29	2.42	0.13	0.035	0.173	0.006	0.03
30	2.50	0.13	0.035	0.172	0.006	0.03
31	2.58	0.17	0.043	0.172	0.008	0.04
32	2.67	0.17	0.043	0.171	0.008	0.04
33	2.75	0.17	0.043	0.170	0.008	0.04
34	2.83	0.17	0.043	0.169	0.008	0.04
35	2.92	0.17	0.043	0.169	0.008	0.04
36	3.00	0.17	0.043	0.168	0.008	0.04
37	3.08	0.17	0.043	0.167	0.008	0.04
38	3.17	0.17	0.043	0.167	0.008	0.04
39	3.25	0.17	0.043	0.166	0.008	0.04
40	3.33	0.17	0.043	0.165	0.008	0.04
41	3.42	0.17	0.043	0.165	0.008	0.04
42	3.50	0.17	0.043	0.164	0.008	0.04
43	3.58	0.17	0.043	0.163	0.008	0.04
44	3.67	0.17	0.043	0.162	0.008	0.04
45	3.75	0.17	0.043	0.162	0.008	0.04
46	3.83	0.20	0.052	0.161	0.009	0.04
47	3.92	0.20	0.052	0.160	0.009	0.04
48	4.00	0.20	0.052	0.160	0.009	0.04
49	4.08	0.20	0.052	0.159	0.009	0.04
50	4.17	0.20	0.052	0.158	0.009	0.04
51	4.25	0.20	0.052	0.158	0.009	0.04
52	4.33	0.23	0.061	0.157	0.011	0.05
53	4.42	0.23	0.061	0.156	0.011	0.05
54	4.50	0.23	0.061	0.156	0.011	0.05

55	4.58	0.23	0.061	0.155	0.011	0.05
56	4.67	0.23	0.061	0.154	0.011	0.05
57	4.75	0.23	0.061	0.154	0.011	0.05
58	4.83	0.27	0.069	0.153	0.012	0.06
59	4.92	0.27	0.069	0.152	0.012	0.06
60	5.00	0.27	0.069	0.152	0.012	0.06
61	5.08	0.20	0.052	0.151	0.009	0.04
62	5.17	0.20	0.052	0.150	0.009	0.04
63	5.25	0.20	0.052	0.150	0.009	0.04
64	5.33	0.23	0.061	0.149	0.011	0.05
65	5.42	0.23	0.061	0.148	0.011	0.05
66	5.50	0.23	0.061	0.148	0.011	0.05
67	5.58	0.27	0.069	0.147	0.012	0.06
68	5.67	0.27	0.069	0.147	0.012	0.06
69	5.75	0.27	0.069	0.146	0.012	0.06
70	5.83	0.27	0.069	0.145	0.012	0.06
71	5.92	0.27	0.069	0.145	0.012	0.06
72	6.00	0.27	0.069	0.144	0.012	0.06
73	6.08	0.30	0.078	0.143	0.014	0.06
74	6.17	0.30	0.078	0.143	0.014	0.06
75	6.25	0.30	0.078	0.142	0.014	0.06
76	6.33	0.30	0.078	0.141	0.014	0.06
77	6.42	0.30	0.078	0.141	0.014	0.06
78	6.50	0.30	0.078	0.140	0.014	0.06
79	6.58	0.33	0.086	0.140	0.016	0.07
80	6.67	0.33	0.086	0.139	0.016	0.07
81	6.75	0.33	0.086	0.138	0.016	0.07
82	6.83	0.33	0.086	0.138	0.016	0.07
83	6.92	0.33	0.086	0.137	0.016	0.07
84	7.00	0.33	0.086	0.136	0.016	0.07
85	7.08	0.33	0.086	0.136	0.016	0.07
86	7.17	0.33	0.086	0.135	0.016	0.07
87	7.25	0.33	0.086	0.135	0.016	0.07
88	7.33	0.37	0.095	0.134	0.017	0.08
89	7.42	0.37	0.095	0.133	0.017	0.08
90	7.50	0.37	0.095	0.133	0.017	0.08
91	7.58	0.40	0.104	0.132	0.019	0.09
92	7.67	0.40	0.104	0.131	0.019	0.09
93	7.75	0.40	0.104	0.131	0.019	0.09
94	7.83	0.43	0.112	0.130	0.020	0.09
95	7.92	0.43	0.112	0.130	0.020	0.09
96	8.00	0.43	0.112	0.129	0.020	0.09
97	8.08	0.50	0.130	0.128	---	0.00
98	8.17	0.50	0.130	0.128	---	0.00
99	8.25	0.50	0.130	0.127	---	0.00
100	8.33	0.50	0.130	0.127	---	0.00
101	8.42	0.50	0.130	0.126	---	0.00
102	8.50	0.50	0.130	0.125	---	0.00
103	8.58	0.53	0.138	0.125	---	0.01
104	8.67	0.53	0.138	0.124	---	0.01
105	8.75	0.53	0.138	0.124	---	0.01
106	8.83	0.57	0.147	0.123	---	0.02
107	8.92	0.57	0.147	0.123	---	0.02
108	9.00	0.57	0.147	0.122	---	0.03

109	9.08	0.63	0.164	0.121	---	0.04
110	9.17	0.63	0.164	0.121	---	0.04
111	9.25	0.63	0.164	0.120	---	0.04
112	9.33	0.67	0.173	0.120	---	0.05
113	9.42	0.67	0.173	0.119	---	0.05
114	9.50	0.67	0.173	0.119	---	0.05
115	9.58	0.70	0.182	0.118	---	0.06
116	9.67	0.70	0.182	0.117	---	0.06
117	9.75	0.70	0.182	0.117	---	0.06
118	9.83	0.73	0.190	0.116	---	0.07
119	9.92	0.73	0.190	0.116	---	0.07
120	10.00	0.73	0.190	0.115	---	0.08
121	10.08	0.50	0.130	0.115	---	0.02
122	10.17	0.50	0.130	0.114	---	0.02
123	10.25	0.50	0.130	0.113	---	0.02
124	10.33	0.50	0.130	0.113	---	0.02
125	10.42	0.50	0.130	0.112	---	0.02
126	10.50	0.50	0.130	0.112	---	0.02
127	10.58	0.67	0.173	0.111	---	0.06
128	10.67	0.67	0.173	0.111	---	0.06
129	10.75	0.67	0.173	0.110	---	0.06
130	10.83	0.67	0.173	0.110	---	0.06
131	10.92	0.67	0.173	0.109	---	0.06
132	11.00	0.67	0.173	0.109	---	0.06
133	11.08	0.63	0.164	0.108	---	0.06
134	11.17	0.63	0.164	0.108	---	0.06
135	11.25	0.63	0.164	0.107	---	0.06
136	11.33	0.63	0.164	0.106	---	0.06
137	11.42	0.63	0.164	0.106	---	0.06
138	11.50	0.63	0.164	0.105	---	0.06
139	11.58	0.57	0.147	0.105	---	0.04
140	11.67	0.57	0.147	0.104	---	0.04
141	11.75	0.57	0.147	0.104	---	0.04
142	11.83	0.60	0.156	0.103	---	0.05
143	11.92	0.60	0.156	0.103	---	0.05
144	12.00	0.60	0.156	0.102	---	0.05
145	12.08	0.83	0.216	0.102	---	0.11
146	12.17	0.83	0.216	0.101	---	0.11
147	12.25	0.83	0.216	0.101	---	0.12
148	12.33	0.87	0.225	0.100	---	0.12
149	12.42	0.87	0.225	0.100	---	0.13
150	12.50	0.87	0.225	0.099	---	0.13
151	12.58	0.93	0.242	0.099	---	0.14
152	12.67	0.93	0.242	0.098	---	0.14
153	12.75	0.93	0.242	0.098	---	0.14
154	12.83	0.97	0.251	0.097	---	0.15
155	12.92	0.97	0.251	0.097	---	0.15
156	13.00	0.97	0.251	0.096	---	0.15
157	13.08	1.13	0.294	0.096	---	0.20
158	13.17	1.13	0.294	0.095	---	0.20
159	13.25	1.13	0.294	0.095	---	0.20
160	13.33	1.13	0.294	0.094	---	0.20
161	13.42	1.13	0.294	0.094	---	0.20
162	13.50	1.13	0.294	0.093	---	0.20

163	13.58	0.77	0.199	0.093	---	0.11
164	13.67	0.77	0.199	0.092	---	0.11
165	13.75	0.77	0.199	0.092	---	0.11
166	13.83	0.77	0.199	0.092	---	0.11
167	13.92	0.77	0.199	0.091	---	0.11
168	14.00	0.77	0.199	0.091	---	0.11
169	14.08	0.90	0.233	0.090	---	0.14
170	14.17	0.90	0.233	0.090	---	0.14
171	14.25	0.90	0.233	0.089	---	0.14
172	14.33	0.87	0.225	0.089	---	0.14
173	14.42	0.87	0.225	0.088	---	0.14
174	14.50	0.87	0.225	0.088	---	0.14
175	14.58	0.87	0.225	0.087	---	0.14
176	14.67	0.87	0.225	0.087	---	0.14
177	14.75	0.87	0.225	0.086	---	0.14
178	14.83	0.83	0.216	0.086	---	0.13
179	14.92	0.83	0.216	0.086	---	0.13
180	15.00	0.83	0.216	0.085	---	0.13
181	15.08	0.80	0.208	0.085	---	0.12
182	15.17	0.80	0.208	0.084	---	0.12
183	15.25	0.80	0.208	0.084	---	0.12
184	15.33	0.77	0.199	0.083	---	0.12
185	15.42	0.77	0.199	0.083	---	0.12
186	15.50	0.77	0.199	0.083	---	0.12
187	15.58	0.63	0.164	0.082	---	0.08
188	15.67	0.63	0.164	0.082	---	0.08
189	15.75	0.63	0.164	0.081	---	0.08
190	15.83	0.63	0.164	0.081	---	0.08
191	15.92	0.63	0.164	0.080	---	0.08
192	16.00	0.63	0.164	0.080	---	0.08
193	16.08	0.13	0.035	0.080	0.006	0.03
194	16.17	0.13	0.035	0.079	0.006	0.03
195	16.25	0.13	0.035	0.079	0.006	0.03
196	16.33	0.13	0.035	0.078	0.006	0.03
197	16.42	0.13	0.035	0.078	0.006	0.03
198	16.50	0.13	0.035	0.078	0.006	0.03
199	16.58	0.10	0.026	0.077	0.005	0.02
200	16.67	0.10	0.026	0.077	0.005	0.02
201	16.75	0.10	0.026	0.076	0.005	0.02
202	16.83	0.10	0.026	0.076	0.005	0.02
203	16.92	0.10	0.026	0.076	0.005	0.02
204	17.00	0.10	0.026	0.075	0.005	0.02
205	17.08	0.17	0.043	0.075	0.008	0.04
206	17.17	0.17	0.043	0.075	0.008	0.04
207	17.25	0.17	0.043	0.074	0.008	0.04
208	17.33	0.17	0.043	0.074	0.008	0.04
209	17.42	0.17	0.043	0.073	0.008	0.04
210	17.50	0.17	0.043	0.073	0.008	0.04
211	17.58	0.17	0.043	0.073	0.008	0.04
212	17.67	0.17	0.043	0.072	0.008	0.04
213	17.75	0.17	0.043	0.072	0.008	0.04
214	17.83	0.13	0.035	0.072	0.006	0.03
215	17.92	0.13	0.035	0.071	0.006	0.03
216	18.00	0.13	0.035	0.071	0.006	0.03

217	18.08	0.13	0.035	0.071	0.006	0.03
218	18.17	0.13	0.035	0.070	0.006	0.03
219	18.25	0.13	0.035	0.070	0.006	0.03
220	18.33	0.13	0.035	0.070	0.006	0.03
221	18.42	0.13	0.035	0.069	0.006	0.03
222	18.50	0.13	0.035	0.069	0.006	0.03
223	18.58	0.10	0.026	0.069	0.005	0.02
224	18.67	0.10	0.026	0.068	0.005	0.02
225	18.75	0.10	0.026	0.068	0.005	0.02
226	18.83	0.07	0.017	0.068	0.003	0.01
227	18.92	0.07	0.017	0.067	0.003	0.01
228	19.00	0.07	0.017	0.067	0.003	0.01
229	19.08	0.10	0.026	0.067	0.005	0.02
230	19.17	0.10	0.026	0.066	0.005	0.02
231	19.25	0.10	0.026	0.066	0.005	0.02
232	19.33	0.13	0.035	0.066	0.006	0.03
233	19.42	0.13	0.035	0.065	0.006	0.03
234	19.50	0.13	0.035	0.065	0.006	0.03
235	19.58	0.10	0.026	0.065	0.005	0.02
236	19.67	0.10	0.026	0.064	0.005	0.02
237	19.75	0.10	0.026	0.064	0.005	0.02
238	19.83	0.07	0.017	0.064	0.003	0.01
239	19.92	0.07	0.017	0.064	0.003	0.01
240	20.00	0.07	0.017	0.063	0.003	0.01
241	20.08	0.10	0.026	0.063	0.005	0.02
242	20.17	0.10	0.026	0.063	0.005	0.02
243	20.25	0.10	0.026	0.062	0.005	0.02
244	20.33	0.10	0.026	0.062	0.005	0.02
245	20.42	0.10	0.026	0.062	0.005	0.02
246	20.50	0.10	0.026	0.062	0.005	0.02
247	20.58	0.10	0.026	0.061	0.005	0.02
248	20.67	0.10	0.026	0.061	0.005	0.02
249	20.75	0.10	0.026	0.061	0.005	0.02
250	20.83	0.07	0.017	0.061	0.003	0.01
251	20.92	0.07	0.017	0.060	0.003	0.01
252	21.00	0.07	0.017	0.060	0.003	0.01
253	21.08	0.10	0.026	0.060	0.005	0.02
254	21.17	0.10	0.026	0.060	0.005	0.02
255	21.25	0.10	0.026	0.059	0.005	0.02
256	21.33	0.07	0.017	0.059	0.003	0.01
257	21.42	0.07	0.017	0.059	0.003	0.01
258	21.50	0.07	0.017	0.059	0.003	0.01
259	21.58	0.10	0.026	0.059	0.005	0.02
260	21.67	0.10	0.026	0.058	0.005	0.02
261	21.75	0.10	0.026	0.058	0.005	0.02
262	21.83	0.07	0.017	0.058	0.003	0.01
263	21.92	0.07	0.017	0.058	0.003	0.01
264	22.00	0.07	0.017	0.058	0.003	0.01
265	22.08	0.10	0.026	0.057	0.005	0.02
266	22.17	0.10	0.026	0.057	0.005	0.02
267	22.25	0.10	0.026	0.057	0.005	0.02
268	22.33	0.07	0.017	0.057	0.003	0.01
269	22.42	0.07	0.017	0.057	0.003	0.01
270	22.50	0.07	0.017	0.057	0.003	0.01

271	22.58	0.07	0.017	0.056	0.003	0.01
272	22.67	0.07	0.017	0.056	0.003	0.01
273	22.75	0.07	0.017	0.056	0.003	0.01
274	22.83	0.07	0.017	0.056	0.003	0.01
275	22.92	0.07	0.017	0.056	0.003	0.01
276	23.00	0.07	0.017	0.056	0.003	0.01
277	23.08	0.07	0.017	0.055	0.003	0.01
278	23.17	0.07	0.017	0.055	0.003	0.01
279	23.25	0.07	0.017	0.055	0.003	0.01
280	23.33	0.07	0.017	0.055	0.003	0.01
281	23.42	0.07	0.017	0.055	0.003	0.01
282	23.50	0.07	0.017	0.055	0.003	0.01
283	23.58	0.07	0.017	0.055	0.003	0.01
284	23.67	0.07	0.017	0.055	0.003	0.01
285	23.75	0.07	0.017	0.055	0.003	0.01
286	23.83	0.07	0.017	0.055	0.003	0.01
287	23.92	0.07	0.017	0.055	0.003	0.01
288	24.00	0.07	0.017	0.055	0.003	0.01
Sum =		100.0			Sum =	14.7

Flood volume = Effective rainfall 1.22(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 6.1(Ac.Ft)
Total soil loss = 0.94(In)
Total soil loss = 4.715(Ac.Ft)
Total rainfall = 2.16(In)
Flood volume = 267193.4 Cubic Feet
Total soil loss = 205391.4 Cubic Feet

Peak flow rate of this hydrograph = 11.962(CFS)

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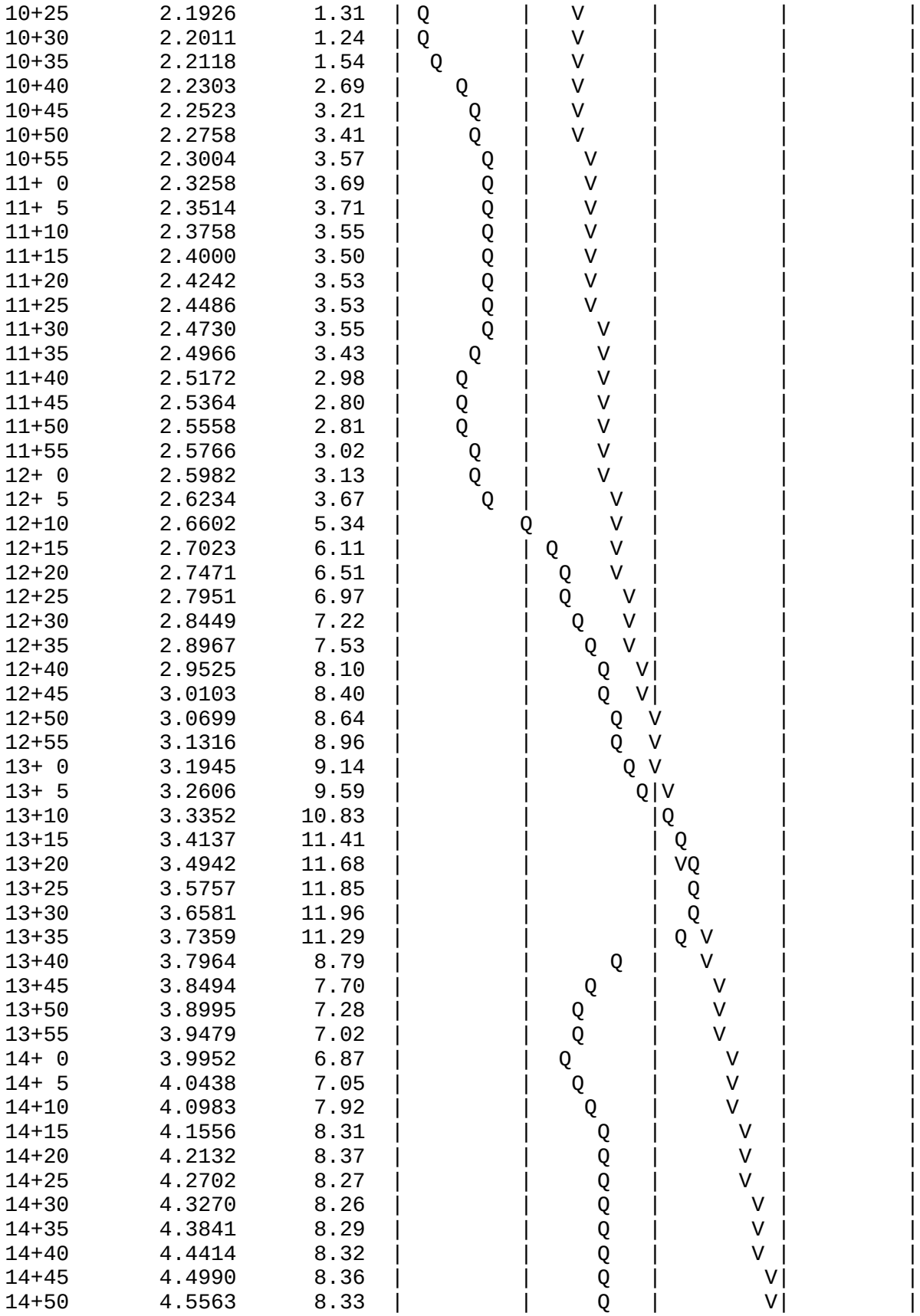
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

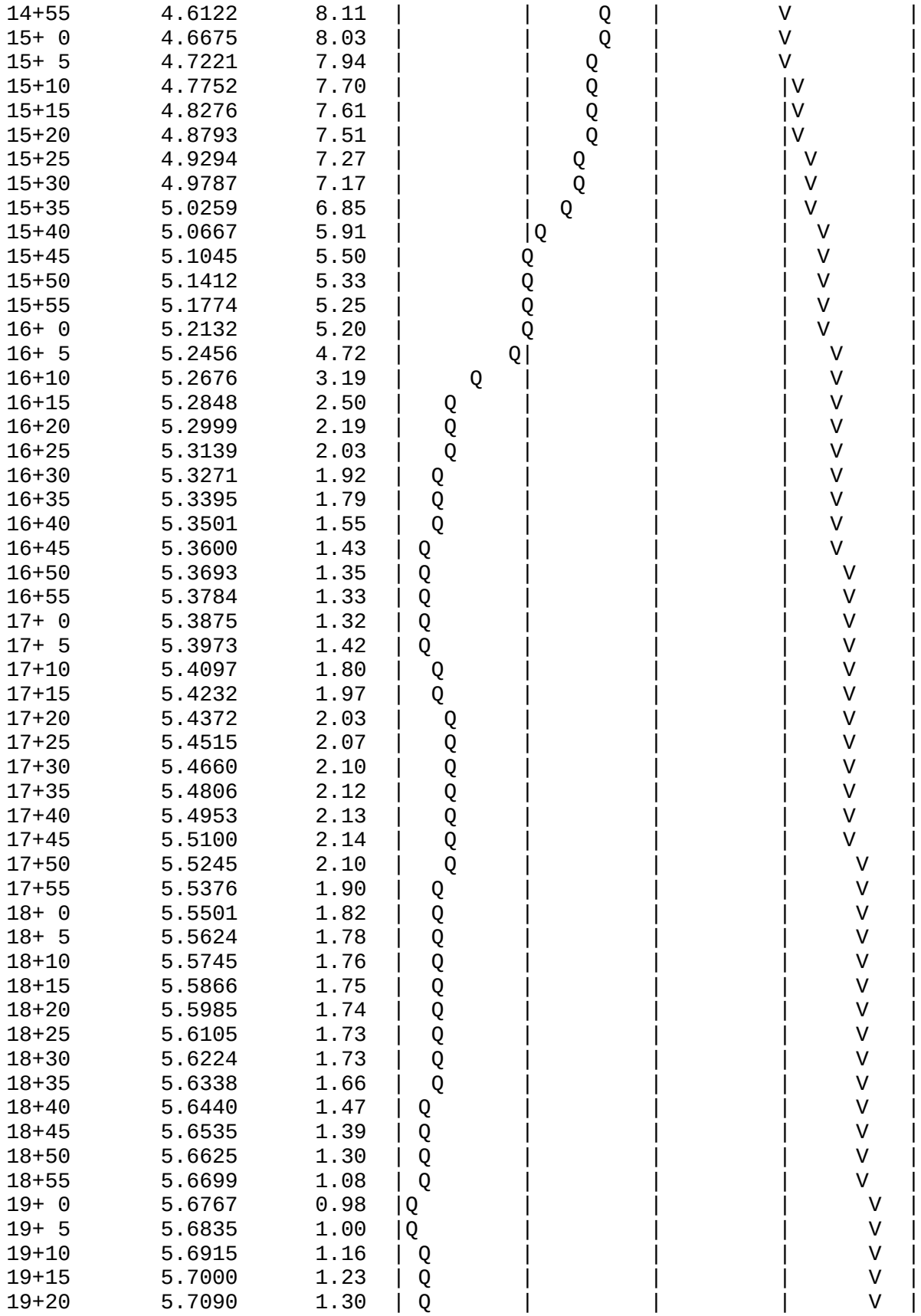
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0008	0.11	Q	|	|	|	|
0+10	0.0042	0.50	Q	|	|	|	|
0+15	0.0088	0.67	VQ	|	|	|	|
0+20	0.0143	0.80	VQ	|	|	|	|
0+25	0.0214	1.03	V Q	|	|	|	|
0+30	0.0293	1.14	V Q	|	|	|	|
0+35	0.0375	1.20	V Q	|	|	|	|
0+40	0.0460	1.23	V Q	|	|	|	|
0+45	0.0547	1.26	V Q	|	|	|	|
0+50	0.0639	1.33	V Q	|	|	|	|
0+55	0.0744	1.53	V Q	|	|	|	|
1+ 0	0.0856	1.62	V Q	|	|	|	|
1+ 5	0.0966	1.60	V Q	|	|	|	|
1+10	0.1065	1.43	V Q	|	|	|	|
1+15	0.1159	1.36	V Q	|	|	|	|
1+20	0.1251	1.34	V Q	|	|	|	|

1+25	0.1342	1.32	V Q	|	|	|	|
1+30	0.1432	1.31	V Q	|	|	|	|
1+35	0.1522	1.31	V Q	|	|	|	|
1+40	0.1612	1.30	|VQ	|	|	|	|
1+45	0.1701	1.30	|VQ	|	|	|	|
1+50	0.1794	1.35	|VQ	|	|	|	|
1+55	0.1900	1.54	|V Q	|	|	|	|
2+ 0	0.2012	1.63	|V Q	|	|	|	|
2+ 5	0.2127	1.66	|V Q	|	|	|	|
2+10	0.2243	1.68	|V Q	|	|	|	|
2+15	0.2359	1.70	|V Q	|	|	|	|
2+20	0.2477	1.71	|V Q	|	|	|	|
2+25	0.2595	1.71	|V Q	|	|	|	|
2+30	0.2713	1.72	|V Q	|	|	|	|
2+35	0.2836	1.78	|V Q	|	|	|	|
2+40	0.2971	1.97	|V Q	|	|	|	|
2+45	0.3113	2.06	| V Q	|	|	|	|
2+50	0.3257	2.09	| V Q	|	|	|	|
2+55	0.3403	2.11	| V Q	|	|	|	|
3+ 0	0.3549	2.13	| V Q	|	|	|	|
3+ 5	0.3696	2.14	| V Q	|	|	|	|
3+10	0.3844	2.14	| V Q	|	|	|	|
3+15	0.3992	2.15	| V Q	|	|	|	|
3+20	0.4140	2.15	| V Q	|	|	|	|
3+25	0.4288	2.15	| V Q	|	|	|	|
3+30	0.4437	2.15	| V Q	|	|	|	|
3+35	0.4585	2.15	| V Q	|	|	|	|
3+40	0.4733	2.15	| VQ	|	|	|	|
3+45	0.4882	2.15	| VQ	|	|	|	|
3+50	0.5034	2.21	| VQ	|	|	|	|
3+55	0.5199	2.40	| VQ	|	|	|	|
4+ 0	0.5370	2.49	| VQ	|	|	|	|
4+ 5	0.5544	2.52	| V Q	|	|	|	|
4+10	0.5719	2.54	| V Q	|	|	|	|
4+15	0.5896	2.56	| V Q	|	|	|	|
4+20	0.6076	2.62	| V Q	|	|	|	|
4+25	0.6271	2.82	| VQ	|	|	|	|
4+30	0.6471	2.91	| VQ	|	|	|	|
4+35	0.6675	2.95	| VQ	|	|	|	|
4+40	0.6880	2.97	| VQ	|	|	|	|
4+45	0.7085	2.99	| VQ	|	|	|	|
4+50	0.7296	3.06	| V Q	|	|	|	|
4+55	0.7520	3.25	| V Q	|	|	|	|
5+ 0	0.7750	3.34	| VQ	|	|	|	|
5+ 5	0.7975	3.27	| VQ	|	|	|	|
5+10	0.8176	2.91	| Q	|	|	|	|
5+15	0.8365	2.75	| Q	|	|	|	|
5+20	0.8554	2.75	| Q	|	|	|	|
5+25	0.8754	2.90	| Q	|	|	|	|
5+30	0.8958	2.96	| Q	|	|	|	|
5+35	0.9168	3.04	| VQ	|	|	|	|
5+40	0.9391	3.24	| Q	|	|	|	|
5+45	0.9620	3.33	| Q	|	|	|	|
5+50	0.9852	3.37	| Q	|	|	|	|

5+55	1.0086	3.40	| Q |	|	|	|
6+ 0	1.0321	3.41	| Q |	|	|	|
6+ 5	1.0561	3.49	| Q |	|	|	|
6+10	1.0815	3.68	| Q |	|	|	|
6+15	1.1075	3.77	| Q |	|	|	|
6+20	1.1338	3.81	| Q |	|	|	|
6+25	1.1602	3.84	| Q |	|	|	|
6+30	1.1867	3.85	| Q |	|	|	|
6+35	1.2137	3.92	| Q |	|	|	|
6+40	1.2420	4.11	| Q |	|	|	|
6+45	1.2710	4.20	| Q |	|	|	|
6+50	1.3002	4.25	| Q |	|	|	|
6+55	1.3296	4.27	| Q |	|	|	|
7+ 0	1.3591	4.28	| Q |	|	|	|
7+ 5	1.3886	4.29	| QV|	|	|	|
7+10	1.4182	4.30	| QV|	|	|	|
7+15	1.4478	4.30	| QV|	|	|	|
7+20	1.4779	4.36	| QV|	|	|	|
7+25	1.5092	4.55	| Q|	|	|	|
7+30	1.5412	4.64	| QV	|	|	|
7+35	1.5738	4.73	| QV	|	|	|
7+40	1.6078	4.95	| QV	|	|	|
7+45	1.6426	5.04	| Q	|	|	|
7+50	1.6780	5.15	| Q	|	|	|
7+55	1.7150	5.37	| QV	|	|	|
8+ 0	1.7527	5.47	| QV	|	|	|
8+ 5	1.7856	4.79	| Q|V	|	|	|
8+10	1.8019	2.36	| Q |V	|	|	|
8+15	1.8109	1.30	| Q |V	|	|	|
8+20	1.8170	0.89	|Q |V	|	|	|
8+25	1.8215	0.66	|Q |V	|	|	|
8+30	1.8251	0.52	|Q |V	|	|	|
8+35	1.8286	0.51	|Q |V	|	|	|
8+40	1.8334	0.69	|Q |V	|	|	|
8+45	1.8387	0.77	|Q |V	|	|	|
8+50	1.8445	0.85	|Q | V	|	|	|
8+55	1.8524	1.15	| Q | V	|	|	|
9+ 0	1.8614	1.30	| Q | V	|	|	|
9+ 5	1.8720	1.53	| Q | V	|	|	|
9+10	1.8863	2.07	| Q | V	|	|	|
9+15	1.9024	2.34	| Q | V	|	|	|
9+20	1.9199	2.55	| Q | V	|	|	|
9+25	1.9397	2.87	| Q | V	|	|	|
9+30	1.9607	3.05	| Q | V	|	|	|
9+35	1.9830	3.23	| Q | V	|	|	|
9+40	2.0073	3.54	| Q | V	|	|	|
9+45	2.0329	3.71	| Q | V	|	|	|
9+50	2.0596	3.88	| Q | V	|	|	|
9+55	2.0884	4.18	| Q | V	|	|	|
10+ 0	2.1182	4.34	| Q | V	|	|	|
10+ 5	2.1454	3.95	| Q | V	|	|	|
10+10	2.1618	2.38	| Q | V	|	|	|
10+15	2.1736	1.70	| Q | V	|	|	|
10+20	2.1836	1.45	| Q | V	|	|	|





19+25	5.7194	1.51	| Q	|	|	|	V |
19+30	5.7304	1.61	| Q	|	|	|	V |
19+35	5.7413	1.59	| Q	|	|	|	V |
19+40	5.7512	1.42	| Q	|	|	|	V |
19+45	5.7605	1.36	| Q	|	|	|	V |
19+50	5.7693	1.28	| Q	|	|	|	V |
19+55	5.7767	1.07	| Q	|	|	|	V |
20+ 0	5.7834	0.98	|Q	|	|	|	V |
20+ 5	5.7903	1.00	|Q	|	|	|	V |
20+10	5.7983	1.16	| Q	|	|	|	V |
20+15	5.8067	1.23	| Q	|	|	|	V |
20+20	5.8153	1.25	| Q	|	|	|	V |
20+25	5.8240	1.26	| Q	|	|	|	V |
20+30	5.8328	1.27	| Q	|	|	|	V |
20+35	5.8415	1.28	| Q	|	|	|	V |
20+40	5.8504	1.28	| Q	|	|	|	V |
20+45	5.8592	1.29	| Q	|	|	|	V |
20+50	5.8677	1.23	| Q	|	|	|	V |
20+55	5.8749	1.04	| Q	|	|	|	V |
21+ 0	5.8815	0.96	|Q	|	|	|	V |
21+ 5	5.8883	0.98	|Q	|	|	|	V |
21+10	5.8962	1.15	| Q	|	|	|	V |
21+15	5.9046	1.22	| Q	|	|	|	V |
21+20	5.9128	1.19	| Q	|	|	|	V |
21+25	5.9198	1.01	| Q	|	|	|	V |
21+30	5.9262	0.94	|Q	|	|	|	V |
21+35	5.9328	0.96	|Q	|	|	|	V |
21+40	5.9407	1.14	| Q	|	|	|	V |
21+45	5.9491	1.22	| Q	|	|	|	V |
21+50	5.9573	1.19	| Q	|	|	|	V |
21+55	5.9642	1.01	| Q	|	|	|	V |
22+ 0	5.9707	0.94	|Q	|	|	|	V |
22+ 5	5.9773	0.96	|Q	|	|	|	V |
22+10	5.9852	1.14	| Q	|	|	|	V|
22+15	5.9935	1.22	| Q	|	|	|	V|
22+20	6.0017	1.19	| Q	|	|	|	V|
22+25	6.0087	1.01	| Q	|	|	|	V|
22+30	6.0152	0.94	|Q	|	|	|	V|
22+35	6.0214	0.91	|Q	|	|	|	V|
22+40	6.0275	0.89	|Q	|	|	|	V|
22+45	6.0336	0.88	|Q	|	|	|	V|
22+50	6.0397	0.88	|Q	|	|	|	V|
22+55	6.0457	0.87	|Q	|	|	|	V|
23+ 0	6.0516	0.87	|Q	|	|	|	V|
23+ 5	6.0575	0.86	|Q	|	|	|	V|
23+10	6.0635	0.86	|Q	|	|	|	V|
23+15	6.0694	0.86	|Q	|	|	|	V|
23+20	6.0753	0.86	|Q	|	|	|	V|
23+25	6.0813	0.86	|Q	|	|	|	V|
23+30	6.0872	0.86	|Q	|	|	|	V|
23+35	6.0931	0.86	|Q	|	|	|	V|
23+40	6.0991	0.86	|Q	|	|	|	V|
23+45	6.1050	0.86	|Q	|	|	|	V|
23+50	6.1109	0.86	|Q	|	|	|	V|

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   23+55       6.1169      0.86  |Q        |         |         |        V|
   24+ 0       6.1228      0.86  |Q        |         |         |        V|
   24+ 5       6.1279      0.75  |Q        |         |         |        V|
   24+10       6.1304      0.36  Q         |         |         |        V|
   24+15       6.1318      0.19  Q         |         |         |        V|
   24+20       6.1326      0.12  Q         |         |         |        V|
   24+25       6.1331      0.08  Q         |         |         |        V|
   24+30       6.1335      0.05  Q         |         |         |        V|
   24+35       6.1337      0.03  Q         |         |         |        V|
   24+40       6.1338      0.02  Q         |         |         |        V|
   24+45       6.1339      0.01  Q         |         |         |        V|
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/29/19 File: 4163UHP102410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 10 YEAR UNIT HYDROGRAPH
MJPA 304163
BUILDING 1
4163uhp10.um1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 3510.00(Ft.)
Length along longest watercourse measured to centroid = 1990.00(Ft.)
Length along longest watercourse = 0.665 Mi.
Length along longest watercourse measured to centroid = 0.377 Mi.
Difference in elevation = 28.65(Ft.)
Slope along watercourse = 43.0974 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.104 Hr.
Lag time = 6.24 Min.
25% of lag time = 1.56 Min.
40% of lag time = 2.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.587(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.587(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	69.00	0.900

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	80.072	13.320	8.084
2	0.167	160.145	44.445	26.974
3	0.250	240.217	19.915	12.086
4	0.333	320.290	8.240	5.001
5	0.417	400.362	4.947	3.002
6	0.500	480.434	3.115	1.891
7	0.583	560.507	2.247	1.364
8	0.667	640.579	1.540	0.935
9	0.750	720.652	1.035	0.628
10	0.833	800.724	1.196	0.726
			Sum = 100.000	Sum= 60.690

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.021	0.126	0.004	0.02
2	0.17	0.07	0.021	0.125	0.004	0.02
3	0.25	0.07	0.021	0.125	0.004	0.02
4	0.33	0.10	0.031	0.124	0.006	0.03
5	0.42	0.10	0.031	0.124	0.006	0.03
6	0.50	0.10	0.031	0.123	0.006	0.03
7	0.58	0.10	0.031	0.123	0.006	0.03
8	0.67	0.10	0.031	0.122	0.006	0.03
9	0.75	0.10	0.031	0.122	0.006	0.03
10	0.83	0.13	0.041	0.121	0.007	0.03
11	0.92	0.13	0.041	0.121	0.007	0.03
12	1.00	0.13	0.041	0.120	0.007	0.03
13	1.08	0.10	0.031	0.120	0.006	0.03
14	1.17	0.10	0.031	0.119	0.006	0.03
15	1.25	0.10	0.031	0.119	0.006	0.03
16	1.33	0.10	0.031	0.118	0.006	0.03
17	1.42	0.10	0.031	0.118	0.006	0.03
18	1.50	0.10	0.031	0.117	0.006	0.03
19	1.58	0.10	0.031	0.117	0.006	0.03
20	1.67	0.10	0.031	0.117	0.006	0.03
21	1.75	0.10	0.031	0.116	0.006	0.03
22	1.83	0.13	0.041	0.116	0.007	0.03
23	1.92	0.13	0.041	0.115	0.007	0.03
24	2.00	0.13	0.041	0.115	0.007	0.03
25	2.08	0.13	0.041	0.114	0.007	0.03
26	2.17	0.13	0.041	0.114	0.007	0.03
27	2.25	0.13	0.041	0.113	0.007	0.03
28	2.33	0.13	0.041	0.113	0.007	0.03
29	2.42	0.13	0.041	0.112	0.007	0.03
30	2.50	0.13	0.041	0.112	0.007	0.03
31	2.58	0.17	0.052	0.111	0.009	0.04
32	2.67	0.17	0.052	0.111	0.009	0.04
33	2.75	0.17	0.052	0.110	0.009	0.04
34	2.83	0.17	0.052	0.110	0.009	0.04
35	2.92	0.17	0.052	0.110	0.009	0.04
36	3.00	0.17	0.052	0.109	0.009	0.04
37	3.08	0.17	0.052	0.109	0.009	0.04
38	3.17	0.17	0.052	0.108	0.009	0.04
39	3.25	0.17	0.052	0.108	0.009	0.04
40	3.33	0.17	0.052	0.107	0.009	0.04
41	3.42	0.17	0.052	0.107	0.009	0.04
42	3.50	0.17	0.052	0.106	0.009	0.04
43	3.58	0.17	0.052	0.106	0.009	0.04
44	3.67	0.17	0.052	0.106	0.009	0.04
45	3.75	0.17	0.052	0.105	0.009	0.04
46	3.83	0.20	0.062	0.105	0.011	0.05
47	3.92	0.20	0.062	0.104	0.011	0.05
48	4.00	0.20	0.062	0.104	0.011	0.05
49	4.08	0.20	0.062	0.103	0.011	0.05
50	4.17	0.20	0.062	0.103	0.011	0.05
51	4.25	0.20	0.062	0.102	0.011	0.05
52	4.33	0.23	0.072	0.102	0.013	0.06
53	4.42	0.23	0.072	0.102	0.013	0.06
54	4.50	0.23	0.072	0.101	0.013	0.06

55	4.58	0.23	0.072	0.101	0.013	0.06
56	4.67	0.23	0.072	0.100	0.013	0.06
57	4.75	0.23	0.072	0.100	0.013	0.06
58	4.83	0.27	0.083	0.099	0.015	0.07
59	4.92	0.27	0.083	0.099	0.015	0.07
60	5.00	0.27	0.083	0.099	0.015	0.07
61	5.08	0.20	0.062	0.098	0.011	0.05
62	5.17	0.20	0.062	0.098	0.011	0.05
63	5.25	0.20	0.062	0.097	0.011	0.05
64	5.33	0.23	0.072	0.097	0.013	0.06
65	5.42	0.23	0.072	0.096	0.013	0.06
66	5.50	0.23	0.072	0.096	0.013	0.06
67	5.58	0.27	0.083	0.096	0.015	0.07
68	5.67	0.27	0.083	0.095	0.015	0.07
69	5.75	0.27	0.083	0.095	0.015	0.07
70	5.83	0.27	0.083	0.094	0.015	0.07
71	5.92	0.27	0.083	0.094	0.015	0.07
72	6.00	0.27	0.083	0.093	0.015	0.07
73	6.08	0.30	0.093	0.093	---	0.00
74	6.17	0.30	0.093	0.093	---	0.00
75	6.25	0.30	0.093	0.092	---	0.00
76	6.33	0.30	0.093	0.092	---	0.00
77	6.42	0.30	0.093	0.091	---	0.00
78	6.50	0.30	0.093	0.091	---	0.00
79	6.58	0.33	0.103	0.091	---	0.01
80	6.67	0.33	0.103	0.090	---	0.01
81	6.75	0.33	0.103	0.090	---	0.01
82	6.83	0.33	0.103	0.089	---	0.01
83	6.92	0.33	0.103	0.089	---	0.01
84	7.00	0.33	0.103	0.089	---	0.01
85	7.08	0.33	0.103	0.088	---	0.02
86	7.17	0.33	0.103	0.088	---	0.02
87	7.25	0.33	0.103	0.087	---	0.02
88	7.33	0.37	0.114	0.087	---	0.03
89	7.42	0.37	0.114	0.087	---	0.03
90	7.50	0.37	0.114	0.086	---	0.03
91	7.58	0.40	0.124	0.086	---	0.04
92	7.67	0.40	0.124	0.085	---	0.04
93	7.75	0.40	0.124	0.085	---	0.04
94	7.83	0.43	0.135	0.085	---	0.05
95	7.92	0.43	0.135	0.084	---	0.05
96	8.00	0.43	0.135	0.084	---	0.05
97	8.08	0.50	0.155	0.083	---	0.07
98	8.17	0.50	0.155	0.083	---	0.07
99	8.25	0.50	0.155	0.083	---	0.07
100	8.33	0.50	0.155	0.082	---	0.07
101	8.42	0.50	0.155	0.082	---	0.07
102	8.50	0.50	0.155	0.082	---	0.07
103	8.58	0.53	0.166	0.081	---	0.08
104	8.67	0.53	0.166	0.081	---	0.08
105	8.75	0.53	0.166	0.080	---	0.09
106	8.83	0.57	0.176	0.080	---	0.10
107	8.92	0.57	0.176	0.080	---	0.10
108	9.00	0.57	0.176	0.079	---	0.10

109	9.08	0.63	0.197	0.079	---	0.12
110	9.17	0.63	0.197	0.078	---	0.12
111	9.25	0.63	0.197	0.078	---	0.12
112	9.33	0.67	0.207	0.078	---	0.13
113	9.42	0.67	0.207	0.077	---	0.13
114	9.50	0.67	0.207	0.077	---	0.13
115	9.58	0.70	0.217	0.077	---	0.14
116	9.67	0.70	0.217	0.076	---	0.14
117	9.75	0.70	0.217	0.076	---	0.14
118	9.83	0.73	0.228	0.076	---	0.15
119	9.92	0.73	0.228	0.075	---	0.15
120	10.00	0.73	0.228	0.075	---	0.15
121	10.08	0.50	0.155	0.074	---	0.08
122	10.17	0.50	0.155	0.074	---	0.08
123	10.25	0.50	0.155	0.074	---	0.08
124	10.33	0.50	0.155	0.073	---	0.08
125	10.42	0.50	0.155	0.073	---	0.08
126	10.50	0.50	0.155	0.073	---	0.08
127	10.58	0.67	0.207	0.072	---	0.13
128	10.67	0.67	0.207	0.072	---	0.14
129	10.75	0.67	0.207	0.072	---	0.14
130	10.83	0.67	0.207	0.071	---	0.14
131	10.92	0.67	0.207	0.071	---	0.14
132	11.00	0.67	0.207	0.071	---	0.14
133	11.08	0.63	0.197	0.070	---	0.13
134	11.17	0.63	0.197	0.070	---	0.13
135	11.25	0.63	0.197	0.069	---	0.13
136	11.33	0.63	0.197	0.069	---	0.13
137	11.42	0.63	0.197	0.069	---	0.13
138	11.50	0.63	0.197	0.068	---	0.13
139	11.58	0.57	0.176	0.068	---	0.11
140	11.67	0.57	0.176	0.068	---	0.11
141	11.75	0.57	0.176	0.067	---	0.11
142	11.83	0.60	0.186	0.067	---	0.12
143	11.92	0.60	0.186	0.067	---	0.12
144	12.00	0.60	0.186	0.066	---	0.12
145	12.08	0.83	0.259	0.066	---	0.19
146	12.17	0.83	0.259	0.066	---	0.19
147	12.25	0.83	0.259	0.065	---	0.19
148	12.33	0.87	0.269	0.065	---	0.20
149	12.42	0.87	0.269	0.065	---	0.20
150	12.50	0.87	0.269	0.064	---	0.20
151	12.58	0.93	0.290	0.064	---	0.23
152	12.67	0.93	0.290	0.064	---	0.23
153	12.75	0.93	0.290	0.064	---	0.23
154	12.83	0.97	0.300	0.063	---	0.24
155	12.92	0.97	0.300	0.063	---	0.24
156	13.00	0.97	0.300	0.063	---	0.24
157	13.08	1.13	0.352	0.062	---	0.29
158	13.17	1.13	0.352	0.062	---	0.29
159	13.25	1.13	0.352	0.062	---	0.29
160	13.33	1.13	0.352	0.061	---	0.29
161	13.42	1.13	0.352	0.061	---	0.29
162	13.50	1.13	0.352	0.061	---	0.29

163	13.58	0.77	0.238	0.060	---	0.18
164	13.67	0.77	0.238	0.060	---	0.18
165	13.75	0.77	0.238	0.060	---	0.18
166	13.83	0.77	0.238	0.059	---	0.18
167	13.92	0.77	0.238	0.059	---	0.18
168	14.00	0.77	0.238	0.059	---	0.18
169	14.08	0.90	0.279	0.059	---	0.22
170	14.17	0.90	0.279	0.058	---	0.22
171	14.25	0.90	0.279	0.058	---	0.22
172	14.33	0.87	0.269	0.058	---	0.21
173	14.42	0.87	0.269	0.057	---	0.21
174	14.50	0.87	0.269	0.057	---	0.21
175	14.58	0.87	0.269	0.057	---	0.21
176	14.67	0.87	0.269	0.056	---	0.21
177	14.75	0.87	0.269	0.056	---	0.21
178	14.83	0.83	0.259	0.056	---	0.20
179	14.92	0.83	0.259	0.056	---	0.20
180	15.00	0.83	0.259	0.055	---	0.20
181	15.08	0.80	0.248	0.055	---	0.19
182	15.17	0.80	0.248	0.055	---	0.19
183	15.25	0.80	0.248	0.054	---	0.19
184	15.33	0.77	0.238	0.054	---	0.18
185	15.42	0.77	0.238	0.054	---	0.18
186	15.50	0.77	0.238	0.054	---	0.18
187	15.58	0.63	0.197	0.053	---	0.14
188	15.67	0.63	0.197	0.053	---	0.14
189	15.75	0.63	0.197	0.053	---	0.14
190	15.83	0.63	0.197	0.053	---	0.14
191	15.92	0.63	0.197	0.052	---	0.14
192	16.00	0.63	0.197	0.052	---	0.14
193	16.08	0.13	0.041	0.052	0.007	0.03
194	16.17	0.13	0.041	0.051	0.007	0.03
195	16.25	0.13	0.041	0.051	0.007	0.03
196	16.33	0.13	0.041	0.051	0.007	0.03
197	16.42	0.13	0.041	0.051	0.007	0.03
198	16.50	0.13	0.041	0.050	0.007	0.03
199	16.58	0.10	0.031	0.050	0.006	0.03
200	16.67	0.10	0.031	0.050	0.006	0.03
201	16.75	0.10	0.031	0.050	0.006	0.03
202	16.83	0.10	0.031	0.049	0.006	0.03
203	16.92	0.10	0.031	0.049	0.006	0.03
204	17.00	0.10	0.031	0.049	0.006	0.03
205	17.08	0.17	0.052	0.049	---	0.00
206	17.17	0.17	0.052	0.048	---	0.00
207	17.25	0.17	0.052	0.048	---	0.00
208	17.33	0.17	0.052	0.048	---	0.00
209	17.42	0.17	0.052	0.048	---	0.00
210	17.50	0.17	0.052	0.047	---	0.00
211	17.58	0.17	0.052	0.047	---	0.00
212	17.67	0.17	0.052	0.047	---	0.00
213	17.75	0.17	0.052	0.047	---	0.00
214	17.83	0.13	0.041	0.047	0.007	0.03
215	17.92	0.13	0.041	0.046	0.007	0.03
216	18.00	0.13	0.041	0.046	0.007	0.03

217	18.08	0.13	0.041	0.046	0.007	0.03
218	18.17	0.13	0.041	0.046	0.007	0.03
219	18.25	0.13	0.041	0.045	0.007	0.03
220	18.33	0.13	0.041	0.045	0.007	0.03
221	18.42	0.13	0.041	0.045	0.007	0.03
222	18.50	0.13	0.041	0.045	0.007	0.03
223	18.58	0.10	0.031	0.045	0.006	0.03
224	18.67	0.10	0.031	0.044	0.006	0.03
225	18.75	0.10	0.031	0.044	0.006	0.03
226	18.83	0.07	0.021	0.044	0.004	0.02
227	18.92	0.07	0.021	0.044	0.004	0.02
228	19.00	0.07	0.021	0.043	0.004	0.02
229	19.08	0.10	0.031	0.043	0.006	0.03
230	19.17	0.10	0.031	0.043	0.006	0.03
231	19.25	0.10	0.031	0.043	0.006	0.03
232	19.33	0.13	0.041	0.043	0.007	0.03
233	19.42	0.13	0.041	0.042	0.007	0.03
234	19.50	0.13	0.041	0.042	0.007	0.03
235	19.58	0.10	0.031	0.042	0.006	0.03
236	19.67	0.10	0.031	0.042	0.006	0.03
237	19.75	0.10	0.031	0.042	0.006	0.03
238	19.83	0.07	0.021	0.041	0.004	0.02
239	19.92	0.07	0.021	0.041	0.004	0.02
240	20.00	0.07	0.021	0.041	0.004	0.02
241	20.08	0.10	0.031	0.041	0.006	0.03
242	20.17	0.10	0.031	0.041	0.006	0.03
243	20.25	0.10	0.031	0.041	0.006	0.03
244	20.33	0.10	0.031	0.040	0.006	0.03
245	20.42	0.10	0.031	0.040	0.006	0.03
246	20.50	0.10	0.031	0.040	0.006	0.03
247	20.58	0.10	0.031	0.040	0.006	0.03
248	20.67	0.10	0.031	0.040	0.006	0.03
249	20.75	0.10	0.031	0.040	0.006	0.03
250	20.83	0.07	0.021	0.039	0.004	0.02
251	20.92	0.07	0.021	0.039	0.004	0.02
252	21.00	0.07	0.021	0.039	0.004	0.02
253	21.08	0.10	0.031	0.039	0.006	0.03
254	21.17	0.10	0.031	0.039	0.006	0.03
255	21.25	0.10	0.031	0.039	0.006	0.03
256	21.33	0.07	0.021	0.038	0.004	0.02
257	21.42	0.07	0.021	0.038	0.004	0.02
258	21.50	0.07	0.021	0.038	0.004	0.02
259	21.58	0.10	0.031	0.038	0.006	0.03
260	21.67	0.10	0.031	0.038	0.006	0.03
261	21.75	0.10	0.031	0.038	0.006	0.03
262	21.83	0.07	0.021	0.038	0.004	0.02
263	21.92	0.07	0.021	0.038	0.004	0.02
264	22.00	0.07	0.021	0.037	0.004	0.02
265	22.08	0.10	0.031	0.037	0.006	0.03
266	22.17	0.10	0.031	0.037	0.006	0.03
267	22.25	0.10	0.031	0.037	0.006	0.03
268	22.33	0.07	0.021	0.037	0.004	0.02
269	22.42	0.07	0.021	0.037	0.004	0.02
270	22.50	0.07	0.021	0.037	0.004	0.02

271	22.58	0.07	0.021	0.037	0.004	0.02
272	22.67	0.07	0.021	0.036	0.004	0.02
273	22.75	0.07	0.021	0.036	0.004	0.02
274	22.83	0.07	0.021	0.036	0.004	0.02
275	22.92	0.07	0.021	0.036	0.004	0.02
276	23.00	0.07	0.021	0.036	0.004	0.02
277	23.08	0.07	0.021	0.036	0.004	0.02
278	23.17	0.07	0.021	0.036	0.004	0.02
279	23.25	0.07	0.021	0.036	0.004	0.02
280	23.33	0.07	0.021	0.036	0.004	0.02
281	23.42	0.07	0.021	0.036	0.004	0.02
282	23.50	0.07	0.021	0.036	0.004	0.02
283	23.58	0.07	0.021	0.036	0.004	0.02
284	23.67	0.07	0.021	0.036	0.004	0.02
285	23.75	0.07	0.021	0.036	0.004	0.02
286	23.83	0.07	0.021	0.035	0.004	0.02
287	23.92	0.07	0.021	0.035	0.004	0.02
288	24.00	0.07	0.021	0.035	0.004	0.02
Sum =	100.0				Sum =	21.0

Flood volume = Effective rainfall 1.75(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 8.8(Ac.Ft)
Total soil loss = 0.84(In)
Total soil loss = 4.220(Ac.Ft)
Total rainfall = 2.59(In)
Flood volume = 381718.1 Cubic Feet
Total soil loss = 183812.9 Cubic Feet

Peak flow rate of this hydrograph = 17.448(CFS)

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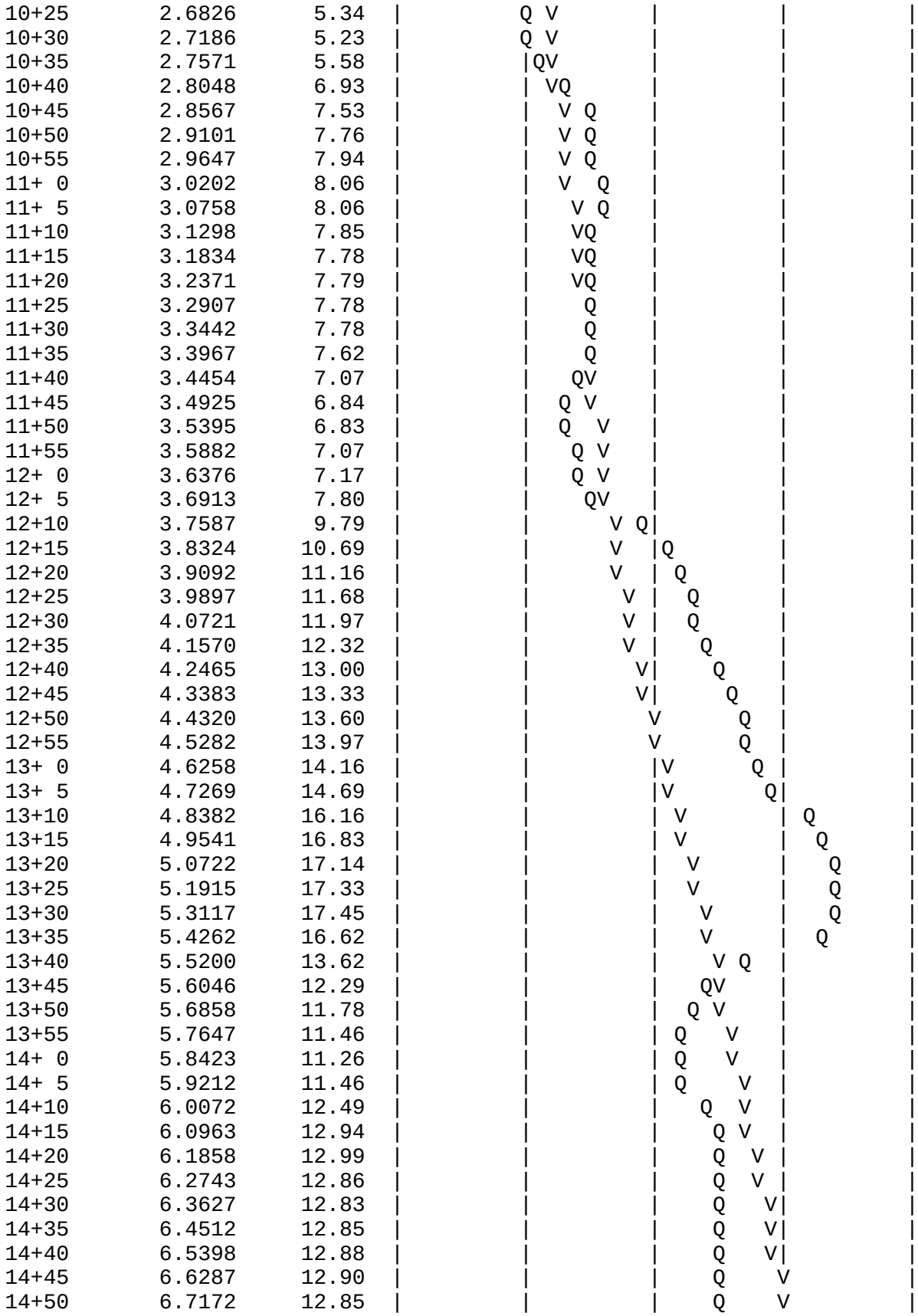
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

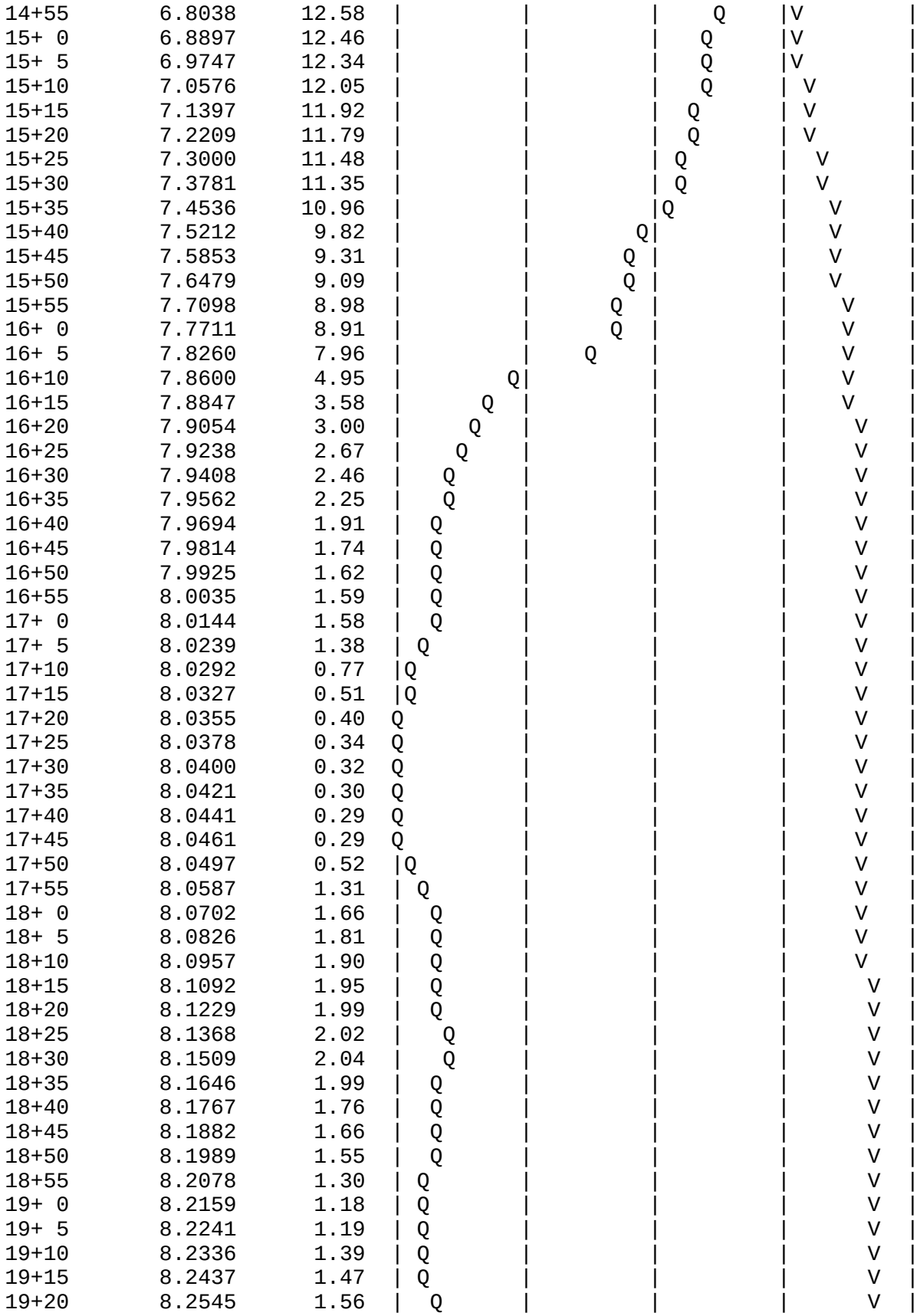
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0009	0.14	Q	|	|	|	|
0+10	0.0050	0.60	VQ	|	|	|	|
0+15	0.0106	0.80	VQ	|	|	|	|
0+20	0.0171	0.95	VQ	|	|	|	|
0+25	0.0256	1.23	V Q	|	|	|	|
0+30	0.0351	1.37	V Q	|	|	|	|
0+35	0.0449	1.43	V Q	|	|	|	|
0+40	0.0551	1.48	V Q	|	|	|	|
0+45	0.0654	1.50	V Q	|	|	|	|
0+50	0.0764	1.59	V Q	|	|	|	|
0+55	0.0890	1.83	V Q	|	|	|	|
1+ 0	0.1024	1.94	V Q	|	|	|	|
1+ 5	0.1156	1.92	V Q	|	|	|	|
1+10	0.1274	1.72	V Q	|	|	|	|
1+15	0.1387	1.63	V Q	|	|	|	|
1+20	0.1497	1.60	V Q	|	|	|	|

1+25	0.1606	1.58	V Q	|	|	|
1+30	0.1714	1.57	V Q	|	|	|
1+35	0.1822	1.57	V Q	|	|	|
1+40	0.1929	1.56	V Q	|	|	|
1+45	0.2036	1.55	V Q	|	|	|
1+50	0.2147	1.61	V Q	|	|	|
1+55	0.2274	1.84	|V Q	|	|	|
2+ 0	0.2408	1.95	|V Q	|	|	|
2+ 5	0.2545	1.99	|V Q	|	|	|
2+10	0.2684	2.01	|V Q	|	|	|
2+15	0.2823	2.03	|V Q	|	|	|
2+20	0.2964	2.04	|V Q	|	|	|
2+25	0.3105	2.05	|V Q	|	|	|
2+30	0.3247	2.05	|V Q	|	|	|
2+35	0.3393	2.13	|V Q	|	|	|
2+40	0.3556	2.36	|V Q	|	|	|
2+45	0.3725	2.46	|V Q	|	|	|
2+50	0.3898	2.50	|V Q	|	|	|
2+55	0.4072	2.53	|V Q	|	|	|
3+ 0	0.4247	2.55	|V Q	|	|	|
3+ 5	0.4423	2.56	| V Q	|	|	|
3+10	0.4600	2.56	| V Q	|	|	|
3+15	0.4777	2.57	| V Q	|	|	|
3+20	0.4954	2.58	| V Q	|	|	|
3+25	0.5132	2.58	| V Q	|	|	|
3+30	0.5309	2.58	| V Q	|	|	|
3+35	0.5487	2.58	| V Q	|	|	|
3+40	0.5664	2.58	| V Q	|	|	|
3+45	0.5842	2.58	| V Q	|	|	|
3+50	0.6024	2.64	| V Q	|	|	|
3+55	0.6222	2.87	| V Q	|	|	|
4+ 0	0.6427	2.98	| V Q	|	|	|
4+ 5	0.6635	3.02	| V Q	|	|	|
4+10	0.6844	3.04	| V Q	|	|	|
4+15	0.7055	3.06	| V Q	|	|	|
4+20	0.7271	3.14	| V Q	|	|	|
4+25	0.7504	3.38	| V Q	|	|	|
4+30	0.7744	3.49	| V Q	|	|	|
4+35	0.7988	3.53	| V Q	|	|	|
4+40	0.8233	3.56	| V Q	|	|	|
4+45	0.8479	3.58	| V Q	|	|	|
4+50	0.8731	3.66	| V Q	|	|	|
4+55	0.8999	3.89	| V Q	|	|	|
5+ 0	0.9274	4.00	| V Q	|	|	|
5+ 5	0.9544	3.91	| V Q	|	|	|
5+10	0.9783	3.48	| V Q	|	|	|
5+15	1.0010	3.29	| V Q	|	|	|
5+20	1.0236	3.29	| V Q	|	|	|
5+25	1.0476	3.47	| V Q	|	|	|
5+30	1.0720	3.55	| V Q	|	|	|
5+35	1.0971	3.64	| V Q	|	|	|
5+40	1.1238	3.88	| V Q	|	|	|
5+45	1.1513	3.99	| V Q	|	|	|
5+50	1.1790	4.03	| V Q	|	|	|

5+55	1.2070	4.06	| V Q |	|	|	|
6+ 0	1.2351	4.08	| V Q |	|	|	|
6+ 5	1.2596	3.55	| V Q |	|	|	|
6+10	1.2716	1.73	| Q V |	|	|	|
6+15	1.2780	0.93	|Q V |	|	|	|
6+20	1.2823	0.62	|Q V |	|	|	|
6+25	1.2853	0.44	Q V |	|	|	|
6+30	1.2876	0.33	Q V |	|	|	|
6+35	1.2900	0.35	Q V |	|	|	|
6+40	1.2940	0.59	|Q V |	|	|	|
6+45	1.2988	0.69	|Q V |	|	|	|
6+50	1.3038	0.72	|Q V |	|	|	|
6+55	1.3091	0.78	|Q V |	|	|	|
7+ 0	1.3148	0.82	|Q V |	|	|	|
7+ 5	1.3207	0.86	|Q V |	|	|	|
7+10	1.3268	0.89	|Q V |	|	|	|
7+15	1.3332	0.92	|Q V |	|	|	|
7+20	1.3404	1.04	| Q V |	|	|	|
7+25	1.3496	1.34	| Q V |	|	|	|
7+30	1.3599	1.49	| Q V |	|	|	|
7+35	1.3713	1.65	| Q V |	|	|	|
7+40	1.3850	1.99	| Q V |	|	|	|
7+45	1.3998	2.16	| Q V |	|	|	|
7+50	1.4158	2.33	| Q V |	|	|	|
7+55	1.4343	2.67	| QV |	|	|	|
8+ 0	1.4539	2.85	| QV |	|	|	|
8+ 5	1.4753	3.11	| Q |	|	|	|
8+10	1.5010	3.74	| VQ |	|	|	|
8+15	1.5288	4.04	| V Q |	|	|	|
8+20	1.5577	4.18	| VQ |	|	|	|
8+25	1.5871	4.28	| VQ |	|	|	|
8+30	1.6171	4.35	| VQ |	|	|	|
8+35	1.6480	4.49	| VQ |	|	|	|
8+40	1.6812	4.81	| V Q|	|	|	|
8+45	1.7154	4.98	| V Q|	|	|	|
8+50	1.7509	5.15	| V Q |	|	|	|
8+55	1.7887	5.48	| V Q |	|	|	|
9+ 0	1.8276	5.65	| V |Q |	|	|	|
9+ 5	1.8683	5.91	| V |Q |	|	|	|
9+10	1.9132	6.53	| V | Q |	|	|	|
9+15	1.9602	6.83	| V | Q |	|	|	|
9+20	2.0089	7.06	| V| Q |	|	|	|
9+25	2.0601	7.43	| V| Q |	|	|	|
9+30	2.1126	7.63	| V| Q |	|	|	|
9+35	2.1664	7.82	| V| Q |	|	|	|
9+40	2.2227	8.17	| V Q |	|	|	|
9+45	2.2802	8.35	| V Q |	|	|	|
9+50	2.3391	8.54	| V Q |	|	|	|
9+55	2.4002	8.88	| V Q |	|	|	|
10+ 0	2.4626	9.06	| |V Q |	|	|	|
10+ 5	2.5216	8.56	| |V Q |	|	|	|
10+10	2.5675	6.67	| |V Q |	|	|	|
10+15	2.6078	5.84	| |Q |	|	|	|
10+20	2.6458	5.53	| |QV |	|	|	|





19+25	8.2669	1.81	Q				V
19+30	8.2802	1.92	Q				V
19+35	8.2933	1.90	Q				V
19+40	8.3050	1.70	Q				V
19+45	8.3162	1.62	Q				V
19+50	8.3267	1.53	Q				V
19+55	8.3356	1.28	Q				V
20+ 0	8.3436	1.17	Q				V
20+ 5	8.3518	1.19	Q				V
20+10	8.3614	1.39	Q				V
20+15	8.3715	1.47	Q				V
20+20	8.3818	1.49	Q				V
20+25	8.3922	1.51	Q				V
20+30	8.4026	1.52	Q				V
20+35	8.4132	1.53	Q				V
20+40	8.4237	1.53	Q				V
20+45	8.4343	1.54	Q				V
20+50	8.4445	1.48	Q				V
20+55	8.4531	1.25	Q				V
21+ 0	8.4610	1.15	Q				V
21+ 5	8.4691	1.17	Q				V
21+10	8.4785	1.38	Q				V
21+15	8.4886	1.46	Q				V
21+20	8.4984	1.42	Q				V
21+25	8.5068	1.21	Q				V
21+30	8.5145	1.12	Q				V
21+35	8.5224	1.15	Q				V
21+40	8.5318	1.36	Q				V
21+45	8.5418	1.46	Q				V
21+50	8.5516	1.42	Q				V
21+55	8.5600	1.21	Q				V
22+ 0	8.5677	1.12	Q				V
22+ 5	8.5756	1.15	Q				V
22+10	8.5850	1.36	Q				V
22+15	8.5951	1.46	Q				V
22+20	8.6049	1.42	Q				V
22+25	8.6132	1.21	Q				V
22+30	8.6209	1.12	Q				V
22+35	8.6284	1.08	Q				V
22+40	8.6357	1.07	Q				V
22+45	8.6430	1.06	Q				V
22+50	8.6502	1.05	Q				V
22+55	8.6574	1.04	Q				V
23+ 0	8.6646	1.04	Q				V
23+ 5	8.6717	1.03	Q				V
23+10	8.6787	1.03	Q				V
23+15	8.6858	1.03	Q				V
23+20	8.6929	1.03	Q				V
23+25	8.7000	1.03	Q				V
23+30	8.7071	1.03	Q				V
23+35	8.7142	1.03	Q				V
23+40	8.7213	1.03	Q				V
23+45	8.7284	1.03	Q				V
23+50	8.7355	1.03	Q				V

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   23+55       8.7426      1.03  | Q       |         |         |        V|
   24+ 0       8.7497      1.03  | Q       |         |         |        V|
   24+ 5       8.7559      0.89  |Q        |         |         |        V|
   24+10       8.7589      0.44  Q         |         |         |        V|
   24+15       8.7605      0.23  Q         |         |         |        V|
   24+20       8.7615      0.15  Q         |         |         |        V|
   24+25       8.7621      0.09  Q         |         |         |        V|
   24+30       8.7625      0.06  Q         |         |         |        V|
   24+35       8.7628      0.04  Q         |         |         |        V|
   24+40       8.7630      0.02  Q         |         |         |        V|
   24+45       8.7630      0.01  Q         |         |         |        V|
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/29/19 File: 4163UHP252425.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 25 YEAR UNIT HYDROGRAPH
MJPA 304163
BUILDING 1
4163uhp25.um1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 3510.00(Ft.)
Length along longest watercourse measured to centroid = 1990.00(Ft.)
Length along longest watercourse = 0.665 Mi.
Length along longest watercourse measured to centroid = 0.377 Mi.
Difference in elevation = 28.65(Ft.)
Slope along watercourse = 43.0974 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.104 Hr.
Lag time = 6.24 Min.
25% of lag time = 1.56 Min.
40% of lag time = 2.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 25.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.149(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	69.00	0.900

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	80.072	13.320	8.084
2	0.167	160.145	44.445	26.974
3	0.250	240.217	19.915	12.086
4	0.333	320.290	8.240	5.001
5	0.417	400.362	4.947	3.002
6	0.500	480.434	3.115	1.891
7	0.583	560.507	2.247	1.364
8	0.667	640.579	1.540	0.935
9	0.750	720.652	1.035	0.628
10	0.833	800.724	1.196	0.726
			Sum = 100.000	Sum= 60.690

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.025	0.126	0.005	0.02
2	0.17	0.07	0.025	0.125	0.005	0.02
3	0.25	0.07	0.025	0.125	0.005	0.02
4	0.33	0.10	0.038	0.124	0.007	0.03
5	0.42	0.10	0.038	0.124	0.007	0.03
6	0.50	0.10	0.038	0.123	0.007	0.03
7	0.58	0.10	0.038	0.123	0.007	0.03
8	0.67	0.10	0.038	0.122	0.007	0.03
9	0.75	0.10	0.038	0.122	0.007	0.03
10	0.83	0.13	0.050	0.121	0.009	0.04
11	0.92	0.13	0.050	0.121	0.009	0.04
12	1.00	0.13	0.050	0.120	0.009	0.04
13	1.08	0.10	0.038	0.120	0.007	0.03
14	1.17	0.10	0.038	0.119	0.007	0.03
15	1.25	0.10	0.038	0.119	0.007	0.03
16	1.33	0.10	0.038	0.118	0.007	0.03
17	1.42	0.10	0.038	0.118	0.007	0.03
18	1.50	0.10	0.038	0.117	0.007	0.03
19	1.58	0.10	0.038	0.117	0.007	0.03
20	1.67	0.10	0.038	0.117	0.007	0.03
21	1.75	0.10	0.038	0.116	0.007	0.03
22	1.83	0.13	0.050	0.116	0.009	0.04
23	1.92	0.13	0.050	0.115	0.009	0.04
24	2.00	0.13	0.050	0.115	0.009	0.04
25	2.08	0.13	0.050	0.114	0.009	0.04
26	2.17	0.13	0.050	0.114	0.009	0.04
27	2.25	0.13	0.050	0.113	0.009	0.04
28	2.33	0.13	0.050	0.113	0.009	0.04
29	2.42	0.13	0.050	0.112	0.009	0.04
30	2.50	0.13	0.050	0.112	0.009	0.04
31	2.58	0.17	0.063	0.111	0.011	0.05
32	2.67	0.17	0.063	0.111	0.011	0.05
33	2.75	0.17	0.063	0.110	0.011	0.05
34	2.83	0.17	0.063	0.110	0.011	0.05
35	2.92	0.17	0.063	0.110	0.011	0.05
36	3.00	0.17	0.063	0.109	0.011	0.05
37	3.08	0.17	0.063	0.109	0.011	0.05
38	3.17	0.17	0.063	0.108	0.011	0.05
39	3.25	0.17	0.063	0.108	0.011	0.05
40	3.33	0.17	0.063	0.107	0.011	0.05
41	3.42	0.17	0.063	0.107	0.011	0.05
42	3.50	0.17	0.063	0.106	0.011	0.05
43	3.58	0.17	0.063	0.106	0.011	0.05
44	3.67	0.17	0.063	0.106	0.011	0.05
45	3.75	0.17	0.063	0.105	0.011	0.05
46	3.83	0.20	0.076	0.105	0.014	0.06
47	3.92	0.20	0.076	0.104	0.014	0.06
48	4.00	0.20	0.076	0.104	0.014	0.06
49	4.08	0.20	0.076	0.103	0.014	0.06
50	4.17	0.20	0.076	0.103	0.014	0.06
51	4.25	0.20	0.076	0.102	0.014	0.06
52	4.33	0.23	0.088	0.102	0.016	0.07
53	4.42	0.23	0.088	0.102	0.016	0.07
54	4.50	0.23	0.088	0.101	0.016	0.07

55	4.58	0.23	0.088	0.101	0.016	0.07
56	4.67	0.23	0.088	0.100	0.016	0.07
57	4.75	0.23	0.088	0.100	0.016	0.07
58	4.83	0.27	0.101	0.099	---	0.00
59	4.92	0.27	0.101	0.099	---	0.00
60	5.00	0.27	0.101	0.099	---	0.00
61	5.08	0.20	0.076	0.098	0.014	0.06
62	5.17	0.20	0.076	0.098	0.014	0.06
63	5.25	0.20	0.076	0.097	0.014	0.06
64	5.33	0.23	0.088	0.097	0.016	0.07
65	5.42	0.23	0.088	0.096	0.016	0.07
66	5.50	0.23	0.088	0.096	0.016	0.07
67	5.58	0.27	0.101	0.096	---	0.01
68	5.67	0.27	0.101	0.095	---	0.01
69	5.75	0.27	0.101	0.095	---	0.01
70	5.83	0.27	0.101	0.094	---	0.01
71	5.92	0.27	0.101	0.094	---	0.01
72	6.00	0.27	0.101	0.093	---	0.01
73	6.08	0.30	0.113	0.093	---	0.02
74	6.17	0.30	0.113	0.093	---	0.02
75	6.25	0.30	0.113	0.092	---	0.02
76	6.33	0.30	0.113	0.092	---	0.02
77	6.42	0.30	0.113	0.091	---	0.02
78	6.50	0.30	0.113	0.091	---	0.02
79	6.58	0.33	0.126	0.091	---	0.04
80	6.67	0.33	0.126	0.090	---	0.04
81	6.75	0.33	0.126	0.090	---	0.04
82	6.83	0.33	0.126	0.089	---	0.04
83	6.92	0.33	0.126	0.089	---	0.04
84	7.00	0.33	0.126	0.089	---	0.04
85	7.08	0.33	0.126	0.088	---	0.04
86	7.17	0.33	0.126	0.088	---	0.04
87	7.25	0.33	0.126	0.087	---	0.04
88	7.33	0.37	0.139	0.087	---	0.05
89	7.42	0.37	0.139	0.087	---	0.05
90	7.50	0.37	0.139	0.086	---	0.05
91	7.58	0.40	0.151	0.086	---	0.07
92	7.67	0.40	0.151	0.085	---	0.07
93	7.75	0.40	0.151	0.085	---	0.07
94	7.83	0.43	0.164	0.085	---	0.08
95	7.92	0.43	0.164	0.084	---	0.08
96	8.00	0.43	0.164	0.084	---	0.08
97	8.08	0.50	0.189	0.083	---	0.11
98	8.17	0.50	0.189	0.083	---	0.11
99	8.25	0.50	0.189	0.083	---	0.11
100	8.33	0.50	0.189	0.082	---	0.11
101	8.42	0.50	0.189	0.082	---	0.11
102	8.50	0.50	0.189	0.082	---	0.11
103	8.58	0.53	0.202	0.081	---	0.12
104	8.67	0.53	0.202	0.081	---	0.12
105	8.75	0.53	0.202	0.080	---	0.12
106	8.83	0.57	0.214	0.080	---	0.13
107	8.92	0.57	0.214	0.080	---	0.13
108	9.00	0.57	0.214	0.079	---	0.13

109	9.08	0.63	0.239	0.079	---	0.16
110	9.17	0.63	0.239	0.078	---	0.16
111	9.25	0.63	0.239	0.078	---	0.16
112	9.33	0.67	0.252	0.078	---	0.17
113	9.42	0.67	0.252	0.077	---	0.17
114	9.50	0.67	0.252	0.077	---	0.17
115	9.58	0.70	0.265	0.077	---	0.19
116	9.67	0.70	0.265	0.076	---	0.19
117	9.75	0.70	0.265	0.076	---	0.19
118	9.83	0.73	0.277	0.076	---	0.20
119	9.92	0.73	0.277	0.075	---	0.20
120	10.00	0.73	0.277	0.075	---	0.20
121	10.08	0.50	0.189	0.074	---	0.11
122	10.17	0.50	0.189	0.074	---	0.11
123	10.25	0.50	0.189	0.074	---	0.12
124	10.33	0.50	0.189	0.073	---	0.12
125	10.42	0.50	0.189	0.073	---	0.12
126	10.50	0.50	0.189	0.073	---	0.12
127	10.58	0.67	0.252	0.072	---	0.18
128	10.67	0.67	0.252	0.072	---	0.18
129	10.75	0.67	0.252	0.072	---	0.18
130	10.83	0.67	0.252	0.071	---	0.18
131	10.92	0.67	0.252	0.071	---	0.18
132	11.00	0.67	0.252	0.071	---	0.18
133	11.08	0.63	0.239	0.070	---	0.17
134	11.17	0.63	0.239	0.070	---	0.17
135	11.25	0.63	0.239	0.069	---	0.17
136	11.33	0.63	0.239	0.069	---	0.17
137	11.42	0.63	0.239	0.069	---	0.17
138	11.50	0.63	0.239	0.068	---	0.17
139	11.58	0.57	0.214	0.068	---	0.15
140	11.67	0.57	0.214	0.068	---	0.15
141	11.75	0.57	0.214	0.067	---	0.15
142	11.83	0.60	0.227	0.067	---	0.16
143	11.92	0.60	0.227	0.067	---	0.16
144	12.00	0.60	0.227	0.066	---	0.16
145	12.08	0.83	0.315	0.066	---	0.25
146	12.17	0.83	0.315	0.066	---	0.25
147	12.25	0.83	0.315	0.065	---	0.25
148	12.33	0.87	0.328	0.065	---	0.26
149	12.42	0.87	0.328	0.065	---	0.26
150	12.50	0.87	0.328	0.064	---	0.26
151	12.58	0.93	0.353	0.064	---	0.29
152	12.67	0.93	0.353	0.064	---	0.29
153	12.75	0.93	0.353	0.064	---	0.29
154	12.83	0.97	0.365	0.063	---	0.30
155	12.92	0.97	0.365	0.063	---	0.30
156	13.00	0.97	0.365	0.063	---	0.30
157	13.08	1.13	0.428	0.062	---	0.37
158	13.17	1.13	0.428	0.062	---	0.37
159	13.25	1.13	0.428	0.062	---	0.37
160	13.33	1.13	0.428	0.061	---	0.37
161	13.42	1.13	0.428	0.061	---	0.37
162	13.50	1.13	0.428	0.061	---	0.37

163	13.58	0.77	0.290	0.060	---	0.23
164	13.67	0.77	0.290	0.060	---	0.23
165	13.75	0.77	0.290	0.060	---	0.23
166	13.83	0.77	0.290	0.059	---	0.23
167	13.92	0.77	0.290	0.059	---	0.23
168	14.00	0.77	0.290	0.059	---	0.23
169	14.08	0.90	0.340	0.059	---	0.28
170	14.17	0.90	0.340	0.058	---	0.28
171	14.25	0.90	0.340	0.058	---	0.28
172	14.33	0.87	0.328	0.058	---	0.27
173	14.42	0.87	0.328	0.057	---	0.27
174	14.50	0.87	0.328	0.057	---	0.27
175	14.58	0.87	0.328	0.057	---	0.27
176	14.67	0.87	0.328	0.056	---	0.27
177	14.75	0.87	0.328	0.056	---	0.27
178	14.83	0.83	0.315	0.056	---	0.26
179	14.92	0.83	0.315	0.056	---	0.26
180	15.00	0.83	0.315	0.055	---	0.26
181	15.08	0.80	0.302	0.055	---	0.25
182	15.17	0.80	0.302	0.055	---	0.25
183	15.25	0.80	0.302	0.054	---	0.25
184	15.33	0.77	0.290	0.054	---	0.24
185	15.42	0.77	0.290	0.054	---	0.24
186	15.50	0.77	0.290	0.054	---	0.24
187	15.58	0.63	0.239	0.053	---	0.19
188	15.67	0.63	0.239	0.053	---	0.19
189	15.75	0.63	0.239	0.053	---	0.19
190	15.83	0.63	0.239	0.053	---	0.19
191	15.92	0.63	0.239	0.052	---	0.19
192	16.00	0.63	0.239	0.052	---	0.19
193	16.08	0.13	0.050	0.052	0.009	0.04
194	16.17	0.13	0.050	0.051	0.009	0.04
195	16.25	0.13	0.050	0.051	0.009	0.04
196	16.33	0.13	0.050	0.051	0.009	0.04
197	16.42	0.13	0.050	0.051	0.009	0.04
198	16.50	0.13	0.050	0.050	0.009	0.04
199	16.58	0.10	0.038	0.050	0.007	0.03
200	16.67	0.10	0.038	0.050	0.007	0.03
201	16.75	0.10	0.038	0.050	0.007	0.03
202	16.83	0.10	0.038	0.049	0.007	0.03
203	16.92	0.10	0.038	0.049	0.007	0.03
204	17.00	0.10	0.038	0.049	0.007	0.03
205	17.08	0.17	0.063	0.049	---	0.01
206	17.17	0.17	0.063	0.048	---	0.01
207	17.25	0.17	0.063	0.048	---	0.01
208	17.33	0.17	0.063	0.048	---	0.02
209	17.42	0.17	0.063	0.048	---	0.02
210	17.50	0.17	0.063	0.047	---	0.02
211	17.58	0.17	0.063	0.047	---	0.02
212	17.67	0.17	0.063	0.047	---	0.02
213	17.75	0.17	0.063	0.047	---	0.02
214	17.83	0.13	0.050	0.047	---	0.00
215	17.92	0.13	0.050	0.046	---	0.00
216	18.00	0.13	0.050	0.046	---	0.00

217	18.08	0.13	0.050	0.046	---	0.00
218	18.17	0.13	0.050	0.046	---	0.00
219	18.25	0.13	0.050	0.045	---	0.00
220	18.33	0.13	0.050	0.045	---	0.01
221	18.42	0.13	0.050	0.045	---	0.01
222	18.50	0.13	0.050	0.045	---	0.01
223	18.58	0.10	0.038	0.045	0.007	0.03
224	18.67	0.10	0.038	0.044	0.007	0.03
225	18.75	0.10	0.038	0.044	0.007	0.03
226	18.83	0.07	0.025	0.044	0.005	0.02
227	18.92	0.07	0.025	0.044	0.005	0.02
228	19.00	0.07	0.025	0.043	0.005	0.02
229	19.08	0.10	0.038	0.043	0.007	0.03
230	19.17	0.10	0.038	0.043	0.007	0.03
231	19.25	0.10	0.038	0.043	0.007	0.03
232	19.33	0.13	0.050	0.043	---	0.01
233	19.42	0.13	0.050	0.042	---	0.01
234	19.50	0.13	0.050	0.042	---	0.01
235	19.58	0.10	0.038	0.042	0.007	0.03
236	19.67	0.10	0.038	0.042	0.007	0.03
237	19.75	0.10	0.038	0.042	0.007	0.03
238	19.83	0.07	0.025	0.041	0.005	0.02
239	19.92	0.07	0.025	0.041	0.005	0.02
240	20.00	0.07	0.025	0.041	0.005	0.02
241	20.08	0.10	0.038	0.041	0.007	0.03
242	20.17	0.10	0.038	0.041	0.007	0.03
243	20.25	0.10	0.038	0.041	0.007	0.03
244	20.33	0.10	0.038	0.040	0.007	0.03
245	20.42	0.10	0.038	0.040	0.007	0.03
246	20.50	0.10	0.038	0.040	0.007	0.03
247	20.58	0.10	0.038	0.040	0.007	0.03
248	20.67	0.10	0.038	0.040	0.007	0.03
249	20.75	0.10	0.038	0.040	0.007	0.03
250	20.83	0.07	0.025	0.039	0.005	0.02
251	20.92	0.07	0.025	0.039	0.005	0.02
252	21.00	0.07	0.025	0.039	0.005	0.02
253	21.08	0.10	0.038	0.039	0.007	0.03
254	21.17	0.10	0.038	0.039	0.007	0.03
255	21.25	0.10	0.038	0.039	0.007	0.03
256	21.33	0.07	0.025	0.038	0.005	0.02
257	21.42	0.07	0.025	0.038	0.005	0.02
258	21.50	0.07	0.025	0.038	0.005	0.02
259	21.58	0.10	0.038	0.038	0.007	0.03
260	21.67	0.10	0.038	0.038	0.007	0.03
261	21.75	0.10	0.038	0.038	---	0.00
262	21.83	0.07	0.025	0.038	0.005	0.02
263	21.92	0.07	0.025	0.038	0.005	0.02
264	22.00	0.07	0.025	0.037	0.005	0.02
265	22.08	0.10	0.038	0.037	---	0.00
266	22.17	0.10	0.038	0.037	---	0.00
267	22.25	0.10	0.038	0.037	---	0.00
268	22.33	0.07	0.025	0.037	0.005	0.02
269	22.42	0.07	0.025	0.037	0.005	0.02
270	22.50	0.07	0.025	0.037	0.005	0.02

271	22.58	0.07	0.025	0.037	0.005	0.02
272	22.67	0.07	0.025	0.036	0.005	0.02
273	22.75	0.07	0.025	0.036	0.005	0.02
274	22.83	0.07	0.025	0.036	0.005	0.02
275	22.92	0.07	0.025	0.036	0.005	0.02
276	23.00	0.07	0.025	0.036	0.005	0.02
277	23.08	0.07	0.025	0.036	0.005	0.02
278	23.17	0.07	0.025	0.036	0.005	0.02
279	23.25	0.07	0.025	0.036	0.005	0.02
280	23.33	0.07	0.025	0.036	0.005	0.02
281	23.42	0.07	0.025	0.036	0.005	0.02
282	23.50	0.07	0.025	0.036	0.005	0.02
283	23.58	0.07	0.025	0.036	0.005	0.02
284	23.67	0.07	0.025	0.036	0.005	0.02
285	23.75	0.07	0.025	0.036	0.005	0.02
286	23.83	0.07	0.025	0.035	0.005	0.02
287	23.92	0.07	0.025	0.035	0.005	0.02
288	24.00	0.07	0.025	0.035	0.005	0.02
	Sum =	100.0			Sum =	26.2

Flood volume = Effective rainfall 2.18(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 11.0(Ac.Ft)
Total soil loss = 0.97(In)
Total soil loss = 4.846(Ac.Ft)
Total rainfall = 3.15(In)
Flood volume = 477308.2 Cubic Feet
Total soil loss = 211091.0 Cubic Feet

Peak flow rate of this hydrograph = 22.047(CFS)

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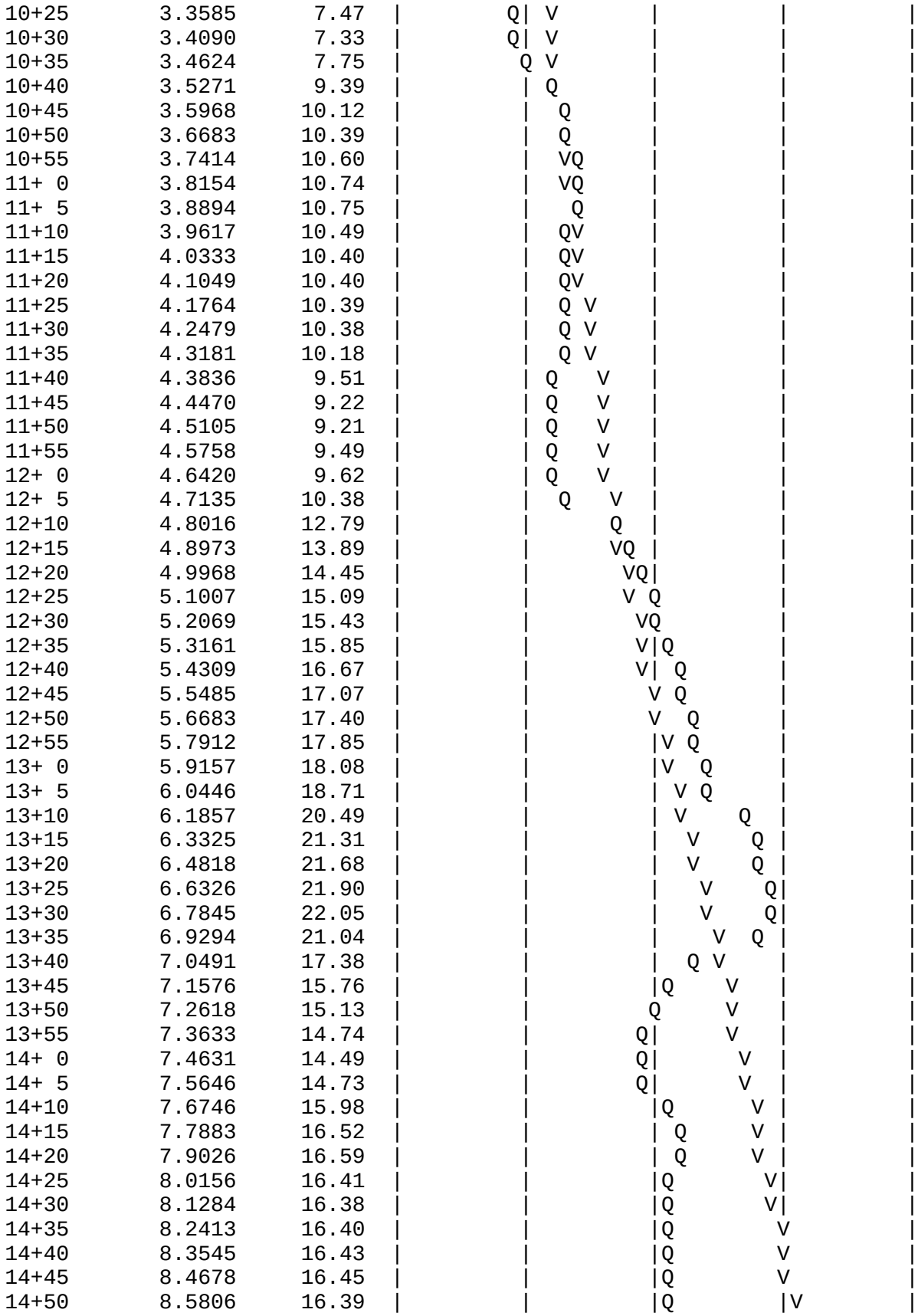
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

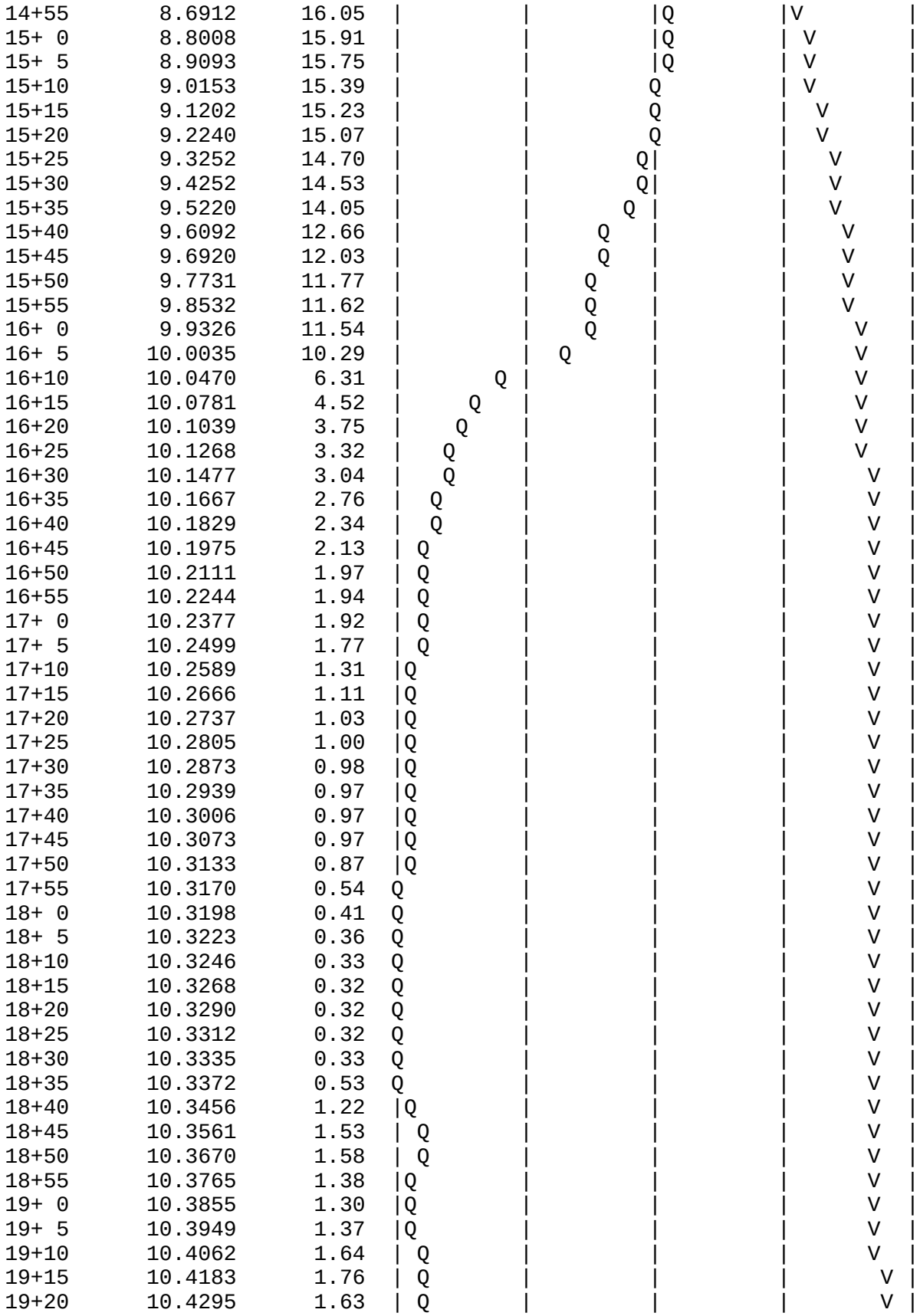
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5	30.0
0+ 5	0.0012	0.17	Q	|	|	|	|
0+10	0.0061	0.72	Q	|	|	|	|
0+15	0.0129	0.97	VQ	|	|	|	|
0+20	0.0209	1.16	VQ	|	|	|	|
0+25	0.0312	1.50	V Q	|	|	|	|
0+30	0.0427	1.67	V Q	|	|	|	|
0+35	0.0547	1.75	V Q	|	|	|	|
0+40	0.0671	1.80	V Q	|	|	|	|
0+45	0.0797	1.83	V Q	|	|	|	|
0+50	0.0930	1.94	V Q	|	|	|	|
0+55	0.1084	2.23	V Q	|	|	|	|
1+ 0	0.1247	2.36	V Q	|	|	|	|
1+ 5	0.1407	2.34	V Q	|	|	|	|
1+10	0.1551	2.09	V Q	|	|	|	|
1+15	0.1688	1.98	V Q	|	|	|	|
1+20	0.1822	1.95	V Q	|	|	|	|

1+25	0.1955	1.92	V Q	|	|	|	|
1+30	0.2086	1.91	V Q	|	|	|	|
1+35	0.2218	1.91	V Q	|	|	|	|
1+40	0.2348	1.90	V Q	|	|	|	|
1+45	0.2478	1.89	V Q	|	|	|	|
1+50	0.2614	1.97	V Q	|	|	|	|
1+55	0.2768	2.24	|VQ	|	|	|	|
2+ 0	0.2931	2.37	|V Q	|	|	|	|
2+ 5	0.3098	2.42	|V Q	|	|	|	|
2+10	0.3267	2.45	|V Q	|	|	|	|
2+15	0.3437	2.47	|V Q	|	|	|	|
2+20	0.3608	2.49	|V Q	|	|	|	|
2+25	0.3780	2.49	|V Q	|	|	|	|
2+30	0.3952	2.50	|V Q	|	|	|	|
2+35	0.4131	2.59	|V Q	|	|	|	|
2+40	0.4328	2.87	|V Q	|	|	|	|
2+45	0.4535	3.00	|V Q	|	|	|	|
2+50	0.4745	3.05	|V Q	|	|	|	|
2+55	0.4957	3.08	|V Q	|	|	|	|
3+ 0	0.5170	3.10	|V Q	|	|	|	|
3+ 5	0.5384	3.11	|V Q	|	|	|	|
3+10	0.5599	3.12	| V Q	|	|	|	|
3+15	0.5815	3.13	| V Q	|	|	|	|
3+20	0.6031	3.14	| V Q	|	|	|	|
3+25	0.6247	3.14	| V Q	|	|	|	|
3+30	0.6463	3.14	| V Q	|	|	|	|
3+35	0.6679	3.14	| V Q	|	|	|	|
3+40	0.6895	3.14	| V Q	|	|	|	|
3+45	0.7111	3.14	| V Q	|	|	|	|
3+50	0.7333	3.22	| V Q	|	|	|	|
3+55	0.7573	3.50	| V Q	|	|	|	|
4+ 0	0.7823	3.62	| V Q	|	|	|	|
4+ 5	0.8076	3.67	| V Q	|	|	|	|
4+10	0.8331	3.71	| VQ	|	|	|	|
4+15	0.8588	3.73	| VQ	|	|	|	|
4+20	0.8851	3.82	| V Q	|	|	|	|
4+25	0.9134	4.11	| V Q	|	|	|	|
4+30	0.9427	4.24	| V Q	|	|	|	|
4+35	0.9723	4.30	| V Q	|	|	|	|
4+40	1.0021	4.33	| V Q	|	|	|	|
4+45	1.0321	4.35	| V Q	|	|	|	|
4+50	1.0582	3.79	| V Q	|	|	|	|
4+55	1.0713	1.89	| QV	|	|	|	|
5+ 0	1.0785	1.05	|Q V	|	|	|	|
5+ 5	1.0868	1.21	|Q V	|	|	|	|
5+10	1.1048	2.61	| QV	|	|	|	|
5+15	1.1269	3.21	| Q	|	|	|	|
5+20	1.1510	3.49	| Q	|	|	|	|
5+25	1.1778	3.89	| VQ	|	|	|	|
5+30	1.2059	4.08	| VQ	|	|	|	|
5+35	1.2308	3.62	| Q	|	|	|	|
5+40	1.2439	1.90	| Q V	|	|	|	|
5+45	1.2519	1.16	|Q V	|	|	|	|
5+50	1.2581	0.90	|Q V	|	|	|	|

5+55	1.2632	0.73	Q V	|	|	|	|
6+ 0	1.2676	0.64	Q V	|	|	|	|
6+ 5	1.2722	0.68	Q V	|	|	|	|
6+10	1.2790	0.98	|Q V	|	|	|	|
6+15	1.2866	1.11	|Q V	|	|	|	|
6+20	1.2946	1.15	|Q V	|	|	|	|
6+25	1.3029	1.22	|Q V	|	|	|	|
6+30	1.3116	1.26	|Q V	|	|	|	|
6+35	1.3213	1.41	|Q V	|	|	|	|
6+40	1.3336	1.78	| Q V	|	|	|	|
6+45	1.3472	1.97	| Q V	|	|	|	|
6+50	1.3614	2.07	| Q V	|	|	|	|
6+55	1.3761	2.13	| Q V	|	|	|	|
7+ 0	1.3911	2.18	| Q V	|	|	|	|
7+ 5	1.4064	2.22	| Q V	|	|	|	|
7+10	1.4219	2.26	| Q V	|	|	|	|
7+15	1.4377	2.29	| Q V	|	|	|	|
7+20	1.4544	2.42	| Q V	|	|	|	|
7+25	1.4736	2.79	| Q V	|	|	|	|
7+30	1.4940	2.96	| Q V	|	|	|	|
7+35	1.5157	3.15	| QV	|	|	|	|
7+40	1.5402	3.56	| QV	|	|	|	|
7+45	1.5660	3.76	| Q	|	|	|	|
7+50	1.5933	3.96	| Q	|	|	|	|
7+55	1.6234	4.37	| Q	|	|	|	|
8+ 0	1.6550	4.58	| Q	|	|	|	|
8+ 5	1.6888	4.90	| Q	|	|	|	|
8+10	1.7277	5.65	| VQ	|	|	|	|
8+15	1.7691	6.01	| V Q	|	|	|	|
8+20	1.8117	6.19	| V Q	|	|	|	|
8+25	1.8551	6.30	| V Q	|	|	|	|
8+30	1.8990	6.38	| V Q	|	|	|	|
8+35	1.9441	6.55	| VQ	|	|	|	|
8+40	1.9919	6.93	| V Q|	|	|	|	|
8+45	2.0410	7.13	| V Q|	|	|	|	|
8+50	2.0915	7.33	| V Q|	|	|	|	|
8+55	2.1447	7.73	| V Q	|	|	|	|
9+ 0	2.1994	7.93	| V Q	|	|	|	|
9+ 5	2.2561	8.24	| V Q	|	|	|	|
9+10	2.3180	8.99	| V |Q	|	|	|	|
9+15	2.3824	9.35	| V | Q	|	|	|	|
9+20	2.4487	9.63	| V | Q	|	|	|	|
9+25	2.5181	10.08	| V| Q	|	|	|	|
9+30	2.5891	10.31	| V| Q	|	|	|	|
9+35	2.6617	10.54	| V| Q	|	|	|	|
9+40	2.7372	10.96	| V| Q	|	|	|	|
9+45	2.8142	11.18	| V Q	|	|	|	|
9+50	2.8927	11.40	| V Q	|	|	|	|
9+55	2.9741	11.81	| V Q	|	|	|	|
10+ 0	3.0568	12.02	| |V Q	|	|	|	|
10+ 5	3.1355	11.42	| |V Q	|	|	|	|
10+10	3.1982	9.11	| |VQ	|	|	|	|
10+15	3.2539	8.10	| QV	|	|	|	|
10+20	3.3070	7.70	| Q V	|	|	|	|





19+25	10.4366	1.02	|Q	|	|	|	V |
19+30	10.4418	0.76	|Q	|	|	|	V |
19+35	10.4476	0.85	|Q	|	|	|	V |
19+40	10.4573	1.41	|Q	|	|	|	V |
19+45	10.4687	1.65	| Q	|	|	|	V |
19+50	10.4801	1.65	| Q	|	|	|	V |
19+55	10.4899	1.42	|Q	|	|	|	V |
20+ 0	10.4990	1.33	|Q	|	|	|	V |
20+ 5	10.5085	1.37	|Q	|	|	|	V |
20+10	10.5198	1.64	| Q	|	|	|	V |
20+15	10.5319	1.76	| Q	|	|	|	V |
20+20	10.5444	1.82	| Q	|	|	|	V |
20+25	10.5571	1.84	| Q	|	|	|	V |
20+30	10.5698	1.85	| Q	|	|	|	V |
20+35	10.5826	1.86	| Q	|	|	|	V |
20+40	10.5955	1.87	| Q	|	|	|	V |
20+45	10.6084	1.87	| Q	|	|	|	V |
20+50	10.6208	1.80	| Q	|	|	|	V |
20+55	10.6312	1.52	| Q	|	|	|	V |
21+ 0	10.6409	1.39	|Q	|	|	|	V |
21+ 5	10.6507	1.43	|Q	|	|	|	V |
21+10	10.6622	1.67	| Q	|	|	|	V |
21+15	10.6745	1.78	| Q	|	|	|	V |
21+20	10.6864	1.73	| Q	|	|	|	V|
21+25	10.6966	1.48	|Q	|	|	|	V|
21+30	10.7060	1.36	|Q	|	|	|	V|
21+35	10.7156	1.40	|Q	|	|	|	V|
21+40	10.7270	1.66	| Q	|	|	|	V|
21+45	10.7375	1.52	| Q	|	|	|	V|
21+50	10.7437	0.90	|Q	|	|	|	V|
21+55	10.7513	1.10	|Q	|	|	|	V|
22+ 0	10.7596	1.21	|Q	|	|	|	V|
22+ 5	10.7669	1.06	|Q	|	|	|	V|
22+10	10.7706	0.53	Q	|	|	|	V|
22+15	10.7727	0.30	Q	|	|	|	V|
22+20	10.7752	0.37	Q	|	|	|	V|
22+25	10.7810	0.85	|Q	|	|	|	V|
22+30	10.7882	1.04	|Q	|	|	|	V|
22+35	10.7960	1.13	|Q	|	|	|	V|
22+40	10.8041	1.17	|Q	|	|	|	V|
22+45	10.8123	1.20	|Q	|	|	|	V|
22+50	10.8206	1.21	|Q	|	|	|	V|
22+55	10.8291	1.23	|Q	|	|	|	V|
23+ 0	10.8376	1.24	|Q	|	|	|	V|
23+ 5	10.8462	1.25	|Q	|	|	|	V|
23+10	10.8549	1.25	|Q	|	|	|	V|
23+15	10.8635	1.25	|Q	|	|	|	V|
23+20	10.8722	1.25	|Q	|	|	|	V|
23+25	10.8808	1.25	|Q	|	|	|	V|
23+30	10.8894	1.25	|Q	|	|	|	V|
23+35	10.8981	1.25	|Q	|	|	|	V|
23+40	10.9067	1.25	|Q	|	|	|	V|
23+45	10.9154	1.25	|Q	|	|	|	V|
23+50	10.9240	1.25	|Q	|	|	|	V|

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   23+55      10.9326      1.25  |Q        |         |         |        V|
   24+ 0      10.9413      1.25  |Q        |         |         |        V|
   24+ 5      10.9488      1.09  |Q        |         |         |        V|
   24+10      10.9524      0.53  Q         |         |         |        V|
   24+15      10.9543      0.28  Q         |         |         |        V|
   24+20      10.9556      0.18  Q         |         |         |        V|
   24+25      10.9563      0.11  Q         |         |         |        V|
   24+30      10.9569      0.08  Q         |         |         |        V|
   24+35      10.9572      0.05  Q         |         |         |        V|
   24+40      10.9574      0.03  Q         |         |         |        V|
   24+45      10.9575      0.02  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/28/19 File: 4163uhp10024100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 100 YEAR UNIT HYDROGRAPH
MJPA 304163
BUILDING 1
4163uhp100.um1

Drainage Area = 60.22(Ac.) = 0.094 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 60.22(Ac.) = 0.094 Sq. Mi.
Length along longest watercourse = 3510.00(Ft.)
Length along longest watercourse measured to centroid = 1990.00(Ft.)
Length along longest watercourse = 0.665 Mi.
Length along longest watercourse measured to centroid = 0.377 Mi.
Difference in elevation = 28.65(Ft.)
Slope along watercourse = 43.0974 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.104 Hr.
Lag time = 6.24 Min.
25% of lag time = 1.56 Min.
40% of lag time = 2.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	1.60	96.35

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
60.22	4.00	240.88

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 4.000(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
60.220	69.00	0.900

Total Area Entered = 60.22(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	84.4	0.194	0.900	0.037	1.000	0.037
					Sum (F) =	0.037

Area averaged mean soil loss (F) (In/Hr) = 0.037
Minimum soil loss rate ((In/Hr)) = 0.018
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	80.072	13.320	8.084
2	0.167	160.145	44.445	26.974
3	0.250	240.217	19.915	12.086
4	0.333	320.290	8.240	5.001
5	0.417	400.362	4.947	3.002
6	0.500	480.434	3.115	1.891
7	0.583	560.507	2.247	1.364
8	0.667	640.579	1.540	0.935
9	0.750	720.652	1.035	0.628
10	0.833	800.724	1.196	0.726
			Sum = 100.000	Sum= 60.690

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.032	0.065	0.006	0.03
2	0.17	0.07	0.032	0.065	0.006	0.03
3	0.25	0.07	0.032	0.065	0.006	0.03
4	0.33	0.10	0.048	0.065	0.009	0.04
5	0.42	0.10	0.048	0.064	0.009	0.04
6	0.50	0.10	0.048	0.064	0.009	0.04
7	0.58	0.10	0.048	0.064	0.009	0.04
8	0.67	0.10	0.048	0.064	0.009	0.04
9	0.75	0.10	0.048	0.063	0.009	0.04
10	0.83	0.13	0.064	0.063	---	0.00
11	0.92	0.13	0.064	0.063	---	0.00
12	1.00	0.13	0.064	0.063	---	0.00
13	1.08	0.10	0.048	0.062	0.009	0.04
14	1.17	0.10	0.048	0.062	0.009	0.04
15	1.25	0.10	0.048	0.062	0.009	0.04
16	1.33	0.10	0.048	0.062	0.009	0.04
17	1.42	0.10	0.048	0.061	0.009	0.04
18	1.50	0.10	0.048	0.061	0.009	0.04
19	1.58	0.10	0.048	0.061	0.009	0.04
20	1.67	0.10	0.048	0.061	0.009	0.04
21	1.75	0.10	0.048	0.060	0.009	0.04
22	1.83	0.13	0.064	0.060	---	0.00
23	1.92	0.13	0.064	0.060	---	0.00
24	2.00	0.13	0.064	0.060	---	0.00
25	2.08	0.13	0.064	0.059	---	0.00
26	2.17	0.13	0.064	0.059	---	0.00
27	2.25	0.13	0.064	0.059	---	0.01
28	2.33	0.13	0.064	0.059	---	0.01
29	2.42	0.13	0.064	0.058	---	0.01
30	2.50	0.13	0.064	0.058	---	0.01
31	2.58	0.17	0.080	0.058	---	0.02
32	2.67	0.17	0.080	0.058	---	0.02
33	2.75	0.17	0.080	0.057	---	0.02
34	2.83	0.17	0.080	0.057	---	0.02
35	2.92	0.17	0.080	0.057	---	0.02
36	3.00	0.17	0.080	0.057	---	0.02
37	3.08	0.17	0.080	0.057	---	0.02
38	3.17	0.17	0.080	0.056	---	0.02
39	3.25	0.17	0.080	0.056	---	0.02
40	3.33	0.17	0.080	0.056	---	0.02
41	3.42	0.17	0.080	0.056	---	0.02
42	3.50	0.17	0.080	0.055	---	0.02
43	3.58	0.17	0.080	0.055	---	0.02
44	3.67	0.17	0.080	0.055	---	0.03
45	3.75	0.17	0.080	0.055	---	0.03
46	3.83	0.20	0.096	0.054	---	0.04
47	3.92	0.20	0.096	0.054	---	0.04
48	4.00	0.20	0.096	0.054	---	0.04
49	4.08	0.20	0.096	0.054	---	0.04
50	4.17	0.20	0.096	0.054	---	0.04
51	4.25	0.20	0.096	0.053	---	0.04
52	4.33	0.23	0.112	0.053	---	0.06
53	4.42	0.23	0.112	0.053	---	0.06
54	4.50	0.23	0.112	0.053	---	0.06

55	4.58	0.23	0.112	0.052	---	0.06
56	4.67	0.23	0.112	0.052	---	0.06
57	4.75	0.23	0.112	0.052	---	0.06
58	4.83	0.27	0.128	0.052	---	0.08
59	4.92	0.27	0.128	0.051	---	0.08
60	5.00	0.27	0.128	0.051	---	0.08
61	5.08	0.20	0.096	0.051	---	0.04
62	5.17	0.20	0.096	0.051	---	0.05
63	5.25	0.20	0.096	0.051	---	0.05
64	5.33	0.23	0.112	0.050	---	0.06
65	5.42	0.23	0.112	0.050	---	0.06
66	5.50	0.23	0.112	0.050	---	0.06
67	5.58	0.27	0.128	0.050	---	0.08
68	5.67	0.27	0.128	0.049	---	0.08
69	5.75	0.27	0.128	0.049	---	0.08
70	5.83	0.27	0.128	0.049	---	0.08
71	5.92	0.27	0.128	0.049	---	0.08
72	6.00	0.27	0.128	0.049	---	0.08
73	6.08	0.30	0.144	0.048	---	0.10
74	6.17	0.30	0.144	0.048	---	0.10
75	6.25	0.30	0.144	0.048	---	0.10
76	6.33	0.30	0.144	0.048	---	0.10
77	6.42	0.30	0.144	0.048	---	0.10
78	6.50	0.30	0.144	0.047	---	0.10
79	6.58	0.33	0.160	0.047	---	0.11
80	6.67	0.33	0.160	0.047	---	0.11
81	6.75	0.33	0.160	0.047	---	0.11
82	6.83	0.33	0.160	0.046	---	0.11
83	6.92	0.33	0.160	0.046	---	0.11
84	7.00	0.33	0.160	0.046	---	0.11
85	7.08	0.33	0.160	0.046	---	0.11
86	7.17	0.33	0.160	0.046	---	0.11
87	7.25	0.33	0.160	0.045	---	0.11
88	7.33	0.37	0.176	0.045	---	0.13
89	7.42	0.37	0.176	0.045	---	0.13
90	7.50	0.37	0.176	0.045	---	0.13
91	7.58	0.40	0.192	0.045	---	0.15
92	7.67	0.40	0.192	0.044	---	0.15
93	7.75	0.40	0.192	0.044	---	0.15
94	7.83	0.43	0.208	0.044	---	0.16
95	7.92	0.43	0.208	0.044	---	0.16
96	8.00	0.43	0.208	0.044	---	0.16
97	8.08	0.50	0.240	0.043	---	0.20
98	8.17	0.50	0.240	0.043	---	0.20
99	8.25	0.50	0.240	0.043	---	0.20
100	8.33	0.50	0.240	0.043	---	0.20
101	8.42	0.50	0.240	0.043	---	0.20
102	8.50	0.50	0.240	0.042	---	0.20
103	8.58	0.53	0.256	0.042	---	0.21
104	8.67	0.53	0.256	0.042	---	0.21
105	8.75	0.53	0.256	0.042	---	0.21
106	8.83	0.57	0.272	0.042	---	0.23
107	8.92	0.57	0.272	0.041	---	0.23
108	9.00	0.57	0.272	0.041	---	0.23

109	9.08	0.63	0.304	0.041	---	0.26
110	9.17	0.63	0.304	0.041	---	0.26
111	9.25	0.63	0.304	0.041	---	0.26
112	9.33	0.67	0.320	0.040	---	0.28
113	9.42	0.67	0.320	0.040	---	0.28
114	9.50	0.67	0.320	0.040	---	0.28
115	9.58	0.70	0.336	0.040	---	0.30
116	9.67	0.70	0.336	0.040	---	0.30
117	9.75	0.70	0.336	0.039	---	0.30
118	9.83	0.73	0.352	0.039	---	0.31
119	9.92	0.73	0.352	0.039	---	0.31
120	10.00	0.73	0.352	0.039	---	0.31
121	10.08	0.50	0.240	0.039	---	0.20
122	10.17	0.50	0.240	0.039	---	0.20
123	10.25	0.50	0.240	0.038	---	0.20
124	10.33	0.50	0.240	0.038	---	0.20
125	10.42	0.50	0.240	0.038	---	0.20
126	10.50	0.50	0.240	0.038	---	0.20
127	10.58	0.67	0.320	0.038	---	0.28
128	10.67	0.67	0.320	0.037	---	0.28
129	10.75	0.67	0.320	0.037	---	0.28
130	10.83	0.67	0.320	0.037	---	0.28
131	10.92	0.67	0.320	0.037	---	0.28
132	11.00	0.67	0.320	0.037	---	0.28
133	11.08	0.63	0.304	0.036	---	0.27
134	11.17	0.63	0.304	0.036	---	0.27
135	11.25	0.63	0.304	0.036	---	0.27
136	11.33	0.63	0.304	0.036	---	0.27
137	11.42	0.63	0.304	0.036	---	0.27
138	11.50	0.63	0.304	0.036	---	0.27
139	11.58	0.57	0.272	0.035	---	0.24
140	11.67	0.57	0.272	0.035	---	0.24
141	11.75	0.57	0.272	0.035	---	0.24
142	11.83	0.60	0.288	0.035	---	0.25
143	11.92	0.60	0.288	0.035	---	0.25
144	12.00	0.60	0.288	0.035	---	0.25
145	12.08	0.83	0.400	0.034	---	0.37
146	12.17	0.83	0.400	0.034	---	0.37
147	12.25	0.83	0.400	0.034	---	0.37
148	12.33	0.87	0.416	0.034	---	0.38
149	12.42	0.87	0.416	0.034	---	0.38
150	12.50	0.87	0.416	0.034	---	0.38
151	12.58	0.93	0.448	0.033	---	0.41
152	12.67	0.93	0.448	0.033	---	0.41
153	12.75	0.93	0.448	0.033	---	0.41
154	12.83	0.97	0.464	0.033	---	0.43
155	12.92	0.97	0.464	0.033	---	0.43
156	13.00	0.97	0.464	0.033	---	0.43
157	13.08	1.13	0.544	0.032	---	0.51
158	13.17	1.13	0.544	0.032	---	0.51
159	13.25	1.13	0.544	0.032	---	0.51
160	13.33	1.13	0.544	0.032	---	0.51
161	13.42	1.13	0.544	0.032	---	0.51
162	13.50	1.13	0.544	0.032	---	0.51

163	13.58	0.77	0.368	0.031	---	0.34
164	13.67	0.77	0.368	0.031	---	0.34
165	13.75	0.77	0.368	0.031	---	0.34
166	13.83	0.77	0.368	0.031	---	0.34
167	13.92	0.77	0.368	0.031	---	0.34
168	14.00	0.77	0.368	0.031	---	0.34
169	14.08	0.90	0.432	0.030	---	0.40
170	14.17	0.90	0.432	0.030	---	0.40
171	14.25	0.90	0.432	0.030	---	0.40
172	14.33	0.87	0.416	0.030	---	0.39
173	14.42	0.87	0.416	0.030	---	0.39
174	14.50	0.87	0.416	0.030	---	0.39
175	14.58	0.87	0.416	0.030	---	0.39
176	14.67	0.87	0.416	0.029	---	0.39
177	14.75	0.87	0.416	0.029	---	0.39
178	14.83	0.83	0.400	0.029	---	0.37
179	14.92	0.83	0.400	0.029	---	0.37
180	15.00	0.83	0.400	0.029	---	0.37
181	15.08	0.80	0.384	0.029	---	0.36
182	15.17	0.80	0.384	0.028	---	0.36
183	15.25	0.80	0.384	0.028	---	0.36
184	15.33	0.77	0.368	0.028	---	0.34
185	15.42	0.77	0.368	0.028	---	0.34
186	15.50	0.77	0.368	0.028	---	0.34
187	15.58	0.63	0.304	0.028	---	0.28
188	15.67	0.63	0.304	0.028	---	0.28
189	15.75	0.63	0.304	0.027	---	0.28
190	15.83	0.63	0.304	0.027	---	0.28
191	15.92	0.63	0.304	0.027	---	0.28
192	16.00	0.63	0.304	0.027	---	0.28
193	16.08	0.13	0.064	0.027	---	0.04
194	16.17	0.13	0.064	0.027	---	0.04
195	16.25	0.13	0.064	0.027	---	0.04
196	16.33	0.13	0.064	0.026	---	0.04
197	16.42	0.13	0.064	0.026	---	0.04
198	16.50	0.13	0.064	0.026	---	0.04
199	16.58	0.10	0.048	0.026	---	0.02
200	16.67	0.10	0.048	0.026	---	0.02
201	16.75	0.10	0.048	0.026	---	0.02
202	16.83	0.10	0.048	0.026	---	0.02
203	16.92	0.10	0.048	0.026	---	0.02
204	17.00	0.10	0.048	0.025	---	0.02
205	17.08	0.17	0.080	0.025	---	0.05
206	17.17	0.17	0.080	0.025	---	0.05
207	17.25	0.17	0.080	0.025	---	0.05
208	17.33	0.17	0.080	0.025	---	0.06
209	17.42	0.17	0.080	0.025	---	0.06
210	17.50	0.17	0.080	0.025	---	0.06
211	17.58	0.17	0.080	0.025	---	0.06
212	17.67	0.17	0.080	0.024	---	0.06
213	17.75	0.17	0.080	0.024	---	0.06
214	17.83	0.13	0.064	0.024	---	0.04
215	17.92	0.13	0.064	0.024	---	0.04
216	18.00	0.13	0.064	0.024	---	0.04

217	18.08	0.13	0.064	0.024	---	0.04
218	18.17	0.13	0.064	0.024	---	0.04
219	18.25	0.13	0.064	0.024	---	0.04
220	18.33	0.13	0.064	0.023	---	0.04
221	18.42	0.13	0.064	0.023	---	0.04
222	18.50	0.13	0.064	0.023	---	0.04
223	18.58	0.10	0.048	0.023	---	0.02
224	18.67	0.10	0.048	0.023	---	0.02
225	18.75	0.10	0.048	0.023	---	0.03
226	18.83	0.07	0.032	0.023	---	0.01
227	18.92	0.07	0.032	0.023	---	0.01
228	19.00	0.07	0.032	0.023	---	0.01
229	19.08	0.10	0.048	0.022	---	0.03
230	19.17	0.10	0.048	0.022	---	0.03
231	19.25	0.10	0.048	0.022	---	0.03
232	19.33	0.13	0.064	0.022	---	0.04
233	19.42	0.13	0.064	0.022	---	0.04
234	19.50	0.13	0.064	0.022	---	0.04
235	19.58	0.10	0.048	0.022	---	0.03
236	19.67	0.10	0.048	0.022	---	0.03
237	19.75	0.10	0.048	0.022	---	0.03
238	19.83	0.07	0.032	0.022	---	0.01
239	19.92	0.07	0.032	0.021	---	0.01
240	20.00	0.07	0.032	0.021	---	0.01
241	20.08	0.10	0.048	0.021	---	0.03
242	20.17	0.10	0.048	0.021	---	0.03
243	20.25	0.10	0.048	0.021	---	0.03
244	20.33	0.10	0.048	0.021	---	0.03
245	20.42	0.10	0.048	0.021	---	0.03
246	20.50	0.10	0.048	0.021	---	0.03
247	20.58	0.10	0.048	0.021	---	0.03
248	20.67	0.10	0.048	0.021	---	0.03
249	20.75	0.10	0.048	0.021	---	0.03
250	20.83	0.07	0.032	0.020	---	0.01
251	20.92	0.07	0.032	0.020	---	0.01
252	21.00	0.07	0.032	0.020	---	0.01
253	21.08	0.10	0.048	0.020	---	0.03
254	21.17	0.10	0.048	0.020	---	0.03
255	21.25	0.10	0.048	0.020	---	0.03
256	21.33	0.07	0.032	0.020	---	0.01
257	21.42	0.07	0.032	0.020	---	0.01
258	21.50	0.07	0.032	0.020	---	0.01
259	21.58	0.10	0.048	0.020	---	0.03
260	21.67	0.10	0.048	0.020	---	0.03
261	21.75	0.10	0.048	0.020	---	0.03
262	21.83	0.07	0.032	0.020	---	0.01
263	21.92	0.07	0.032	0.020	---	0.01
264	22.00	0.07	0.032	0.019	---	0.01
265	22.08	0.10	0.048	0.019	---	0.03
266	22.17	0.10	0.048	0.019	---	0.03
267	22.25	0.10	0.048	0.019	---	0.03
268	22.33	0.07	0.032	0.019	---	0.01
269	22.42	0.07	0.032	0.019	---	0.01
270	22.50	0.07	0.032	0.019	---	0.01

271	22.58	0.07	0.032	0.019	---	0.01
272	22.67	0.07	0.032	0.019	---	0.01
273	22.75	0.07	0.032	0.019	---	0.01
274	22.83	0.07	0.032	0.019	---	0.01
275	22.92	0.07	0.032	0.019	---	0.01
276	23.00	0.07	0.032	0.019	---	0.01
277	23.08	0.07	0.032	0.019	---	0.01
278	23.17	0.07	0.032	0.019	---	0.01
279	23.25	0.07	0.032	0.019	---	0.01
280	23.33	0.07	0.032	0.019	---	0.01
281	23.42	0.07	0.032	0.019	---	0.01
282	23.50	0.07	0.032	0.019	---	0.01
283	23.58	0.07	0.032	0.019	---	0.01
284	23.67	0.07	0.032	0.018	---	0.01
285	23.75	0.07	0.032	0.018	---	0.01
286	23.83	0.07	0.032	0.018	---	0.01
287	23.92	0.07	0.032	0.018	---	0.01
288	24.00	0.07	0.032	0.018	---	0.01
Sum =	100.0				Sum =	38.4

Flood volume = Effective rainfall 3.20(In)
times area 60.2(Ac.)/[(In)/(Ft.)] = 16.0(Ac.Ft)
Total soil loss = 0.80(In)
Total soil loss = 4.026(Ac.Ft)
Total rainfall = 4.00(In)
Flood volume = 698898.1 Cubic Feet
Total soil loss = 175393.5 Cubic Feet

Peak flow rate of this hydrograph = 30.791(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	10.0	20.0	30.0	40.0
0+ 5	0.0015	0.21	Q	|	|	|	|
0+10	0.0078	0.92	Q	|	|	|	|
0+15	0.0163	1.24	VQ	|	|	|	|
0+20	0.0265	1.47	VQ	|	|	|	|
0+25	0.0396	1.91	VQ	|	|	|	|
0+30	0.0542	2.12	V Q	|	|	|	|
0+35	0.0695	2.22	V Q	|	|	|	|
0+40	0.0852	2.28	V Q	|	|	|	|
0+45	0.1012	2.32	V Q	|	|	|	|
0+50	0.1153	2.05	V Q	|	|	|	|
0+55	0.1224	1.03	VQ	|	|	|	|
1+ 0	0.1264	0.58	Q	|	|	|	|
1+ 5	0.1313	0.71	Q	|	|	|	|
1+10	0.1425	1.63	VQ	|	|	|	|
1+15	0.1563	2.01	V Q	|	|	|	|
1+20	0.1711	2.15	V Q	|	|	|	|

1+25	0.1865	2.23	V Q	|	|	|	|
1+30	0.2022	2.28	V Q	|	|	|	|
1+35	0.2180	2.30	V Q	|	|	|	|
1+40	0.2341	2.34	V Q	|	|	|	|
1+45	0.2504	2.36	V Q	|	|	|	|
1+50	0.2649	2.10	V Q	|	|	|	|
1+55	0.2728	1.15	VQ	|	|	|	|
2+ 0	0.2778	0.73	Q	|	|	|	|
2+ 5	0.2817	0.56	Q	|	|	|	|
2+10	0.2849	0.47	Q	|	|	|	|
2+15	0.2878	0.41	Q	|	|	|	|
2+20	0.2904	0.38	Q	|	|	|	|
2+25	0.2929	0.36	Q	|	|	|	|
2+30	0.2953	0.35	Q	|	|	|	|
2+35	0.2985	0.47	Q	|	|	|	|
2+40	0.3048	0.92	Q	|	|	|	|
2+45	0.3126	1.12	VQ	|	|	|	|
2+50	0.3210	1.22	VQ	|	|	|	|
2+55	0.3298	1.28	VQ	|	|	|	|
3+ 0	0.3389	1.33	VQ	|	|	|	|
3+ 5	0.3483	1.36	VQ	|	|	|	|
3+10	0.3579	1.39	VQ	|	|	|	|
3+15	0.3677	1.42	VQ	|	|	|	|
3+20	0.3776	1.44	VQ	|	|	|	|
3+25	0.3876	1.46	VQ	|	|	|	|
3+30	0.3977	1.47	VQ	|	|	|	|
3+35	0.4080	1.48	|Q	|	|	|	|
3+40	0.4183	1.50	|Q	|	|	|	|
3+45	0.4287	1.51	|Q	|	|	|	|
3+50	0.4401	1.66	|Q	|	|	|	|
3+55	0.4546	2.10	|VQ	|	|	|	|
4+ 0	0.4705	2.31	|VQ	|	|	|	|
4+ 5	0.4870	2.40	|VQ	|	|	|	|
4+10	0.5040	2.47	|VQ	|	|	|	|
4+15	0.5213	2.51	|VQ	|	|	|	|
4+20	0.5397	2.67	|VQ	|	|	|	|
4+25	0.5613	3.13	|V Q	|	|	|	|
4+30	0.5844	3.35	|V Q	|	|	|	|
4+35	0.6082	3.46	|V Q	|	|	|	|
4+40	0.6324	3.52	|V Q	|	|	|	|
4+45	0.6570	3.56	|V Q	|	|	|	|
4+50	0.6826	3.73	|V Q	|	|	|	|
4+55	0.7115	4.19	|V Q	|	|	|	|
5+ 0	0.7418	4.41	|V Q	|	|	|	|
5+ 5	0.7711	4.25	|V Q	|	|	|	|
5+10	0.7949	3.45	|V Q	|	|	|	|
5+15	0.8163	3.11	| VQ	|	|	|	|
5+20	0.8377	3.11	| VQ	|	|	|	|
5+25	0.8616	3.48	| VQ	|	|	|	|
5+30	0.8867	3.63	| VQ	|	|	|	|
5+35	0.9130	3.82	| VQ	|	|	|	|
5+40	0.9425	4.29	| V Q	|	|	|	|
5+45	0.9735	4.50	| V Q	|	|	|	|
5+50	1.0052	4.59	| V Q	|	|	|	|

5+55	1.0373	4.67	V Q				
6+ 0	1.0699	4.72	V Q				
6+ 5	1.1036	4.90	V Q				
6+10	1.1405	5.36	V Q				
6+15	1.1790	5.58	V Q				
6+20	1.2181	5.68	V Q				
6+25	1.2576	5.74	V Q				
6+30	1.2975	5.79	V Q				
6+35	1.3385	5.95	V Q				
6+40	1.3826	6.41	V Q				
6+45	1.4283	6.63	V Q				
6+50	1.4746	6.73	V Q				
6+55	1.5214	6.79	V Q				
7+ 0	1.5685	6.84	V Q				
7+ 5	1.6158	6.87	V Q				
7+10	1.6633	6.90	V Q				
7+15	1.7109	6.92	V Q				
7+20	1.7597	7.07	V Q				
7+25	1.8114	7.52	V Q				
7+30	1.8646	7.72	V Q				
7+35	1.9194	7.95	V Q				
7+40	1.9775	8.44	V Q				
7+45	2.0372	8.67	V Q				
7+50	2.0986	8.92	V Q				
7+55	2.1636	9.43	V Q				
8+ 0	2.2302	9.67	V Q				
8+ 5	2.2994	10.06	V Q				
8+10	2.3752	11.00	V Q				
8+15	2.4539	11.43	V Q				
8+20	2.5341	11.64	V Q				
8+25	2.6151	11.76	V Q				
8+30	2.6967	11.85	V Q				
8+35	2.7796	12.04	V Q				
8+40	2.8658	12.52	V Q				
8+45	2.9536	12.74	V Q				
8+50	3.0430	12.99	V Q				
8+55	3.1359	13.48	V Q				
9+ 0	3.2303	13.72	V Q				
9+ 5	3.3274	14.09	V Q				
9+10	3.4308	15.03	V Q				
9+15	3.5374	15.47	V Q				
9+20	3.6462	15.80	V Q				
9+25	3.7588	16.35	V Q				
9+30	3.8733	16.63	V Q				
9+35	3.9898	16.91	V Q				
9+40	4.1098	17.43	V Q				
9+45	4.2316	17.68	V Q				
9+50	4.3552	17.95	V Q				
9+55	4.4823	18.46	V Q				
10+ 0	4.6111	18.70	V Q				
10+ 5	4.7345	17.92	V Q				
10+10	4.8377	14.97	V Q				
10+15	4.9318	13.67	VQ				
10+20	5.0224	13.15	VQ				

10+25	5.1109	12.84	|	| Q	|	|	|
10+30	5.1980	12.65	|	| Q	|	|	|
10+35	5.2887	13.17	|	| Q	|	|	|
10+40	5.3937	15.24	|	| V Q	|	|	|
10+45	5.5049	16.14	|	| V Q	|	|	|
10+50	5.6183	16.47	|	| V Q	|	|	|
10+55	5.7335	16.73	|	| V Q	|	|	|
11+ 0	5.8498	16.89	|	| V Q	|	|	|
11+ 5	5.9661	16.88	|	| V Q	|	|	|
11+10	6.0799	16.53	|	| VQ	|	|	|
11+15	6.1929	16.40	|	| VQ	|	|	|
11+20	6.3058	16.39	|	| VQ	|	|	|
11+25	6.4184	16.35	|	| Q	|	|	|
11+30	6.5309	16.33	|	| Q	|	|	|
11+35	6.6415	16.06	|	| Q	|	|	|
11+40	6.7462	15.20	|	| QV	|	|	|
11+45	6.8482	14.81	|	| Q V	|	|	|
11+50	6.9500	14.78	|	| Q V	|	|	|
11+55	7.0541	15.12	|	| Q V	|	|	|
12+ 0	7.1593	15.27	|	| Q V	|	|	|
12+ 5	7.2710	16.22	|	| Q V	|	|	|
12+10	7.4037	19.27	|	| VQ|	|	|
12+15	7.5459	20.65	|	| V Q	|	|
12+20	7.6929	21.35	|	| V|Q	|	|
12+25	7.8454	22.14	|	| V| Q	|	|
12+30	8.0008	22.56	|	| V| Q	|	|
12+35	8.1597	23.08	|	| V Q	|	|
12+40	8.3257	24.10	|	| V Q	|	|
12+45	8.4952	24.60	|	| |V Q	|	|
12+50	8.6674	25.01	|	| |V Q	|	|
12+55	8.8434	25.56	|	| | V Q	|	|
13+ 0	9.0213	25.83	|	| | V Q	|	|
13+ 5	9.2047	26.62	|	| | V Q	|	|
13+10	9.4035	28.87	|	| | V Q |	|
13+15	9.6094	29.90	|	| | V Q|	|
13+20	9.8185	30.35	|	| | V Q	|
13+25	10.0294	30.62	|	| | V Q	|
13+30	10.2414	30.79	|	| | V Q	|
13+35	10.4446	29.50	|	| | V Q|	|
13+40	10.6156	24.83	|	| | Q V	|
13+45	10.7724	22.77	|	| | Q V	|
13+50	10.9236	21.95	|	| |Q V	|
13+55	11.0712	21.43	|	| |Q V	|
14+ 0	11.2166	21.11	|	| |Q V	|
14+ 5	11.3640	21.40	|	| |Q V	|
14+10	11.5221	22.97	|	| | Q V	|
14+15	11.6850	23.64	|	| | Q V	|
14+20	11.8483	23.71	|	| | Q V	|
14+25	12.0100	23.48	|	| | Q V	|
14+30	12.1713	23.42	|	| | Q V |
14+35	12.3328	23.44	|	| | Q V |
14+40	12.4943	23.46	|	| | Q |V |
14+45	12.6560	23.48	|	| | Q |V |
14+50	12.8171	23.38	|	| | Q |V |

14+55	12.9751	22.95	|	|	| Q	| V |
15+ 0	13.1318	22.75	|	|	| Q	| V |
15+ 5	13.2870	22.54	|	|	| Q	| V |
15+10	13.4390	22.07	|	|	| Q	| V |
15+15	13.5895	21.85	|	|	|Q	| V |
15+20	13.7384	21.63	|	|	|Q	| V |
15+25	13.8841	21.14	|	|	|Q	| V |
15+30	14.0281	20.92	|	|	Q	| V |
15+35	14.1679	20.30	|	|	Q	| V |
15+40	14.2955	18.52	|	| Q	|	| V |
15+45	14.4174	17.71	|	| Q	|	| V |
15+50	14.5370	17.37	|	| Q	|	| V |
15+55	14.6553	17.17	|	| Q	|	| V |
16+ 0	14.7726	17.04	|	| Q	|	| V |
16+ 5	14.8760	15.01	|	Q |	|	| V |
16+10	14.9345	8.49	| Q	|	|	| V |
16+15	14.9727	5.55	| Q	|	|	| V |
16+20	15.0024	4.31	| Q	|	|	| V |
16+25	15.0272	3.60	| Q	|	|	| V |
16+30	15.0489	3.15	| Q	|	|	| V |
16+35	15.0676	2.71	| Q	|	|	| V |
16+40	15.0818	2.06	| Q	|	|	| V |
16+45	15.0936	1.72	|Q	|	|	| V |
16+50	15.1038	1.48	|Q	|	|	| V |
16+55	15.1137	1.44	|Q	|	|	| V |
17+ 0	15.1234	1.41	|Q	|	|	| V |
17+ 5	15.1348	1.66	|Q	|	|	| V |
17+10	15.1521	2.51	| Q	|	|	| V |
17+15	15.1721	2.90	| Q	|	|	| V |
17+20	15.1931	3.06	| Q	|	|	| V |
17+25	15.2149	3.16	| Q	|	|	| V |
17+30	15.2371	3.23	| Q	|	|	| V |
17+35	15.2597	3.28	| Q	|	|	| V |
17+40	15.2825	3.32	| Q	|	|	| V |
17+45	15.3056	3.34	| Q	|	|	| V |
17+50	15.3279	3.24	| Q	|	|	| V |
17+55	15.3473	2.82	| Q	|	|	| V |
18+ 0	15.3655	2.63	| Q	|	|	| V |
18+ 5	15.3831	2.56	| Q	|	|	| V |
18+10	15.4005	2.52	| Q	|	|	| V |
18+15	15.4177	2.50	| Q	|	|	| V |
18+20	15.4348	2.48	| Q	|	|	| V |
18+25	15.4518	2.47	| Q	|	|	| V |
18+30	15.4688	2.47	| Q	|	|	| V |
18+35	15.4849	2.34	| Q	|	|	| V |
18+40	15.4981	1.91	|Q	|	|	| V |
18+45	15.5100	1.73	|Q	|	|	| V |
18+50	15.5205	1.52	|Q	|	|	| V |
18+55	15.5277	1.05	|Q	|	|	| V |
19+ 0	15.5335	0.83	Q	|	|	| V |
19+ 5	15.5395	0.87	Q	|	|	| V |
19+10	15.5480	1.24	|Q	|	|	| V |
19+15	15.5577	1.40	|Q	|	|	| V |
19+20	15.5686	1.58	|Q	|	|	| V |

19+25	15.5827	2.06	| Q	|	|	|	V |
19+30	15.5984	2.28	| Q	|	|	|	V |
19+35	15.6139	2.24	| Q	|	|	|	V |
19+40	15.6268	1.88	|Q	|	|	|	V |
19+45	15.6388	1.73	|Q	|	|	|	V |
19+50	15.6495	1.56	|Q	|	|	|	V|
19+55	15.6571	1.10	|Q	|	|	|	V|
20+ 0	15.6633	0.90	Q	|	|	|	V|
20+ 5	15.6698	0.94	Q	|	|	|	V|
20+10	15.6789	1.32	|Q	|	|	|	V|
20+15	15.6890	1.48	|Q	|	|	|	V|
20+20	15.6995	1.53	|Q	|	|	|	V|
20+25	15.7103	1.57	|Q	|	|	|	V|
20+30	15.7213	1.59	|Q	|	|	|	V|
20+35	15.7324	1.61	|Q	|	|	|	V|
20+40	15.7436	1.63	|Q	|	|	|	V|
20+45	15.7549	1.64	|Q	|	|	|	V|
20+50	15.7654	1.53	|Q	|	|	|	V|
20+55	15.7730	1.10	|Q	|	|	|	V|
21+ 0	15.7794	0.92	Q	|	|	|	V|
21+ 5	15.7860	0.97	Q	|	|	|	V|
21+10	15.7954	1.36	|Q	|	|	|	V|
21+15	15.8059	1.53	|Q	|	|	|	V|
21+20	15.8160	1.46	|Q	|	|	|	V|
21+25	15.8233	1.07	|Q	|	|	|	V|
21+30	15.8295	0.90	Q	|	|	|	V|
21+35	15.8361	0.96	Q	|	|	|	V|
21+40	15.8455	1.37	|Q	|	|	|	V|
21+45	15.8562	1.54	|Q	|	|	|	V|
21+50	15.8664	1.49	|Q	|	|	|	V|
21+55	15.8739	1.09	|Q	|	|	|	V|
22+ 0	15.8803	0.92	Q	|	|	|	V|
22+ 5	15.8871	0.99	Q	|	|	|	V|
22+10	15.8967	1.39	|Q	|	|	|	V|
22+15	15.9075	1.57	|Q	|	|	|	V|
22+20	15.9179	1.51	|Q	|	|	|	V|
22+25	15.9256	1.12	|Q	|	|	|	V|
22+30	15.9321	0.95	Q	|	|	|	V|
22+35	15.9382	0.88	Q	|	|	|	V|
22+40	15.9440	0.85	Q	|	|	|	V|
22+45	15.9498	0.83	Q	|	|	|	V|
22+50	15.9555	0.83	Q	|	|	|	V|
22+55	15.9611	0.82	Q	|	|	|	V|
23+ 0	15.9667	0.81	Q	|	|	|	V|
23+ 5	15.9722	0.80	Q	|	|	|	V|
23+10	15.9777	0.80	Q	|	|	|	V|
23+15	15.9833	0.81	Q	|	|	|	V|
23+20	15.9888	0.81	Q	|	|	|	V|
23+25	15.9944	0.81	Q	|	|	|	V|
23+30	16.0000	0.81	Q	|	|	|	V|
23+35	16.0056	0.81	Q	|	|	|	V|
23+40	16.0112	0.82	Q	|	|	|	V|
23+45	16.0169	0.82	Q	|	|	|	V|
23+50	16.0225	0.82	Q	|	|	|	V|

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   23+55      16.0282      0.82  Q          |          |          |         V|
   24+ 0      16.0339      0.82  Q          |          |          |         V|
   24+ 5      16.0388      0.71  Q          |          |          |         V|
   24+10      16.0412      0.35  Q          |          |          |         V|
   24+15      16.0424      0.18  Q          |          |          |         V|
   24+20      16.0432      0.12  Q          |          |          |         V|
   24+25      16.0437      0.08  Q          |          |          |         V|
   24+30      16.0441      0.05  Q          |          |          |         V|
   24+35      16.0443      0.03  Q          |          |          |         V|
   24+40      16.0444      0.02  Q          |          |          |         V|
   24+45      16.0445      0.01  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/30/19 File: 4163UHP1241.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 1 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 2
4163UHP1.UM1

Drainage Area = 29.10(Ac.) = 0.045 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 29.10(Ac.) = 0.045 Sq. Mi.
Length along longest watercourse = 2560.00(Ft.)
Length along longest watercourse measured to centroid = 740.00(Ft.)
Length along longest watercourse = 0.485 Mi.
Length along longest watercourse measured to centroid = 0.140 Mi.
Difference in elevation = 17.50(Ft.)
Slope along watercourse = 36.0938 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.066 Hr.
Lag time = 3.93 Min.
25% of lag time = 0.98 Min.
40% of lag time = 1.57 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	1.60	46.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	4.00	116.40

STORM EVENT (YEAR) = 1.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.175(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.175(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
29.100	69.00	0.900

Total Area Entered = 29.10(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	127.113	27.224	7.984
2	0.167	254.227	48.435	14.205
3	0.250	381.340	12.720	3.731
4	0.333	508.453	5.712	1.675
5	0.417	635.566	3.158	0.926
6	0.500	762.680	1.739	0.510
7	0.583	889.793	1.012	0.297
		Sum = 100.000	Sum=	29.327

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.009	0.193	0.002	0.01
2	0.17	0.07	0.009	0.193	0.002	0.01
3	0.25	0.07	0.009	0.192	0.002	0.01

4	0.33	0.10	0.014	0.191	0.003	0.01
5	0.42	0.10	0.014	0.190	0.003	0.01
6	0.50	0.10	0.014	0.190	0.003	0.01
7	0.58	0.10	0.014	0.189	0.003	0.01
8	0.67	0.10	0.014	0.188	0.003	0.01
9	0.75	0.10	0.014	0.187	0.003	0.01
10	0.83	0.13	0.019	0.187	0.003	0.02
11	0.92	0.13	0.019	0.186	0.003	0.02
12	1.00	0.13	0.019	0.185	0.003	0.02
13	1.08	0.10	0.014	0.184	0.003	0.01
14	1.17	0.10	0.014	0.184	0.003	0.01
15	1.25	0.10	0.014	0.183	0.003	0.01
16	1.33	0.10	0.014	0.182	0.003	0.01
17	1.42	0.10	0.014	0.182	0.003	0.01
18	1.50	0.10	0.014	0.181	0.003	0.01
19	1.58	0.10	0.014	0.180	0.003	0.01
20	1.67	0.10	0.014	0.179	0.003	0.01
21	1.75	0.10	0.014	0.179	0.003	0.01
22	1.83	0.13	0.019	0.178	0.003	0.02
23	1.92	0.13	0.019	0.177	0.003	0.02
24	2.00	0.13	0.019	0.176	0.003	0.02
25	2.08	0.13	0.019	0.176	0.003	0.02
26	2.17	0.13	0.019	0.175	0.003	0.02
27	2.25	0.13	0.019	0.174	0.003	0.02
28	2.33	0.13	0.019	0.174	0.003	0.02
29	2.42	0.13	0.019	0.173	0.003	0.02
30	2.50	0.13	0.019	0.172	0.003	0.02
31	2.58	0.17	0.023	0.172	0.004	0.02
32	2.67	0.17	0.023	0.171	0.004	0.02
33	2.75	0.17	0.023	0.170	0.004	0.02
34	2.83	0.17	0.023	0.169	0.004	0.02
35	2.92	0.17	0.023	0.169	0.004	0.02
36	3.00	0.17	0.023	0.168	0.004	0.02
37	3.08	0.17	0.023	0.167	0.004	0.02
38	3.17	0.17	0.023	0.167	0.004	0.02
39	3.25	0.17	0.023	0.166	0.004	0.02
40	3.33	0.17	0.023	0.165	0.004	0.02
41	3.42	0.17	0.023	0.165	0.004	0.02
42	3.50	0.17	0.023	0.164	0.004	0.02
43	3.58	0.17	0.023	0.163	0.004	0.02
44	3.67	0.17	0.023	0.162	0.004	0.02
45	3.75	0.17	0.023	0.162	0.004	0.02
46	3.83	0.20	0.028	0.161	0.005	0.02
47	3.92	0.20	0.028	0.160	0.005	0.02
48	4.00	0.20	0.028	0.160	0.005	0.02
49	4.08	0.20	0.028	0.159	0.005	0.02
50	4.17	0.20	0.028	0.158	0.005	0.02
51	4.25	0.20	0.028	0.158	0.005	0.02
52	4.33	0.23	0.033	0.157	0.006	0.03
53	4.42	0.23	0.033	0.156	0.006	0.03
54	4.50	0.23	0.033	0.156	0.006	0.03
55	4.58	0.23	0.033	0.155	0.006	0.03
56	4.67	0.23	0.033	0.154	0.006	0.03
57	4.75	0.23	0.033	0.154	0.006	0.03

58	4.83	0.27	0.038	0.153	0.007	0.03
59	4.92	0.27	0.038	0.152	0.007	0.03
60	5.00	0.27	0.038	0.152	0.007	0.03
61	5.08	0.20	0.028	0.151	0.005	0.02
62	5.17	0.20	0.028	0.150	0.005	0.02
63	5.25	0.20	0.028	0.150	0.005	0.02
64	5.33	0.23	0.033	0.149	0.006	0.03
65	5.42	0.23	0.033	0.148	0.006	0.03
66	5.50	0.23	0.033	0.148	0.006	0.03
67	5.58	0.27	0.038	0.147	0.007	0.03
68	5.67	0.27	0.038	0.147	0.007	0.03
69	5.75	0.27	0.038	0.146	0.007	0.03
70	5.83	0.27	0.038	0.145	0.007	0.03
71	5.92	0.27	0.038	0.145	0.007	0.03
72	6.00	0.27	0.038	0.144	0.007	0.03
73	6.08	0.30	0.042	0.143	0.008	0.03
74	6.17	0.30	0.042	0.143	0.008	0.03
75	6.25	0.30	0.042	0.142	0.008	0.03
76	6.33	0.30	0.042	0.141	0.008	0.03
77	6.42	0.30	0.042	0.141	0.008	0.03
78	6.50	0.30	0.042	0.140	0.008	0.03
79	6.58	0.33	0.047	0.140	0.008	0.04
80	6.67	0.33	0.047	0.139	0.008	0.04
81	6.75	0.33	0.047	0.138	0.008	0.04
82	6.83	0.33	0.047	0.138	0.008	0.04
83	6.92	0.33	0.047	0.137	0.008	0.04
84	7.00	0.33	0.047	0.136	0.008	0.04
85	7.08	0.33	0.047	0.136	0.008	0.04
86	7.17	0.33	0.047	0.135	0.008	0.04
87	7.25	0.33	0.047	0.135	0.008	0.04
88	7.33	0.37	0.052	0.134	0.009	0.04
89	7.42	0.37	0.052	0.133	0.009	0.04
90	7.50	0.37	0.052	0.133	0.009	0.04
91	7.58	0.40	0.056	0.132	0.010	0.05
92	7.67	0.40	0.056	0.131	0.010	0.05
93	7.75	0.40	0.056	0.131	0.010	0.05
94	7.83	0.43	0.061	0.130	0.011	0.05
95	7.92	0.43	0.061	0.130	0.011	0.05
96	8.00	0.43	0.061	0.129	0.011	0.05
97	8.08	0.50	0.070	0.128	0.013	0.06
98	8.17	0.50	0.070	0.128	0.013	0.06
99	8.25	0.50	0.070	0.127	0.013	0.06
100	8.33	0.50	0.070	0.127	0.013	0.06
101	8.42	0.50	0.070	0.126	0.013	0.06
102	8.50	0.50	0.070	0.125	0.013	0.06
103	8.58	0.53	0.075	0.125	0.014	0.06
104	8.67	0.53	0.075	0.124	0.014	0.06
105	8.75	0.53	0.075	0.124	0.014	0.06
106	8.83	0.57	0.080	0.123	0.014	0.07
107	8.92	0.57	0.080	0.123	0.014	0.07
108	9.00	0.57	0.080	0.122	0.014	0.07
109	9.08	0.63	0.089	0.121	0.016	0.07
110	9.17	0.63	0.089	0.121	0.016	0.07
111	9.25	0.63	0.089	0.120	0.016	0.07

112	9.33	0.67	0.094	0.120	0.017	0.08
113	9.42	0.67	0.094	0.119	0.017	0.08
114	9.50	0.67	0.094	0.119	0.017	0.08
115	9.58	0.70	0.099	0.118	0.018	0.08
116	9.67	0.70	0.099	0.117	0.018	0.08
117	9.75	0.70	0.099	0.117	0.018	0.08
118	9.83	0.73	0.103	0.116	0.019	0.08
119	9.92	0.73	0.103	0.116	0.019	0.08
120	10.00	0.73	0.103	0.115	0.019	0.08
121	10.08	0.50	0.070	0.115	0.013	0.06
122	10.17	0.50	0.070	0.114	0.013	0.06
123	10.25	0.50	0.070	0.113	0.013	0.06
124	10.33	0.50	0.070	0.113	0.013	0.06
125	10.42	0.50	0.070	0.112	0.013	0.06
126	10.50	0.50	0.070	0.112	0.013	0.06
127	10.58	0.67	0.094	0.111	0.017	0.08
128	10.67	0.67	0.094	0.111	0.017	0.08
129	10.75	0.67	0.094	0.110	0.017	0.08
130	10.83	0.67	0.094	0.110	0.017	0.08
131	10.92	0.67	0.094	0.109	0.017	0.08
132	11.00	0.67	0.094	0.109	0.017	0.08
133	11.08	0.63	0.089	0.108	0.016	0.07
134	11.17	0.63	0.089	0.108	0.016	0.07
135	11.25	0.63	0.089	0.107	0.016	0.07
136	11.33	0.63	0.089	0.106	0.016	0.07
137	11.42	0.63	0.089	0.106	0.016	0.07
138	11.50	0.63	0.089	0.105	0.016	0.07
139	11.58	0.57	0.080	0.105	0.014	0.07
140	11.67	0.57	0.080	0.104	0.014	0.07
141	11.75	0.57	0.080	0.104	0.014	0.07
142	11.83	0.60	0.085	0.103	0.015	0.07
143	11.92	0.60	0.085	0.103	0.015	0.07
144	12.00	0.60	0.085	0.102	0.015	0.07
145	12.08	0.83	0.117	0.102	---	0.02
146	12.17	0.83	0.117	0.101	---	0.02
147	12.25	0.83	0.117	0.101	---	0.02
148	12.33	0.87	0.122	0.100	---	0.02
149	12.42	0.87	0.122	0.100	---	0.02
150	12.50	0.87	0.122	0.099	---	0.02
151	12.58	0.93	0.132	0.099	---	0.03
152	12.67	0.93	0.132	0.098	---	0.03
153	12.75	0.93	0.132	0.098	---	0.03
154	12.83	0.97	0.136	0.097	---	0.04
155	12.92	0.97	0.136	0.097	---	0.04
156	13.00	0.97	0.136	0.096	---	0.04
157	13.08	1.13	0.160	0.096	---	0.06
158	13.17	1.13	0.160	0.095	---	0.06
159	13.25	1.13	0.160	0.095	---	0.06
160	13.33	1.13	0.160	0.094	---	0.07
161	13.42	1.13	0.160	0.094	---	0.07
162	13.50	1.13	0.160	0.093	---	0.07
163	13.58	0.77	0.108	0.093	---	0.02
164	13.67	0.77	0.108	0.092	---	0.02
165	13.75	0.77	0.108	0.092	---	0.02

166	13.83	0.77	0.108	0.092	---	0.02
167	13.92	0.77	0.108	0.091	---	0.02
168	14.00	0.77	0.108	0.091	---	0.02
169	14.08	0.90	0.127	0.090	---	0.04
170	14.17	0.90	0.127	0.090	---	0.04
171	14.25	0.90	0.127	0.089	---	0.04
172	14.33	0.87	0.122	0.089	---	0.03
173	14.42	0.87	0.122	0.088	---	0.03
174	14.50	0.87	0.122	0.088	---	0.03
175	14.58	0.87	0.122	0.087	---	0.03
176	14.67	0.87	0.122	0.087	---	0.04
177	14.75	0.87	0.122	0.086	---	0.04
178	14.83	0.83	0.117	0.086	---	0.03
179	14.92	0.83	0.117	0.086	---	0.03
180	15.00	0.83	0.117	0.085	---	0.03
181	15.08	0.80	0.113	0.085	---	0.03
182	15.17	0.80	0.113	0.084	---	0.03
183	15.25	0.80	0.113	0.084	---	0.03
184	15.33	0.77	0.108	0.083	---	0.02
185	15.42	0.77	0.108	0.083	---	0.03
186	15.50	0.77	0.108	0.083	---	0.03
187	15.58	0.63	0.089	0.082	---	0.01
188	15.67	0.63	0.089	0.082	---	0.01
189	15.75	0.63	0.089	0.081	---	0.01
190	15.83	0.63	0.089	0.081	---	0.01
191	15.92	0.63	0.089	0.080	---	0.01
192	16.00	0.63	0.089	0.080	---	0.01
193	16.08	0.13	0.019	0.080	0.003	0.02
194	16.17	0.13	0.019	0.079	0.003	0.02
195	16.25	0.13	0.019	0.079	0.003	0.02
196	16.33	0.13	0.019	0.078	0.003	0.02
197	16.42	0.13	0.019	0.078	0.003	0.02
198	16.50	0.13	0.019	0.078	0.003	0.02
199	16.58	0.10	0.014	0.077	0.003	0.01
200	16.67	0.10	0.014	0.077	0.003	0.01
201	16.75	0.10	0.014	0.076	0.003	0.01
202	16.83	0.10	0.014	0.076	0.003	0.01
203	16.92	0.10	0.014	0.076	0.003	0.01
204	17.00	0.10	0.014	0.075	0.003	0.01
205	17.08	0.17	0.023	0.075	0.004	0.02
206	17.17	0.17	0.023	0.075	0.004	0.02
207	17.25	0.17	0.023	0.074	0.004	0.02
208	17.33	0.17	0.023	0.074	0.004	0.02
209	17.42	0.17	0.023	0.073	0.004	0.02
210	17.50	0.17	0.023	0.073	0.004	0.02
211	17.58	0.17	0.023	0.073	0.004	0.02
212	17.67	0.17	0.023	0.072	0.004	0.02
213	17.75	0.17	0.023	0.072	0.004	0.02
214	17.83	0.13	0.019	0.072	0.003	0.02
215	17.92	0.13	0.019	0.071	0.003	0.02
216	18.00	0.13	0.019	0.071	0.003	0.02
217	18.08	0.13	0.019	0.071	0.003	0.02
218	18.17	0.13	0.019	0.070	0.003	0.02
219	18.25	0.13	0.019	0.070	0.003	0.02

220	18.33	0.13	0.019	0.070	0.003	0.02
221	18.42	0.13	0.019	0.069	0.003	0.02
222	18.50	0.13	0.019	0.069	0.003	0.02
223	18.58	0.10	0.014	0.069	0.003	0.01
224	18.67	0.10	0.014	0.068	0.003	0.01
225	18.75	0.10	0.014	0.068	0.003	0.01
226	18.83	0.07	0.009	0.068	0.002	0.01
227	18.92	0.07	0.009	0.067	0.002	0.01
228	19.00	0.07	0.009	0.067	0.002	0.01
229	19.08	0.10	0.014	0.067	0.003	0.01
230	19.17	0.10	0.014	0.066	0.003	0.01
231	19.25	0.10	0.014	0.066	0.003	0.01
232	19.33	0.13	0.019	0.066	0.003	0.02
233	19.42	0.13	0.019	0.065	0.003	0.02
234	19.50	0.13	0.019	0.065	0.003	0.02
235	19.58	0.10	0.014	0.065	0.003	0.01
236	19.67	0.10	0.014	0.064	0.003	0.01
237	19.75	0.10	0.014	0.064	0.003	0.01
238	19.83	0.07	0.009	0.064	0.002	0.01
239	19.92	0.07	0.009	0.064	0.002	0.01
240	20.00	0.07	0.009	0.063	0.002	0.01
241	20.08	0.10	0.014	0.063	0.003	0.01
242	20.17	0.10	0.014	0.063	0.003	0.01
243	20.25	0.10	0.014	0.062	0.003	0.01
244	20.33	0.10	0.014	0.062	0.003	0.01
245	20.42	0.10	0.014	0.062	0.003	0.01
246	20.50	0.10	0.014	0.062	0.003	0.01
247	20.58	0.10	0.014	0.061	0.003	0.01
248	20.67	0.10	0.014	0.061	0.003	0.01
249	20.75	0.10	0.014	0.061	0.003	0.01
250	20.83	0.07	0.009	0.061	0.002	0.01
251	20.92	0.07	0.009	0.060	0.002	0.01
252	21.00	0.07	0.009	0.060	0.002	0.01
253	21.08	0.10	0.014	0.060	0.003	0.01
254	21.17	0.10	0.014	0.060	0.003	0.01
255	21.25	0.10	0.014	0.059	0.003	0.01
256	21.33	0.07	0.009	0.059	0.002	0.01
257	21.42	0.07	0.009	0.059	0.002	0.01
258	21.50	0.07	0.009	0.059	0.002	0.01
259	21.58	0.10	0.014	0.059	0.003	0.01
260	21.67	0.10	0.014	0.058	0.003	0.01
261	21.75	0.10	0.014	0.058	0.003	0.01
262	21.83	0.07	0.009	0.058	0.002	0.01
263	21.92	0.07	0.009	0.058	0.002	0.01
264	22.00	0.07	0.009	0.058	0.002	0.01
265	22.08	0.10	0.014	0.057	0.003	0.01
266	22.17	0.10	0.014	0.057	0.003	0.01
267	22.25	0.10	0.014	0.057	0.003	0.01
268	22.33	0.07	0.009	0.057	0.002	0.01
269	22.42	0.07	0.009	0.057	0.002	0.01
270	22.50	0.07	0.009	0.057	0.002	0.01
271	22.58	0.07	0.009	0.056	0.002	0.01
272	22.67	0.07	0.009	0.056	0.002	0.01
273	22.75	0.07	0.009	0.056	0.002	0.01

274	22.83	0.07	0.009	0.056	0.002	0.01
275	22.92	0.07	0.009	0.056	0.002	0.01
276	23.00	0.07	0.009	0.056	0.002	0.01
277	23.08	0.07	0.009	0.055	0.002	0.01
278	23.17	0.07	0.009	0.055	0.002	0.01
279	23.25	0.07	0.009	0.055	0.002	0.01
280	23.33	0.07	0.009	0.055	0.002	0.01
281	23.42	0.07	0.009	0.055	0.002	0.01
282	23.50	0.07	0.009	0.055	0.002	0.01
283	23.58	0.07	0.009	0.055	0.002	0.01
284	23.67	0.07	0.009	0.055	0.002	0.01
285	23.75	0.07	0.009	0.055	0.002	0.01
286	23.83	0.07	0.009	0.055	0.002	0.01
287	23.92	0.07	0.009	0.055	0.002	0.01
288	24.00	0.07	0.009	0.055	0.002	0.01
Sum =	100.0				Sum =	8.3

Flood volume = Effective rainfall 0.69(In)
times area 29.1(Ac.)/[(In)/(Ft.)] = 1.7(Ac.Ft)
Total soil loss = 0.49(In)
Total soil loss = 1.180(Ac.Ft)
Total rainfall = 1.17(In)
Flood volume = 72667.4 Cubic Feet
Total soil loss = 51418.9 Cubic Feet

Peak flow rate of this hydrograph = 2.473(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.06	Q	|	|	|	|
0+10	0.0016	0.17	Q	|	|	|	|
0+15	0.0030	0.20	Q	|	|	|	|
0+20	0.0047	0.24	Q	|	|	|	|
0+25	0.0068	0.31	VQ	|	|	|	|
0+30	0.0090	0.32	VQ	|	|	|	|
0+35	0.0113	0.33	VQ	|	|	|	|
0+40	0.0136	0.34	VQ	|	|	|	|
0+45	0.0159	0.34	VQ	|	|	|	|
0+50	0.0185	0.37	VQ	|	|	|	|
0+55	0.0214	0.42	VQ	|	|	|	|
1+ 0	0.0244	0.44	VQ	|	|	|	|
1+ 5	0.0273	0.41	VQ	|	|	|	|
1+10	0.0298	0.36	VQ	|	|	|	|
1+15	0.0322	0.35	VQ	|	|	|	|
1+20	0.0346	0.35	VQ	|	|	|	|
1+25	0.0369	0.34	VQ	|	|	|	|
1+30	0.0393	0.34	VQ	|	|	|	|
1+35	0.0416	0.34	VQ	|	|	|	|

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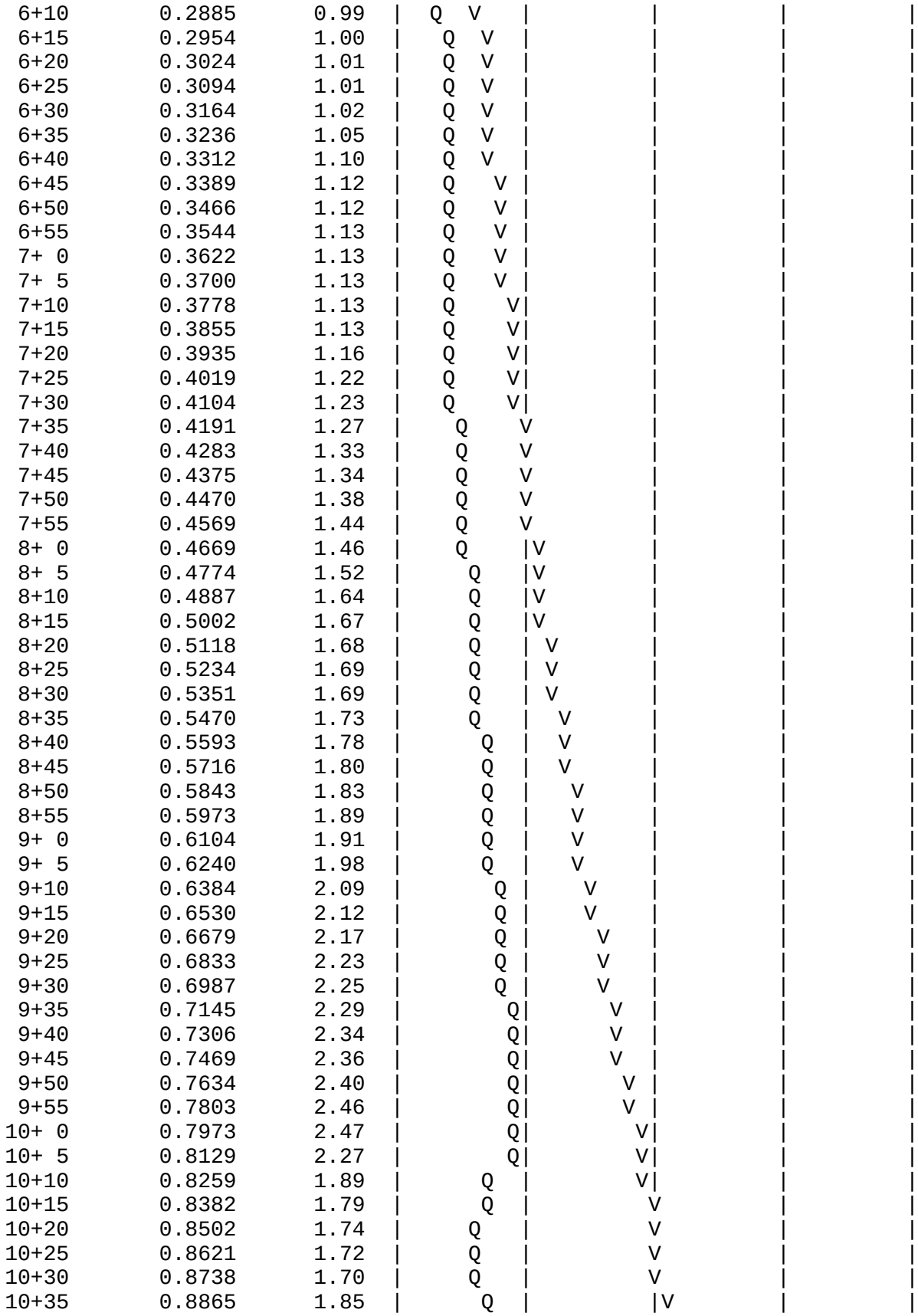
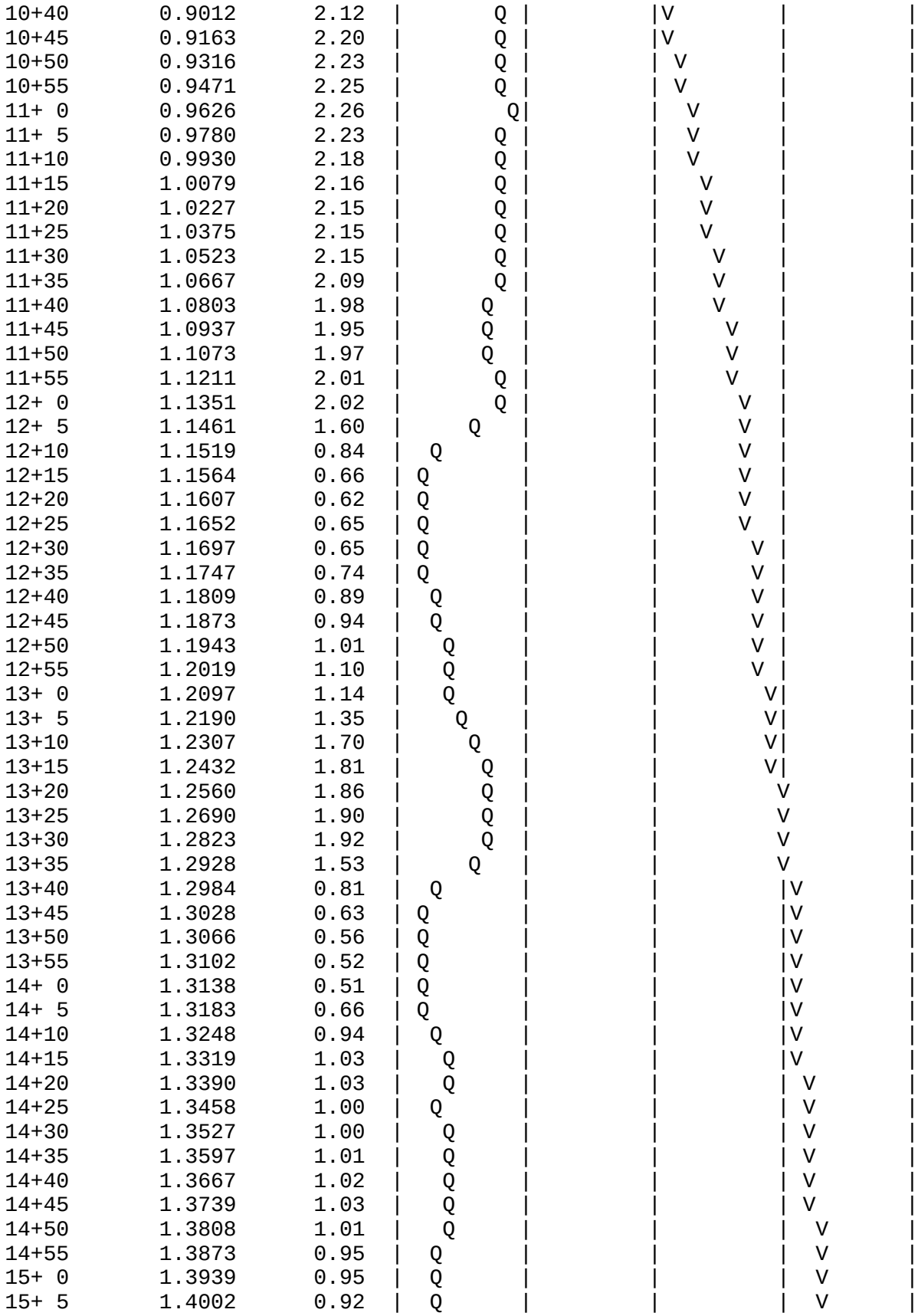
1+40       0.0440      0.34  |Q         |          |          |          |
1+45       0.0463      0.34  |Q         |          |          |          |
1+50       0.0488      0.37  |Q         |          |          |          |
1+55       0.0518      0.42  |Q         |          |          |          |
2+ 0       0.0548      0.44  |Q         |          |          |          |
2+ 5       0.0579      0.45  |Q         |          |          |          |
2+10       0.0609      0.45  |Q         |          |          |          |
2+15       0.0641      0.45  |Q         |          |          |          |
2+20       0.0672      0.45  |Q         |          |          |          |
2+25       0.0703      0.45  |Q         |          |          |          |
2+30       0.0734      0.45  |Q         |          |          |          |
2+35       0.0767      0.48  |Q         |          |          |          |
2+40       0.0804      0.54  |VQ        |          |          |          |
2+45       0.0842      0.55  | Q        |          |          |          |
2+50       0.0881      0.56  | Q        |          |          |          |
2+55       0.0919      0.56  | Q        |          |          |          |
3+ 0       0.0958      0.56  | Q        |          |          |          |
3+ 5       0.0997      0.57  | Q        |          |          |          |
3+10       0.1036      0.57  | Q        |          |          |          |
3+15       0.1075      0.57  | Q        |          |          |          |
3+20       0.1114      0.57  | Q        |          |          |          |
3+25       0.1153      0.57  | Q        |          |          |          |
3+30       0.1192      0.57  | Q        |          |          |          |
3+35       0.1231      0.57  | Q        |          |          |          |
3+40       0.1270      0.57  | QV       |          |          |          |
3+45       0.1309      0.57  | QV       |          |          |          |
3+50       0.1350      0.60  | QV       |          |          |          |
3+55       0.1395      0.65  | QV       |          |          |          |
4+ 0       0.1440      0.67  | QV       |          |          |          |
4+ 5       0.1487      0.67  | QV       |          |          |          |
4+10       0.1533      0.68  | QV       |          |          |          |
4+15       0.1580      0.68  | QV       |          |          |          |
4+20       0.1629      0.71  | QV       |          |          |          |
4+25       0.1681      0.76  |  QV      |          |          |          |
4+30       0.1735      0.78  |  QV      |          |          |          |
4+35       0.1789      0.78  |  QV      |          |          |          |
4+40       0.1843      0.79  |  QV      |          |          |          |
4+45       0.1898      0.79  |  QV      |          |          |          |
4+50       0.1954      0.82  |  QV      |          |          |          |
4+55       0.2015      0.88  |  QV      |          |          |          |
5+ 0       0.2076      0.89  |  QV      |          |          |          |
5+ 5       0.2134      0.84  |  Q V     |          |          |          |
5+10       0.2184      0.73  | Q  V     |          |          |          |
5+15       0.2232      0.70  | Q  V     |          |          |          |
5+20       0.2282      0.72  | Q  V     |          |          |          |
5+25       0.2335      0.77  |  Q V     |          |          |          |
5+30       0.2389      0.78  |  Q V     |          |          |          |
5+35       0.2445      0.82  |  Q V     |          |          |          |
5+40       0.2505      0.87  |  Q  V    |          |          |          |
5+45       0.2567      0.89  |  Q  V    |          |          |          |
5+50       0.2628      0.90  |  Q  V    |          |          |          |
5+55       0.2690      0.90  |  Q  V    |          |          |          |
6+ 0       0.2753      0.90  |  Q  V    |          |          |          |
6+ 5       0.2817      0.94  |  Q  V    |          |          |          |
```





15+10	1.4061	0.86	| Q	|	|	| V	|
15+15	1.4120	0.85	| Q	|	|	| V	|
15+20	1.4176	0.82	| Q	|	|	| V	|
15+25	1.4228	0.76	| Q	|	|	| V	|
15+30	1.4280	0.75	| Q	|	|	| V	|
15+35	1.4321	0.60	| Q	|	|	| V	|
15+40	1.4345	0.34	|Q	|	|	| V	|
15+45	1.4364	0.28	|Q	|	|	| V	|
15+50	1.4383	0.26	|Q	|	|	| V	|
15+55	1.4400	0.26	|Q	|	|	| V	|
16+ 0	1.4418	0.26	|Q	|	|	| V	|
16+ 5	1.4440	0.31	|Q	|	|	| V	|
16+10	1.4468	0.41	|Q	|	|	| V	|
16+15	1.4498	0.43	|Q	|	|	| V	|
16+20	1.4528	0.44	|Q	|	|	| V	|
16+25	1.4559	0.45	|Q	|	|	| V	|
16+30	1.4590	0.45	|Q	|	|	| V	|
16+35	1.4619	0.42	|Q	|	|	| V	|
16+40	1.4644	0.37	|Q	|	|	| V	|
16+45	1.4668	0.35	|Q	|	|	| V	|
16+50	1.4692	0.35	|Q	|	|	| V	|
16+55	1.4716	0.34	|Q	|	|	| V	|
17+ 0	1.4739	0.34	|Q	|	|	| V	|
17+ 5	1.4767	0.40	|Q	|	|	| V	|
17+10	1.4802	0.51	| Q	|	|	| V	|
17+15	1.4839	0.54	| Q	|	|	| V	|
17+20	1.4877	0.55	| Q	|	|	| V	|
17+25	1.4915	0.56	| Q	|	|	| V	|
17+30	1.4954	0.56	| Q	|	|	| V	|
17+35	1.4993	0.57	| Q	|	|	| V	|
17+40	1.5032	0.57	| Q	|	|	| V	|
17+45	1.5071	0.57	| Q	|	|	| V	|
17+50	1.5108	0.53	| Q	|	|	| V	|
17+55	1.5141	0.48	|Q	|	|	| V	|
18+ 0	1.5173	0.47	|Q	|	|	| V	|
18+ 5	1.5205	0.46	|Q	|	|	| V	|
18+10	1.5236	0.46	|Q	|	|	| V	|
18+15	1.5267	0.45	|Q	|	|	| V	|
18+20	1.5298	0.45	|Q	|	|	| V	|
18+25	1.5329	0.45	|Q	|	|	| V	|
18+30	1.5361	0.45	|Q	|	|	| V	|
18+35	1.5390	0.42	|Q	|	|	| V	|
18+40	1.5415	0.37	|Q	|	|	| V	|
18+45	1.5439	0.35	|Q	|	|	| V	|
18+50	1.5461	0.32	|Q	|	|	| V	|
18+55	1.5478	0.26	|Q	|	|	| V	|
19+ 0	1.5495	0.24	Q	|	|	| V	|
19+ 5	1.5513	0.26	|Q	|	|	| V	|
19+10	1.5535	0.31	|Q	|	|	| V	|
19+15	1.5557	0.33	|Q	|	|	| V	|
19+20	1.5582	0.36	|Q	|	|	| V	|
19+25	1.5611	0.42	|Q	|	|	| V	|
19+30	1.5642	0.44	|Q	|	|	| V	|
19+35	1.5670	0.41	|Q	|	|	| V	|

19+40	1.5695	0.36	|Q	|	|	|	V |
19+45	1.5719	0.35	|Q	|	|	|	V |
19+50	1.5741	0.32	|Q	|	|	|	V |
19+55	1.5759	0.26	|Q	|	|	|	V |
20+ 0	1.5775	0.24	Q	|	|	|	V |
20+ 5	1.5793	0.26	|Q	|	|	|	V |
20+10	1.5815	0.31	|Q	|	|	|	V |
20+15	1.5838	0.33	|Q	|	|	|	V |
20+20	1.5861	0.33	|Q	|	|	|	V |
20+25	1.5884	0.34	|Q	|	|	|	V |
20+30	1.5907	0.34	|Q	|	|	|	V |
20+35	1.5930	0.34	|Q	|	|	|	V |
20+40	1.5954	0.34	|Q	|	|	|	V |
20+45	1.5977	0.34	|Q	|	|	|	V |
20+50	1.5998	0.31	|Q	|	|	|	V |
20+55	1.6016	0.25	|Q	|	|	|	V |
21+ 0	1.6032	0.24	Q	|	|	|	V |
21+ 5	1.6050	0.26	|Q	|	|	|	V |
21+10	1.6072	0.31	|Q	|	|	|	V |
21+15	1.6095	0.33	|Q	|	|	|	V |
21+20	1.6115	0.30	|Q	|	|	|	V |
21+25	1.6133	0.25	|Q	|	|	|	V |
21+30	1.6149	0.24	Q	|	|	|	V |
21+35	1.6167	0.26	|Q	|	|	|	V |
21+40	1.6189	0.31	|Q	|	|	|	V |
21+45	1.6211	0.33	|Q	|	|	|	V |
21+50	1.6232	0.30	|Q	|	|	|	V |
21+55	1.6249	0.25	|Q	|	|	|	V |
22+ 0	1.6266	0.24	Q	|	|	|	V|
22+ 5	1.6284	0.26	|Q	|	|	|	V|
22+10	1.6306	0.31	|Q	|	|	|	V|
22+15	1.6328	0.33	|Q	|	|	|	V|
22+20	1.6349	0.30	|Q	|	|	|	V|
22+25	1.6366	0.25	|Q	|	|	|	V|
22+30	1.6383	0.24	Q	|	|	|	V|
22+35	1.6399	0.23	Q	|	|	|	V|
22+40	1.6414	0.23	Q	|	|	|	V|
22+45	1.6430	0.23	Q	|	|	|	V|
22+50	1.6446	0.23	Q	|	|	|	V|
22+55	1.6461	0.23	Q	|	|	|	V|
23+ 0	1.6477	0.23	Q	|	|	|	V|
23+ 5	1.6492	0.23	Q	|	|	|	V|
23+10	1.6508	0.23	Q	|	|	|	V|
23+15	1.6524	0.23	Q	|	|	|	V|
23+20	1.6539	0.23	Q	|	|	|	V|
23+25	1.6555	0.23	Q	|	|	|	V|
23+30	1.6570	0.23	Q	|	|	|	V|
23+35	1.6586	0.23	Q	|	|	|	V|
23+40	1.6601	0.23	Q	|	|	|	V|
23+45	1.6617	0.23	Q	|	|	|	V|
23+50	1.6633	0.23	Q	|	|	|	V|
23+55	1.6648	0.23	Q	|	|	|	V|
24+ 0	1.6664	0.23	Q	|	|	|	V|
24+ 5	1.6675	0.16	Q	|	|	|	V|

```
   24+10       1.6679      0.06  Q         |          |          |        V|
   24+15       1.6681      0.03  Q         |          |          |        V|
   24+20       1.6682      0.01  Q         |          |          |        V|
   24+25       1.6682      0.01  Q         |          |          |        V|
   24+30       1.6682      0.00  Q         |          |          |        V|
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
Study date 10/30/19 File: 4163UHP2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 2 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 2
4163UHP2.UM1

Drainage Area = 29.10(Ac.) = 0.045 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 29.10(Ac.) = 0.045 Sq. Mi.
Length along longest watercourse = 2560.00(Ft.)
Length along longest watercourse measured to centroid = 740.00(Ft.)
Length along longest watercourse = 0.485 Mi.
Length along longest watercourse measured to centroid = 0.140 Mi.
Difference in elevation = 17.50(Ft.)
Slope along watercourse = 36.0938 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.066 Hr.
Lag time = 3.93 Min.
25% of lag time = 0.98 Min.
40% of lag time = 1.57 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	1.60	46.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	4.00	116.40

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
29.100	69.00	0.900

Total Area Entered = 29.10(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	127.113	27.224	7.984
2	0.167	254.227	48.435	14.205
3	0.250	381.340	12.720	3.731
4	0.333	508.453	5.712	1.675
5	0.417	635.566	3.158	0.926
6	0.500	762.680	1.739	0.510
7	0.583	889.793	1.012	0.297
		Sum = 100.000	Sum=	29.327

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.013	0.193	0.002	0.01
2	0.17	0.07	0.013	0.193	0.002	0.01
3	0.25	0.07	0.013	0.192	0.002	0.01

4	0.33	0.10	0.019	0.191	0.003	0.02
5	0.42	0.10	0.019	0.190	0.003	0.02
6	0.50	0.10	0.019	0.190	0.003	0.02
7	0.58	0.10	0.019	0.189	0.003	0.02
8	0.67	0.10	0.019	0.188	0.003	0.02
9	0.75	0.10	0.019	0.187	0.003	0.02
10	0.83	0.13	0.026	0.187	0.005	0.02
11	0.92	0.13	0.026	0.186	0.005	0.02
12	1.00	0.13	0.026	0.185	0.005	0.02
13	1.08	0.10	0.019	0.184	0.003	0.02
14	1.17	0.10	0.019	0.184	0.003	0.02
15	1.25	0.10	0.019	0.183	0.003	0.02
16	1.33	0.10	0.019	0.182	0.003	0.02
17	1.42	0.10	0.019	0.182	0.003	0.02
18	1.50	0.10	0.019	0.181	0.003	0.02
19	1.58	0.10	0.019	0.180	0.003	0.02
20	1.67	0.10	0.019	0.179	0.003	0.02
21	1.75	0.10	0.019	0.179	0.003	0.02
22	1.83	0.13	0.026	0.178	0.005	0.02
23	1.92	0.13	0.026	0.177	0.005	0.02
24	2.00	0.13	0.026	0.176	0.005	0.02
25	2.08	0.13	0.026	0.176	0.005	0.02
26	2.17	0.13	0.026	0.175	0.005	0.02
27	2.25	0.13	0.026	0.174	0.005	0.02
28	2.33	0.13	0.026	0.174	0.005	0.02
29	2.42	0.13	0.026	0.173	0.005	0.02
30	2.50	0.13	0.026	0.172	0.005	0.02
31	2.58	0.17	0.032	0.172	0.006	0.03
32	2.67	0.17	0.032	0.171	0.006	0.03
33	2.75	0.17	0.032	0.170	0.006	0.03
34	2.83	0.17	0.032	0.169	0.006	0.03
35	2.92	0.17	0.032	0.169	0.006	0.03
36	3.00	0.17	0.032	0.168	0.006	0.03
37	3.08	0.17	0.032	0.167	0.006	0.03
38	3.17	0.17	0.032	0.167	0.006	0.03
39	3.25	0.17	0.032	0.166	0.006	0.03
40	3.33	0.17	0.032	0.165	0.006	0.03
41	3.42	0.17	0.032	0.165	0.006	0.03
42	3.50	0.17	0.032	0.164	0.006	0.03
43	3.58	0.17	0.032	0.163	0.006	0.03
44	3.67	0.17	0.032	0.162	0.006	0.03
45	3.75	0.17	0.032	0.162	0.006	0.03
46	3.83	0.20	0.038	0.161	0.007	0.03
47	3.92	0.20	0.038	0.160	0.007	0.03
48	4.00	0.20	0.038	0.160	0.007	0.03
49	4.08	0.20	0.038	0.159	0.007	0.03
50	4.17	0.20	0.038	0.158	0.007	0.03
51	4.25	0.20	0.038	0.158	0.007	0.03
52	4.33	0.23	0.045	0.157	0.008	0.04
53	4.42	0.23	0.045	0.156	0.008	0.04
54	4.50	0.23	0.045	0.156	0.008	0.04
55	4.58	0.23	0.045	0.155	0.008	0.04
56	4.67	0.23	0.045	0.154	0.008	0.04
57	4.75	0.23	0.045	0.154	0.008	0.04

58	4.83	0.27	0.051	0.153	0.009	0.04
59	4.92	0.27	0.051	0.152	0.009	0.04
60	5.00	0.27	0.051	0.152	0.009	0.04
61	5.08	0.20	0.038	0.151	0.007	0.03
62	5.17	0.20	0.038	0.150	0.007	0.03
63	5.25	0.20	0.038	0.150	0.007	0.03
64	5.33	0.23	0.045	0.149	0.008	0.04
65	5.42	0.23	0.045	0.148	0.008	0.04
66	5.50	0.23	0.045	0.148	0.008	0.04
67	5.58	0.27	0.051	0.147	0.009	0.04
68	5.67	0.27	0.051	0.147	0.009	0.04
69	5.75	0.27	0.051	0.146	0.009	0.04
70	5.83	0.27	0.051	0.145	0.009	0.04
71	5.92	0.27	0.051	0.145	0.009	0.04
72	6.00	0.27	0.051	0.144	0.009	0.04
73	6.08	0.30	0.058	0.143	0.010	0.05
74	6.17	0.30	0.058	0.143	0.010	0.05
75	6.25	0.30	0.058	0.142	0.010	0.05
76	6.33	0.30	0.058	0.141	0.010	0.05
77	6.42	0.30	0.058	0.141	0.010	0.05
78	6.50	0.30	0.058	0.140	0.010	0.05
79	6.58	0.33	0.064	0.140	0.012	0.05
80	6.67	0.33	0.064	0.139	0.012	0.05
81	6.75	0.33	0.064	0.138	0.012	0.05
82	6.83	0.33	0.064	0.138	0.012	0.05
83	6.92	0.33	0.064	0.137	0.012	0.05
84	7.00	0.33	0.064	0.136	0.012	0.05
85	7.08	0.33	0.064	0.136	0.012	0.05
86	7.17	0.33	0.064	0.135	0.012	0.05
87	7.25	0.33	0.064	0.135	0.012	0.05
88	7.33	0.37	0.070	0.134	0.013	0.06
89	7.42	0.37	0.070	0.133	0.013	0.06
90	7.50	0.37	0.070	0.133	0.013	0.06
91	7.58	0.40	0.077	0.132	0.014	0.06
92	7.67	0.40	0.077	0.131	0.014	0.06
93	7.75	0.40	0.077	0.131	0.014	0.06
94	7.83	0.43	0.083	0.130	0.015	0.07
95	7.92	0.43	0.083	0.130	0.015	0.07
96	8.00	0.43	0.083	0.129	0.015	0.07
97	8.08	0.50	0.096	0.128	0.017	0.08
98	8.17	0.50	0.096	0.128	0.017	0.08
99	8.25	0.50	0.096	0.127	0.017	0.08
100	8.33	0.50	0.096	0.127	0.017	0.08
101	8.42	0.50	0.096	0.126	0.017	0.08
102	8.50	0.50	0.096	0.125	0.017	0.08
103	8.58	0.53	0.102	0.125	0.018	0.08
104	8.67	0.53	0.102	0.124	0.018	0.08
105	8.75	0.53	0.102	0.124	0.018	0.08
106	8.83	0.57	0.109	0.123	0.020	0.09
107	8.92	0.57	0.109	0.123	0.020	0.09
108	9.00	0.57	0.109	0.122	0.020	0.09
109	9.08	0.63	0.122	0.121	---	0.00
110	9.17	0.63	0.122	0.121	---	0.00
111	9.25	0.63	0.122	0.120	---	0.00

112	9.33	0.67	0.128	0.120	---	0.01
113	9.42	0.67	0.128	0.119	---	0.01
114	9.50	0.67	0.128	0.119	---	0.01
115	9.58	0.70	0.134	0.118	---	0.02
116	9.67	0.70	0.134	0.117	---	0.02
117	9.75	0.70	0.134	0.117	---	0.02
118	9.83	0.73	0.141	0.116	---	0.02
119	9.92	0.73	0.141	0.116	---	0.03
120	10.00	0.73	0.141	0.115	---	0.03
121	10.08	0.50	0.096	0.115	0.017	0.08
122	10.17	0.50	0.096	0.114	0.017	0.08
123	10.25	0.50	0.096	0.113	0.017	0.08
124	10.33	0.50	0.096	0.113	0.017	0.08
125	10.42	0.50	0.096	0.112	0.017	0.08
126	10.50	0.50	0.096	0.112	0.017	0.08
127	10.58	0.67	0.128	0.111	---	0.02
128	10.67	0.67	0.128	0.111	---	0.02
129	10.75	0.67	0.128	0.110	---	0.02
130	10.83	0.67	0.128	0.110	---	0.02
131	10.92	0.67	0.128	0.109	---	0.02
132	11.00	0.67	0.128	0.109	---	0.02
133	11.08	0.63	0.122	0.108	---	0.01
134	11.17	0.63	0.122	0.108	---	0.01
135	11.25	0.63	0.122	0.107	---	0.01
136	11.33	0.63	0.122	0.106	---	0.02
137	11.42	0.63	0.122	0.106	---	0.02
138	11.50	0.63	0.122	0.105	---	0.02
139	11.58	0.57	0.109	0.105	---	0.00
140	11.67	0.57	0.109	0.104	---	0.00
141	11.75	0.57	0.109	0.104	---	0.00
142	11.83	0.60	0.115	0.103	---	0.01
143	11.92	0.60	0.115	0.103	---	0.01
144	12.00	0.60	0.115	0.102	---	0.01
145	12.08	0.83	0.160	0.102	---	0.06
146	12.17	0.83	0.160	0.101	---	0.06
147	12.25	0.83	0.160	0.101	---	0.06
148	12.33	0.87	0.166	0.100	---	0.07
149	12.42	0.87	0.166	0.100	---	0.07
150	12.50	0.87	0.166	0.099	---	0.07
151	12.58	0.93	0.179	0.099	---	0.08
152	12.67	0.93	0.179	0.098	---	0.08
153	12.75	0.93	0.179	0.098	---	0.08
154	12.83	0.97	0.186	0.097	---	0.09
155	12.92	0.97	0.186	0.097	---	0.09
156	13.00	0.97	0.186	0.096	---	0.09
157	13.08	1.13	0.218	0.096	---	0.12
158	13.17	1.13	0.218	0.095	---	0.12
159	13.25	1.13	0.218	0.095	---	0.12
160	13.33	1.13	0.218	0.094	---	0.12
161	13.42	1.13	0.218	0.094	---	0.12
162	13.50	1.13	0.218	0.093	---	0.12
163	13.58	0.77	0.147	0.093	---	0.05
164	13.67	0.77	0.147	0.092	---	0.05
165	13.75	0.77	0.147	0.092	---	0.06

166	13.83	0.77	0.147	0.092	---	0.06
167	13.92	0.77	0.147	0.091	---	0.06
168	14.00	0.77	0.147	0.091	---	0.06
169	14.08	0.90	0.173	0.090	---	0.08
170	14.17	0.90	0.173	0.090	---	0.08
171	14.25	0.90	0.173	0.089	---	0.08
172	14.33	0.87	0.166	0.089	---	0.08
173	14.42	0.87	0.166	0.088	---	0.08
174	14.50	0.87	0.166	0.088	---	0.08
175	14.58	0.87	0.166	0.087	---	0.08
176	14.67	0.87	0.166	0.087	---	0.08
177	14.75	0.87	0.166	0.086	---	0.08
178	14.83	0.83	0.160	0.086	---	0.07
179	14.92	0.83	0.160	0.086	---	0.07
180	15.00	0.83	0.160	0.085	---	0.07
181	15.08	0.80	0.154	0.085	---	0.07
182	15.17	0.80	0.154	0.084	---	0.07
183	15.25	0.80	0.154	0.084	---	0.07
184	15.33	0.77	0.147	0.083	---	0.06
185	15.42	0.77	0.147	0.083	---	0.06
186	15.50	0.77	0.147	0.083	---	0.06
187	15.58	0.63	0.122	0.082	---	0.04
188	15.67	0.63	0.122	0.082	---	0.04
189	15.75	0.63	0.122	0.081	---	0.04
190	15.83	0.63	0.122	0.081	---	0.04
191	15.92	0.63	0.122	0.080	---	0.04
192	16.00	0.63	0.122	0.080	---	0.04
193	16.08	0.13	0.026	0.080	0.005	0.02
194	16.17	0.13	0.026	0.079	0.005	0.02
195	16.25	0.13	0.026	0.079	0.005	0.02
196	16.33	0.13	0.026	0.078	0.005	0.02
197	16.42	0.13	0.026	0.078	0.005	0.02
198	16.50	0.13	0.026	0.078	0.005	0.02
199	16.58	0.10	0.019	0.077	0.003	0.02
200	16.67	0.10	0.019	0.077	0.003	0.02
201	16.75	0.10	0.019	0.076	0.003	0.02
202	16.83	0.10	0.019	0.076	0.003	0.02
203	16.92	0.10	0.019	0.076	0.003	0.02
204	17.00	0.10	0.019	0.075	0.003	0.02
205	17.08	0.17	0.032	0.075	0.006	0.03
206	17.17	0.17	0.032	0.075	0.006	0.03
207	17.25	0.17	0.032	0.074	0.006	0.03
208	17.33	0.17	0.032	0.074	0.006	0.03
209	17.42	0.17	0.032	0.073	0.006	0.03
210	17.50	0.17	0.032	0.073	0.006	0.03
211	17.58	0.17	0.032	0.073	0.006	0.03
212	17.67	0.17	0.032	0.072	0.006	0.03
213	17.75	0.17	0.032	0.072	0.006	0.03
214	17.83	0.13	0.026	0.072	0.005	0.02
215	17.92	0.13	0.026	0.071	0.005	0.02
216	18.00	0.13	0.026	0.071	0.005	0.02
217	18.08	0.13	0.026	0.071	0.005	0.02
218	18.17	0.13	0.026	0.070	0.005	0.02
219	18.25	0.13	0.026	0.070	0.005	0.02

220	18.33	0.13	0.026	0.070	0.005	0.02
221	18.42	0.13	0.026	0.069	0.005	0.02
222	18.50	0.13	0.026	0.069	0.005	0.02
223	18.58	0.10	0.019	0.069	0.003	0.02
224	18.67	0.10	0.019	0.068	0.003	0.02
225	18.75	0.10	0.019	0.068	0.003	0.02
226	18.83	0.07	0.013	0.068	0.002	0.01
227	18.92	0.07	0.013	0.067	0.002	0.01
228	19.00	0.07	0.013	0.067	0.002	0.01
229	19.08	0.10	0.019	0.067	0.003	0.02
230	19.17	0.10	0.019	0.066	0.003	0.02
231	19.25	0.10	0.019	0.066	0.003	0.02
232	19.33	0.13	0.026	0.066	0.005	0.02
233	19.42	0.13	0.026	0.065	0.005	0.02
234	19.50	0.13	0.026	0.065	0.005	0.02
235	19.58	0.10	0.019	0.065	0.003	0.02
236	19.67	0.10	0.019	0.064	0.003	0.02
237	19.75	0.10	0.019	0.064	0.003	0.02
238	19.83	0.07	0.013	0.064	0.002	0.01
239	19.92	0.07	0.013	0.064	0.002	0.01
240	20.00	0.07	0.013	0.063	0.002	0.01
241	20.08	0.10	0.019	0.063	0.003	0.02
242	20.17	0.10	0.019	0.063	0.003	0.02
243	20.25	0.10	0.019	0.062	0.003	0.02
244	20.33	0.10	0.019	0.062	0.003	0.02
245	20.42	0.10	0.019	0.062	0.003	0.02
246	20.50	0.10	0.019	0.062	0.003	0.02
247	20.58	0.10	0.019	0.061	0.003	0.02
248	20.67	0.10	0.019	0.061	0.003	0.02
249	20.75	0.10	0.019	0.061	0.003	0.02
250	20.83	0.07	0.013	0.061	0.002	0.01
251	20.92	0.07	0.013	0.060	0.002	0.01
252	21.00	0.07	0.013	0.060	0.002	0.01
253	21.08	0.10	0.019	0.060	0.003	0.02
254	21.17	0.10	0.019	0.060	0.003	0.02
255	21.25	0.10	0.019	0.059	0.003	0.02
256	21.33	0.07	0.013	0.059	0.002	0.01
257	21.42	0.07	0.013	0.059	0.002	0.01
258	21.50	0.07	0.013	0.059	0.002	0.01
259	21.58	0.10	0.019	0.059	0.003	0.02
260	21.67	0.10	0.019	0.058	0.003	0.02
261	21.75	0.10	0.019	0.058	0.003	0.02
262	21.83	0.07	0.013	0.058	0.002	0.01
263	21.92	0.07	0.013	0.058	0.002	0.01
264	22.00	0.07	0.013	0.058	0.002	0.01
265	22.08	0.10	0.019	0.057	0.003	0.02
266	22.17	0.10	0.019	0.057	0.003	0.02
267	22.25	0.10	0.019	0.057	0.003	0.02
268	22.33	0.07	0.013	0.057	0.002	0.01
269	22.42	0.07	0.013	0.057	0.002	0.01
270	22.50	0.07	0.013	0.057	0.002	0.01
271	22.58	0.07	0.013	0.056	0.002	0.01
272	22.67	0.07	0.013	0.056	0.002	0.01
273	22.75	0.07	0.013	0.056	0.002	0.01

274	22.83	0.07	0.013	0.056	0.002	0.01
275	22.92	0.07	0.013	0.056	0.002	0.01
276	23.00	0.07	0.013	0.056	0.002	0.01
277	23.08	0.07	0.013	0.055	0.002	0.01
278	23.17	0.07	0.013	0.055	0.002	0.01
279	23.25	0.07	0.013	0.055	0.002	0.01
280	23.33	0.07	0.013	0.055	0.002	0.01
281	23.42	0.07	0.013	0.055	0.002	0.01
282	23.50	0.07	0.013	0.055	0.002	0.01
283	23.58	0.07	0.013	0.055	0.002	0.01
284	23.67	0.07	0.013	0.055	0.002	0.01
285	23.75	0.07	0.013	0.055	0.002	0.01
286	23.83	0.07	0.013	0.055	0.002	0.01
287	23.92	0.07	0.013	0.055	0.002	0.01
288	24.00	0.07	0.013	0.055	0.002	0.01
	Sum =	100.0			Sum =	10.1

Flood volume = Effective rainfall 0.85(In)
times area 29.1(Ac.)/[(In)/(Ft.)] = 2.1(Ac.Ft)
Total soil loss = 0.75(In)
Total soil loss = 1.829(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 89345.2 Cubic Feet
Total soil loss = 79658.0 Cubic Feet

Peak flow rate of this hydrograph = 3.618(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0006	0.08	Q	|	|	|	|
0+10	0.0022	0.23	Q	|	|	|	|
0+15	0.0041	0.27	VQ	|	|	|	|
0+20	0.0063	0.33	VQ	|	|	|	|
0+25	0.0092	0.42	VQ	|	|	|	|
0+30	0.0122	0.44	VQ	|	|	|	|
0+35	0.0154	0.45	VQ	|	|	|	|
0+40	0.0185	0.46	VQ	|	|	|	|
0+45	0.0217	0.46	VQ	|	|	|	|
0+50	0.0252	0.50	V Q	|	|	|	|
0+55	0.0291	0.58	V Q	|	|	|	|
1+ 0	0.0333	0.60	V Q	|	|	|	|
1+ 5	0.0371	0.56	V Q	|	|	|	|
1+10	0.0406	0.50	VQ	|	|	|	|
1+15	0.0439	0.48	VQ	|	|	|	|
1+20	0.0471	0.47	VQ	|	|	|	|
1+25	0.0503	0.47	VQ	|	|	|	|
1+30	0.0535	0.46	|Q	|	|	|	|
1+35	0.0567	0.46	|Q	|	|	|	|

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1+40       0.0599      0.46  |Q         |          |          |          |
1+45       0.0630      0.46  |Q         |          |          |          |
1+50       0.0665      0.50  |VQ        |          |          |          |
1+55       0.0705      0.58  |VQ        |          |          |          |
2+ 0       0.0746      0.60  |VQ        |          |          |          |
2+ 5       0.0788      0.61  |VQ        |          |          |          |
2+10       0.0830      0.61  |VQ        |          |          |          |
2+15       0.0872      0.61  |VQ        |          |          |          |
2+20       0.0915      0.62  |VQ        |          |          |          |
2+25       0.0957      0.62  |VQ        |          |          |          |
2+30       0.1000      0.62  |VQ        |          |          |          |
2+35       0.1045      0.66  | Q        |          |          |          |
2+40       0.1095      0.73  | Q        |          |          |          |
2+45       0.1147      0.75  | VQ       |          |          |          |
2+50       0.1200      0.76  | VQ       |          |          |          |
2+55       0.1252      0.77  | VQ       |          |          |          |
3+ 0       0.1305      0.77  | VQ       |          |          |          |
3+ 5       0.1358      0.77  | VQ       |          |          |          |
3+10       0.1411      0.77  | VQ       |          |          |          |
3+15       0.1464      0.77  | VQ       |          |          |          |
3+20       0.1517      0.77  | VQ       |          |          |          |
3+25       0.1570      0.77  |  Q       |          |          |          |
3+30       0.1623      0.77  |  Q       |          |          |          |
3+35       0.1676      0.77  |  Q       |          |          |          |
3+40       0.1729      0.77  |  Q       |          |          |          |
3+45       0.1782      0.77  |  Q       |          |          |          |
3+50       0.1838      0.81  |  Q       |          |          |          |
3+55       0.1899      0.89  |  Q       |          |          |          |
4+ 0       0.1962      0.91  |  Q       |          |          |          |
4+ 5       0.2025      0.91  |  Q       |          |          |          |
4+10       0.2088      0.92  |  QV      |          |          |          |
4+15       0.2152      0.92  |  QV      |          |          |          |
4+20       0.2218      0.97  |  QV      |          |          |          |
4+25       0.2290      1.04  |   Q      |          |          |          |
4+30       0.2363      1.06  |   Q      |          |          |          |
4+35       0.2436      1.07  |   Q      |          |          |          |
4+40       0.2510      1.07  |   Q      |          |          |          |
4+45       0.2584      1.08  |   QV     |          |          |          |
4+50       0.2662      1.12  |   QV     |          |          |          |
4+55       0.2744      1.19  |   QV     |          |          |          |
5+ 0       0.2827      1.21  |   QV     |          |          |          |
5+ 5       0.2906      1.14  |   QV     |          |          |          |
5+10       0.2974      0.99  |  Q V     |          |          |          |
5+15       0.3040      0.96  |  Q V     |          |          |          |
5+20       0.3108      0.98  |  Q  V    |          |          |          |
5+25       0.3180      1.05  |   Q V    |          |          |          |
5+30       0.3254      1.06  |   Q V    |          |          |          |
5+35       0.3330      1.11  |   Q V    |          |          |          |
5+40       0.3412      1.19  |   Q V    |          |          |          |
5+45       0.3496      1.21  |   Q V    |          |          |          |
5+50       0.3580      1.22  |   Q V    |          |          |          |
5+55       0.3664      1.23  |   Q  V   |          |          |          |
6+ 0       0.3749      1.23  |   Q  V   |          |          |          |
6+ 5       0.3837      1.27  |    Q V   |          |          |          |
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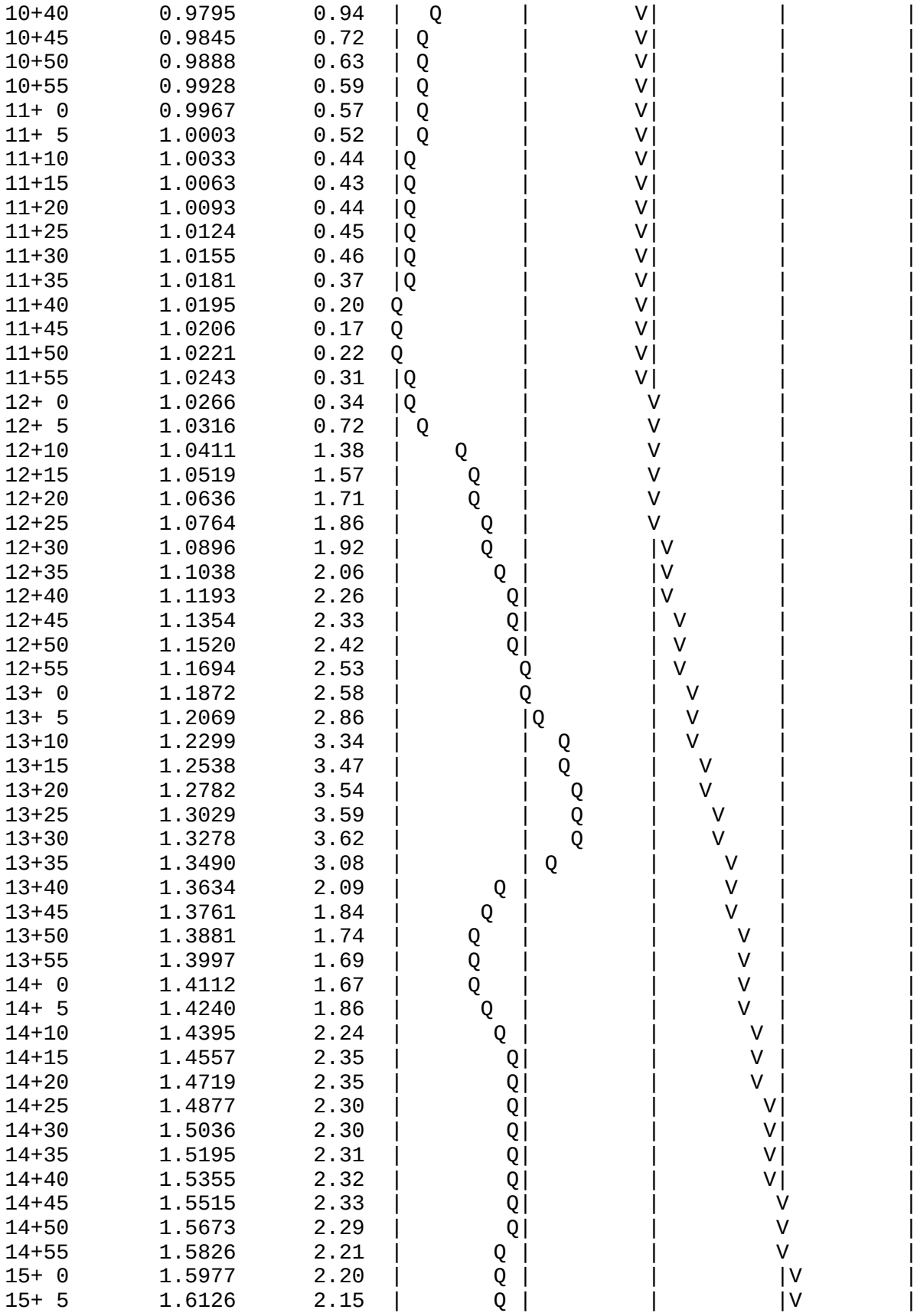
6+10	0.3930	1.35	| Q V |	|	|	|
6+15	0.4024	1.37	| Q V |	|	|	|
6+20	0.4119	1.38	| Q V |	|	|	|
6+25	0.4214	1.38	| Q V |	|	|	|
6+30	0.4309	1.38	| Q V |	|	|	|
6+35	0.4407	1.43	| Q V |	|	|	|
6+40	0.4511	1.50	| Q V |	|	|	|
6+45	0.4616	1.52	| Q V|	|	|	|
6+50	0.4721	1.53	| Q V|	|	|	|
6+55	0.4827	1.54	| Q V|	|	|	|
7+ 0	0.4933	1.54	| Q V|	|	|	|
7+ 5	0.5039	1.54	| Q V|	|	|	|
7+10	0.5145	1.54	| Q V	|	|	|
7+15	0.5251	1.54	| Q V	|	|	|
7+20	0.5360	1.58	| Q V	|	|	|
7+25	0.5474	1.66	| Q V	|	|	|
7+30	0.5589	1.68	| Q V	|	|	|
7+35	0.5708	1.73	| Q |V	|	|	|
7+40	0.5833	1.81	| Q |V	|	|	|
7+45	0.5959	1.83	| Q |V	|	|	|
7+50	0.6088	1.88	| Q |V	|	|	|
7+55	0.6223	1.96	| Q | V	|	|	|
8+ 0	0.6360	1.98	| Q | V	|	|	|
8+ 5	0.6503	2.08	| Q | V	|	|	|
8+10	0.6656	2.23	| Q | V	|	|	|
8+15	0.6813	2.27	| Q| V	|	|	|
8+20	0.6971	2.29	| Q| V	|	|	|
8+25	0.7129	2.30	| Q| V	|	|	|
8+30	0.7288	2.31	| Q| V	|	|	|
8+35	0.7450	2.35	| Q| V	|	|	|
8+40	0.7617	2.43	| Q| V	|	|	|
8+45	0.7785	2.45	| Q| V	|	|	|
8+50	0.7957	2.50	| Q| V	|	|	|
8+55	0.8135	2.58	| Q V	|	|	|
9+ 0	0.8314	2.60	| Q V	|	|	|
9+ 5	0.8444	1.90	| Q | V	|	|	|
9+10	0.8489	0.64	| Q | V	|	|	|
9+15	0.8511	0.32	|Q | V	|	|	|
9+20	0.8528	0.24	Q | V	|	|	|
9+25	0.8546	0.27	|Q | V	|	|	|
9+30	0.8564	0.26	|Q | V	|	|	|
9+35	0.8586	0.31	|Q | V	|	|	|
9+40	0.8615	0.43	|Q | V	|	|	|
9+45	0.8648	0.47	|Q | V	|	|	|
9+50	0.8686	0.55	| Q | V	|	|	|
9+55	0.8732	0.67	| Q | V	|	|	|
10+ 0	0.8781	0.71	| Q | V	|	|	|
10+ 5	0.8860	1.16	| Q | V	|	|	|
10+10	0.8993	1.92	| Q | V	|	|	|
10+15	0.9139	2.13	| Q | V	|	|	|
10+20	0.9292	2.22	| Q | V	|	|	|
10+25	0.9448	2.27	| Q| V	|	|	|
10+30	0.9606	2.29	| Q| V	|	|	|
10+35	0.9731	1.81	| Q | V	|	|	|



15+10	1.6268	2.07	| Q |	|	|V |
15+15	1.6409	2.05	| Q |	|	| V |
15+20	1.6547	2.00	| Q |	|	| V |
15+25	1.6680	1.92	| Q |	|	| V |
15+30	1.6811	1.90	| Q |	|	| V |
15+35	1.6928	1.70	| Q |	|	| V |
15+40	1.7020	1.34	| Q |	|	| V |
15+45	1.7107	1.26	| Q |	|	| V |
15+50	1.7191	1.22	| Q |	|	| V |
15+55	1.7275	1.21	| Q |	|	| V |
16+ 0	1.7358	1.21	| Q |	|	| V |
16+ 5	1.7430	1.05	| Q |	|	| V |
16+10	1.7483	0.76	| Q |	|	| V |
16+15	1.7530	0.68	| Q |	|	| V |
16+20	1.7575	0.65	| Q |	|	| V |
16+25	1.7618	0.63	| Q |	|	| V |
16+30	1.7661	0.62	| Q |	|	| V |
16+35	1.7700	0.57	| Q |	|	| V |
16+40	1.7735	0.50	|Q |	|	| V |
16+45	1.7768	0.48	|Q |	|	| V |
16+50	1.7800	0.47	|Q |	|	| V |
16+55	1.7832	0.47	|Q |	|	| V |
17+ 0	1.7864	0.46	|Q |	|	| V |
17+ 5	1.7902	0.55	| Q |	|	| V |
17+10	1.7950	0.69	| Q |	|	| V |
17+15	1.8000	0.73	| Q |	|	| V |
17+20	1.8052	0.75	| Q |	|	| V |
17+25	1.8105	0.76	| Q |	|	| V |
17+30	1.8157	0.77	| Q |	|	| V |
17+35	1.8210	0.77	| Q |	|	| V |
17+40	1.8263	0.77	| Q |	|	| V |
17+45	1.8316	0.77	| Q |	|	| V |
17+50	1.8367	0.73	| Q |	|	| V |
17+55	1.8412	0.65	| Q |	|	| V |
18+ 0	1.8455	0.63	| Q |	|	| V |
18+ 5	1.8498	0.63	| Q |	|	| V |
18+10	1.8541	0.62	| Q |	|	| V |
18+15	1.8584	0.62	| Q |	|	| V |
18+20	1.8626	0.62	| Q |	|	| V |
18+25	1.8668	0.62	| Q |	|	| V |
18+30	1.8711	0.62	| Q |	|	| V |
18+35	1.8750	0.57	| Q |	|	| V |
18+40	1.8785	0.50	|Q |	|	| V |
18+45	1.8818	0.48	|Q |	|	| V |
18+50	1.8847	0.43	|Q |	|	| V |
18+55	1.8871	0.35	|Q |	|	| V |
19+ 0	1.8894	0.33	|Q |	|	| V |
19+ 5	1.8919	0.36	|Q |	|	| V |
19+10	1.8948	0.43	|Q |	|	| V |
19+15	1.8979	0.45	|Q |	|	| V |
19+20	1.9013	0.49	|Q |	|	| V |
19+25	1.9053	0.57	| Q |	|	| V |
19+30	1.9094	0.60	| Q |	|	| V |
19+35	1.9133	0.56	| Q |	|	| V |

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19+40       1.9167      0.50  |Q        |          |          |       V  |
19+45       1.9200      0.48  |Q        |          |          |       V  |
19+50       1.9229      0.43  |Q        |          |          |       V  |
19+55       1.9253      0.35  |Q        |          |          |       V  |
20+ 0       1.9276      0.33  |Q        |          |          |       V  |
20+ 5       1.9300      0.36  |Q        |          |          |       V  |
20+10       1.9330      0.43  |Q        |          |          |       V  |
20+15       1.9361      0.45  |Q        |          |          |       V  |
20+20       1.9392      0.45  |Q        |          |          |       V  |
20+25       1.9423      0.46  |Q        |          |          |       V  |
20+30       1.9455      0.46  |Q        |          |          |       V  |
20+35       1.9487      0.46  |Q        |          |          |        V |
20+40       1.9519      0.46  |Q        |          |          |        V |
20+45       1.9551      0.46  |Q        |          |          |        V |
20+50       1.9579      0.42  |Q        |          |          |        V |
20+55       1.9603      0.35  |Q        |          |          |        V |
21+ 0       1.9626      0.33  |Q        |          |          |        V |
21+ 5       1.9650      0.36  |Q        |          |          |        V |
21+10       1.9680      0.43  |Q        |          |          |        V |
21+15       1.9711      0.45  |Q        |          |          |        V |
21+20       1.9739      0.41  |Q        |          |          |        V |
21+25       1.9762      0.34  |Q        |          |          |        V |
21+30       1.9785      0.32  |Q        |          |          |        V |
21+35       1.9810      0.36  |Q        |          |          |        V |
21+40       1.9839      0.43  |Q        |          |          |        V |
21+45       1.9870      0.45  |Q        |          |          |        V |
21+50       1.9898      0.41  |Q        |          |          |        V |
21+55       1.9922      0.34  |Q        |          |          |        V |
22+ 0       1.9944      0.32  |Q        |          |          |        V |
22+ 5       1.9969      0.36  |Q        |          |          |        V |
22+10       1.9998      0.43  |Q        |          |          |         V|
22+15       2.0029      0.45  |Q        |          |          |         V|
22+20       2.0057      0.41  |Q        |          |          |         V|
22+25       2.0081      0.34  |Q        |          |          |         V|
22+30       2.0103      0.32  |Q        |          |          |         V|
22+35       2.0125      0.32  |Q        |          |          |         V|
22+40       2.0146      0.31  |Q        |          |          |         V|
22+45       2.0168      0.31  |Q        |          |          |         V|
22+50       2.0189      0.31  |Q        |          |          |         V|
22+55       2.0210      0.31  |Q        |          |          |         V|
23+ 0       2.0231      0.31  |Q        |          |          |         V|
23+ 5       2.0252      0.31  |Q        |          |          |         V|
23+10       2.0274      0.31  |Q        |          |          |         V|
23+15       2.0295      0.31  |Q        |          |          |         V|
23+20       2.0316      0.31  |Q        |          |          |         V|
23+25       2.0337      0.31  |Q        |          |          |         V|
23+30       2.0358      0.31  |Q        |          |          |         V|
23+35       2.0380      0.31  |Q        |          |          |         V|
23+40       2.0401      0.31  |Q        |          |          |         V|
23+45       2.0422      0.31  |Q        |          |          |         V|
23+50       2.0443      0.31  |Q        |          |          |         V|
23+55       2.0465      0.31  |Q        |          |          |         V|
24+ 0       2.0486      0.31  |Q        |          |          |         V|
24+ 5       2.0501      0.22  Q         |          |          |         V|
```

24+10	2.0506	0.07	Q	|	|	|	V|
24+15	2.0509	0.04	Q	|	|	|	V|
24+20	2.0510	0.02	Q	|	|	|	V|
24+25	2.0511	0.01	Q	|	|	|	V|
24+30	2.0511	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/30/19 File: 4163UHP5245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 5 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 2
4163UHP5.UM1

Drainage Area = 29.10(Ac.) = 0.045 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 29.10(Ac.) = 0.045 Sq. Mi.
Length along longest watercourse = 2560.00(Ft.)
Length along longest watercourse measured to centroid = 740.00(Ft.)
Length along longest watercourse = 0.485 Mi.
Length along longest watercourse measured to centroid = 0.140 Mi.
Difference in elevation = 17.50(Ft.)
Slope along watercourse = 36.0938 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.066 Hr.
Lag time = 3.93 Min.
25% of lag time = 0.98 Min.
40% of lag time = 1.57 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	1.60	46.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	4.00	116.40

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.162(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.162(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
29.100	69.00	0.900

Total Area Entered = 29.10(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	127.113	27.224	7.984
2	0.167	254.227	48.435	14.205
3	0.250	381.340	12.720	3.731
4	0.333	508.453	5.712	1.675
5	0.417	635.566	3.158	0.926
6	0.500	762.680	1.739	0.510
7	0.583	889.793	1.012	0.297
		Sum = 100.000	Sum=	29.327

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.017	0.193	0.003	0.01
2	0.17	0.07	0.017	0.193	0.003	0.01
3	0.25	0.07	0.017	0.192	0.003	0.01

4	0.33	0.10	0.026	0.191	0.005	0.02
5	0.42	0.10	0.026	0.190	0.005	0.02
6	0.50	0.10	0.026	0.190	0.005	0.02
7	0.58	0.10	0.026	0.189	0.005	0.02
8	0.67	0.10	0.026	0.188	0.005	0.02
9	0.75	0.10	0.026	0.187	0.005	0.02
10	0.83	0.13	0.035	0.187	0.006	0.03
11	0.92	0.13	0.035	0.186	0.006	0.03
12	1.00	0.13	0.035	0.185	0.006	0.03
13	1.08	0.10	0.026	0.184	0.005	0.02
14	1.17	0.10	0.026	0.184	0.005	0.02
15	1.25	0.10	0.026	0.183	0.005	0.02
16	1.33	0.10	0.026	0.182	0.005	0.02
17	1.42	0.10	0.026	0.182	0.005	0.02
18	1.50	0.10	0.026	0.181	0.005	0.02
19	1.58	0.10	0.026	0.180	0.005	0.02
20	1.67	0.10	0.026	0.179	0.005	0.02
21	1.75	0.10	0.026	0.179	0.005	0.02
22	1.83	0.13	0.035	0.178	0.006	0.03
23	1.92	0.13	0.035	0.177	0.006	0.03
24	2.00	0.13	0.035	0.176	0.006	0.03
25	2.08	0.13	0.035	0.176	0.006	0.03
26	2.17	0.13	0.035	0.175	0.006	0.03
27	2.25	0.13	0.035	0.174	0.006	0.03
28	2.33	0.13	0.035	0.174	0.006	0.03
29	2.42	0.13	0.035	0.173	0.006	0.03
30	2.50	0.13	0.035	0.172	0.006	0.03
31	2.58	0.17	0.043	0.172	0.008	0.04
32	2.67	0.17	0.043	0.171	0.008	0.04
33	2.75	0.17	0.043	0.170	0.008	0.04
34	2.83	0.17	0.043	0.169	0.008	0.04
35	2.92	0.17	0.043	0.169	0.008	0.04
36	3.00	0.17	0.043	0.168	0.008	0.04
37	3.08	0.17	0.043	0.167	0.008	0.04
38	3.17	0.17	0.043	0.167	0.008	0.04
39	3.25	0.17	0.043	0.166	0.008	0.04
40	3.33	0.17	0.043	0.165	0.008	0.04
41	3.42	0.17	0.043	0.165	0.008	0.04
42	3.50	0.17	0.043	0.164	0.008	0.04
43	3.58	0.17	0.043	0.163	0.008	0.04
44	3.67	0.17	0.043	0.162	0.008	0.04
45	3.75	0.17	0.043	0.162	0.008	0.04
46	3.83	0.20	0.052	0.161	0.009	0.04
47	3.92	0.20	0.052	0.160	0.009	0.04
48	4.00	0.20	0.052	0.160	0.009	0.04
49	4.08	0.20	0.052	0.159	0.009	0.04
50	4.17	0.20	0.052	0.158	0.009	0.04
51	4.25	0.20	0.052	0.158	0.009	0.04
52	4.33	0.23	0.061	0.157	0.011	0.05
53	4.42	0.23	0.061	0.156	0.011	0.05
54	4.50	0.23	0.061	0.156	0.011	0.05
55	4.58	0.23	0.061	0.155	0.011	0.05
56	4.67	0.23	0.061	0.154	0.011	0.05
57	4.75	0.23	0.061	0.154	0.011	0.05

58	4.83	0.27	0.069	0.153	0.012	0.06
59	4.92	0.27	0.069	0.152	0.012	0.06
60	5.00	0.27	0.069	0.152	0.012	0.06
61	5.08	0.20	0.052	0.151	0.009	0.04
62	5.17	0.20	0.052	0.150	0.009	0.04
63	5.25	0.20	0.052	0.150	0.009	0.04
64	5.33	0.23	0.061	0.149	0.011	0.05
65	5.42	0.23	0.061	0.148	0.011	0.05
66	5.50	0.23	0.061	0.148	0.011	0.05
67	5.58	0.27	0.069	0.147	0.012	0.06
68	5.67	0.27	0.069	0.147	0.012	0.06
69	5.75	0.27	0.069	0.146	0.012	0.06
70	5.83	0.27	0.069	0.145	0.012	0.06
71	5.92	0.27	0.069	0.145	0.012	0.06
72	6.00	0.27	0.069	0.144	0.012	0.06
73	6.08	0.30	0.078	0.143	0.014	0.06
74	6.17	0.30	0.078	0.143	0.014	0.06
75	6.25	0.30	0.078	0.142	0.014	0.06
76	6.33	0.30	0.078	0.141	0.014	0.06
77	6.42	0.30	0.078	0.141	0.014	0.06
78	6.50	0.30	0.078	0.140	0.014	0.06
79	6.58	0.33	0.086	0.140	0.016	0.07
80	6.67	0.33	0.086	0.139	0.016	0.07
81	6.75	0.33	0.086	0.138	0.016	0.07
82	6.83	0.33	0.086	0.138	0.016	0.07
83	6.92	0.33	0.086	0.137	0.016	0.07
84	7.00	0.33	0.086	0.136	0.016	0.07
85	7.08	0.33	0.086	0.136	0.016	0.07
86	7.17	0.33	0.086	0.135	0.016	0.07
87	7.25	0.33	0.086	0.135	0.016	0.07
88	7.33	0.37	0.095	0.134	0.017	0.08
89	7.42	0.37	0.095	0.133	0.017	0.08
90	7.50	0.37	0.095	0.133	0.017	0.08
91	7.58	0.40	0.104	0.132	0.019	0.09
92	7.67	0.40	0.104	0.131	0.019	0.09
93	7.75	0.40	0.104	0.131	0.019	0.09
94	7.83	0.43	0.112	0.130	0.020	0.09
95	7.92	0.43	0.112	0.130	0.020	0.09
96	8.00	0.43	0.112	0.129	0.020	0.09
97	8.08	0.50	0.130	0.128	---	0.00
98	8.17	0.50	0.130	0.128	---	0.00
99	8.25	0.50	0.130	0.127	---	0.00
100	8.33	0.50	0.130	0.127	---	0.00
101	8.42	0.50	0.130	0.126	---	0.00
102	8.50	0.50	0.130	0.125	---	0.00
103	8.58	0.53	0.138	0.125	---	0.01
104	8.67	0.53	0.138	0.124	---	0.01
105	8.75	0.53	0.138	0.124	---	0.01
106	8.83	0.57	0.147	0.123	---	0.02
107	8.92	0.57	0.147	0.123	---	0.02
108	9.00	0.57	0.147	0.122	---	0.03
109	9.08	0.63	0.164	0.121	---	0.04
110	9.17	0.63	0.164	0.121	---	0.04
111	9.25	0.63	0.164	0.120	---	0.04

112	9.33	0.67	0.173	0.120	---	0.05
113	9.42	0.67	0.173	0.119	---	0.05
114	9.50	0.67	0.173	0.119	---	0.05
115	9.58	0.70	0.182	0.118	---	0.06
116	9.67	0.70	0.182	0.117	---	0.06
117	9.75	0.70	0.182	0.117	---	0.06
118	9.83	0.73	0.190	0.116	---	0.07
119	9.92	0.73	0.190	0.116	---	0.07
120	10.00	0.73	0.190	0.115	---	0.08
121	10.08	0.50	0.130	0.115	---	0.02
122	10.17	0.50	0.130	0.114	---	0.02
123	10.25	0.50	0.130	0.113	---	0.02
124	10.33	0.50	0.130	0.113	---	0.02
125	10.42	0.50	0.130	0.112	---	0.02
126	10.50	0.50	0.130	0.112	---	0.02
127	10.58	0.67	0.173	0.111	---	0.06
128	10.67	0.67	0.173	0.111	---	0.06
129	10.75	0.67	0.173	0.110	---	0.06
130	10.83	0.67	0.173	0.110	---	0.06
131	10.92	0.67	0.173	0.109	---	0.06
132	11.00	0.67	0.173	0.109	---	0.06
133	11.08	0.63	0.164	0.108	---	0.06
134	11.17	0.63	0.164	0.108	---	0.06
135	11.25	0.63	0.164	0.107	---	0.06
136	11.33	0.63	0.164	0.106	---	0.06
137	11.42	0.63	0.164	0.106	---	0.06
138	11.50	0.63	0.164	0.105	---	0.06
139	11.58	0.57	0.147	0.105	---	0.04
140	11.67	0.57	0.147	0.104	---	0.04
141	11.75	0.57	0.147	0.104	---	0.04
142	11.83	0.60	0.156	0.103	---	0.05
143	11.92	0.60	0.156	0.103	---	0.05
144	12.00	0.60	0.156	0.102	---	0.05
145	12.08	0.83	0.216	0.102	---	0.11
146	12.17	0.83	0.216	0.101	---	0.11
147	12.25	0.83	0.216	0.101	---	0.12
148	12.33	0.87	0.225	0.100	---	0.12
149	12.42	0.87	0.225	0.100	---	0.13
150	12.50	0.87	0.225	0.099	---	0.13
151	12.58	0.93	0.242	0.099	---	0.14
152	12.67	0.93	0.242	0.098	---	0.14
153	12.75	0.93	0.242	0.098	---	0.14
154	12.83	0.97	0.251	0.097	---	0.15
155	12.92	0.97	0.251	0.097	---	0.15
156	13.00	0.97	0.251	0.096	---	0.15
157	13.08	1.13	0.294	0.096	---	0.20
158	13.17	1.13	0.294	0.095	---	0.20
159	13.25	1.13	0.294	0.095	---	0.20
160	13.33	1.13	0.294	0.094	---	0.20
161	13.42	1.13	0.294	0.094	---	0.20
162	13.50	1.13	0.294	0.093	---	0.20
163	13.58	0.77	0.199	0.093	---	0.11
164	13.67	0.77	0.199	0.092	---	0.11
165	13.75	0.77	0.199	0.092	---	0.11

166	13.83	0.77	0.199	0.092	---	0.11
167	13.92	0.77	0.199	0.091	---	0.11
168	14.00	0.77	0.199	0.091	---	0.11
169	14.08	0.90	0.233	0.090	---	0.14
170	14.17	0.90	0.233	0.090	---	0.14
171	14.25	0.90	0.233	0.089	---	0.14
172	14.33	0.87	0.225	0.089	---	0.14
173	14.42	0.87	0.225	0.088	---	0.14
174	14.50	0.87	0.225	0.088	---	0.14
175	14.58	0.87	0.225	0.087	---	0.14
176	14.67	0.87	0.225	0.087	---	0.14
177	14.75	0.87	0.225	0.086	---	0.14
178	14.83	0.83	0.216	0.086	---	0.13
179	14.92	0.83	0.216	0.086	---	0.13
180	15.00	0.83	0.216	0.085	---	0.13
181	15.08	0.80	0.208	0.085	---	0.12
182	15.17	0.80	0.208	0.084	---	0.12
183	15.25	0.80	0.208	0.084	---	0.12
184	15.33	0.77	0.199	0.083	---	0.12
185	15.42	0.77	0.199	0.083	---	0.12
186	15.50	0.77	0.199	0.083	---	0.12
187	15.58	0.63	0.164	0.082	---	0.08
188	15.67	0.63	0.164	0.082	---	0.08
189	15.75	0.63	0.164	0.081	---	0.08
190	15.83	0.63	0.164	0.081	---	0.08
191	15.92	0.63	0.164	0.080	---	0.08
192	16.00	0.63	0.164	0.080	---	0.08
193	16.08	0.13	0.035	0.080	0.006	0.03
194	16.17	0.13	0.035	0.079	0.006	0.03
195	16.25	0.13	0.035	0.079	0.006	0.03
196	16.33	0.13	0.035	0.078	0.006	0.03
197	16.42	0.13	0.035	0.078	0.006	0.03
198	16.50	0.13	0.035	0.078	0.006	0.03
199	16.58	0.10	0.026	0.077	0.005	0.02
200	16.67	0.10	0.026	0.077	0.005	0.02
201	16.75	0.10	0.026	0.076	0.005	0.02
202	16.83	0.10	0.026	0.076	0.005	0.02
203	16.92	0.10	0.026	0.076	0.005	0.02
204	17.00	0.10	0.026	0.075	0.005	0.02
205	17.08	0.17	0.043	0.075	0.008	0.04
206	17.17	0.17	0.043	0.075	0.008	0.04
207	17.25	0.17	0.043	0.074	0.008	0.04
208	17.33	0.17	0.043	0.074	0.008	0.04
209	17.42	0.17	0.043	0.073	0.008	0.04
210	17.50	0.17	0.043	0.073	0.008	0.04
211	17.58	0.17	0.043	0.073	0.008	0.04
212	17.67	0.17	0.043	0.072	0.008	0.04
213	17.75	0.17	0.043	0.072	0.008	0.04
214	17.83	0.13	0.035	0.072	0.006	0.03
215	17.92	0.13	0.035	0.071	0.006	0.03
216	18.00	0.13	0.035	0.071	0.006	0.03
217	18.08	0.13	0.035	0.071	0.006	0.03
218	18.17	0.13	0.035	0.070	0.006	0.03
219	18.25	0.13	0.035	0.070	0.006	0.03

220	18.33	0.13	0.035	0.070	0.006	0.03
221	18.42	0.13	0.035	0.069	0.006	0.03
222	18.50	0.13	0.035	0.069	0.006	0.03
223	18.58	0.10	0.026	0.069	0.005	0.02
224	18.67	0.10	0.026	0.068	0.005	0.02
225	18.75	0.10	0.026	0.068	0.005	0.02
226	18.83	0.07	0.017	0.068	0.003	0.01
227	18.92	0.07	0.017	0.067	0.003	0.01
228	19.00	0.07	0.017	0.067	0.003	0.01
229	19.08	0.10	0.026	0.067	0.005	0.02
230	19.17	0.10	0.026	0.066	0.005	0.02
231	19.25	0.10	0.026	0.066	0.005	0.02
232	19.33	0.13	0.035	0.066	0.006	0.03
233	19.42	0.13	0.035	0.065	0.006	0.03
234	19.50	0.13	0.035	0.065	0.006	0.03
235	19.58	0.10	0.026	0.065	0.005	0.02
236	19.67	0.10	0.026	0.064	0.005	0.02
237	19.75	0.10	0.026	0.064	0.005	0.02
238	19.83	0.07	0.017	0.064	0.003	0.01
239	19.92	0.07	0.017	0.064	0.003	0.01
240	20.00	0.07	0.017	0.063	0.003	0.01
241	20.08	0.10	0.026	0.063	0.005	0.02
242	20.17	0.10	0.026	0.063	0.005	0.02
243	20.25	0.10	0.026	0.062	0.005	0.02
244	20.33	0.10	0.026	0.062	0.005	0.02
245	20.42	0.10	0.026	0.062	0.005	0.02
246	20.50	0.10	0.026	0.062	0.005	0.02
247	20.58	0.10	0.026	0.061	0.005	0.02
248	20.67	0.10	0.026	0.061	0.005	0.02
249	20.75	0.10	0.026	0.061	0.005	0.02
250	20.83	0.07	0.017	0.061	0.003	0.01
251	20.92	0.07	0.017	0.060	0.003	0.01
252	21.00	0.07	0.017	0.060	0.003	0.01
253	21.08	0.10	0.026	0.060	0.005	0.02
254	21.17	0.10	0.026	0.060	0.005	0.02
255	21.25	0.10	0.026	0.059	0.005	0.02
256	21.33	0.07	0.017	0.059	0.003	0.01
257	21.42	0.07	0.017	0.059	0.003	0.01
258	21.50	0.07	0.017	0.059	0.003	0.01
259	21.58	0.10	0.026	0.059	0.005	0.02
260	21.67	0.10	0.026	0.058	0.005	0.02
261	21.75	0.10	0.026	0.058	0.005	0.02
262	21.83	0.07	0.017	0.058	0.003	0.01
263	21.92	0.07	0.017	0.058	0.003	0.01
264	22.00	0.07	0.017	0.058	0.003	0.01
265	22.08	0.10	0.026	0.057	0.005	0.02
266	22.17	0.10	0.026	0.057	0.005	0.02
267	22.25	0.10	0.026	0.057	0.005	0.02
268	22.33	0.07	0.017	0.057	0.003	0.01
269	22.42	0.07	0.017	0.057	0.003	0.01
270	22.50	0.07	0.017	0.057	0.003	0.01
271	22.58	0.07	0.017	0.056	0.003	0.01
272	22.67	0.07	0.017	0.056	0.003	0.01
273	22.75	0.07	0.017	0.056	0.003	0.01

274	22.83	0.07	0.017	0.056	0.003	0.01
275	22.92	0.07	0.017	0.056	0.003	0.01
276	23.00	0.07	0.017	0.056	0.003	0.01
277	23.08	0.07	0.017	0.055	0.003	0.01
278	23.17	0.07	0.017	0.055	0.003	0.01
279	23.25	0.07	0.017	0.055	0.003	0.01
280	23.33	0.07	0.017	0.055	0.003	0.01
281	23.42	0.07	0.017	0.055	0.003	0.01
282	23.50	0.07	0.017	0.055	0.003	0.01
283	23.58	0.07	0.017	0.055	0.003	0.01
284	23.67	0.07	0.017	0.055	0.003	0.01
285	23.75	0.07	0.017	0.055	0.003	0.01
286	23.83	0.07	0.017	0.055	0.003	0.01
287	23.92	0.07	0.017	0.055	0.003	0.01
288	24.00	0.07	0.017	0.055	0.003	0.01
Sum =	100.0				Sum =	14.7

Flood volume = Effective rainfall 1.22(In)
times area 29.1(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)
Total soil loss = 0.94(In)
Total soil loss = 2.279(Ac.Ft)
Total rainfall = 2.16(In)
Flood volume = 129128.5 Cubic Feet
Total soil loss = 99251.7 Cubic Feet

Peak flow rate of this hydrograph = 5.857(CFS)

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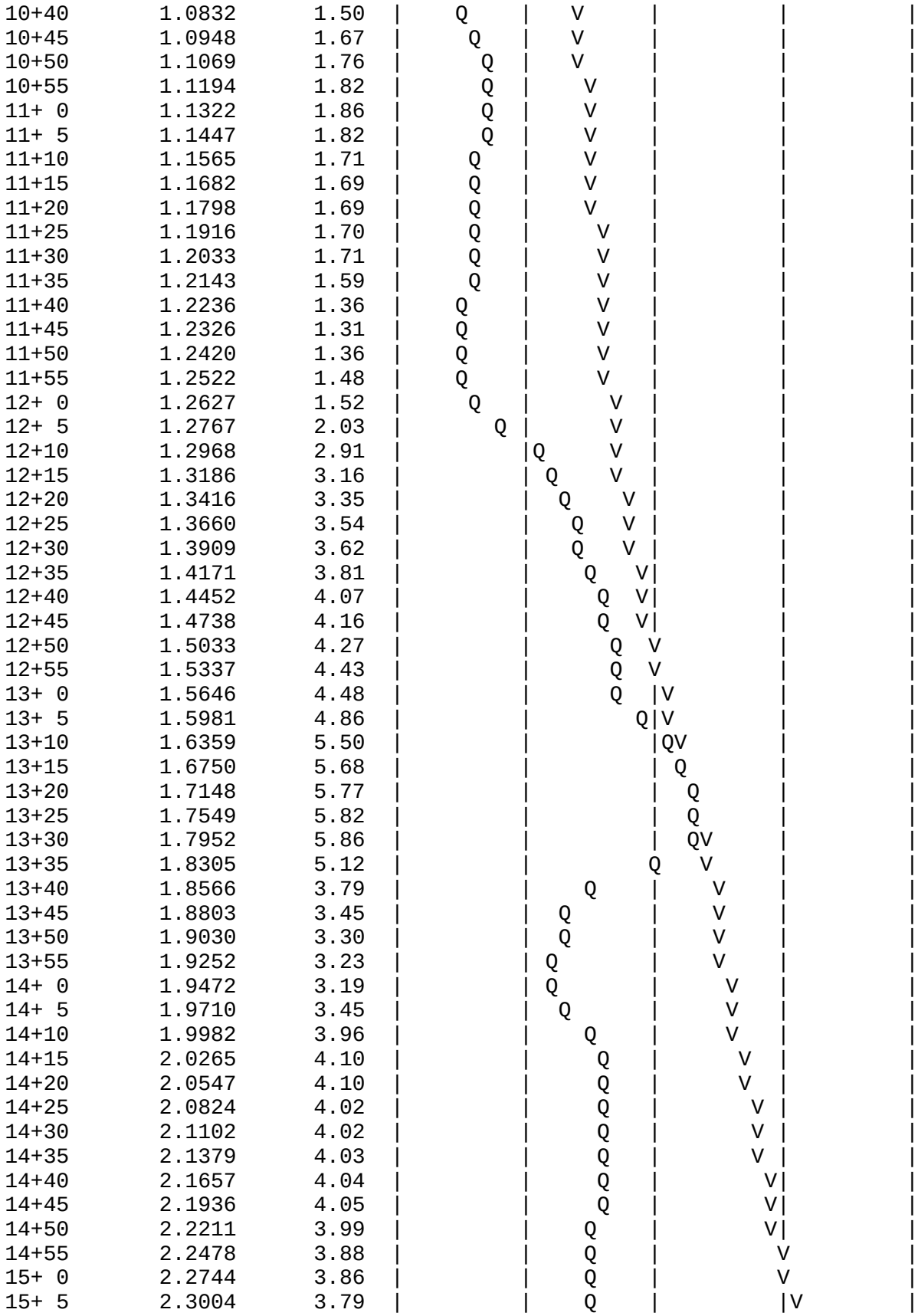
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0008	0.11	Q	|	|	|	|
0+10	0.0029	0.31	VQ	|	|	|	|
0+15	0.0055	0.37	VQ	|	|	|	|
0+20	0.0086	0.45	VQ	|	|	|	|
0+25	0.0124	0.56	V Q	|	|	|	|
0+30	0.0165	0.60	V Q	|	|	|	|
0+35	0.0208	0.61	V Q	|	|	|	|
0+40	0.0250	0.62	V Q	|	|	|	|
0+45	0.0293	0.62	V Q	|	|	|	|
0+50	0.0340	0.68	V Q	|	|	|	|
0+55	0.0394	0.78	V Q	|	|	|	|
1+ 0	0.0449	0.81	V Q	|	|	|	|
1+ 5	0.0502	0.76	V Q	|	|	|	|
1+10	0.0548	0.67	V Q	|	|	|	|
1+15	0.0593	0.65	V Q	|	|	|	|
1+20	0.0636	0.64	V Q	|	|	|	|
1+25	0.0680	0.63	V Q	|	|	|	|
1+30	0.0723	0.63	V Q	|	|	|	|
1+35	0.0766	0.62	|VQ	|	|	|	|

1+40	0.0809	0.62	VQ				
1+45	0.0852	0.62	VQ				
1+50	0.0899	0.68	VQ				
1+55	0.0953	0.78	V Q				
2+ 0	0.1008	0.81	V Q				
2+ 5	0.1065	0.82	V Q				
2+10	0.1122	0.83	V Q				
2+15	0.1179	0.83	V Q				
2+20	0.1236	0.83	V Q				
2+25	0.1294	0.83	V Q				
2+30	0.1351	0.83	V Q				
2+35	0.1412	0.89	V Q				
2+40	0.1480	0.99	V Q				
2+45	0.1550	1.02	V Q				
2+50	0.1621	1.03	V Q				
2+55	0.1692	1.03	V Q				
3+ 0	0.1764	1.04	V Q				
3+ 5	0.1835	1.04	V Q				
3+10	0.1907	1.04	V Q				
3+15	0.1979	1.04	V Q				
3+20	0.2050	1.04	V Q				
3+25	0.2122	1.04	V Q				
3+30	0.2194	1.04	V Q				
3+35	0.2265	1.04	VQ				
3+40	0.2337	1.04	VQ				
3+45	0.2409	1.04	VQ				
3+50	0.2484	1.10	VQ				
3+55	0.2567	1.20	VQ				
4+ 0	0.2651	1.22	VQ				
4+ 5	0.2736	1.24	VQ				
4+10	0.2822	1.24	VQ				
4+15	0.2908	1.25	VQ				
4+20	0.2997	1.31	VQ				
4+25	0.3094	1.41	VQ				
4+30	0.3193	1.43	VQ				
4+35	0.3292	1.44	VQ				
4+40	0.3392	1.45	VQ				
4+45	0.3493	1.45	VQ				
4+50	0.3597	1.51	V Q				
4+55	0.3708	1.61	VQ				
5+ 0	0.3821	1.64	VQ				
5+ 5	0.3927	1.54	VQ				
5+10	0.4019	1.34	Q				
5+15	0.4109	1.29	Q				
5+20	0.4200	1.33	Q				
5+25	0.4298	1.42	Q				
5+30	0.4397	1.44	Q				
5+35	0.4500	1.50	Q				
5+40	0.4611	1.61	Q				
5+45	0.4724	1.64	Q				
5+50	0.4837	1.65	Q				
5+55	0.4952	1.66	Q				
6+ 0	0.5066	1.66	Q				
6+ 5	0.5185	1.72	Q				

6+10	0.5310	1.82	| Q |	|	|	|
6+15	0.5438	1.85	| Q |	|	|	|
6+20	0.5566	1.86	| Q |	|	|	|
6+25	0.5694	1.87	| Q |	|	|	|
6+30	0.5823	1.87	| Q |	|	|	|
6+35	0.5956	1.93	| QV |	|	|	|
6+40	0.6096	2.03	| Q |	|	|	|
6+45	0.6237	2.06	| Q |	|	|	|
6+50	0.6380	2.07	| Q |	|	|	|
6+55	0.6523	2.08	| Q |	|	|	|
7+ 0	0.6666	2.08	| Q |	|	|	|
7+ 5	0.6809	2.08	| QV|	|	|	|
7+10	0.6953	2.08	| QV|	|	|	|
7+15	0.7096	2.08	| QV|	|	|	|
7+20	0.7243	2.14	| QV|	|	|	|
7+25	0.7397	2.24	| QV|	|	|	|
7+30	0.7553	2.26	| QV	|	|	|
7+35	0.7714	2.33	| QV	|	|	|
7+40	0.7882	2.44	| QV	|	|	|
7+45	0.8052	2.47	| QV	|	|	|
7+50	0.8227	2.54	| QV	|	|	|
7+55	0.8410	2.65	| QV	|	|	|
8+ 0	0.8594	2.68	| QV	|	|	|
8+ 5	0.8730	1.97	| Q |V	|	|	|
8+10	0.8777	0.69	| Q |V	|	|	|
8+15	0.8802	0.36	|Q |V	|	|	|
8+20	0.8817	0.23	Q |V	|	|	|
8+25	0.8828	0.16	Q |V	|	|	|
8+30	0.8837	0.13	Q |V	|	|	|
8+35	0.8851	0.19	Q |V	|	|	|
8+40	0.8873	0.33	|Q |V	|	|	|
8+45	0.8899	0.38	|Q | V	|	|	|
8+50	0.8933	0.48	|Q | V	|	|	|
8+55	0.8976	0.63	| Q | V	|	|	|
9+ 0	0.9023	0.68	| Q | V	|	|	|
9+ 5	0.9082	0.85	| Q | V	|	|	|
9+10	0.9159	1.13	| Q | V	|	|	|
9+15	0.9243	1.21	| Q | V	|	|	|
9+20	0.9334	1.33	| Q | V	|	|	|
9+25	0.9436	1.48	| Q | V	|	|	|
9+30	0.9543	1.54	| Q | V	|	|	|
9+35	0.9656	1.65	| Q | V	|	|	|
9+40	0.9780	1.80	| Q | V	|	|	|
9+45	0.9907	1.85	| Q | V	|	|	|
9+50	1.0041	1.95	| Q | V	|	|	|
9+55	1.0186	2.10	| Q | V	|	|	|
10+ 0	1.0334	2.15	| Q | V	|	|	|
10+ 5	1.0451	1.70	| Q | V	|	|	|
10+10	1.0511	0.87	| Q | V	|	|	|
10+15	1.0557	0.66	| Q | V	|	|	|
10+20	1.0596	0.58	| Q | V	|	|	|
10+25	1.0633	0.54	| Q | V	|	|	|
10+30	1.0670	0.52	| Q | V	|	|	|
10+35	1.0729	0.87	| Q | V	|	|	|



| | | |

19+40	2.7827	0.67	| Q	|	|	|	V |
19+45	2.7872	0.65	| Q	|	|	|	V |
19+50	2.7912	0.58	| Q	|	|	|	V |
19+55	2.7944	0.47	|Q	|	|	|	V |
20+ 0	2.7975	0.44	|Q	|	|	|	V |
20+ 5	2.8008	0.49	|Q	|	|	|	V |
20+10	2.8048	0.58	| Q	|	|	|	V |
20+15	2.8090	0.60	| Q	|	|	|	V |
20+20	2.8132	0.61	| Q	|	|	|	V |
20+25	2.8174	0.62	| Q	|	|	|	V |
20+30	2.8217	0.62	| Q	|	|	|	V |
20+35	2.8260	0.62	| Q	|	|	|	V |
20+40	2.8303	0.62	| Q	|	|	|	V |
20+45	2.8346	0.62	| Q	|	|	|	V |
20+50	2.8385	0.57	| Q	|	|	|	V |
20+55	2.8417	0.47	|Q	|	|	|	V |
21+ 0	2.8448	0.44	|Q	|	|	|	V |
21+ 5	2.8481	0.49	|Q	|	|	|	V |
21+10	2.8521	0.58	| Q	|	|	|	V |
21+15	2.8563	0.60	| Q	|	|	|	V |
21+20	2.8601	0.56	| Q	|	|	|	V |
21+25	2.8633	0.46	|Q	|	|	|	V |
21+30	2.8663	0.44	|Q	|	|	|	V |
21+35	2.8696	0.49	|Q	|	|	|	V |
21+40	2.8736	0.58	| Q	|	|	|	V |
21+45	2.8777	0.60	| Q	|	|	|	V |
21+50	2.8816	0.56	| Q	|	|	|	V |
21+55	2.8847	0.46	|Q	|	|	|	V |
22+ 0	2.8878	0.44	|Q	|	|	|	V |
22+ 5	2.8911	0.49	|Q	|	|	|	V|
22+10	2.8951	0.58	| Q	|	|	|	V|
22+15	2.8992	0.60	| Q	|	|	|	V|
22+20	2.9031	0.56	| Q	|	|	|	V|
22+25	2.9062	0.46	|Q	|	|	|	V|
22+30	2.9093	0.44	|Q	|	|	|	V|
22+35	2.9122	0.43	|Q	|	|	|	V|
22+40	2.9151	0.42	|Q	|	|	|	V|
22+45	2.9180	0.42	|Q	|	|	|	V|
22+50	2.9209	0.42	|Q	|	|	|	V|
22+55	2.9237	0.42	|Q	|	|	|	V|
23+ 0	2.9266	0.42	|Q	|	|	|	V|
23+ 5	2.9295	0.42	|Q	|	|	|	V|
23+10	2.9323	0.42	|Q	|	|	|	V|
23+15	2.9352	0.42	|Q	|	|	|	V|
23+20	2.9381	0.42	|Q	|	|	|	V|
23+25	2.9409	0.42	|Q	|	|	|	V|
23+30	2.9438	0.42	|Q	|	|	|	V|
23+35	2.9467	0.42	|Q	|	|	|	V|
23+40	2.9495	0.42	|Q	|	|	|	V|
23+45	2.9524	0.42	|Q	|	|	|	V|
23+50	2.9553	0.42	|Q	|	|	|	V|
23+55	2.9581	0.42	|Q	|	|	|	V|
24+ 0	2.9610	0.42	|Q	|	|	|	V|
24+ 5	2.9631	0.30	|Q	|	|	|	V|

```
   24+10       2.9638      0.10  Q         |          |          |        V|
   24+15       2.9641      0.05  Q         |          |          |        V|
   24+20       2.9643      0.02  Q         |          |          |        V|
   24+25       2.9644      0.01  Q         |          |          |        V|
   24+30       2.9644      0.00  Q         |          |          |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/30/19 File: 4163UHP102410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 10 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 2
4163UHP10.UM1

Drainage Area = 29.10(Ac.) = 0.045 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 29.10(Ac.) = 0.045 Sq. Mi.
Length along longest watercourse = 2560.00(Ft.)
Length along longest watercourse measured to centroid = 740.00(Ft.)
Length along longest watercourse = 0.485 Mi.
Length along longest watercourse measured to centroid = 0.140 Mi.
Difference in elevation = 17.50(Ft.)
Slope along watercourse = 36.0938 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.066 Hr.
Lag time = 3.93 Min.
25% of lag time = 0.98 Min.
40% of lag time = 1.57 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	1.60	46.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	4.00	116.40

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.587(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.587(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
29.100	69.00	0.900

Total Area Entered = 29.10(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	127.113	27.224	7.984
2	0.167	254.227	48.435	14.205
3	0.250	381.340	12.720	3.731
4	0.333	508.453	5.712	1.675
5	0.417	635.566	3.158	0.926
6	0.500	762.680	1.739	0.510
7	0.583	889.793	1.012	0.297
		Sum = 100.000	Sum=	29.327

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.021	0.126	0.004	0.02
2	0.17	0.07	0.021	0.125	0.004	0.02
3	0.25	0.07	0.021	0.125	0.004	0.02

4	0.33	0.10	0.031	0.124	0.006	0.03
5	0.42	0.10	0.031	0.124	0.006	0.03
6	0.50	0.10	0.031	0.123	0.006	0.03
7	0.58	0.10	0.031	0.123	0.006	0.03
8	0.67	0.10	0.031	0.122	0.006	0.03
9	0.75	0.10	0.031	0.122	0.006	0.03
10	0.83	0.13	0.041	0.121	0.007	0.03
11	0.92	0.13	0.041	0.121	0.007	0.03
12	1.00	0.13	0.041	0.120	0.007	0.03
13	1.08	0.10	0.031	0.120	0.006	0.03
14	1.17	0.10	0.031	0.119	0.006	0.03
15	1.25	0.10	0.031	0.119	0.006	0.03
16	1.33	0.10	0.031	0.118	0.006	0.03
17	1.42	0.10	0.031	0.118	0.006	0.03
18	1.50	0.10	0.031	0.117	0.006	0.03
19	1.58	0.10	0.031	0.117	0.006	0.03
20	1.67	0.10	0.031	0.117	0.006	0.03
21	1.75	0.10	0.031	0.116	0.006	0.03
22	1.83	0.13	0.041	0.116	0.007	0.03
23	1.92	0.13	0.041	0.115	0.007	0.03
24	2.00	0.13	0.041	0.115	0.007	0.03
25	2.08	0.13	0.041	0.114	0.007	0.03
26	2.17	0.13	0.041	0.114	0.007	0.03
27	2.25	0.13	0.041	0.113	0.007	0.03
28	2.33	0.13	0.041	0.113	0.007	0.03
29	2.42	0.13	0.041	0.112	0.007	0.03
30	2.50	0.13	0.041	0.112	0.007	0.03
31	2.58	0.17	0.052	0.111	0.009	0.04
32	2.67	0.17	0.052	0.111	0.009	0.04
33	2.75	0.17	0.052	0.110	0.009	0.04
34	2.83	0.17	0.052	0.110	0.009	0.04
35	2.92	0.17	0.052	0.110	0.009	0.04
36	3.00	0.17	0.052	0.109	0.009	0.04
37	3.08	0.17	0.052	0.109	0.009	0.04
38	3.17	0.17	0.052	0.108	0.009	0.04
39	3.25	0.17	0.052	0.108	0.009	0.04
40	3.33	0.17	0.052	0.107	0.009	0.04
41	3.42	0.17	0.052	0.107	0.009	0.04
42	3.50	0.17	0.052	0.106	0.009	0.04
43	3.58	0.17	0.052	0.106	0.009	0.04
44	3.67	0.17	0.052	0.106	0.009	0.04
45	3.75	0.17	0.052	0.105	0.009	0.04
46	3.83	0.20	0.062	0.105	0.011	0.05
47	3.92	0.20	0.062	0.104	0.011	0.05
48	4.00	0.20	0.062	0.104	0.011	0.05
49	4.08	0.20	0.062	0.103	0.011	0.05
50	4.17	0.20	0.062	0.103	0.011	0.05
51	4.25	0.20	0.062	0.102	0.011	0.05
52	4.33	0.23	0.072	0.102	0.013	0.06
53	4.42	0.23	0.072	0.102	0.013	0.06
54	4.50	0.23	0.072	0.101	0.013	0.06
55	4.58	0.23	0.072	0.101	0.013	0.06
56	4.67	0.23	0.072	0.100	0.013	0.06
57	4.75	0.23	0.072	0.100	0.013	0.06

58	4.83	0.27	0.083	0.099	0.015	0.07
59	4.92	0.27	0.083	0.099	0.015	0.07
60	5.00	0.27	0.083	0.099	0.015	0.07
61	5.08	0.20	0.062	0.098	0.011	0.05
62	5.17	0.20	0.062	0.098	0.011	0.05
63	5.25	0.20	0.062	0.097	0.011	0.05
64	5.33	0.23	0.072	0.097	0.013	0.06
65	5.42	0.23	0.072	0.096	0.013	0.06
66	5.50	0.23	0.072	0.096	0.013	0.06
67	5.58	0.27	0.083	0.096	0.015	0.07
68	5.67	0.27	0.083	0.095	0.015	0.07
69	5.75	0.27	0.083	0.095	0.015	0.07
70	5.83	0.27	0.083	0.094	0.015	0.07
71	5.92	0.27	0.083	0.094	0.015	0.07
72	6.00	0.27	0.083	0.093	0.015	0.07
73	6.08	0.30	0.093	0.093	---	0.00
74	6.17	0.30	0.093	0.093	---	0.00
75	6.25	0.30	0.093	0.092	---	0.00
76	6.33	0.30	0.093	0.092	---	0.00
77	6.42	0.30	0.093	0.091	---	0.00
78	6.50	0.30	0.093	0.091	---	0.00
79	6.58	0.33	0.103	0.091	---	0.01
80	6.67	0.33	0.103	0.090	---	0.01
81	6.75	0.33	0.103	0.090	---	0.01
82	6.83	0.33	0.103	0.089	---	0.01
83	6.92	0.33	0.103	0.089	---	0.01
84	7.00	0.33	0.103	0.089	---	0.01
85	7.08	0.33	0.103	0.088	---	0.02
86	7.17	0.33	0.103	0.088	---	0.02
87	7.25	0.33	0.103	0.087	---	0.02
88	7.33	0.37	0.114	0.087	---	0.03
89	7.42	0.37	0.114	0.087	---	0.03
90	7.50	0.37	0.114	0.086	---	0.03
91	7.58	0.40	0.124	0.086	---	0.04
92	7.67	0.40	0.124	0.085	---	0.04
93	7.75	0.40	0.124	0.085	---	0.04
94	7.83	0.43	0.135	0.085	---	0.05
95	7.92	0.43	0.135	0.084	---	0.05
96	8.00	0.43	0.135	0.084	---	0.05
97	8.08	0.50	0.155	0.083	---	0.07
98	8.17	0.50	0.155	0.083	---	0.07
99	8.25	0.50	0.155	0.083	---	0.07
100	8.33	0.50	0.155	0.082	---	0.07
101	8.42	0.50	0.155	0.082	---	0.07
102	8.50	0.50	0.155	0.082	---	0.07
103	8.58	0.53	0.166	0.081	---	0.08
104	8.67	0.53	0.166	0.081	---	0.08
105	8.75	0.53	0.166	0.080	---	0.09
106	8.83	0.57	0.176	0.080	---	0.10
107	8.92	0.57	0.176	0.080	---	0.10
108	9.00	0.57	0.176	0.079	---	0.10
109	9.08	0.63	0.197	0.079	---	0.12
110	9.17	0.63	0.197	0.078	---	0.12
111	9.25	0.63	0.197	0.078	---	0.12

112	9.33	0.67	0.207	0.078	---	0.13
113	9.42	0.67	0.207	0.077	---	0.13
114	9.50	0.67	0.207	0.077	---	0.13
115	9.58	0.70	0.217	0.077	---	0.14
116	9.67	0.70	0.217	0.076	---	0.14
117	9.75	0.70	0.217	0.076	---	0.14
118	9.83	0.73	0.228	0.076	---	0.15
119	9.92	0.73	0.228	0.075	---	0.15
120	10.00	0.73	0.228	0.075	---	0.15
121	10.08	0.50	0.155	0.074	---	0.08
122	10.17	0.50	0.155	0.074	---	0.08
123	10.25	0.50	0.155	0.074	---	0.08
124	10.33	0.50	0.155	0.073	---	0.08
125	10.42	0.50	0.155	0.073	---	0.08
126	10.50	0.50	0.155	0.073	---	0.08
127	10.58	0.67	0.207	0.072	---	0.13
128	10.67	0.67	0.207	0.072	---	0.14
129	10.75	0.67	0.207	0.072	---	0.14
130	10.83	0.67	0.207	0.071	---	0.14
131	10.92	0.67	0.207	0.071	---	0.14
132	11.00	0.67	0.207	0.071	---	0.14
133	11.08	0.63	0.197	0.070	---	0.13
134	11.17	0.63	0.197	0.070	---	0.13
135	11.25	0.63	0.197	0.069	---	0.13
136	11.33	0.63	0.197	0.069	---	0.13
137	11.42	0.63	0.197	0.069	---	0.13
138	11.50	0.63	0.197	0.068	---	0.13
139	11.58	0.57	0.176	0.068	---	0.11
140	11.67	0.57	0.176	0.068	---	0.11
141	11.75	0.57	0.176	0.067	---	0.11
142	11.83	0.60	0.186	0.067	---	0.12
143	11.92	0.60	0.186	0.067	---	0.12
144	12.00	0.60	0.186	0.066	---	0.12
145	12.08	0.83	0.259	0.066	---	0.19
146	12.17	0.83	0.259	0.066	---	0.19
147	12.25	0.83	0.259	0.065	---	0.19
148	12.33	0.87	0.269	0.065	---	0.20
149	12.42	0.87	0.269	0.065	---	0.20
150	12.50	0.87	0.269	0.064	---	0.20
151	12.58	0.93	0.290	0.064	---	0.23
152	12.67	0.93	0.290	0.064	---	0.23
153	12.75	0.93	0.290	0.064	---	0.23
154	12.83	0.97	0.300	0.063	---	0.24
155	12.92	0.97	0.300	0.063	---	0.24
156	13.00	0.97	0.300	0.063	---	0.24
157	13.08	1.13	0.352	0.062	---	0.29
158	13.17	1.13	0.352	0.062	---	0.29
159	13.25	1.13	0.352	0.062	---	0.29
160	13.33	1.13	0.352	0.061	---	0.29
161	13.42	1.13	0.352	0.061	---	0.29
162	13.50	1.13	0.352	0.061	---	0.29
163	13.58	0.77	0.238	0.060	---	0.18
164	13.67	0.77	0.238	0.060	---	0.18
165	13.75	0.77	0.238	0.060	---	0.18

166	13.83	0.77	0.238	0.059	---	0.18
167	13.92	0.77	0.238	0.059	---	0.18
168	14.00	0.77	0.238	0.059	---	0.18
169	14.08	0.90	0.279	0.059	---	0.22
170	14.17	0.90	0.279	0.058	---	0.22
171	14.25	0.90	0.279	0.058	---	0.22
172	14.33	0.87	0.269	0.058	---	0.21
173	14.42	0.87	0.269	0.057	---	0.21
174	14.50	0.87	0.269	0.057	---	0.21
175	14.58	0.87	0.269	0.057	---	0.21
176	14.67	0.87	0.269	0.056	---	0.21
177	14.75	0.87	0.269	0.056	---	0.21
178	14.83	0.83	0.259	0.056	---	0.20
179	14.92	0.83	0.259	0.056	---	0.20
180	15.00	0.83	0.259	0.055	---	0.20
181	15.08	0.80	0.248	0.055	---	0.19
182	15.17	0.80	0.248	0.055	---	0.19
183	15.25	0.80	0.248	0.054	---	0.19
184	15.33	0.77	0.238	0.054	---	0.18
185	15.42	0.77	0.238	0.054	---	0.18
186	15.50	0.77	0.238	0.054	---	0.18
187	15.58	0.63	0.197	0.053	---	0.14
188	15.67	0.63	0.197	0.053	---	0.14
189	15.75	0.63	0.197	0.053	---	0.14
190	15.83	0.63	0.197	0.053	---	0.14
191	15.92	0.63	0.197	0.052	---	0.14
192	16.00	0.63	0.197	0.052	---	0.14
193	16.08	0.13	0.041	0.052	0.007	0.03
194	16.17	0.13	0.041	0.051	0.007	0.03
195	16.25	0.13	0.041	0.051	0.007	0.03
196	16.33	0.13	0.041	0.051	0.007	0.03
197	16.42	0.13	0.041	0.051	0.007	0.03
198	16.50	0.13	0.041	0.050	0.007	0.03
199	16.58	0.10	0.031	0.050	0.006	0.03
200	16.67	0.10	0.031	0.050	0.006	0.03
201	16.75	0.10	0.031	0.050	0.006	0.03
202	16.83	0.10	0.031	0.049	0.006	0.03
203	16.92	0.10	0.031	0.049	0.006	0.03
204	17.00	0.10	0.031	0.049	0.006	0.03
205	17.08	0.17	0.052	0.049	---	0.00
206	17.17	0.17	0.052	0.048	---	0.00
207	17.25	0.17	0.052	0.048	---	0.00
208	17.33	0.17	0.052	0.048	---	0.00
209	17.42	0.17	0.052	0.048	---	0.00
210	17.50	0.17	0.052	0.047	---	0.00
211	17.58	0.17	0.052	0.047	---	0.00
212	17.67	0.17	0.052	0.047	---	0.00
213	17.75	0.17	0.052	0.047	---	0.00
214	17.83	0.13	0.041	0.047	0.007	0.03
215	17.92	0.13	0.041	0.046	0.007	0.03
216	18.00	0.13	0.041	0.046	0.007	0.03
217	18.08	0.13	0.041	0.046	0.007	0.03
218	18.17	0.13	0.041	0.046	0.007	0.03
219	18.25	0.13	0.041	0.045	0.007	0.03

220	18.33	0.13	0.041	0.045	0.007	0.03
221	18.42	0.13	0.041	0.045	0.007	0.03
222	18.50	0.13	0.041	0.045	0.007	0.03
223	18.58	0.10	0.031	0.045	0.006	0.03
224	18.67	0.10	0.031	0.044	0.006	0.03
225	18.75	0.10	0.031	0.044	0.006	0.03
226	18.83	0.07	0.021	0.044	0.004	0.02
227	18.92	0.07	0.021	0.044	0.004	0.02
228	19.00	0.07	0.021	0.043	0.004	0.02
229	19.08	0.10	0.031	0.043	0.006	0.03
230	19.17	0.10	0.031	0.043	0.006	0.03
231	19.25	0.10	0.031	0.043	0.006	0.03
232	19.33	0.13	0.041	0.043	0.007	0.03
233	19.42	0.13	0.041	0.042	0.007	0.03
234	19.50	0.13	0.041	0.042	0.007	0.03
235	19.58	0.10	0.031	0.042	0.006	0.03
236	19.67	0.10	0.031	0.042	0.006	0.03
237	19.75	0.10	0.031	0.042	0.006	0.03
238	19.83	0.07	0.021	0.041	0.004	0.02
239	19.92	0.07	0.021	0.041	0.004	0.02
240	20.00	0.07	0.021	0.041	0.004	0.02
241	20.08	0.10	0.031	0.041	0.006	0.03
242	20.17	0.10	0.031	0.041	0.006	0.03
243	20.25	0.10	0.031	0.041	0.006	0.03
244	20.33	0.10	0.031	0.040	0.006	0.03
245	20.42	0.10	0.031	0.040	0.006	0.03
246	20.50	0.10	0.031	0.040	0.006	0.03
247	20.58	0.10	0.031	0.040	0.006	0.03
248	20.67	0.10	0.031	0.040	0.006	0.03
249	20.75	0.10	0.031	0.040	0.006	0.03
250	20.83	0.07	0.021	0.039	0.004	0.02
251	20.92	0.07	0.021	0.039	0.004	0.02
252	21.00	0.07	0.021	0.039	0.004	0.02
253	21.08	0.10	0.031	0.039	0.006	0.03
254	21.17	0.10	0.031	0.039	0.006	0.03
255	21.25	0.10	0.031	0.039	0.006	0.03
256	21.33	0.07	0.021	0.038	0.004	0.02
257	21.42	0.07	0.021	0.038	0.004	0.02
258	21.50	0.07	0.021	0.038	0.004	0.02
259	21.58	0.10	0.031	0.038	0.006	0.03
260	21.67	0.10	0.031	0.038	0.006	0.03
261	21.75	0.10	0.031	0.038	0.006	0.03
262	21.83	0.07	0.021	0.038	0.004	0.02
263	21.92	0.07	0.021	0.038	0.004	0.02
264	22.00	0.07	0.021	0.037	0.004	0.02
265	22.08	0.10	0.031	0.037	0.006	0.03
266	22.17	0.10	0.031	0.037	0.006	0.03
267	22.25	0.10	0.031	0.037	0.006	0.03
268	22.33	0.07	0.021	0.037	0.004	0.02
269	22.42	0.07	0.021	0.037	0.004	0.02
270	22.50	0.07	0.021	0.037	0.004	0.02
271	22.58	0.07	0.021	0.037	0.004	0.02
272	22.67	0.07	0.021	0.036	0.004	0.02
273	22.75	0.07	0.021	0.036	0.004	0.02

274	22.83	0.07	0.021	0.036	0.004	0.02
275	22.92	0.07	0.021	0.036	0.004	0.02
276	23.00	0.07	0.021	0.036	0.004	0.02
277	23.08	0.07	0.021	0.036	0.004	0.02
278	23.17	0.07	0.021	0.036	0.004	0.02
279	23.25	0.07	0.021	0.036	0.004	0.02
280	23.33	0.07	0.021	0.036	0.004	0.02
281	23.42	0.07	0.021	0.036	0.004	0.02
282	23.50	0.07	0.021	0.036	0.004	0.02
283	23.58	0.07	0.021	0.036	0.004	0.02
284	23.67	0.07	0.021	0.036	0.004	0.02
285	23.75	0.07	0.021	0.036	0.004	0.02
286	23.83	0.07	0.021	0.035	0.004	0.02
287	23.92	0.07	0.021	0.035	0.004	0.02
288	24.00	0.07	0.021	0.035	0.004	0.02
Sum =		100.0			Sum =	21.0

Flood volume = Effective rainfall 1.75(In)
times area 29.1(Ac.)/[(In)/(Ft.)] = 4.2(Ac.Ft)
Total soil loss = 0.84(In)
Total soil loss = 2.039(Ac.Ft)
Total rainfall = 2.59(In)
Flood volume = 184472.9 Cubic Feet
Total soil loss = 88824.2 Cubic Feet

Peak flow rate of this hydrograph = 8.518(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0009	0.14	Q	|	|	|	|
0+10	0.0035	0.38	VQ	|	|	|	|
0+15	0.0066	0.44	VQ	|	|	|	|
0+20	0.0103	0.54	V Q	|	|	|	|
0+25	0.0149	0.67	V Q	|	|	|	|
0+30	0.0198	0.71	V Q	|	|	|	|
0+35	0.0248	0.73	V Q	|	|	|	|
0+40	0.0299	0.74	V Q	|	|	|	|
0+45	0.0351	0.74	V Q	|	|	|	|
0+50	0.0407	0.81	V Q	|	|	|	|
0+55	0.0471	0.94	V Q	|	|	|	|
1+ 0	0.0538	0.97	V Q	|	|	|	|
1+ 5	0.0601	0.91	V Q	|	|	|	|
1+10	0.0656	0.80	V Q	|	|	|	|
1+15	0.0709	0.77	V Q	|	|	|	|
1+20	0.0762	0.76	V Q	|	|	|	|
1+25	0.0814	0.75	V Q	|	|	|	|
1+30	0.0865	0.75	V Q	|	|	|	|
1+35	0.0917	0.75	V Q	|	|	|	|

```
1+40       0.0968      0.75  V Q       |          |          |          |
1+45       0.1019      0.75  V Q       |          |          |          |
1+50       0.1076      0.81  |V Q       |          |          |          |
1+55       0.1140      0.94  |V Q       |          |          |          |
2+ 0       0.1207      0.97  |V Q       |          |          |          |
2+ 5       0.1274      0.98  |V Q       |          |          |          |
2+10       0.1342      0.99  |V Q       |          |          |          |
2+15       0.1411      0.99  |V Q       |          |          |          |
2+20       0.1479      1.00  |V Q       |          |          |          |
2+25       0.1548      1.00  |V Q       |          |          |          |
2+30       0.1617      1.00  |V Q       |          |          |          |
2+35       0.1690      1.06  |V  Q      |          |          |          |
2+40       0.1771      1.18  |V  Q      |          |          |          |
2+45       0.1855      1.22  |V  Q      |          |          |          |
2+50       0.1940      1.23  |V  Q      |          |          |          |
2+55       0.2025      1.24  |V  Q      |          |          |          |
3+ 0       0.2111      1.24  |V  Q      |          |          |          |
3+ 5       0.2196      1.25  | V Q      |          |          |          |
3+10       0.2282      1.25  | V Q      |          |          |          |
3+15       0.2368      1.25  | V Q      |          |          |          |
3+20       0.2454      1.25  | V Q      |          |          |          |
3+25       0.2539      1.25  | V Q      |          |          |          |
3+30       0.2625      1.25  | V Q      |          |          |          |
3+35       0.2711      1.25  | V Q      |          |          |          |
3+40       0.2797      1.25  | V Q      |          |          |          |
3+45       0.2882      1.25  | V Q      |          |          |          |
3+50       0.2973      1.31  | V  Q     |          |          |          |
3+55       0.3072      1.43  | V  Q     |          |          |          |
4+ 0       0.3172      1.47  | V  Q     |          |          |          |
4+ 5       0.3274      1.48  |  V Q     |          |          |          |
4+10       0.3377      1.49  |  V Q     |          |          |          |
4+15       0.3479      1.49  |  V Q     |          |          |          |
4+20       0.3587      1.56  |  V  Q    |          |          |          |
4+25       0.3703      1.68  |  V  Q    |          |          |          |
4+30       0.3821      1.71  |  V  Q    |          |          |          |
4+35       0.3940      1.73  |  V  Q    |          |          |          |
4+40       0.4060      1.74  |  V  Q    |          |          |          |
4+45       0.4179      1.74  |  V  Q    |          |          |          |
4+50       0.4304      1.81  |   V  Q   |          |          |          |
4+55       0.4437      1.93  |   V  Q   |          |          |          |
5+ 0       0.4572      1.96  |   V  Q   |          |          |          |
5+ 5       0.4699      1.84  |   V  Q   |          |          |          |
5+10       0.4810      1.61  |   V Q    |          |          |          |
5+15       0.4917      1.55  |   V Q    |          |          |          |
5+20       0.5026      1.59  |   V Q    |          |          |          |
5+25       0.5143      1.70  |   V Q    |          |          |          |
5+30       0.5261      1.72  |   V Q    |          |          |          |
5+35       0.5385      1.80  |    V Q   |          |          |          |
5+40       0.5518      1.92  |    V Q   |          |          |          |
5+45       0.5653      1.96  |    V Q   |          |          |          |
5+50       0.5789      1.98  |    V Q   |          |          |          |
5+55       0.5926      1.99  |    V Q   |          |          |          |
6+ 0       0.6063      1.99  |    V Q   |          |          |          |
6+ 5       0.6163      1.45  |    Q     |          |          |          |
```

6+10	0.6196	0.49	|Q V |	|	|	|
6+15	0.6213	0.25	Q V |	|	|	|
6+20	0.6223	0.14	Q V |	|	|	|
6+25	0.6229	0.09	Q V |	|	|	|
6+30	0.6234	0.07	Q V |	|	|	|
6+35	0.6244	0.14	Q V |	|	|	|
6+40	0.6265	0.30	|Q V |	|	|	|
6+45	0.6289	0.35	|Q V |	|	|	|
6+50	0.6315	0.38	|Q V |	|	|	|
6+55	0.6343	0.40	|Q V |	|	|	|
7+ 0	0.6372	0.42	|Q V |	|	|	|
7+ 5	0.6402	0.44	|Q V |	|	|	|
7+10	0.6433	0.45	|Q V |	|	|	|
7+15	0.6464	0.46	|Q V |	|	|	|
7+20	0.6502	0.55	| Q V |	|	|	|
7+25	0.6551	0.71	| Q V |	|	|	|
7+30	0.6604	0.76	| Q V |	|	|	|
7+35	0.6664	0.87	| Q V |	|	|	|
7+40	0.6736	1.04	| Q V |	|	|	|
7+45	0.6811	1.10	| Q V |	|	|	|
7+50	0.6895	1.21	| Q V |	|	|	|
7+55	0.6990	1.38	| QV |	|	|	|
8+ 0	0.7089	1.44	| QV |	|	|	|
8+ 5	0.7201	1.63	| Q |	|	|	|
8+10	0.7335	1.95	| VQ |	|	|	|
8+15	0.7476	2.04	| VQ |	|	|	|
8+20	0.7620	2.09	| VQ |	|	|	|
8+25	0.7766	2.12	| VQ |	|	|	|
8+30	0.7914	2.14	| VQ |	|	|	|
8+35	0.8068	2.24	| VQ |	|	|	|
8+40	0.8234	2.40	| V Q|	|	|	|
8+45	0.8403	2.45	| V Q|	|	|	|
8+50	0.8579	2.56	| V Q |	|	|	|
8+55	0.8767	2.73	| V Q |	|	|	|
9+ 0	0.8959	2.79	| V |Q |	|	|	|
9+ 5	0.9165	2.98	| V |Q |	|	|	|
9+10	0.9392	3.30	| V | Q |	|	|	|
9+15	0.9625	3.39	| V| Q |	|	|	|
9+20	0.9868	3.52	| V| Q |	|	|	|
9+25	1.0123	3.70	| V| Q |	|	|	|
9+30	1.0382	3.76	| V| Q |	|	|	|
9+35	1.0649	3.88	| V Q |	|	|	|
9+40	1.0927	4.04	| V Q |	|	|	|
9+45	1.1210	4.10	| V Q |	|	|	|
9+50	1.1500	4.21	| V Q |	|	|	|
9+55	1.1801	4.38	| |V Q |	|	|	|
10+ 0	1.2107	4.43	| |V Q |	|	|	|
10+ 5	1.2374	3.89	| |V Q |	|	|	|
10+10	1.2573	2.88	| |Q |	|	|	|
10+15	1.2753	2.62	| Q V |	|	|	|
10+20	1.2927	2.52	| Q V |	|	|	|
10+25	1.3096	2.46	| Q| V |	|	|	|
10+30	1.3263	2.43	| Q| V |	|	|	|
10+35	1.3459	2.83	| |QV |	|	|	|

10+40	1.3705	3.58	|	| V Q |	|	|
10+45	1.3966	3.78	|	| V Q |	|	|
10+50	1.4233	3.88	|	| V Q |	|	|
10+55	1.4504	3.94	|	| V Q |	|	|
11+ 0	1.4778	3.98	|	| V Q |	|	|
11+ 5	1.5048	3.92	|	| VQ |	|	|
11+10	1.5309	3.78	|	| VQ |	|	|
11+15	1.5567	3.75	|	| VQ |	|	|
11+20	1.5825	3.75	|	| Q |	|	|
11+25	1.6083	3.75	|	| QV |	|	|
11+30	1.6342	3.75	|	| Q |	|	|
11+35	1.6589	3.59	|	| QV |	|	|
11+40	1.6817	3.31	|	| Q V |	|	|
11+45	1.7040	3.24	|	| Q V |	|	|
11+50	1.7268	3.30	|	| Q V |	|	|
11+55	1.7504	3.44	|	| Q V |	|	|
12+ 0	1.7744	3.48	|	| Q V |	|	|
12+ 5	1.8024	4.07	|	| QV |	|	|
12+10	1.8377	5.12	|	| V Q |	|	|
12+15	1.8750	5.41	|	| V |Q |	|	|
12+20	1.9137	5.63	|	| V | Q |	|	|
12+25	1.9540	5.85	|	| V | Q |	|	|
12+30	1.9949	5.94	|	| V | Q |	|	|
12+35	2.0372	6.15	|	| V| Q |	|	|
12+40	2.0817	6.46	|	| V| Q |	|	|
12+45	2.1269	6.55	|	| V Q |	|	|
12+50	2.1729	6.68	|	| V Q |	|	|
12+55	2.2202	6.86	|	| V Q |	|	|
13+ 0	2.2678	6.92	|	| |V Q |	|	|
13+ 5	2.3185	7.36	|	| |V Q|	|	|
13+10	2.3744	8.12	|	| | V | Q |	|	|
13+15	2.4318	8.33	|	| | V | Q |	|	|
13+20	2.4898	8.43	|	| | V | Q |	|	|
13+25	2.5482	8.48	|	| | V | Q |	|	|
13+30	2.6069	8.52	|	| | V | Q |	|	|
13+35	2.6595	7.63	|	| | V Q |	|	|
13+40	2.7010	6.02	|	| | QV |	|	|
13+45	2.7396	5.61	|	| | Q V |	|	|
13+50	2.7770	5.43	|	| |Q V |	|	|
13+55	2.8137	5.33	|	| |Q V |	|	|
14+ 0	2.8500	5.28	|	| |Q V |	|	|
14+ 5	2.8885	5.59	|	| | Q V |	|	|
14+10	2.9311	6.18	|	| | Q V |	|	|
14+15	2.9748	6.35	|	| | Q V |	|	|
14+20	3.0185	6.34	|	| | Q V |	|	|
14+25	3.0615	6.24	|	| | Q V |	|	|
14+30	3.1044	6.23	|	| | Q V|	|	|
14+35	3.1474	6.24	|	| | Q V|	|	|
14+40	3.1903	6.24	|	| | Q V |	|	|
14+45	3.2333	6.24	|	| | Q V |	|	|
14+50	3.2757	6.16	|	| | Q V |	|	|
14+55	3.3172	6.02	|	| | Q |V |	|	|
15+ 0	3.3585	5.99	|	| | Q |V |	|	|
15+ 5	3.3992	5.90	|	| | Q | V |	|	|

15+10	3.4388	5.75			Q	V
15+15	3.4782	5.72			Q	V
15+20	3.5169	5.62			Q	V
15+25	3.5546	5.47			Q	V
15+30	3.5921	5.44			Q	V
15+35	3.6272	5.10			Q	V
15+40	3.6582	4.51		Q		V
15+45	3.6882	4.35		Q		V
15+50	3.7177	4.29		Q		V
15+55	3.7471	4.26		Q		V
16+ 0	3.7763	4.25		Q		V
16+ 5	3.7994	3.36		Q		V
16+10	3.8117	1.78	Q			V
16+15	3.8212	1.37	Q			V
16+20	3.8293	1.19	Q			V
16+25	3.8368	1.09	Q			V
16+30	3.8439	1.03	Q			V
16+35	3.8503	0.93	Q			V
16+40	3.8559	0.81	Q			V
16+45	3.8612	0.78	Q			V
16+50	3.8664	0.76	Q			V
16+55	3.8716	0.75	Q			V
17+ 0	3.8768	0.75	Q			V
17+ 5	3.8807	0.57	Q			V
17+10	3.8824	0.25	Q			V
17+15	3.8836	0.17	Q			V
17+20	3.8846	0.14	Q			V
17+25	3.8855	0.13	Q			V
17+30	3.8864	0.12	Q			V
17+35	3.8872	0.12	Q			V
17+40	3.8881	0.13	Q			V
17+45	3.8891	0.14	Q			V
17+50	3.8916	0.37	Q			V
17+55	3.8971	0.79	Q			V
18+ 0	3.9032	0.90	Q			V
18+ 5	3.9098	0.95	Q			V
18+10	3.9165	0.97	Q			V
18+15	3.9233	0.99	Q			V
18+20	3.9301	1.00	Q			V
18+25	3.9370	1.00	Q			V
18+30	3.9438	1.00	Q			V
18+35	3.9502	0.93	Q			V
18+40	3.9558	0.81	Q			V
18+45	3.9611	0.78	Q			V
18+50	3.9659	0.69	Q			V
18+55	3.9698	0.57	Q			V
19+ 0	3.9735	0.53	Q			V
19+ 5	3.9775	0.58	Q			V
19+10	3.9822	0.69	Q			V
19+15	3.9872	0.72	Q			V
19+20	3.9927	0.80	Q			V
19+25	3.9991	0.93	Q			V
19+30	4.0057	0.96	Q			V
19+35	4.0120	0.91	Q			V

19+40	4.0175	0.80	| Q	|	|	|	V |
19+45	4.0229	0.77	| Q	|	|	|	V |
19+50	4.0276	0.69	| Q	|	|	|	V |
19+55	4.0315	0.57	| Q	|	|	|	V |
20+ 0	4.0352	0.53	| Q	|	|	|	V |
20+ 5	4.0392	0.58	| Q	|	|	|	V |
20+10	4.0440	0.69	| Q	|	|	|	V |
20+15	4.0489	0.72	| Q	|	|	|	V |
20+20	4.0540	0.73	| Q	|	|	|	V |
20+25	4.0591	0.74	| Q	|	|	|	V |
20+30	4.0642	0.74	| Q	|	|	|	V |
20+35	4.0693	0.75	| Q	|	|	|	V |
20+40	4.0745	0.75	| Q	|	|	|	V |
20+45	4.0796	0.75	| Q	|	|	|	V |
20+50	4.0843	0.68	| Q	|	|	|	V |
20+55	4.0882	0.56	| Q	|	|	|	V |
21+ 0	4.0918	0.53	| Q	|	|	|	V |
21+ 5	4.0958	0.58	| Q	|	|	|	V |
21+10	4.1006	0.69	| Q	|	|	|	V |
21+15	4.1055	0.72	| Q	|	|	|	V |
21+20	4.1101	0.66	| Q	|	|	|	V |
21+25	4.1139	0.55	| Q	|	|	|	V |
21+30	4.1175	0.52	| Q	|	|	|	V |
21+35	4.1215	0.58	| Q	|	|	|	V |
21+40	4.1263	0.69	| Q	|	|	|	V |
21+45	4.1312	0.72	| Q	|	|	|	V|
21+50	4.1358	0.66	| Q	|	|	|	V|
21+55	4.1396	0.55	| Q	|	|	|	V|
22+ 0	4.1432	0.52	| Q	|	|	|	V|
22+ 5	4.1472	0.58	| Q	|	|	|	V|
22+10	4.1520	0.69	| Q	|	|	|	V|
22+15	4.1570	0.72	| Q	|	|	|	V|
22+20	4.1615	0.66	| Q	|	|	|	V|
22+25	4.1653	0.55	| Q	|	|	|	V|
22+30	4.1690	0.52	| Q	|	|	|	V|
22+35	4.1725	0.51	| Q	|	|	|	V|
22+40	4.1760	0.50	| Q	|	|	|	V|
22+45	4.1794	0.50	| Q	|	|	|	V|
22+50	4.1828	0.50	|Q	|	|	|	V|
22+55	4.1863	0.50	|Q	|	|	|	V|
23+ 0	4.1897	0.50	|Q	|	|	|	V|
23+ 5	4.1931	0.50	|Q	|	|	|	V|
23+10	4.1966	0.50	|Q	|	|	|	V|
23+15	4.2000	0.50	|Q	|	|	|	V|
23+20	4.2034	0.50	|Q	|	|	|	V|
23+25	4.2068	0.50	|Q	|	|	|	V|
23+30	4.2103	0.50	|Q	|	|	|	V|
23+35	4.2137	0.50	|Q	|	|	|	V|
23+40	4.2171	0.50	|Q	|	|	|	V|
23+45	4.2206	0.50	|Q	|	|	|	V|
23+50	4.2240	0.50	|Q	|	|	|	V|
23+55	4.2274	0.50	|Q	|	|	|	V|
24+ 0	4.2309	0.50	|Q	|	|	|	V|
24+ 5	4.2334	0.36	|Q	|	|	|	V|

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   24+10       4.2342      0.12  Q         |          |          |        V|
   24+15       4.2346      0.06  Q         |          |          |        V|
   24+20       4.2348      0.03  Q         |          |          |        V|
   24+25       4.2349      0.01  Q         |          |          |        V|
   24+30       4.2349      0.01  Q         |          |          |         V
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 10/30/19 File: 4163UHP252425.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 25 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 2
4163UHP25.UM1

Drainage Area = 29.10(Ac.) = 0.045 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 29.10(Ac.) = 0.045 Sq. Mi.
Length along longest watercourse = 2560.00(Ft.)
Length along longest watercourse measured to centroid = 740.00(Ft.)
Length along longest watercourse = 0.485 Mi.
Length along longest watercourse measured to centroid = 0.140 Mi.
Difference in elevation = 17.50(Ft.)
Slope along watercourse = 36.0938 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.066 Hr.
Lag time = 3.93 Min.
25% of lag time = 0.98 Min.
40% of lag time = 1.57 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	1.60	46.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	4.00	116.40

STORM EVENT (YEAR) = 25.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.149(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
29.100	69.00	0.900

Total Area Entered = 29.10(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	127.113	27.224	7.984
2	0.167	254.227	48.435	14.205
3	0.250	381.340	12.720	3.731
4	0.333	508.453	5.712	1.675
5	0.417	635.566	3.158	0.926
6	0.500	762.680	1.739	0.510
7	0.583	889.793	1.012	0.297
		Sum = 100.000	Sum=	29.327

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.025	0.126	0.005	0.02
2	0.17	0.07	0.025	0.125	0.005	0.02
3	0.25	0.07	0.025	0.125	0.005	0.02

4	0.33	0.10	0.038	0.124	0.007	0.03
5	0.42	0.10	0.038	0.124	0.007	0.03
6	0.50	0.10	0.038	0.123	0.007	0.03
7	0.58	0.10	0.038	0.123	0.007	0.03
8	0.67	0.10	0.038	0.122	0.007	0.03
9	0.75	0.10	0.038	0.122	0.007	0.03
10	0.83	0.13	0.050	0.121	0.009	0.04
11	0.92	0.13	0.050	0.121	0.009	0.04
12	1.00	0.13	0.050	0.120	0.009	0.04
13	1.08	0.10	0.038	0.120	0.007	0.03
14	1.17	0.10	0.038	0.119	0.007	0.03
15	1.25	0.10	0.038	0.119	0.007	0.03
16	1.33	0.10	0.038	0.118	0.007	0.03
17	1.42	0.10	0.038	0.118	0.007	0.03
18	1.50	0.10	0.038	0.117	0.007	0.03
19	1.58	0.10	0.038	0.117	0.007	0.03
20	1.67	0.10	0.038	0.117	0.007	0.03
21	1.75	0.10	0.038	0.116	0.007	0.03
22	1.83	0.13	0.050	0.116	0.009	0.04
23	1.92	0.13	0.050	0.115	0.009	0.04
24	2.00	0.13	0.050	0.115	0.009	0.04
25	2.08	0.13	0.050	0.114	0.009	0.04
26	2.17	0.13	0.050	0.114	0.009	0.04
27	2.25	0.13	0.050	0.113	0.009	0.04
28	2.33	0.13	0.050	0.113	0.009	0.04
29	2.42	0.13	0.050	0.112	0.009	0.04
30	2.50	0.13	0.050	0.112	0.009	0.04
31	2.58	0.17	0.063	0.111	0.011	0.05
32	2.67	0.17	0.063	0.111	0.011	0.05
33	2.75	0.17	0.063	0.110	0.011	0.05
34	2.83	0.17	0.063	0.110	0.011	0.05
35	2.92	0.17	0.063	0.110	0.011	0.05
36	3.00	0.17	0.063	0.109	0.011	0.05
37	3.08	0.17	0.063	0.109	0.011	0.05
38	3.17	0.17	0.063	0.108	0.011	0.05
39	3.25	0.17	0.063	0.108	0.011	0.05
40	3.33	0.17	0.063	0.107	0.011	0.05
41	3.42	0.17	0.063	0.107	0.011	0.05
42	3.50	0.17	0.063	0.106	0.011	0.05
43	3.58	0.17	0.063	0.106	0.011	0.05
44	3.67	0.17	0.063	0.106	0.011	0.05
45	3.75	0.17	0.063	0.105	0.011	0.05
46	3.83	0.20	0.076	0.105	0.014	0.06
47	3.92	0.20	0.076	0.104	0.014	0.06
48	4.00	0.20	0.076	0.104	0.014	0.06
49	4.08	0.20	0.076	0.103	0.014	0.06
50	4.17	0.20	0.076	0.103	0.014	0.06
51	4.25	0.20	0.076	0.102	0.014	0.06
52	4.33	0.23	0.088	0.102	0.016	0.07
53	4.42	0.23	0.088	0.102	0.016	0.07
54	4.50	0.23	0.088	0.101	0.016	0.07
55	4.58	0.23	0.088	0.101	0.016	0.07
56	4.67	0.23	0.088	0.100	0.016	0.07
57	4.75	0.23	0.088	0.100	0.016	0.07

58	4.83	0.27	0.101	0.099	---	0.00
59	4.92	0.27	0.101	0.099	---	0.00
60	5.00	0.27	0.101	0.099	---	0.00
61	5.08	0.20	0.076	0.098	0.014	0.06
62	5.17	0.20	0.076	0.098	0.014	0.06
63	5.25	0.20	0.076	0.097	0.014	0.06
64	5.33	0.23	0.088	0.097	0.016	0.07
65	5.42	0.23	0.088	0.096	0.016	0.07
66	5.50	0.23	0.088	0.096	0.016	0.07
67	5.58	0.27	0.101	0.096	---	0.01
68	5.67	0.27	0.101	0.095	---	0.01
69	5.75	0.27	0.101	0.095	---	0.01
70	5.83	0.27	0.101	0.094	---	0.01
71	5.92	0.27	0.101	0.094	---	0.01
72	6.00	0.27	0.101	0.093	---	0.01
73	6.08	0.30	0.113	0.093	---	0.02
74	6.17	0.30	0.113	0.093	---	0.02
75	6.25	0.30	0.113	0.092	---	0.02
76	6.33	0.30	0.113	0.092	---	0.02
77	6.42	0.30	0.113	0.091	---	0.02
78	6.50	0.30	0.113	0.091	---	0.02
79	6.58	0.33	0.126	0.091	---	0.04
80	6.67	0.33	0.126	0.090	---	0.04
81	6.75	0.33	0.126	0.090	---	0.04
82	6.83	0.33	0.126	0.089	---	0.04
83	6.92	0.33	0.126	0.089	---	0.04
84	7.00	0.33	0.126	0.089	---	0.04
85	7.08	0.33	0.126	0.088	---	0.04
86	7.17	0.33	0.126	0.088	---	0.04
87	7.25	0.33	0.126	0.087	---	0.04
88	7.33	0.37	0.139	0.087	---	0.05
89	7.42	0.37	0.139	0.087	---	0.05
90	7.50	0.37	0.139	0.086	---	0.05
91	7.58	0.40	0.151	0.086	---	0.07
92	7.67	0.40	0.151	0.085	---	0.07
93	7.75	0.40	0.151	0.085	---	0.07
94	7.83	0.43	0.164	0.085	---	0.08
95	7.92	0.43	0.164	0.084	---	0.08
96	8.00	0.43	0.164	0.084	---	0.08
97	8.08	0.50	0.189	0.083	---	0.11
98	8.17	0.50	0.189	0.083	---	0.11
99	8.25	0.50	0.189	0.083	---	0.11
100	8.33	0.50	0.189	0.082	---	0.11
101	8.42	0.50	0.189	0.082	---	0.11
102	8.50	0.50	0.189	0.082	---	0.11
103	8.58	0.53	0.202	0.081	---	0.12
104	8.67	0.53	0.202	0.081	---	0.12
105	8.75	0.53	0.202	0.080	---	0.12
106	8.83	0.57	0.214	0.080	---	0.13
107	8.92	0.57	0.214	0.080	---	0.13
108	9.00	0.57	0.214	0.079	---	0.13
109	9.08	0.63	0.239	0.079	---	0.16
110	9.17	0.63	0.239	0.078	---	0.16
111	9.25	0.63	0.239	0.078	---	0.16

112	9.33	0.67	0.252	0.078	---	0.17
113	9.42	0.67	0.252	0.077	---	0.17
114	9.50	0.67	0.252	0.077	---	0.17
115	9.58	0.70	0.265	0.077	---	0.19
116	9.67	0.70	0.265	0.076	---	0.19
117	9.75	0.70	0.265	0.076	---	0.19
118	9.83	0.73	0.277	0.076	---	0.20
119	9.92	0.73	0.277	0.075	---	0.20
120	10.00	0.73	0.277	0.075	---	0.20
121	10.08	0.50	0.189	0.074	---	0.11
122	10.17	0.50	0.189	0.074	---	0.11
123	10.25	0.50	0.189	0.074	---	0.12
124	10.33	0.50	0.189	0.073	---	0.12
125	10.42	0.50	0.189	0.073	---	0.12
126	10.50	0.50	0.189	0.073	---	0.12
127	10.58	0.67	0.252	0.072	---	0.18
128	10.67	0.67	0.252	0.072	---	0.18
129	10.75	0.67	0.252	0.072	---	0.18
130	10.83	0.67	0.252	0.071	---	0.18
131	10.92	0.67	0.252	0.071	---	0.18
132	11.00	0.67	0.252	0.071	---	0.18
133	11.08	0.63	0.239	0.070	---	0.17
134	11.17	0.63	0.239	0.070	---	0.17
135	11.25	0.63	0.239	0.069	---	0.17
136	11.33	0.63	0.239	0.069	---	0.17
137	11.42	0.63	0.239	0.069	---	0.17
138	11.50	0.63	0.239	0.068	---	0.17
139	11.58	0.57	0.214	0.068	---	0.15
140	11.67	0.57	0.214	0.068	---	0.15
141	11.75	0.57	0.214	0.067	---	0.15
142	11.83	0.60	0.227	0.067	---	0.16
143	11.92	0.60	0.227	0.067	---	0.16
144	12.00	0.60	0.227	0.066	---	0.16
145	12.08	0.83	0.315	0.066	---	0.25
146	12.17	0.83	0.315	0.066	---	0.25
147	12.25	0.83	0.315	0.065	---	0.25
148	12.33	0.87	0.328	0.065	---	0.26
149	12.42	0.87	0.328	0.065	---	0.26
150	12.50	0.87	0.328	0.064	---	0.26
151	12.58	0.93	0.353	0.064	---	0.29
152	12.67	0.93	0.353	0.064	---	0.29
153	12.75	0.93	0.353	0.064	---	0.29
154	12.83	0.97	0.365	0.063	---	0.30
155	12.92	0.97	0.365	0.063	---	0.30
156	13.00	0.97	0.365	0.063	---	0.30
157	13.08	1.13	0.428	0.062	---	0.37
158	13.17	1.13	0.428	0.062	---	0.37
159	13.25	1.13	0.428	0.062	---	0.37
160	13.33	1.13	0.428	0.061	---	0.37
161	13.42	1.13	0.428	0.061	---	0.37
162	13.50	1.13	0.428	0.061	---	0.37
163	13.58	0.77	0.290	0.060	---	0.23
164	13.67	0.77	0.290	0.060	---	0.23
165	13.75	0.77	0.290	0.060	---	0.23

166	13.83	0.77	0.290	0.059	---	0.23
167	13.92	0.77	0.290	0.059	---	0.23
168	14.00	0.77	0.290	0.059	---	0.23
169	14.08	0.90	0.340	0.059	---	0.28
170	14.17	0.90	0.340	0.058	---	0.28
171	14.25	0.90	0.340	0.058	---	0.28
172	14.33	0.87	0.328	0.058	---	0.27
173	14.42	0.87	0.328	0.057	---	0.27
174	14.50	0.87	0.328	0.057	---	0.27
175	14.58	0.87	0.328	0.057	---	0.27
176	14.67	0.87	0.328	0.056	---	0.27
177	14.75	0.87	0.328	0.056	---	0.27
178	14.83	0.83	0.315	0.056	---	0.26
179	14.92	0.83	0.315	0.056	---	0.26
180	15.00	0.83	0.315	0.055	---	0.26
181	15.08	0.80	0.302	0.055	---	0.25
182	15.17	0.80	0.302	0.055	---	0.25
183	15.25	0.80	0.302	0.054	---	0.25
184	15.33	0.77	0.290	0.054	---	0.24
185	15.42	0.77	0.290	0.054	---	0.24
186	15.50	0.77	0.290	0.054	---	0.24
187	15.58	0.63	0.239	0.053	---	0.19
188	15.67	0.63	0.239	0.053	---	0.19
189	15.75	0.63	0.239	0.053	---	0.19
190	15.83	0.63	0.239	0.053	---	0.19
191	15.92	0.63	0.239	0.052	---	0.19
192	16.00	0.63	0.239	0.052	---	0.19
193	16.08	0.13	0.050	0.052	0.009	0.04
194	16.17	0.13	0.050	0.051	0.009	0.04
195	16.25	0.13	0.050	0.051	0.009	0.04
196	16.33	0.13	0.050	0.051	0.009	0.04
197	16.42	0.13	0.050	0.051	0.009	0.04
198	16.50	0.13	0.050	0.050	0.009	0.04
199	16.58	0.10	0.038	0.050	0.007	0.03
200	16.67	0.10	0.038	0.050	0.007	0.03
201	16.75	0.10	0.038	0.050	0.007	0.03
202	16.83	0.10	0.038	0.049	0.007	0.03
203	16.92	0.10	0.038	0.049	0.007	0.03
204	17.00	0.10	0.038	0.049	0.007	0.03
205	17.08	0.17	0.063	0.049	---	0.01
206	17.17	0.17	0.063	0.048	---	0.01
207	17.25	0.17	0.063	0.048	---	0.01
208	17.33	0.17	0.063	0.048	---	0.02
209	17.42	0.17	0.063	0.048	---	0.02
210	17.50	0.17	0.063	0.047	---	0.02
211	17.58	0.17	0.063	0.047	---	0.02
212	17.67	0.17	0.063	0.047	---	0.02
213	17.75	0.17	0.063	0.047	---	0.02
214	17.83	0.13	0.050	0.047	---	0.00
215	17.92	0.13	0.050	0.046	---	0.00
216	18.00	0.13	0.050	0.046	---	0.00
217	18.08	0.13	0.050	0.046	---	0.00
218	18.17	0.13	0.050	0.046	---	0.00
219	18.25	0.13	0.050	0.045	---	0.00

220	18.33	0.13	0.050	0.045	---	0.01
221	18.42	0.13	0.050	0.045	---	0.01
222	18.50	0.13	0.050	0.045	---	0.01
223	18.58	0.10	0.038	0.045	0.007	0.03
224	18.67	0.10	0.038	0.044	0.007	0.03
225	18.75	0.10	0.038	0.044	0.007	0.03
226	18.83	0.07	0.025	0.044	0.005	0.02
227	18.92	0.07	0.025	0.044	0.005	0.02
228	19.00	0.07	0.025	0.043	0.005	0.02
229	19.08	0.10	0.038	0.043	0.007	0.03
230	19.17	0.10	0.038	0.043	0.007	0.03
231	19.25	0.10	0.038	0.043	0.007	0.03
232	19.33	0.13	0.050	0.043	---	0.01
233	19.42	0.13	0.050	0.042	---	0.01
234	19.50	0.13	0.050	0.042	---	0.01
235	19.58	0.10	0.038	0.042	0.007	0.03
236	19.67	0.10	0.038	0.042	0.007	0.03
237	19.75	0.10	0.038	0.042	0.007	0.03
238	19.83	0.07	0.025	0.041	0.005	0.02
239	19.92	0.07	0.025	0.041	0.005	0.02
240	20.00	0.07	0.025	0.041	0.005	0.02
241	20.08	0.10	0.038	0.041	0.007	0.03
242	20.17	0.10	0.038	0.041	0.007	0.03
243	20.25	0.10	0.038	0.041	0.007	0.03
244	20.33	0.10	0.038	0.040	0.007	0.03
245	20.42	0.10	0.038	0.040	0.007	0.03
246	20.50	0.10	0.038	0.040	0.007	0.03
247	20.58	0.10	0.038	0.040	0.007	0.03
248	20.67	0.10	0.038	0.040	0.007	0.03
249	20.75	0.10	0.038	0.040	0.007	0.03
250	20.83	0.07	0.025	0.039	0.005	0.02
251	20.92	0.07	0.025	0.039	0.005	0.02
252	21.00	0.07	0.025	0.039	0.005	0.02
253	21.08	0.10	0.038	0.039	0.007	0.03
254	21.17	0.10	0.038	0.039	0.007	0.03
255	21.25	0.10	0.038	0.039	0.007	0.03
256	21.33	0.07	0.025	0.038	0.005	0.02
257	21.42	0.07	0.025	0.038	0.005	0.02
258	21.50	0.07	0.025	0.038	0.005	0.02
259	21.58	0.10	0.038	0.038	0.007	0.03
260	21.67	0.10	0.038	0.038	0.007	0.03
261	21.75	0.10	0.038	0.038	---	0.00
262	21.83	0.07	0.025	0.038	0.005	0.02
263	21.92	0.07	0.025	0.038	0.005	0.02
264	22.00	0.07	0.025	0.037	0.005	0.02
265	22.08	0.10	0.038	0.037	---	0.00
266	22.17	0.10	0.038	0.037	---	0.00
267	22.25	0.10	0.038	0.037	---	0.00
268	22.33	0.07	0.025	0.037	0.005	0.02
269	22.42	0.07	0.025	0.037	0.005	0.02
270	22.50	0.07	0.025	0.037	0.005	0.02
271	22.58	0.07	0.025	0.037	0.005	0.02
272	22.67	0.07	0.025	0.036	0.005	0.02
273	22.75	0.07	0.025	0.036	0.005	0.02

274	22.83	0.07	0.025	0.036	0.005	0.02
275	22.92	0.07	0.025	0.036	0.005	0.02
276	23.00	0.07	0.025	0.036	0.005	0.02
277	23.08	0.07	0.025	0.036	0.005	0.02
278	23.17	0.07	0.025	0.036	0.005	0.02
279	23.25	0.07	0.025	0.036	0.005	0.02
280	23.33	0.07	0.025	0.036	0.005	0.02
281	23.42	0.07	0.025	0.036	0.005	0.02
282	23.50	0.07	0.025	0.036	0.005	0.02
283	23.58	0.07	0.025	0.036	0.005	0.02
284	23.67	0.07	0.025	0.036	0.005	0.02
285	23.75	0.07	0.025	0.036	0.005	0.02
286	23.83	0.07	0.025	0.035	0.005	0.02
287	23.92	0.07	0.025	0.035	0.005	0.02
288	24.00	0.07	0.025	0.035	0.005	0.02
Sum =	100.0				Sum =	26.2

Flood volume = Effective rainfall 2.18(In)
times area 29.1(Ac.)/[(In)/(Ft.)] = 5.3(Ac.Ft)
Total soil loss = 0.97(In)
Total soil loss = 2.342(Ac.Ft)
Total rainfall = 3.15(In)
Flood volume = 230668.4 Cubic Feet
Total soil loss = 102005.7 Cubic Feet

Peak flow rate of this hydrograph = 10.758(CFS)

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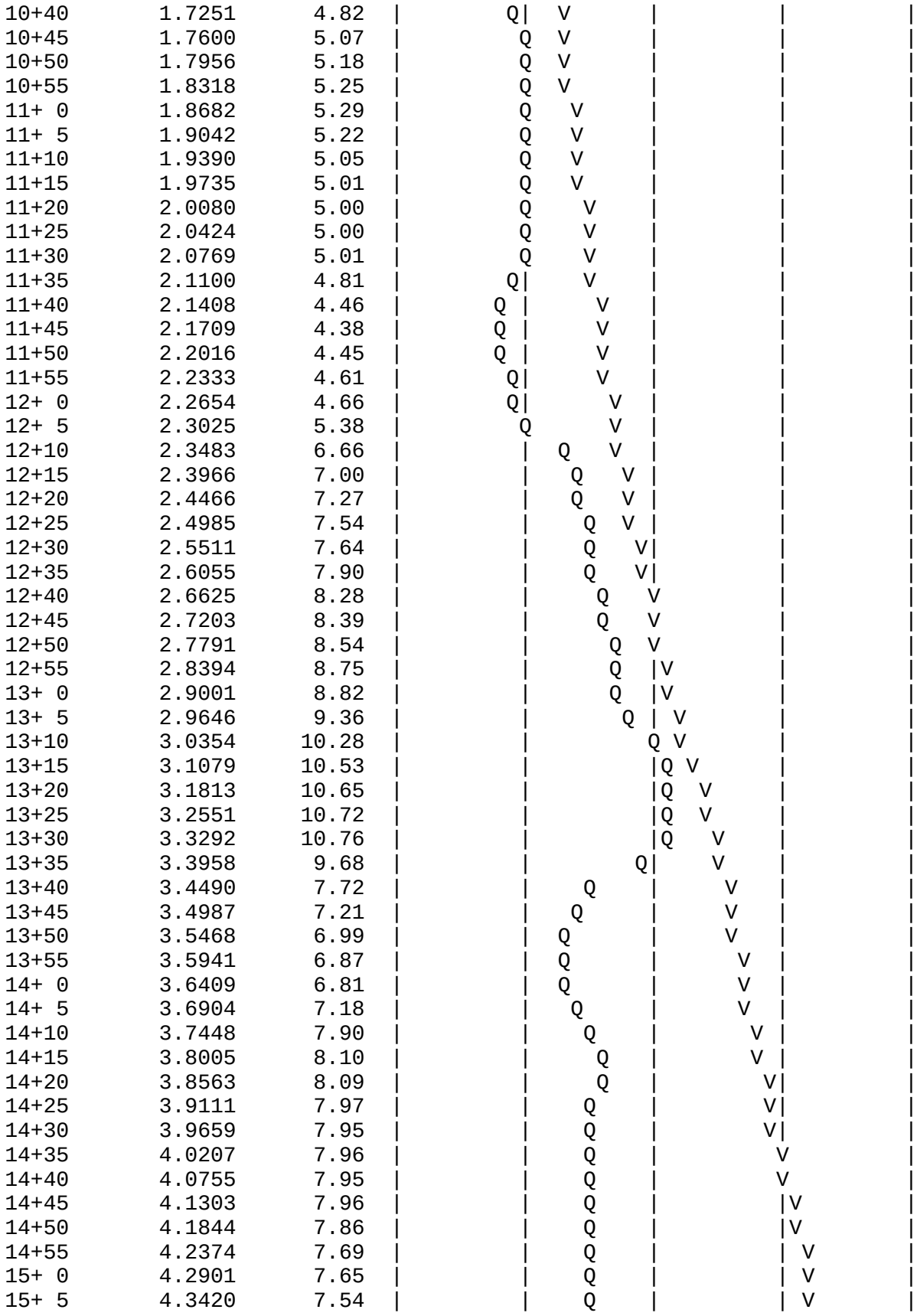
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

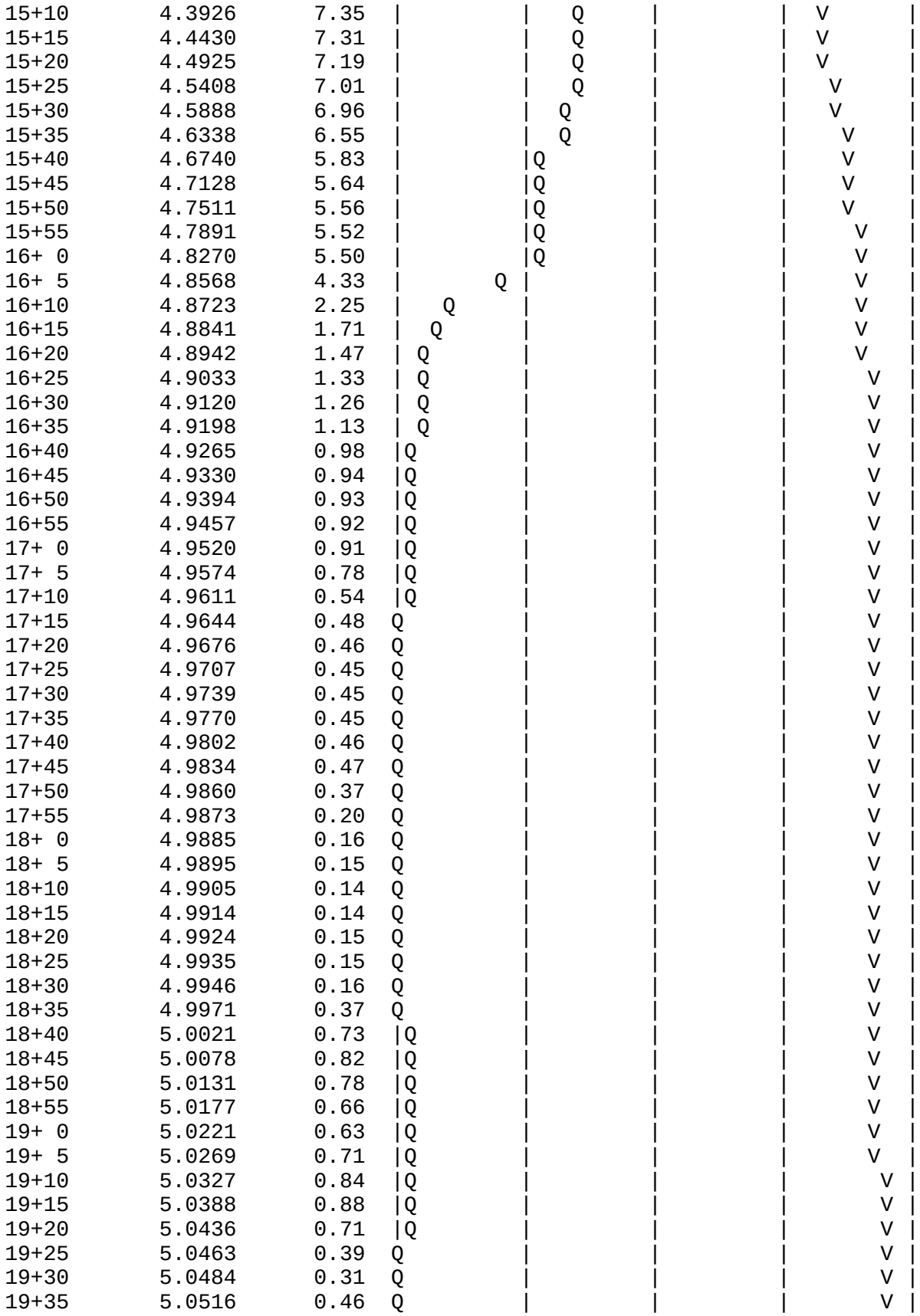
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0011	0.17	Q	|	|	|	|
0+10	0.0043	0.46	Q	|	|	|	|
0+15	0.0080	0.54	VQ	|	|	|	|
0+20	0.0125	0.65	VQ	|	|	|	|
0+25	0.0181	0.82	VQ	|	|	|	|
0+30	0.0241	0.87	VQ	|	|	|	|
0+35	0.0302	0.89	VQ	|	|	|	|
0+40	0.0364	0.90	VQ	|	|	|	|
0+45	0.0427	0.91	VQ	|	|	|	|
0+50	0.0495	0.99	VQ	|	|	|	|
0+55	0.0574	1.14	V Q	|	|	|	|
1+ 0	0.0655	1.18	V Q	|	|	|	|
1+ 5	0.0731	1.11	V Q	|	|	|	|
1+10	0.0798	0.97	VQ	|	|	|	|
1+15	0.0863	0.94	VQ	|	|	|	|
1+20	0.0927	0.93	VQ	|	|	|	|
1+25	0.0990	0.92	VQ	|	|	|	|
1+30	0.1053	0.91	VQ	|	|	|	|
1+35	0.1116	0.91	VQ	|	|	|	|

1+40	0.1178	0.91	VQ	|	|	|	|
1+45	0.1241	0.91	VQ	|	|	|	|
1+50	0.1309	0.99	VQ	|	|	|	|
1+55	0.1388	1.14	|VQ	|	|	|	|
2+ 0	0.1469	1.18	|VQ	|	|	|	|
2+ 5	0.1551	1.19	|VQ	|	|	|	|
2+10	0.1634	1.20	|VQ	|	|	|	|
2+15	0.1717	1.21	|VQ	|	|	|	|
2+20	0.1801	1.21	|VQ	|	|	|	|
2+25	0.1884	1.21	|VQ	|	|	|	|
2+30	0.1968	1.21	|VQ	|	|	|	|
2+35	0.2057	1.29	|VQ	|	|	|	|
2+40	0.2156	1.44	|VQ	|	|	|	|
2+45	0.2258	1.48	|VQ	|	|	|	|
2+50	0.2361	1.50	|VQ	|	|	|	|
2+55	0.2465	1.51	|V Q	|	|	|	|
3+ 0	0.2569	1.51	|V Q	|	|	|	|
3+ 5	0.2674	1.52	| VQ	|	|	|	|
3+10	0.2778	1.52	| VQ	|	|	|	|
3+15	0.2882	1.52	| VQ	|	|	|	|
3+20	0.2987	1.52	| VQ	|	|	|	|
3+25	0.3091	1.52	| VQ	|	|	|	|
3+30	0.3196	1.52	| VQ	|	|	|	|
3+35	0.3300	1.52	| VQ	|	|	|	|
3+40	0.3404	1.52	| VQ	|	|	|	|
3+45	0.3509	1.52	| VQ	|	|	|	|
3+50	0.3619	1.60	| VQ	|	|	|	|
3+55	0.3739	1.74	| VQ	|	|	|	|
4+ 0	0.3862	1.78	| VQ	|	|	|	|
4+ 5	0.3986	1.80	| Q	|	|	|	|
4+10	0.4110	1.81	| Q	|	|	|	|
4+15	0.4235	1.82	| Q	|	|	|	|
4+20	0.4366	1.90	| Q	|	|	|	|
4+25	0.4507	2.05	| VQ	|	|	|	|
4+30	0.4651	2.09	| VQ	|	|	|	|
4+35	0.4796	2.10	| VQ	|	|	|	|
4+40	0.4942	2.11	| VQ	|	|	|	|
4+45	0.5087	2.12	| VQ	|	|	|	|
4+50	0.5195	1.55	| Q	|	|	|	|
4+55	0.5232	0.55	|Q V	|	|	|	|
5+ 0	0.5253	0.29	Q V	|	|	|	|
5+ 5	0.5298	0.66	|Q V	|	|	|	|
5+10	0.5398	1.45	| Q V	|	|	|	|
5+15	0.5510	1.63	| QV	|	|	|	|
5+20	0.5634	1.80	| QV	|	|	|	|
5+25	0.5772	2.00	| QV	|	|	|	|
5+30	0.5914	2.07	| Q	|	|	|	|
5+35	0.6022	1.57	| QV	|	|	|	|
5+40	0.6066	0.63	|Q V	|	|	|	|
5+45	0.6092	0.39	Q V	|	|	|	|
5+50	0.6113	0.29	Q V	|	|	|	|
5+55	0.6129	0.24	Q V	|	|	|	|
6+ 0	0.6144	0.22	Q V	|	|	|	|
6+ 5	0.6166	0.31	Q V	|	|	|	|

```
 6+10       0.6200      0.50  |Q  V     |          |          |          |
 6+15       0.6239      0.56  |Q  V     |          |          |          |
 6+20       0.6280      0.60  |Q  V     |          |          |          |
 6+25       0.6323      0.62  |Q  V     |          |          |          |
 6+30       0.6367      0.64  |Q  V     |          |          |          |
 6+35       0.6419      0.75  |Q  V     |          |          |          |
 6+40       0.6484      0.95  |Q  V     |          |          |          |
 6+45       0.6553      1.00  | Q V     |          |          |          |
 6+50       0.6624      1.04  | Q  V    |          |          |          |
 6+55       0.6698      1.06  | Q  V    |          |          |          |
 7+ 0       0.6772      1.08  | Q  V    |          |          |          |
 7+ 5       0.6847      1.09  | Q  V    |          |          |          |
 7+10       0.6924      1.11  | Q  V    |          |          |          |
 7+15       0.7001      1.12  | Q  V    |          |          |          |
 7+20       0.7085      1.23  | Q  V    |          |          |          |
 7+25       0.7183      1.42  | Q  V    |          |          |          |
 7+30       0.7285      1.48  | Q  V    |          |          |          |
 7+35       0.7396      1.61  |  Q V    |          |          |          |
 7+40       0.7521      1.82  |  Q V    |          |          |          |
 7+45       0.7651      1.88  |  Q V    |          |          |          |
 7+50       0.7790      2.02  |   QV    |          |          |          |
 7+55       0.7943      2.22  |   QV    |          |          |          |
 8+ 0       0.8100      2.29  |   Q V   |          |          |          |
 8+ 5       0.8274      2.52  |    QV   |          |          |          |
 8+10       0.8474      2.90  |    QV   |          |          |          |
 8+15       0.8682      3.02  |     Q   |          |          |          |
 8+20       0.8893      3.07  |     Q   |          |          |          |
 8+25       0.9107      3.11  |     Q   |          |          |          |
 8+30       0.9323      3.13  |     QV  |          |          |          |
 8+35       0.9547      3.25  |     QV  |          |          |          |
 8+40       0.9784      3.44  |     QV  |          |          |          |
 8+45       1.0025      3.50  |     QV  |          |          |          |
 8+50       1.0275      3.63  |      Q  |          |          |          |
 8+55       1.0539      3.83  |      Q  |          |          |          |
 9+ 0       1.0808      3.90  |      QV |          |          |          |
 9+ 5       1.1093      4.14  |       Q |          |          |          |
 9+10       1.1404      4.52  |       VQ|          |          |          |
 9+15       1.1723      4.63  |       VQ|          |          |          |
 9+20       1.2052      4.79  |        Q|          |          |          |
 9+25       1.2397      5.00  |        Q|          |          |          |
 9+30       1.2746      5.07  |        VQ          |          |          |
 9+35       1.3105      5.21  |        VQ          |          |          |
 9+40       1.3477      5.41  |         Q          |          |          |
 9+45       1.3855      5.48  |         Q          |          |          |
 9+50       1.4241      5.61  |         VQ         |          |          |
 9+55       1.4641      5.81  |          |Q        |          |          |
10+ 0       1.5046      5.88  |          |Q        |          |          |
10+ 5       1.5405      5.21  |          QV        |          |          |
10+10       1.5679      3.98  |      Q   |V        |          |          |
10+15       1.5931      3.67  |      Q   | V       |          |          |
10+20       1.6175      3.53  |      Q   | V       |          |          |
10+25       1.6413      3.46  |     Q    | V       |          |          |
10+30       1.6649      3.43  |     Q    | V       |          |          |
10+35       1.6919      3.91  |      Q   | V       |          |          |
```





19+40	5.0568	0.76	|Q	|	|	|	V |
19+45	5.0626	0.84	|Q	|	|	|	V |
19+50	5.0680	0.79	|Q	|	|	|	V |
19+55	5.0726	0.66	|Q	|	|	|	V |
20+ 0	5.0770	0.63	|Q	|	|	|	V |
20+ 5	5.0818	0.71	|Q	|	|	|	V |
20+10	5.0876	0.84	|Q	|	|	|	V |
20+15	5.0937	0.88	|Q	|	|	|	V |
20+20	5.0998	0.89	|Q	|	|	|	V |
20+25	5.1060	0.90	|Q	|	|	|	V |
20+30	5.1123	0.91	|Q	|	|	|	V |
20+35	5.1185	0.91	|Q	|	|	|	V |
20+40	5.1248	0.91	|Q	|	|	|	V |
20+45	5.1311	0.91	|Q	|	|	|	V |
20+50	5.1367	0.83	|Q	|	|	|	V |
20+55	5.1414	0.68	|Q	|	|	|	V |
21+ 0	5.1458	0.64	|Q	|	|	|	V |
21+ 5	5.1507	0.71	|Q	|	|	|	V |
21+10	5.1565	0.84	|Q	|	|	|	V |
21+15	5.1626	0.88	|Q	|	|	|	V |
21+20	5.1681	0.81	|Q	|	|	|	V|
21+25	5.1728	0.67	|Q	|	|	|	V|
21+30	5.1772	0.64	|Q	|	|	|	V|
21+35	5.1820	0.71	|Q	|	|	|	V|
21+40	5.1878	0.84	|Q	|	|	|	V|
21+45	5.1922	0.63	|Q	|	|	|	V|
21+50	5.1947	0.37	Q	|	|	|	V|
21+55	5.1985	0.56	|Q	|	|	|	V|
22+ 0	5.2026	0.59	|Q	|	|	|	V|
22+ 5	5.2056	0.43	Q	|	|	|	V|
22+10	5.2066	0.15	Q	|	|	|	V|
22+15	5.2072	0.08	Q	|	|	|	V|
22+20	5.2087	0.21	Q	|	|	|	V|
22+25	5.2120	0.48	Q	|	|	|	V|
22+30	5.2157	0.54	|Q	|	|	|	V|
22+35	5.2197	0.57	|Q	|	|	|	V|
22+40	5.2237	0.59	|Q	|	|	|	V|
22+45	5.2278	0.60	|Q	|	|	|	V|
22+50	5.2320	0.61	|Q	|	|	|	V|
22+55	5.2362	0.61	|Q	|	|	|	V|
23+ 0	5.2404	0.61	|Q	|	|	|	V|
23+ 5	5.2445	0.61	|Q	|	|	|	V|
23+10	5.2487	0.61	|Q	|	|	|	V|
23+15	5.2529	0.61	|Q	|	|	|	V|
23+20	5.2571	0.61	|Q	|	|	|	V|
23+25	5.2612	0.61	|Q	|	|	|	V|
23+30	5.2654	0.61	|Q	|	|	|	V|
23+35	5.2696	0.61	|Q	|	|	|	V|
23+40	5.2738	0.61	|Q	|	|	|	V|
23+45	5.2779	0.61	|Q	|	|	|	V|
23+50	5.2821	0.61	|Q	|	|	|	V|
23+55	5.2863	0.61	|Q	|	|	|	V|
24+ 0	5.2905	0.61	|Q	|	|	|	V|
24+ 5	5.2935	0.44	Q	|	|	|	V|

```
   24+10       5.2945      0.15  Q         |          |          |        V|
   24+15       5.2950      0.07  Q         |          |          |        V|
   24+20       5.2953      0.04  Q         |          |          |        V|
   24+25       5.2954      0.02  Q         |          |          |        V|
   24+30       5.2954      0.01  Q         |          |          |         V
---------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
Study date 10/30/19 File: 4163UHP10024100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 100 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 2
4163UHP100.UM1

Drainage Area = 29.10(Ac.) = 0.045 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 29.10(Ac.) = 0.045 Sq. Mi.
Length along longest watercourse = 2560.00(Ft.)
Length along longest watercourse measured to centroid = 740.00(Ft.)
Length along longest watercourse = 0.485 Mi.
Length along longest watercourse measured to centroid = 0.140 Mi.
Difference in elevation = 17.50(Ft.)
Slope along watercourse = 36.0938 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.066 Hr.
Lag time = 3.93 Min.
25% of lag time = 0.98 Min.
40% of lag time = 1.57 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	1.60	46.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
29.10	4.00	116.40

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 4.000(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
29.100	69.00	0.900

Total Area Entered = 29.10(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	84.4	0.194	0.900	0.037	1.000	0.037
					Sum (F) =	0.037

Area averaged mean soil loss (F) (In/Hr) = 0.037
Minimum soil loss rate ((In/Hr)) = 0.018
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	127.113	27.224	7.984
2	0.167	254.227	48.435	14.205
3	0.250	381.340	12.720	3.731
4	0.333	508.453	5.712	1.675
5	0.417	635.566	3.158	0.926
6	0.500	762.680	1.739	0.510
7	0.583	889.793	1.012	0.297
		Sum = 100.000	Sum=	29.327

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.032	0.065	0.006	0.03
2	0.17	0.07	0.032	0.065	0.006	0.03
3	0.25	0.07	0.032	0.065	0.006	0.03

4	0.33	0.10	0.048	0.065	0.009	0.04
5	0.42	0.10	0.048	0.064	0.009	0.04
6	0.50	0.10	0.048	0.064	0.009	0.04
7	0.58	0.10	0.048	0.064	0.009	0.04
8	0.67	0.10	0.048	0.064	0.009	0.04
9	0.75	0.10	0.048	0.063	0.009	0.04
10	0.83	0.13	0.064	0.063	---	0.00
11	0.92	0.13	0.064	0.063	---	0.00
12	1.00	0.13	0.064	0.063	---	0.00
13	1.08	0.10	0.048	0.062	0.009	0.04
14	1.17	0.10	0.048	0.062	0.009	0.04
15	1.25	0.10	0.048	0.062	0.009	0.04
16	1.33	0.10	0.048	0.062	0.009	0.04
17	1.42	0.10	0.048	0.061	0.009	0.04
18	1.50	0.10	0.048	0.061	0.009	0.04
19	1.58	0.10	0.048	0.061	0.009	0.04
20	1.67	0.10	0.048	0.061	0.009	0.04
21	1.75	0.10	0.048	0.060	0.009	0.04
22	1.83	0.13	0.064	0.060	---	0.00
23	1.92	0.13	0.064	0.060	---	0.00
24	2.00	0.13	0.064	0.060	---	0.00
25	2.08	0.13	0.064	0.059	---	0.00
26	2.17	0.13	0.064	0.059	---	0.00
27	2.25	0.13	0.064	0.059	---	0.01
28	2.33	0.13	0.064	0.059	---	0.01
29	2.42	0.13	0.064	0.058	---	0.01
30	2.50	0.13	0.064	0.058	---	0.01
31	2.58	0.17	0.080	0.058	---	0.02
32	2.67	0.17	0.080	0.058	---	0.02
33	2.75	0.17	0.080	0.057	---	0.02
34	2.83	0.17	0.080	0.057	---	0.02
35	2.92	0.17	0.080	0.057	---	0.02
36	3.00	0.17	0.080	0.057	---	0.02
37	3.08	0.17	0.080	0.057	---	0.02
38	3.17	0.17	0.080	0.056	---	0.02
39	3.25	0.17	0.080	0.056	---	0.02
40	3.33	0.17	0.080	0.056	---	0.02
41	3.42	0.17	0.080	0.056	---	0.02
42	3.50	0.17	0.080	0.055	---	0.02
43	3.58	0.17	0.080	0.055	---	0.02
44	3.67	0.17	0.080	0.055	---	0.03
45	3.75	0.17	0.080	0.055	---	0.03
46	3.83	0.20	0.096	0.054	---	0.04
47	3.92	0.20	0.096	0.054	---	0.04
48	4.00	0.20	0.096	0.054	---	0.04
49	4.08	0.20	0.096	0.054	---	0.04
50	4.17	0.20	0.096	0.054	---	0.04
51	4.25	0.20	0.096	0.053	---	0.04
52	4.33	0.23	0.112	0.053	---	0.06
53	4.42	0.23	0.112	0.053	---	0.06
54	4.50	0.23	0.112	0.053	---	0.06
55	4.58	0.23	0.112	0.052	---	0.06
56	4.67	0.23	0.112	0.052	---	0.06
57	4.75	0.23	0.112	0.052	---	0.06

58	4.83	0.27	0.128	0.052	---	0.08
59	4.92	0.27	0.128	0.051	---	0.08
60	5.00	0.27	0.128	0.051	---	0.08
61	5.08	0.20	0.096	0.051	---	0.04
62	5.17	0.20	0.096	0.051	---	0.05
63	5.25	0.20	0.096	0.051	---	0.05
64	5.33	0.23	0.112	0.050	---	0.06
65	5.42	0.23	0.112	0.050	---	0.06
66	5.50	0.23	0.112	0.050	---	0.06
67	5.58	0.27	0.128	0.050	---	0.08
68	5.67	0.27	0.128	0.049	---	0.08
69	5.75	0.27	0.128	0.049	---	0.08
70	5.83	0.27	0.128	0.049	---	0.08
71	5.92	0.27	0.128	0.049	---	0.08
72	6.00	0.27	0.128	0.049	---	0.08
73	6.08	0.30	0.144	0.048	---	0.10
74	6.17	0.30	0.144	0.048	---	0.10
75	6.25	0.30	0.144	0.048	---	0.10
76	6.33	0.30	0.144	0.048	---	0.10
77	6.42	0.30	0.144	0.048	---	0.10
78	6.50	0.30	0.144	0.047	---	0.10
79	6.58	0.33	0.160	0.047	---	0.11
80	6.67	0.33	0.160	0.047	---	0.11
81	6.75	0.33	0.160	0.047	---	0.11
82	6.83	0.33	0.160	0.046	---	0.11
83	6.92	0.33	0.160	0.046	---	0.11
84	7.00	0.33	0.160	0.046	---	0.11
85	7.08	0.33	0.160	0.046	---	0.11
86	7.17	0.33	0.160	0.046	---	0.11
87	7.25	0.33	0.160	0.045	---	0.11
88	7.33	0.37	0.176	0.045	---	0.13
89	7.42	0.37	0.176	0.045	---	0.13
90	7.50	0.37	0.176	0.045	---	0.13
91	7.58	0.40	0.192	0.045	---	0.15
92	7.67	0.40	0.192	0.044	---	0.15
93	7.75	0.40	0.192	0.044	---	0.15
94	7.83	0.43	0.208	0.044	---	0.16
95	7.92	0.43	0.208	0.044	---	0.16
96	8.00	0.43	0.208	0.044	---	0.16
97	8.08	0.50	0.240	0.043	---	0.20
98	8.17	0.50	0.240	0.043	---	0.20
99	8.25	0.50	0.240	0.043	---	0.20
100	8.33	0.50	0.240	0.043	---	0.20
101	8.42	0.50	0.240	0.043	---	0.20
102	8.50	0.50	0.240	0.042	---	0.20
103	8.58	0.53	0.256	0.042	---	0.21
104	8.67	0.53	0.256	0.042	---	0.21
105	8.75	0.53	0.256	0.042	---	0.21
106	8.83	0.57	0.272	0.042	---	0.23
107	8.92	0.57	0.272	0.041	---	0.23
108	9.00	0.57	0.272	0.041	---	0.23
109	9.08	0.63	0.304	0.041	---	0.26
110	9.17	0.63	0.304	0.041	---	0.26
111	9.25	0.63	0.304	0.041	---	0.26

112	9.33	0.67	0.320	0.040	---	0.28
113	9.42	0.67	0.320	0.040	---	0.28
114	9.50	0.67	0.320	0.040	---	0.28
115	9.58	0.70	0.336	0.040	---	0.30
116	9.67	0.70	0.336	0.040	---	0.30
117	9.75	0.70	0.336	0.039	---	0.30
118	9.83	0.73	0.352	0.039	---	0.31
119	9.92	0.73	0.352	0.039	---	0.31
120	10.00	0.73	0.352	0.039	---	0.31
121	10.08	0.50	0.240	0.039	---	0.20
122	10.17	0.50	0.240	0.039	---	0.20
123	10.25	0.50	0.240	0.038	---	0.20
124	10.33	0.50	0.240	0.038	---	0.20
125	10.42	0.50	0.240	0.038	---	0.20
126	10.50	0.50	0.240	0.038	---	0.20
127	10.58	0.67	0.320	0.038	---	0.28
128	10.67	0.67	0.320	0.037	---	0.28
129	10.75	0.67	0.320	0.037	---	0.28
130	10.83	0.67	0.320	0.037	---	0.28
131	10.92	0.67	0.320	0.037	---	0.28
132	11.00	0.67	0.320	0.037	---	0.28
133	11.08	0.63	0.304	0.036	---	0.27
134	11.17	0.63	0.304	0.036	---	0.27
135	11.25	0.63	0.304	0.036	---	0.27
136	11.33	0.63	0.304	0.036	---	0.27
137	11.42	0.63	0.304	0.036	---	0.27
138	11.50	0.63	0.304	0.036	---	0.27
139	11.58	0.57	0.272	0.035	---	0.24
140	11.67	0.57	0.272	0.035	---	0.24
141	11.75	0.57	0.272	0.035	---	0.24
142	11.83	0.60	0.288	0.035	---	0.25
143	11.92	0.60	0.288	0.035	---	0.25
144	12.00	0.60	0.288	0.035	---	0.25
145	12.08	0.83	0.400	0.034	---	0.37
146	12.17	0.83	0.400	0.034	---	0.37
147	12.25	0.83	0.400	0.034	---	0.37
148	12.33	0.87	0.416	0.034	---	0.38
149	12.42	0.87	0.416	0.034	---	0.38
150	12.50	0.87	0.416	0.034	---	0.38
151	12.58	0.93	0.448	0.033	---	0.41
152	12.67	0.93	0.448	0.033	---	0.41
153	12.75	0.93	0.448	0.033	---	0.41
154	12.83	0.97	0.464	0.033	---	0.43
155	12.92	0.97	0.464	0.033	---	0.43
156	13.00	0.97	0.464	0.033	---	0.43
157	13.08	1.13	0.544	0.032	---	0.51
158	13.17	1.13	0.544	0.032	---	0.51
159	13.25	1.13	0.544	0.032	---	0.51
160	13.33	1.13	0.544	0.032	---	0.51
161	13.42	1.13	0.544	0.032	---	0.51
162	13.50	1.13	0.544	0.032	---	0.51
163	13.58	0.77	0.368	0.031	---	0.34
164	13.67	0.77	0.368	0.031	---	0.34
165	13.75	0.77	0.368	0.031	---	0.34

166	13.83	0.77	0.368	0.031	---	0.34
167	13.92	0.77	0.368	0.031	---	0.34
168	14.00	0.77	0.368	0.031	---	0.34
169	14.08	0.90	0.432	0.030	---	0.40
170	14.17	0.90	0.432	0.030	---	0.40
171	14.25	0.90	0.432	0.030	---	0.40
172	14.33	0.87	0.416	0.030	---	0.39
173	14.42	0.87	0.416	0.030	---	0.39
174	14.50	0.87	0.416	0.030	---	0.39
175	14.58	0.87	0.416	0.030	---	0.39
176	14.67	0.87	0.416	0.029	---	0.39
177	14.75	0.87	0.416	0.029	---	0.39
178	14.83	0.83	0.400	0.029	---	0.37
179	14.92	0.83	0.400	0.029	---	0.37
180	15.00	0.83	0.400	0.029	---	0.37
181	15.08	0.80	0.384	0.029	---	0.36
182	15.17	0.80	0.384	0.028	---	0.36
183	15.25	0.80	0.384	0.028	---	0.36
184	15.33	0.77	0.368	0.028	---	0.34
185	15.42	0.77	0.368	0.028	---	0.34
186	15.50	0.77	0.368	0.028	---	0.34
187	15.58	0.63	0.304	0.028	---	0.28
188	15.67	0.63	0.304	0.028	---	0.28
189	15.75	0.63	0.304	0.027	---	0.28
190	15.83	0.63	0.304	0.027	---	0.28
191	15.92	0.63	0.304	0.027	---	0.28
192	16.00	0.63	0.304	0.027	---	0.28
193	16.08	0.13	0.064	0.027	---	0.04
194	16.17	0.13	0.064	0.027	---	0.04
195	16.25	0.13	0.064	0.027	---	0.04
196	16.33	0.13	0.064	0.026	---	0.04
197	16.42	0.13	0.064	0.026	---	0.04
198	16.50	0.13	0.064	0.026	---	0.04
199	16.58	0.10	0.048	0.026	---	0.02
200	16.67	0.10	0.048	0.026	---	0.02
201	16.75	0.10	0.048	0.026	---	0.02
202	16.83	0.10	0.048	0.026	---	0.02
203	16.92	0.10	0.048	0.026	---	0.02
204	17.00	0.10	0.048	0.025	---	0.02
205	17.08	0.17	0.080	0.025	---	0.05
206	17.17	0.17	0.080	0.025	---	0.05
207	17.25	0.17	0.080	0.025	---	0.05
208	17.33	0.17	0.080	0.025	---	0.06
209	17.42	0.17	0.080	0.025	---	0.06
210	17.50	0.17	0.080	0.025	---	0.06
211	17.58	0.17	0.080	0.025	---	0.06
212	17.67	0.17	0.080	0.024	---	0.06
213	17.75	0.17	0.080	0.024	---	0.06
214	17.83	0.13	0.064	0.024	---	0.04
215	17.92	0.13	0.064	0.024	---	0.04
216	18.00	0.13	0.064	0.024	---	0.04
217	18.08	0.13	0.064	0.024	---	0.04
218	18.17	0.13	0.064	0.024	---	0.04
219	18.25	0.13	0.064	0.024	---	0.04

220	18.33	0.13	0.064	0.023	---	0.04
221	18.42	0.13	0.064	0.023	---	0.04
222	18.50	0.13	0.064	0.023	---	0.04
223	18.58	0.10	0.048	0.023	---	0.02
224	18.67	0.10	0.048	0.023	---	0.02
225	18.75	0.10	0.048	0.023	---	0.03
226	18.83	0.07	0.032	0.023	---	0.01
227	18.92	0.07	0.032	0.023	---	0.01
228	19.00	0.07	0.032	0.023	---	0.01
229	19.08	0.10	0.048	0.022	---	0.03
230	19.17	0.10	0.048	0.022	---	0.03
231	19.25	0.10	0.048	0.022	---	0.03
232	19.33	0.13	0.064	0.022	---	0.04
233	19.42	0.13	0.064	0.022	---	0.04
234	19.50	0.13	0.064	0.022	---	0.04
235	19.58	0.10	0.048	0.022	---	0.03
236	19.67	0.10	0.048	0.022	---	0.03
237	19.75	0.10	0.048	0.022	---	0.03
238	19.83	0.07	0.032	0.022	---	0.01
239	19.92	0.07	0.032	0.021	---	0.01
240	20.00	0.07	0.032	0.021	---	0.01
241	20.08	0.10	0.048	0.021	---	0.03
242	20.17	0.10	0.048	0.021	---	0.03
243	20.25	0.10	0.048	0.021	---	0.03
244	20.33	0.10	0.048	0.021	---	0.03
245	20.42	0.10	0.048	0.021	---	0.03
246	20.50	0.10	0.048	0.021	---	0.03
247	20.58	0.10	0.048	0.021	---	0.03
248	20.67	0.10	0.048	0.021	---	0.03
249	20.75	0.10	0.048	0.021	---	0.03
250	20.83	0.07	0.032	0.020	---	0.01
251	20.92	0.07	0.032	0.020	---	0.01
252	21.00	0.07	0.032	0.020	---	0.01
253	21.08	0.10	0.048	0.020	---	0.03
254	21.17	0.10	0.048	0.020	---	0.03
255	21.25	0.10	0.048	0.020	---	0.03
256	21.33	0.07	0.032	0.020	---	0.01
257	21.42	0.07	0.032	0.020	---	0.01
258	21.50	0.07	0.032	0.020	---	0.01
259	21.58	0.10	0.048	0.020	---	0.03
260	21.67	0.10	0.048	0.020	---	0.03
261	21.75	0.10	0.048	0.020	---	0.03
262	21.83	0.07	0.032	0.020	---	0.01
263	21.92	0.07	0.032	0.020	---	0.01
264	22.00	0.07	0.032	0.019	---	0.01
265	22.08	0.10	0.048	0.019	---	0.03
266	22.17	0.10	0.048	0.019	---	0.03
267	22.25	0.10	0.048	0.019	---	0.03
268	22.33	0.07	0.032	0.019	---	0.01
269	22.42	0.07	0.032	0.019	---	0.01
270	22.50	0.07	0.032	0.019	---	0.01
271	22.58	0.07	0.032	0.019	---	0.01
272	22.67	0.07	0.032	0.019	---	0.01
273	22.75	0.07	0.032	0.019	---	0.01

274	22.83	0.07	0.032	0.019	---	0.01
275	22.92	0.07	0.032	0.019	---	0.01
276	23.00	0.07	0.032	0.019	---	0.01
277	23.08	0.07	0.032	0.019	---	0.01
278	23.17	0.07	0.032	0.019	---	0.01
279	23.25	0.07	0.032	0.019	---	0.01
280	23.33	0.07	0.032	0.019	---	0.01
281	23.42	0.07	0.032	0.019	---	0.01
282	23.50	0.07	0.032	0.019	---	0.01
283	23.58	0.07	0.032	0.019	---	0.01
284	23.67	0.07	0.032	0.018	---	0.01
285	23.75	0.07	0.032	0.018	---	0.01
286	23.83	0.07	0.032	0.018	---	0.01
287	23.92	0.07	0.032	0.018	---	0.01
288	24.00	0.07	0.032	0.018	---	0.01
Sum =	100.0				Sum =	38.4

Flood volume = Effective rainfall 3.20(In)
times area 29.1(Ac.)/[(In)/(Ft.)] = 7.8(Ac.Ft)
Total soil loss = 0.80(In)
Total soil loss = 1.946(Ac.Ft)
Total rainfall = 4.00(In)
Flood volume = 337752.8 Cubic Feet
Total soil loss = 84755.2 Cubic Feet

Peak flow rate of this hydrograph = 15.006(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0014	0.21	Q	|	|	|	|
0+10	0.0055	0.58	VQ	|	|	|	|
0+15	0.0101	0.68	VQ	|	|	|	|
0+20	0.0159	0.83	VQ	|	|	|	|
0+25	0.0230	1.04	V Q	|	|	|	|
0+30	0.0306	1.10	V Q	|	|	|	|
0+35	0.0384	1.13	V Q	|	|	|	|
0+40	0.0463	1.14	V Q	|	|	|	|
0+45	0.0542	1.15	V Q	|	|	|	|
0+50	0.0601	0.85	VQ	|	|	|	|
0+55	0.0621	0.30	Q	|	|	|	|
1+ 0	0.0633	0.17	Q	|	|	|	|
1+ 5	0.0661	0.41	Q	|	|	|	|
1+10	0.0724	0.91	VQ	|	|	|	|
1+15	0.0795	1.04	V Q	|	|	|	|
1+20	0.0870	1.09	V Q	|	|	|	|
1+25	0.0948	1.12	V Q	|	|	|	|
1+30	0.1027	1.14	V Q	|	|	|	|
1+35	0.1106	1.15	V Q	|	|	|	|

1+40	0.1186	1.15	V Q	|	|	|	|
1+45	0.1265	1.15	V Q	|	|	|	|
1+50	0.1325	0.87	VQ	|	|	|	|
1+55	0.1351	0.37	Q	|	|	|	|
2+ 0	0.1367	0.24	Q	|	|	|	|
2+ 5	0.1381	0.19	Q	|	|	|	|
2+10	0.1392	0.16	Q	|	|	|	|
2+15	0.1402	0.15	Q	|	|	|	|
2+20	0.1413	0.15	Q	|	|	|	|
2+25	0.1423	0.16	Q	|	|	|	|
2+30	0.1434	0.16	Q	|	|	|	|
2+35	0.1455	0.30	Q	|	|	|	|
2+40	0.1492	0.53	VQ	|	|	|	|
2+45	0.1533	0.60	VQ	|	|	|	|
2+50	0.1576	0.63	VQ	|	|	|	|
2+55	0.1621	0.65	VQ	|	|	|	|
3+ 0	0.1668	0.67	VQ	|	|	|	|
3+ 5	0.1714	0.68	VQ	|	|	|	|
3+10	0.1762	0.69	VQ	|	|	|	|
3+15	0.1810	0.69	VQ	|	|	|	|
3+20	0.1858	0.70	VQ	|	|	|	|
3+25	0.1907	0.71	VQ	|	|	|	|
3+30	0.1956	0.72	|Q	|	|	|	|
3+35	0.2006	0.72	|Q	|	|	|	|
3+40	0.2056	0.73	|Q	|	|	|	|
3+45	0.2107	0.74	|Q	|	|	|	|
3+50	0.2167	0.87	|Q	|	|	|	|
3+55	0.2243	1.10	|VQ	|	|	|	|
4+ 0	0.2323	1.17	|VQ	|	|	|	|
4+ 5	0.2406	1.20	|VQ	|	|	|	|
4+10	0.2491	1.23	|VQ	|	|	|	|
4+15	0.2576	1.24	|VQ	|	|	|	|
4+20	0.2671	1.38	|VQ	|	|	|	|
4+25	0.2782	1.61	|V Q	|	|	|	|
4+30	0.2898	1.68	|V Q	|	|	|	|
4+35	0.3016	1.71	|V Q	|	|	|	|
4+40	0.3136	1.74	|V Q	|	|	|	|
4+45	0.3256	1.75	|V Q	|	|	|	|
4+50	0.3386	1.89	|V Q	|	|	|	|
4+55	0.3532	2.12	|V Q	|	|	|	|
5+ 0	0.3683	2.19	|V Q	|	|	|	|
5+ 5	0.3819	1.97	|V Q	|	|	|	|
5+10	0.3924	1.53	| VQ	|	|	|	|
5+15	0.4023	1.43	| Q	|	|	|	|
5+20	0.4127	1.51	| VQ	|	|	|	|
5+25	0.4246	1.72	| VQ	|	|	|	|
5+30	0.4367	1.77	| VQ	|	|	|	|
5+35	0.4500	1.92	| VQ	|	|	|	|
5+40	0.4649	2.17	| V Q	|	|	|	|
5+45	0.4803	2.24	| V Q	|	|	|	|
5+50	0.4961	2.28	| V Q	|	|	|	|
5+55	0.5119	2.30	| V Q	|	|	|	|
6+ 0	0.5279	2.32	| V Q	|	|	|	|
6+ 5	0.5448	2.46	| V Q	|	|	|	|

6+10	0.5633	2.69	V Q			
6+15	0.5823	2.76	V Q			
6+20	0.6015	2.79	V Q			
6+25	0.6208	2.81	V Q			
6+30	0.6403	2.82	V Q			
6+35	0.6607	2.96	V Q			
6+40	0.6827	3.20	V Q			
6+45	0.7052	3.26	V Q			
6+50	0.7279	3.30	V Q			
6+55	0.7507	3.32	V Q			
7+ 0	0.7737	3.33	V Q			
7+ 5	0.7967	3.34	V Q			
7+10	0.8197	3.35	V Q			
7+15	0.8428	3.35	V Q			
7+20	0.8669	3.49	V Q			
7+25	0.8925	3.72	V Q			
7+30	0.9186	3.79	V Q			
7+35	0.9458	3.95	V Q			
7+40	0.9747	4.20	V Q			
7+45	1.0041	4.27	V Q			
7+50	1.0346	4.44	V Q			
7+55	1.0669	4.68	V Q			
8+ 0	1.0996	4.76	V Q			
8+ 5	1.1344	5.05	V Q			
8+10	1.1725	5.53	V Q			
8+15	1.2115	5.66	V Q			
8+20	1.2509	5.72	V Q			
8+25	1.2905	5.76	V Q			
8+30	1.3304	5.78	V Q			
8+35	1.3712	5.92	V Q			
8+40	1.4136	6.16	V Q			
8+45	1.4564	6.22	V Q			
8+50	1.5004	6.38	V Q			
8+55	1.5461	6.63	V Q			
9+ 0	1.5923	6.71	V Q			
9+ 5	1.6405	7.00	V Q			
9+10	1.6919	7.47	V Q			
9+15	1.7443	7.61	V Q			
9+20	1.7981	7.80	V Q			
9+25	1.8536	8.06	V Q			
9+30	1.9097	8.14	V Q			
9+35	1.9669	8.31	V Q			
9+40	2.0259	8.56	V Q			
9+45	2.0853	8.63	V Q			
9+50	2.1460	8.80	V Q			
9+55	2.2083	9.05	V Q			
10+ 0	2.2711	9.12	V Q			
10+ 5	2.3280	8.26	V Q			
10+10	2.3741	6.69	VQ			
10+15	2.4174	6.29	Q			
10+20	2.4595	6.11	Q			
10+25	2.5009	6.01	Q			
10+30	2.5419	5.96	Q V			
10+35	2.5872	6.57	Q			

10+40	2.6403	7.71	|	| V Q	|	|	|
10+45	2.6955	8.02	|	| V Q	|	|	|
10+50	2.7517	8.16	|	| V Q	|	|	|
10+55	2.8084	8.24	|	| V Q	|	|	|
11+ 0	2.8655	8.28	|	| V Q	|	|	|
11+ 5	2.9218	8.18	|	| VQ	|	|	|
11+10	2.9767	7.96	|	| Q	|	|	|
11+15	3.0311	7.91	|	| Q	|	|	|
11+20	3.0854	7.89	|	| Q	|	|	|
11+25	3.1397	7.88	|	| QV	|	|	|
11+30	3.1939	7.87	|	| QV	|	|	|
11+35	3.2464	7.62	|	| QV	|	|	|
11+40	3.2957	7.17	|	| Q V	|	|	|
11+45	3.3443	7.05	|	| Q V	|	|	|
11+50	3.3935	7.13	|	| Q V	|	|	|
11+55	3.4440	7.34	|	| Q V	|	|	|
12+ 0	3.4949	7.39	|	| Q V	|	|	|
12+ 5	3.5520	8.30	|	| Q V	|	|	|
12+10	3.6203	9.91	|	| VQ	|	|	|
12+15	3.6916	10.35	|	| VQ	|	|	|
12+20	3.7650	10.67	|	| V|Q	|	|	|
12+25	3.8408	11.01	|	| V| Q	|	|	|
12+30	3.9175	11.13	|	| V Q	|	|	|
12+35	3.9963	11.45	|	| V Q	|	|	|
12+40	4.0785	11.92	|	| |V Q	|	|	|
12+45	4.1615	12.06	|	| |V Q	|	|	|
12+50	4.2458	12.25	|	| |V Q	|	|	|
12+55	4.3320	12.51	|	| | V Q	|	|	|
13+ 0	4.4187	12.59	|	| | V Q	|	|	|
13+ 5	4.5101	13.27	|	| | V Q	|	|	|
13+10	4.6094	14.43	|	| | V Q |	|	|	|
13+15	4.7109	14.74	|	| | V Q|	|	|	|
13+20	4.8134	14.88	|	| | V Q|	|	|	|
13+25	4.9165	14.96	|	| | V Q|	|	|	|
13+30	5.0198	15.01	|	| | V Q	|	|	|
13+35	5.1137	13.63	|	| | VQ |	|	|	|
13+40	5.1904	11.13	|	| | Q V |	|	|	|
13+45	5.2625	10.48	|	| Q V |	|	|	|
13+50	5.3327	10.19	|	| Q V |	|	|	|
13+55	5.4018	10.03	|	| Q V |	|	|	|
14+ 0	5.4703	9.95	|	| Q| V |	|	|	|
14+ 5	5.5420	10.41	|	| Q V |	|	|	|
14+10	5.6200	11.32	|	| | Q V |	|	|	|
14+15	5.6997	11.57	|	| | Q V|	|	|	|
14+20	5.7792	11.55	|	| | Q V|	|	|	|
14+25	5.8577	11.39	|	| | Q V	|	|	|
14+30	5.9359	11.37	|	| | Q V	|	|	|
14+35	6.0142	11.36	|	| | Q |V	|	|	|
14+40	6.0924	11.35	|	| | Q |V	|	|	|
14+45	6.1705	11.35	|	| | Q |V	|	|	|
14+50	6.2478	11.22	|	| | Q | V	|	|	|
14+55	6.3235	11.00	|	| |Q | V	|	|	|
15+ 0	6.3989	10.94	|	| |Q | V	|	|	|
15+ 5	6.4732	10.79	|	| |Q | V	|	|	|

| | | |

19+40	7.5563	0.87	|Q	|	|	|	V |
19+45	7.5619	0.82	|Q	|	|	|	V|
19+50	7.5666	0.67	|Q	|	|	|	V|
19+55	7.5695	0.43	Q	|	|	|	V|
20+ 0	7.5721	0.37	Q	|	|	|	V|
20+ 5	7.5753	0.47	Q	|	|	|	V|
20+10	7.5800	0.68	|Q	|	|	|	V|
20+15	7.5850	0.74	|Q	|	|	|	V|
20+20	7.5903	0.76	|Q	|	|	|	V|
20+25	7.5956	0.78	|Q	|	|	|	V|
20+30	7.6011	0.79	|Q	|	|	|	V|
20+35	7.6066	0.80	|Q	|	|	|	V|
20+40	7.6121	0.80	|Q	|	|	|	V|
20+45	7.6176	0.80	|Q	|	|	|	V|
20+50	7.6222	0.68	|Q	|	|	|	V|
20+55	7.6254	0.45	Q	|	|	|	V|
21+ 0	7.6281	0.39	Q	|	|	|	V|
21+ 5	7.6315	0.50	Q	|	|	|	V|
21+10	7.6364	0.71	|Q	|	|	|	V|
21+15	7.6417	0.77	|Q	|	|	|	V|
21+20	7.6462	0.66	|Q	|	|	|	V|
21+25	7.6494	0.45	Q	|	|	|	V|
21+30	7.6521	0.40	Q	|	|	|	V|
21+35	7.6557	0.51	|Q	|	|	|	V|
21+40	7.6607	0.73	|Q	|	|	|	V|
21+45	7.6660	0.78	|Q	|	|	|	V|
21+50	7.6707	0.68	|Q	|	|	|	V|
21+55	7.6739	0.47	Q	|	|	|	V|
22+ 0	7.6768	0.42	Q	|	|	|	V|
22+ 5	7.6804	0.52	|Q	|	|	|	V|
22+10	7.6854	0.74	|Q	|	|	|	V|
22+15	7.6909	0.79	|Q	|	|	|	V|
22+20	7.6956	0.69	|Q	|	|	|	V|
22+25	7.6989	0.48	Q	|	|	|	V|
22+30	7.7018	0.43	Q	|	|	|	V|
22+35	7.7046	0.41	Q	|	|	|	V|
22+40	7.7074	0.39	Q	|	|	|	V|
22+45	7.7100	0.39	Q	|	|	|	V|
22+50	7.7127	0.38	Q	|	|	|	V|
22+55	7.7153	0.38	Q	|	|	|	V|
23+ 0	7.7180	0.39	Q	|	|	|	V|
23+ 5	7.7206	0.39	Q	|	|	|	V|
23+10	7.7233	0.39	Q	|	|	|	V|
23+15	7.7260	0.39	Q	|	|	|	V|
23+20	7.7287	0.39	Q	|	|	|	V|
23+25	7.7314	0.39	Q	|	|	|	V|
23+30	7.7341	0.39	Q	|	|	|	V|
23+35	7.7368	0.39	Q	|	|	|	V|
23+40	7.7395	0.40	Q	|	|	|	V|
23+45	7.7423	0.40	Q	|	|	|	V|
23+50	7.7450	0.40	Q	|	|	|	V|
23+55	7.7477	0.40	Q	|	|	|	V|
24+ 0	7.7505	0.40	Q	|	|	|	V|
24+ 5	7.7525	0.29	Q	|	|	|	V|

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   24+10       7.7532      0.10  Q         |          |          |        V|
   24+15       7.7535      0.05  Q         |          |          |        V|
   24+20       7.7536      0.02  Q         |          |          |        V|
   24+25       7.7537      0.01  Q         |          |          |        V|
   24+30       7.7537      0.00  Q         |          |          |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/13/19 File: 4163UHP1241.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 1 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 3
4163UHP1.UM1

Drainage Area = 37.40(Ac.) = 0.058 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 37.40(Ac.) = 0.058 Sq. Mi.
Length along longest watercourse = 3120.00(Ft.)
Length along longest watercourse measured to centroid = 1850.00(Ft.)
Length along longest watercourse = 0.591 Mi.
Length along longest watercourse measured to centroid = 0.350 Mi.
Difference in elevation = 28.00(Ft.)
Slope along watercourse = 47.3846 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.43 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	1.60	59.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	4.00	149.60

STORM EVENT (YEAR) = 1.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.175(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.175(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
37.400	69.00	0.900

Total Area Entered = 37.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.657	15.489	5.838
2	0.167	175.313	46.596	17.563
3	0.250	262.970	17.939	6.762
4	0.333	350.627	7.777	2.931
5	0.417	438.284	4.555	1.717
6	0.500	525.940	2.875	1.084
7	0.583	613.597	2.007	0.757
8	0.667	701.254	1.306	0.492
9	0.750	788.910	0.907	0.342
10	0.833	876.567	0.549	0.207
			Sum = 100.000	Sum= 37.692

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.009	0.193	0.002	0.01
2	0.17	0.07	0.009	0.193	0.002	0.01
3	0.25	0.07	0.009	0.192	0.002	0.01
4	0.33	0.10	0.014	0.191	0.003	0.01
5	0.42	0.10	0.014	0.190	0.003	0.01
6	0.50	0.10	0.014	0.190	0.003	0.01
7	0.58	0.10	0.014	0.189	0.003	0.01
8	0.67	0.10	0.014	0.188	0.003	0.01
9	0.75	0.10	0.014	0.187	0.003	0.01
10	0.83	0.13	0.019	0.187	0.003	0.02
11	0.92	0.13	0.019	0.186	0.003	0.02
12	1.00	0.13	0.019	0.185	0.003	0.02
13	1.08	0.10	0.014	0.184	0.003	0.01
14	1.17	0.10	0.014	0.184	0.003	0.01
15	1.25	0.10	0.014	0.183	0.003	0.01
16	1.33	0.10	0.014	0.182	0.003	0.01
17	1.42	0.10	0.014	0.182	0.003	0.01
18	1.50	0.10	0.014	0.181	0.003	0.01
19	1.58	0.10	0.014	0.180	0.003	0.01
20	1.67	0.10	0.014	0.179	0.003	0.01
21	1.75	0.10	0.014	0.179	0.003	0.01
22	1.83	0.13	0.019	0.178	0.003	0.02
23	1.92	0.13	0.019	0.177	0.003	0.02
24	2.00	0.13	0.019	0.176	0.003	0.02
25	2.08	0.13	0.019	0.176	0.003	0.02
26	2.17	0.13	0.019	0.175	0.003	0.02
27	2.25	0.13	0.019	0.174	0.003	0.02
28	2.33	0.13	0.019	0.174	0.003	0.02
29	2.42	0.13	0.019	0.173	0.003	0.02
30	2.50	0.13	0.019	0.172	0.003	0.02
31	2.58	0.17	0.023	0.172	0.004	0.02
32	2.67	0.17	0.023	0.171	0.004	0.02
33	2.75	0.17	0.023	0.170	0.004	0.02
34	2.83	0.17	0.023	0.169	0.004	0.02
35	2.92	0.17	0.023	0.169	0.004	0.02
36	3.00	0.17	0.023	0.168	0.004	0.02
37	3.08	0.17	0.023	0.167	0.004	0.02
38	3.17	0.17	0.023	0.167	0.004	0.02
39	3.25	0.17	0.023	0.166	0.004	0.02
40	3.33	0.17	0.023	0.165	0.004	0.02
41	3.42	0.17	0.023	0.165	0.004	0.02
42	3.50	0.17	0.023	0.164	0.004	0.02
43	3.58	0.17	0.023	0.163	0.004	0.02
44	3.67	0.17	0.023	0.162	0.004	0.02
45	3.75	0.17	0.023	0.162	0.004	0.02
46	3.83	0.20	0.028	0.161	0.005	0.02
47	3.92	0.20	0.028	0.160	0.005	0.02
48	4.00	0.20	0.028	0.160	0.005	0.02
49	4.08	0.20	0.028	0.159	0.005	0.02
50	4.17	0.20	0.028	0.158	0.005	0.02
51	4.25	0.20	0.028	0.158	0.005	0.02
52	4.33	0.23	0.033	0.157	0.006	0.03
53	4.42	0.23	0.033	0.156	0.006	0.03
54	4.50	0.23	0.033	0.156	0.006	0.03

55	4.58	0.23	0.033	0.155	0.006	0.03
56	4.67	0.23	0.033	0.154	0.006	0.03
57	4.75	0.23	0.033	0.154	0.006	0.03
58	4.83	0.27	0.038	0.153	0.007	0.03
59	4.92	0.27	0.038	0.152	0.007	0.03
60	5.00	0.27	0.038	0.152	0.007	0.03
61	5.08	0.20	0.028	0.151	0.005	0.02
62	5.17	0.20	0.028	0.150	0.005	0.02
63	5.25	0.20	0.028	0.150	0.005	0.02
64	5.33	0.23	0.033	0.149	0.006	0.03
65	5.42	0.23	0.033	0.148	0.006	0.03
66	5.50	0.23	0.033	0.148	0.006	0.03
67	5.58	0.27	0.038	0.147	0.007	0.03
68	5.67	0.27	0.038	0.147	0.007	0.03
69	5.75	0.27	0.038	0.146	0.007	0.03
70	5.83	0.27	0.038	0.145	0.007	0.03
71	5.92	0.27	0.038	0.145	0.007	0.03
72	6.00	0.27	0.038	0.144	0.007	0.03
73	6.08	0.30	0.042	0.143	0.008	0.03
74	6.17	0.30	0.042	0.143	0.008	0.03
75	6.25	0.30	0.042	0.142	0.008	0.03
76	6.33	0.30	0.042	0.141	0.008	0.03
77	6.42	0.30	0.042	0.141	0.008	0.03
78	6.50	0.30	0.042	0.140	0.008	0.03
79	6.58	0.33	0.047	0.140	0.008	0.04
80	6.67	0.33	0.047	0.139	0.008	0.04
81	6.75	0.33	0.047	0.138	0.008	0.04
82	6.83	0.33	0.047	0.138	0.008	0.04
83	6.92	0.33	0.047	0.137	0.008	0.04
84	7.00	0.33	0.047	0.136	0.008	0.04
85	7.08	0.33	0.047	0.136	0.008	0.04
86	7.17	0.33	0.047	0.135	0.008	0.04
87	7.25	0.33	0.047	0.135	0.008	0.04
88	7.33	0.37	0.052	0.134	0.009	0.04
89	7.42	0.37	0.052	0.133	0.009	0.04
90	7.50	0.37	0.052	0.133	0.009	0.04
91	7.58	0.40	0.056	0.132	0.010	0.05
92	7.67	0.40	0.056	0.131	0.010	0.05
93	7.75	0.40	0.056	0.131	0.010	0.05
94	7.83	0.43	0.061	0.130	0.011	0.05
95	7.92	0.43	0.061	0.130	0.011	0.05
96	8.00	0.43	0.061	0.129	0.011	0.05
97	8.08	0.50	0.070	0.128	0.013	0.06
98	8.17	0.50	0.070	0.128	0.013	0.06
99	8.25	0.50	0.070	0.127	0.013	0.06
100	8.33	0.50	0.070	0.127	0.013	0.06
101	8.42	0.50	0.070	0.126	0.013	0.06
102	8.50	0.50	0.070	0.125	0.013	0.06
103	8.58	0.53	0.075	0.125	0.014	0.06
104	8.67	0.53	0.075	0.124	0.014	0.06
105	8.75	0.53	0.075	0.124	0.014	0.06
106	8.83	0.57	0.080	0.123	0.014	0.07
107	8.92	0.57	0.080	0.123	0.014	0.07
108	9.00	0.57	0.080	0.122	0.014	0.07

109	9.08	0.63	0.089	0.121	0.016	0.07
110	9.17	0.63	0.089	0.121	0.016	0.07
111	9.25	0.63	0.089	0.120	0.016	0.07
112	9.33	0.67	0.094	0.120	0.017	0.08
113	9.42	0.67	0.094	0.119	0.017	0.08
114	9.50	0.67	0.094	0.119	0.017	0.08
115	9.58	0.70	0.099	0.118	0.018	0.08
116	9.67	0.70	0.099	0.117	0.018	0.08
117	9.75	0.70	0.099	0.117	0.018	0.08
118	9.83	0.73	0.103	0.116	0.019	0.08
119	9.92	0.73	0.103	0.116	0.019	0.08
120	10.00	0.73	0.103	0.115	0.019	0.08
121	10.08	0.50	0.070	0.115	0.013	0.06
122	10.17	0.50	0.070	0.114	0.013	0.06
123	10.25	0.50	0.070	0.113	0.013	0.06
124	10.33	0.50	0.070	0.113	0.013	0.06
125	10.42	0.50	0.070	0.112	0.013	0.06
126	10.50	0.50	0.070	0.112	0.013	0.06
127	10.58	0.67	0.094	0.111	0.017	0.08
128	10.67	0.67	0.094	0.111	0.017	0.08
129	10.75	0.67	0.094	0.110	0.017	0.08
130	10.83	0.67	0.094	0.110	0.017	0.08
131	10.92	0.67	0.094	0.109	0.017	0.08
132	11.00	0.67	0.094	0.109	0.017	0.08
133	11.08	0.63	0.089	0.108	0.016	0.07
134	11.17	0.63	0.089	0.108	0.016	0.07
135	11.25	0.63	0.089	0.107	0.016	0.07
136	11.33	0.63	0.089	0.106	0.016	0.07
137	11.42	0.63	0.089	0.106	0.016	0.07
138	11.50	0.63	0.089	0.105	0.016	0.07
139	11.58	0.57	0.080	0.105	0.014	0.07
140	11.67	0.57	0.080	0.104	0.014	0.07
141	11.75	0.57	0.080	0.104	0.014	0.07
142	11.83	0.60	0.085	0.103	0.015	0.07
143	11.92	0.60	0.085	0.103	0.015	0.07
144	12.00	0.60	0.085	0.102	0.015	0.07
145	12.08	0.83	0.117	0.102	---	0.02
146	12.17	0.83	0.117	0.101	---	0.02
147	12.25	0.83	0.117	0.101	---	0.02
148	12.33	0.87	0.122	0.100	---	0.02
149	12.42	0.87	0.122	0.100	---	0.02
150	12.50	0.87	0.122	0.099	---	0.02
151	12.58	0.93	0.132	0.099	---	0.03
152	12.67	0.93	0.132	0.098	---	0.03
153	12.75	0.93	0.132	0.098	---	0.03
154	12.83	0.97	0.136	0.097	---	0.04
155	12.92	0.97	0.136	0.097	---	0.04
156	13.00	0.97	0.136	0.096	---	0.04
157	13.08	1.13	0.160	0.096	---	0.06
158	13.17	1.13	0.160	0.095	---	0.06
159	13.25	1.13	0.160	0.095	---	0.06
160	13.33	1.13	0.160	0.094	---	0.07
161	13.42	1.13	0.160	0.094	---	0.07
162	13.50	1.13	0.160	0.093	---	0.07

163	13.58	0.77	0.108	0.093	---	0.02
164	13.67	0.77	0.108	0.092	---	0.02
165	13.75	0.77	0.108	0.092	---	0.02
166	13.83	0.77	0.108	0.092	---	0.02
167	13.92	0.77	0.108	0.091	---	0.02
168	14.00	0.77	0.108	0.091	---	0.02
169	14.08	0.90	0.127	0.090	---	0.04
170	14.17	0.90	0.127	0.090	---	0.04
171	14.25	0.90	0.127	0.089	---	0.04
172	14.33	0.87	0.122	0.089	---	0.03
173	14.42	0.87	0.122	0.088	---	0.03
174	14.50	0.87	0.122	0.088	---	0.03
175	14.58	0.87	0.122	0.087	---	0.03
176	14.67	0.87	0.122	0.087	---	0.04
177	14.75	0.87	0.122	0.086	---	0.04
178	14.83	0.83	0.117	0.086	---	0.03
179	14.92	0.83	0.117	0.086	---	0.03
180	15.00	0.83	0.117	0.085	---	0.03
181	15.08	0.80	0.113	0.085	---	0.03
182	15.17	0.80	0.113	0.084	---	0.03
183	15.25	0.80	0.113	0.084	---	0.03
184	15.33	0.77	0.108	0.083	---	0.02
185	15.42	0.77	0.108	0.083	---	0.03
186	15.50	0.77	0.108	0.083	---	0.03
187	15.58	0.63	0.089	0.082	---	0.01
188	15.67	0.63	0.089	0.082	---	0.01
189	15.75	0.63	0.089	0.081	---	0.01
190	15.83	0.63	0.089	0.081	---	0.01
191	15.92	0.63	0.089	0.080	---	0.01
192	16.00	0.63	0.089	0.080	---	0.01
193	16.08	0.13	0.019	0.080	0.003	0.02
194	16.17	0.13	0.019	0.079	0.003	0.02
195	16.25	0.13	0.019	0.079	0.003	0.02
196	16.33	0.13	0.019	0.078	0.003	0.02
197	16.42	0.13	0.019	0.078	0.003	0.02
198	16.50	0.13	0.019	0.078	0.003	0.02
199	16.58	0.10	0.014	0.077	0.003	0.01
200	16.67	0.10	0.014	0.077	0.003	0.01
201	16.75	0.10	0.014	0.076	0.003	0.01
202	16.83	0.10	0.014	0.076	0.003	0.01
203	16.92	0.10	0.014	0.076	0.003	0.01
204	17.00	0.10	0.014	0.075	0.003	0.01
205	17.08	0.17	0.023	0.075	0.004	0.02
206	17.17	0.17	0.023	0.075	0.004	0.02
207	17.25	0.17	0.023	0.074	0.004	0.02
208	17.33	0.17	0.023	0.074	0.004	0.02
209	17.42	0.17	0.023	0.073	0.004	0.02
210	17.50	0.17	0.023	0.073	0.004	0.02
211	17.58	0.17	0.023	0.073	0.004	0.02
212	17.67	0.17	0.023	0.072	0.004	0.02
213	17.75	0.17	0.023	0.072	0.004	0.02
214	17.83	0.13	0.019	0.072	0.003	0.02
215	17.92	0.13	0.019	0.071	0.003	0.02
216	18.00	0.13	0.019	0.071	0.003	0.02

217	18.08	0.13	0.019	0.071	0.003	0.02
218	18.17	0.13	0.019	0.070	0.003	0.02
219	18.25	0.13	0.019	0.070	0.003	0.02
220	18.33	0.13	0.019	0.070	0.003	0.02
221	18.42	0.13	0.019	0.069	0.003	0.02
222	18.50	0.13	0.019	0.069	0.003	0.02
223	18.58	0.10	0.014	0.069	0.003	0.01
224	18.67	0.10	0.014	0.068	0.003	0.01
225	18.75	0.10	0.014	0.068	0.003	0.01
226	18.83	0.07	0.009	0.068	0.002	0.01
227	18.92	0.07	0.009	0.067	0.002	0.01
228	19.00	0.07	0.009	0.067	0.002	0.01
229	19.08	0.10	0.014	0.067	0.003	0.01
230	19.17	0.10	0.014	0.066	0.003	0.01
231	19.25	0.10	0.014	0.066	0.003	0.01
232	19.33	0.13	0.019	0.066	0.003	0.02
233	19.42	0.13	0.019	0.065	0.003	0.02
234	19.50	0.13	0.019	0.065	0.003	0.02
235	19.58	0.10	0.014	0.065	0.003	0.01
236	19.67	0.10	0.014	0.064	0.003	0.01
237	19.75	0.10	0.014	0.064	0.003	0.01
238	19.83	0.07	0.009	0.064	0.002	0.01
239	19.92	0.07	0.009	0.064	0.002	0.01
240	20.00	0.07	0.009	0.063	0.002	0.01
241	20.08	0.10	0.014	0.063	0.003	0.01
242	20.17	0.10	0.014	0.063	0.003	0.01
243	20.25	0.10	0.014	0.062	0.003	0.01
244	20.33	0.10	0.014	0.062	0.003	0.01
245	20.42	0.10	0.014	0.062	0.003	0.01
246	20.50	0.10	0.014	0.062	0.003	0.01
247	20.58	0.10	0.014	0.061	0.003	0.01
248	20.67	0.10	0.014	0.061	0.003	0.01
249	20.75	0.10	0.014	0.061	0.003	0.01
250	20.83	0.07	0.009	0.061	0.002	0.01
251	20.92	0.07	0.009	0.060	0.002	0.01
252	21.00	0.07	0.009	0.060	0.002	0.01
253	21.08	0.10	0.014	0.060	0.003	0.01
254	21.17	0.10	0.014	0.060	0.003	0.01
255	21.25	0.10	0.014	0.059	0.003	0.01
256	21.33	0.07	0.009	0.059	0.002	0.01
257	21.42	0.07	0.009	0.059	0.002	0.01
258	21.50	0.07	0.009	0.059	0.002	0.01
259	21.58	0.10	0.014	0.059	0.003	0.01
260	21.67	0.10	0.014	0.058	0.003	0.01
261	21.75	0.10	0.014	0.058	0.003	0.01
262	21.83	0.07	0.009	0.058	0.002	0.01
263	21.92	0.07	0.009	0.058	0.002	0.01
264	22.00	0.07	0.009	0.058	0.002	0.01
265	22.08	0.10	0.014	0.057	0.003	0.01
266	22.17	0.10	0.014	0.057	0.003	0.01
267	22.25	0.10	0.014	0.057	0.003	0.01
268	22.33	0.07	0.009	0.057	0.002	0.01
269	22.42	0.07	0.009	0.057	0.002	0.01
270	22.50	0.07	0.009	0.057	0.002	0.01

271	22.58	0.07	0.009	0.056	0.002	0.01
272	22.67	0.07	0.009	0.056	0.002	0.01
273	22.75	0.07	0.009	0.056	0.002	0.01
274	22.83	0.07	0.009	0.056	0.002	0.01
275	22.92	0.07	0.009	0.056	0.002	0.01
276	23.00	0.07	0.009	0.056	0.002	0.01
277	23.08	0.07	0.009	0.055	0.002	0.01
278	23.17	0.07	0.009	0.055	0.002	0.01
279	23.25	0.07	0.009	0.055	0.002	0.01
280	23.33	0.07	0.009	0.055	0.002	0.01
281	23.42	0.07	0.009	0.055	0.002	0.01
282	23.50	0.07	0.009	0.055	0.002	0.01
283	23.58	0.07	0.009	0.055	0.002	0.01
284	23.67	0.07	0.009	0.055	0.002	0.01
285	23.75	0.07	0.009	0.055	0.002	0.01
286	23.83	0.07	0.009	0.055	0.002	0.01
287	23.92	0.07	0.009	0.055	0.002	0.01
288	24.00	0.07	0.009	0.055	0.002	0.01
Sum =	100.0				Sum =	8.3

Flood volume = Effective rainfall 0.69(In)
times area 37.4(Ac.)/[(In)/(Ft.)] = 2.1(Ac.Ft)
Total soil loss = 0.49(In)
Total soil loss = 1.517(Ac.Ft)
Total rainfall = 1.17(In)
Flood volume = 93391.5 Cubic Feet
Total soil loss = 66084.5 Cubic Feet

Peak flow rate of this hydrograph = 3.160(CFS)

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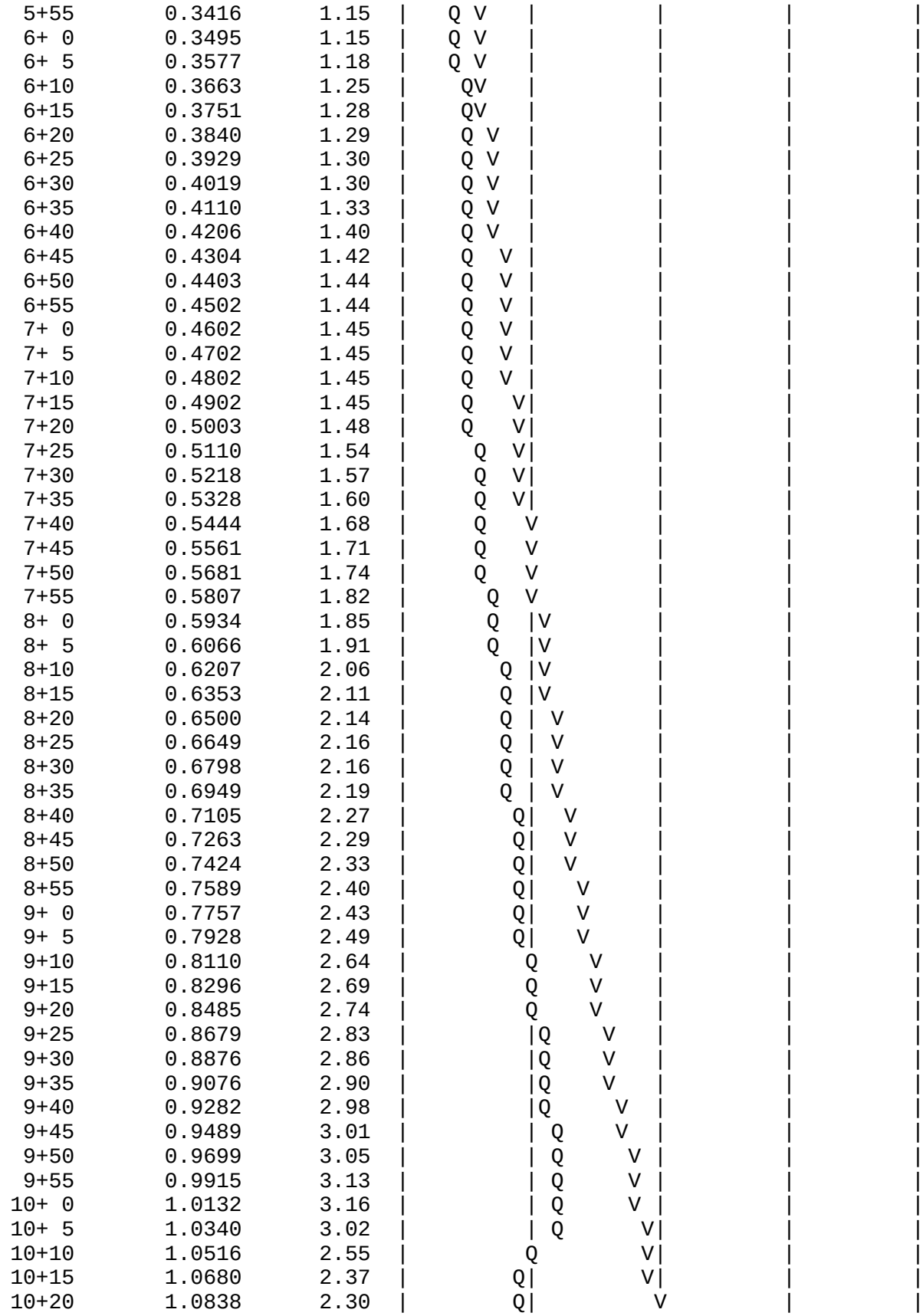
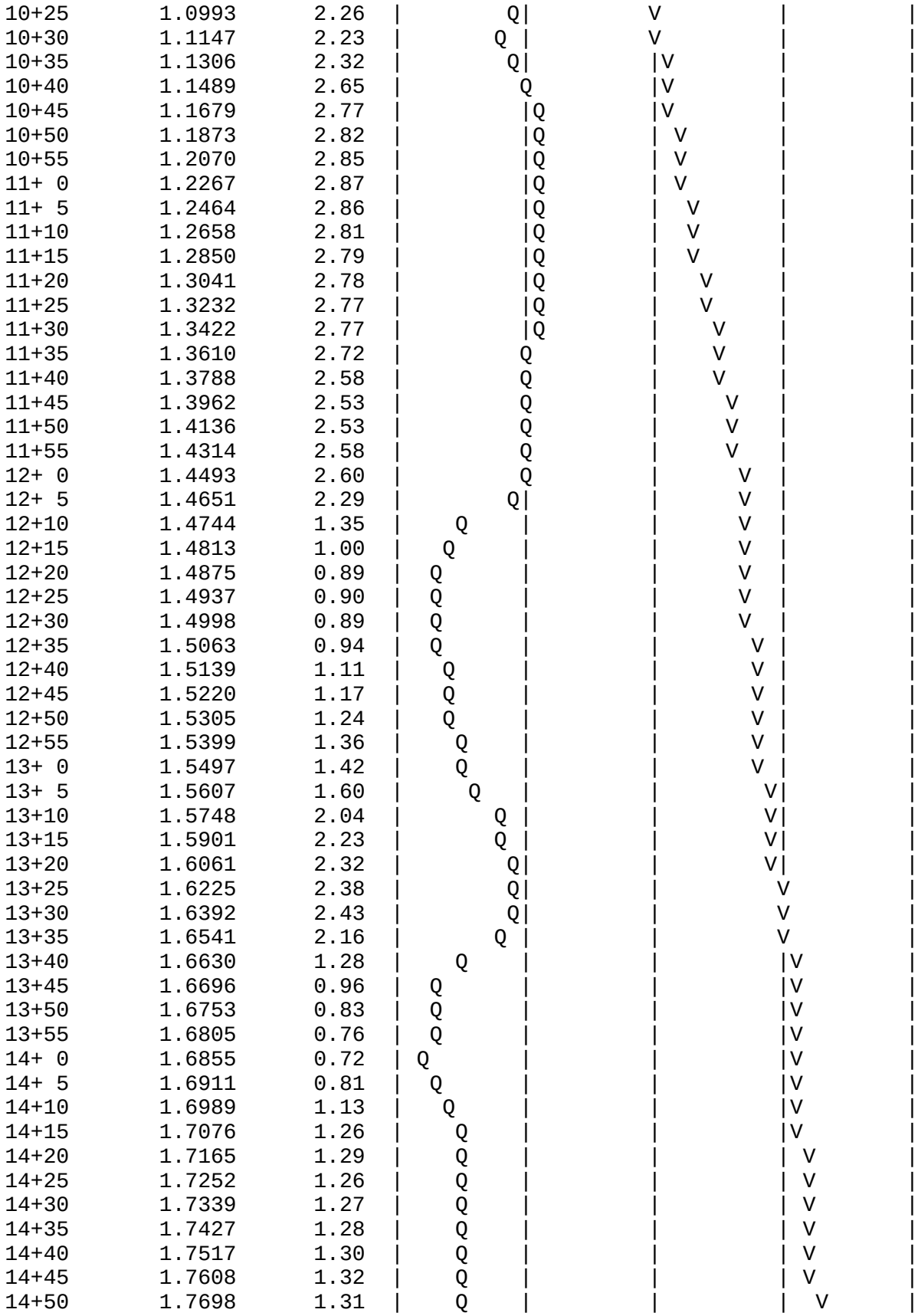
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0003	0.05	Q	|	|	|	|
0+10	0.0016	0.18	Q	|	|	|	|
0+15	0.0032	0.23	Q	|	|	|	|
0+20	0.0051	0.28	VQ	|	|	|	|
0+25	0.0075	0.36	VQ	|	|	|	|
0+30	0.0102	0.39	VQ	|	|	|	|
0+35	0.0131	0.41	VQ	|	|	|	|
0+40	0.0160	0.42	VQ	|	|	|	|
0+45	0.0189	0.43	VQ	|	|	|	|
0+50	0.0220	0.45	VQ	|	|	|	|
0+55	0.0256	0.52	V Q	|	|	|	|
1+ 0	0.0294	0.55	V Q	|	|	|	|
1+ 5	0.0332	0.54	V Q	|	|	|	|
1+10	0.0365	0.48	VQ	|	|	|	|
1+15	0.0396	0.46	VQ	|	|	|	|
1+20	0.0427	0.45	VQ	|	|	|	|

1+25	0.0458	0.44	VQ	|	|	|	|
1+30	0.0488	0.44	VQ	|	|	|	|
1+35	0.0519	0.44	VQ	|	|	|	|
1+40	0.0549	0.44	|Q	|	|	|	|
1+45	0.0579	0.44	|Q	|	|	|	|
1+50	0.0610	0.46	|Q	|	|	|	|
1+55	0.0647	0.53	|VQ	|	|	|	|
2+ 0	0.0685	0.55	|VQ	|	|	|	|
2+ 5	0.0724	0.56	|VQ	|	|	|	|
2+10	0.0763	0.57	|VQ	|	|	|	|
2+15	0.0802	0.57	|VQ	|	|	|	|
2+20	0.0842	0.58	|VQ	|	|	|	|
2+25	0.0882	0.58	|VQ	|	|	|	|
2+30	0.0922	0.58	|VQ	|	|	|	|
2+35	0.0964	0.60	|VQ	|	|	|	|
2+40	0.1010	0.67	|VQ	|	|	|	|
2+45	0.1058	0.70	|VQ	|	|	|	|
2+50	0.1107	0.71	| Q	|	|	|	|
2+55	0.1156	0.72	| Q	|	|	|	|
3+ 0	0.1205	0.72	| Q	|	|	|	|
3+ 5	0.1255	0.72	| Q	|	|	|	|
3+10	0.1305	0.72	| Q	|	|	|	|
3+15	0.1355	0.73	| Q	|	|	|	|
3+20	0.1405	0.73	| Q	|	|	|	|
3+25	0.1455	0.73	| Q	|	|	|	|
3+30	0.1505	0.73	| Q	|	|	|	|
3+35	0.1555	0.73	| Q	|	|	|	|
3+40	0.1605	0.73	| Q	|	|	|	|
3+45	0.1655	0.73	| QV	|	|	|	|
3+50	0.1707	0.75	| QV	|	|	|	|
3+55	0.1763	0.82	| Q	|	|	|	|
4+ 0	0.1821	0.84	| Q	|	|	|	|
4+ 5	0.1880	0.85	| Q	|	|	|	|
4+10	0.1939	0.86	| Q	|	|	|	|
4+15	0.1999	0.86	| Q	|	|	|	|
4+20	0.2060	0.89	| Q	|	|	|	|
4+25	0.2126	0.96	| Q	|	|	|	|
4+30	0.2194	0.99	| QV	|	|	|	|
4+35	0.2263	1.00	| QV	|	|	|	|
4+40	0.2332	1.01	| Q	|	|	|	|
4+45	0.2402	1.01	| Q	|	|	|	|
4+50	0.2473	1.04	| Q	|	|	|	|
4+55	0.2549	1.11	| Q	|	|	|	|
5+ 0	0.2627	1.13	| Q	|	|	|	|
5+ 5	0.2703	1.10	| QV	|	|	|	|
5+10	0.2770	0.97	| Q V	|	|	|	|
5+15	0.2833	0.92	| Q V	|	|	|	|
5+20	0.2897	0.93	| Q V	|	|	|	|
5+25	0.2965	0.98	| Q V	|	|	|	|
5+30	0.3034	1.00	| QV	|	|	|	|
5+35	0.3105	1.03	| QV	|	|	|	|
5+40	0.3181	1.10	| QV	|	|	|	|
5+45	0.3258	1.13	| Q V	|	|	|	|
5+50	0.3337	1.14	| Q V	|	|	|	|





14+55	1.7784	1.24	| Q	|	|	| V	|
15+ 0	1.7868	1.23	| Q	|	|	| V	|
15+ 5	1.7951	1.20	| Q	|	|	| V	|
15+10	1.8028	1.13	| Q	|	|	| V	|
15+15	1.8105	1.11	| Q	|	|	| V	|
15+20	1.8179	1.08	| Q	|	|	| V	|
15+25	1.8248	1.00	| Q	|	|	| V	|
15+30	1.8315	0.98	| Q	|	|	| V	|
15+35	1.8375	0.87	| Q	|	|	| V	|
15+40	1.8412	0.54	| Q	|	|	| V	|
15+45	1.8441	0.42	|Q	|	|	| V	|
15+50	1.8467	0.38	|Q	|	|	| V	|
15+55	1.8492	0.36	|Q	|	|	| V	|
16+ 0	1.8517	0.35	|Q	|	|	| V	|
16+ 5	1.8543	0.39	|Q	|	|	| V	|
16+10	1.8577	0.49	|Q	|	|	| V	|
16+15	1.8614	0.53	| Q	|	|	| V	|
16+20	1.8652	0.55	| Q	|	|	| V	|
16+25	1.8691	0.56	| Q	|	|	| V	|
16+30	1.8730	0.57	| Q	|	|	| V	|
16+35	1.8768	0.55	| Q	|	|	| V	|
16+40	1.8802	0.49	|Q	|	|	| V	|
16+45	1.8833	0.46	|Q	|	|	| V	|
16+50	1.8865	0.45	|Q	|	|	| V	|
16+55	1.8895	0.45	|Q	|	|	| V	|
17+ 0	1.8926	0.44	|Q	|	|	| V	|
17+ 5	1.8959	0.48	|Q	|	|	| V	|
17+10	1.9002	0.62	| Q	|	|	| V	|
17+15	1.9048	0.67	| Q	|	|	| V	|
17+20	1.9096	0.69	| Q	|	|	| V	|
17+25	1.9144	0.70	| Q	|	|	| V	|
17+30	1.9193	0.71	| Q	|	|	| V	|
17+35	1.9243	0.72	| Q	|	|	| V	|
17+40	1.9292	0.72	| Q	|	|	| V	|
17+45	1.9342	0.72	| Q	|	|	| V	|
17+50	1.9391	0.70	| Q	|	|	| V	|
17+55	1.9435	0.64	| Q	|	|	| V	|
18+ 0	1.9477	0.61	| Q	|	|	| V	|
18+ 5	1.9518	0.60	| Q	|	|	| V	|
18+10	1.9559	0.59	| Q	|	|	| V	|
18+15	1.9599	0.59	| Q	|	|	| V	|
18+20	1.9640	0.59	| Q	|	|	| V	|
18+25	1.9680	0.58	| Q	|	|	| V	|
18+30	1.9720	0.58	| Q	|	|	| V	|
18+35	1.9758	0.56	| Q	|	|	| V	|
18+40	1.9792	0.49	|Q	|	|	| V	|
18+45	1.9824	0.46	|Q	|	|	| V	|
18+50	1.9854	0.43	|Q	|	|	| V	|
18+55	1.9878	0.36	|Q	|	|	| V	|
19+ 0	1.9901	0.33	|Q	|	|	| V	|
19+ 5	1.9924	0.33	|Q	|	|	| V	|
19+10	1.9951	0.39	|Q	|	|	| V	|
19+15	1.9980	0.41	|Q	|	|	| V	|
19+20	2.0010	0.44	|Q	|	|	| V	|

19+25	2.0046	0.52	| Q	|	|	|	V |
19+30	2.0083	0.55	| Q	|	|	|	V |
19+35	2.0120	0.54	| Q	|	|	|	V |
19+40	2.0153	0.48	|Q	|	|	|	V |
19+45	2.0185	0.46	|Q	|	|	|	V |
19+50	2.0214	0.43	|Q	|	|	|	V |
19+55	2.0239	0.35	|Q	|	|	|	V |
20+ 0	2.0261	0.33	|Q	|	|	|	V |
20+ 5	2.0284	0.33	|Q	|	|	|	V |
20+10	2.0311	0.39	|Q	|	|	|	V |
20+15	2.0340	0.41	|Q	|	|	|	V |
20+20	2.0369	0.42	|Q	|	|	|	V |
20+25	2.0398	0.43	|Q	|	|	|	V |
20+30	2.0428	0.43	|Q	|	|	|	V |
20+35	2.0458	0.43	|Q	|	|	|	V |
20+40	2.0488	0.43	|Q	|	|	|	V |
20+45	2.0518	0.44	|Q	|	|	|	V |
20+50	2.0546	0.41	|Q	|	|	|	V |
20+55	2.0570	0.35	|Q	|	|	|	V |
21+ 0	2.0592	0.32	|Q	|	|	|	V |
21+ 5	2.0615	0.33	|Q	|	|	|	V |
21+10	2.0642	0.39	|Q	|	|	|	V |
21+15	2.0670	0.41	|Q	|	|	|	V |
21+20	2.0698	0.40	|Q	|	|	|	V |
21+25	2.0721	0.34	|Q	|	|	|	V |
21+30	2.0742	0.31	|Q	|	|	|	V |
21+35	2.0765	0.33	|Q	|	|	|	V |
21+40	2.0792	0.39	|Q	|	|	|	V |
21+45	2.0820	0.41	|Q	|	|	|	V |
21+50	2.0848	0.40	|Q	|	|	|	V |
21+55	2.0871	0.34	|Q	|	|	|	V |
22+ 0	2.0893	0.31	|Q	|	|	|	V |
22+ 5	2.0915	0.33	|Q	|	|	|	V|
22+10	2.0942	0.39	|Q	|	|	|	V|
22+15	2.0970	0.41	|Q	|	|	|	V|
22+20	2.0998	0.40	|Q	|	|	|	V|
22+25	2.1021	0.34	|Q	|	|	|	V|
22+30	2.1043	0.31	|Q	|	|	|	V|
22+35	2.1064	0.30	|Q	|	|	|	V|
22+40	2.1084	0.30	|Q	|	|	|	V|
22+45	2.1105	0.30	|Q	|	|	|	V|
22+50	2.1125	0.29	|Q	|	|	|	V|
22+55	2.1145	0.29	|Q	|	|	|	V|
23+ 0	2.1165	0.29	|Q	|	|	|	V|
23+ 5	2.1185	0.29	|Q	|	|	|	V|
23+10	2.1205	0.29	|Q	|	|	|	V|
23+15	2.1225	0.29	|Q	|	|	|	V|
23+20	2.1245	0.29	|Q	|	|	|	V|
23+25	2.1265	0.29	|Q	|	|	|	V|
23+30	2.1285	0.29	|Q	|	|	|	V|
23+35	2.1305	0.29	|Q	|	|	|	V|
23+40	2.1325	0.29	|Q	|	|	|	V|
23+45	2.1345	0.29	|Q	|	|	|	V|
23+50	2.1365	0.29	|Q	|	|	|	V|

```
   23+55       2.1385      0.29  |Q        |          |          |        V|
   24+ 0       2.1405      0.29  |Q        |          |          |        V|
   24+ 5       2.1422      0.25  Q         |          |          |        V|
   24+10       2.1430      0.11  Q         |          |          |        V|
   24+15       2.1434      0.06  Q         |          |          |        V|
   24+20       2.1436      0.04  Q         |          |          |        V|
   24+25       2.1438      0.02  Q         |          |          |        V|
   24+30       2.1439      0.01  Q         |          |          |        V|
   24+35       2.1439      0.01  Q         |          |          |        V|
   24+40       2.1440      0.00  Q         |          |          |        V|
   24+45       2.1440      0.00  Q         |          |          |        V|
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/13/19 File: 4163UHP2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 2 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 3
4163UHP2.UM1

Drainage Area = 37.40(Ac.) = 0.058 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 37.40(Ac.) = 0.058 Sq. Mi.
Length along longest watercourse = 3120.00(Ft.)
Length along longest watercourse measured to centroid = 1850.00(Ft.)
Length along longest watercourse = 0.591 Mi.
Length along longest watercourse measured to centroid = 0.350 Mi.
Difference in elevation = 28.00(Ft.)
Slope along watercourse = 47.3846 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.43 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	1.60	59.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	4.00	149.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
37.400	69.00	0.900

Total Area Entered = 37.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.657	15.489	5.838
2	0.167	175.313	46.596	17.563
3	0.250	262.970	17.939	6.762
4	0.333	350.627	7.777	2.931
5	0.417	438.284	4.555	1.717
6	0.500	525.940	2.875	1.084
7	0.583	613.597	2.007	0.757
8	0.667	701.254	1.306	0.492
9	0.750	788.910	0.907	0.342
10	0.833	876.567	0.549	0.207
			Sum = 100.000	Sum= 37.692

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.013	0.193	0.002	0.01
2	0.17	0.07	0.013	0.193	0.002	0.01
3	0.25	0.07	0.013	0.192	0.002	0.01
4	0.33	0.10	0.019	0.191	0.003	0.02
5	0.42	0.10	0.019	0.190	0.003	0.02
6	0.50	0.10	0.019	0.190	0.003	0.02
7	0.58	0.10	0.019	0.189	0.003	0.02
8	0.67	0.10	0.019	0.188	0.003	0.02
9	0.75	0.10	0.019	0.187	0.003	0.02
10	0.83	0.13	0.026	0.187	0.005	0.02
11	0.92	0.13	0.026	0.186	0.005	0.02
12	1.00	0.13	0.026	0.185	0.005	0.02
13	1.08	0.10	0.019	0.184	0.003	0.02
14	1.17	0.10	0.019	0.184	0.003	0.02
15	1.25	0.10	0.019	0.183	0.003	0.02
16	1.33	0.10	0.019	0.182	0.003	0.02
17	1.42	0.10	0.019	0.182	0.003	0.02
18	1.50	0.10	0.019	0.181	0.003	0.02
19	1.58	0.10	0.019	0.180	0.003	0.02
20	1.67	0.10	0.019	0.179	0.003	0.02
21	1.75	0.10	0.019	0.179	0.003	0.02
22	1.83	0.13	0.026	0.178	0.005	0.02
23	1.92	0.13	0.026	0.177	0.005	0.02
24	2.00	0.13	0.026	0.176	0.005	0.02
25	2.08	0.13	0.026	0.176	0.005	0.02
26	2.17	0.13	0.026	0.175	0.005	0.02
27	2.25	0.13	0.026	0.174	0.005	0.02
28	2.33	0.13	0.026	0.174	0.005	0.02
29	2.42	0.13	0.026	0.173	0.005	0.02
30	2.50	0.13	0.026	0.172	0.005	0.02
31	2.58	0.17	0.032	0.172	0.006	0.03
32	2.67	0.17	0.032	0.171	0.006	0.03
33	2.75	0.17	0.032	0.170	0.006	0.03
34	2.83	0.17	0.032	0.169	0.006	0.03
35	2.92	0.17	0.032	0.169	0.006	0.03
36	3.00	0.17	0.032	0.168	0.006	0.03
37	3.08	0.17	0.032	0.167	0.006	0.03
38	3.17	0.17	0.032	0.167	0.006	0.03
39	3.25	0.17	0.032	0.166	0.006	0.03
40	3.33	0.17	0.032	0.165	0.006	0.03
41	3.42	0.17	0.032	0.165	0.006	0.03
42	3.50	0.17	0.032	0.164	0.006	0.03
43	3.58	0.17	0.032	0.163	0.006	0.03
44	3.67	0.17	0.032	0.162	0.006	0.03
45	3.75	0.17	0.032	0.162	0.006	0.03
46	3.83	0.20	0.038	0.161	0.007	0.03
47	3.92	0.20	0.038	0.160	0.007	0.03
48	4.00	0.20	0.038	0.160	0.007	0.03
49	4.08	0.20	0.038	0.159	0.007	0.03
50	4.17	0.20	0.038	0.158	0.007	0.03
51	4.25	0.20	0.038	0.158	0.007	0.03
52	4.33	0.23	0.045	0.157	0.008	0.04
53	4.42	0.23	0.045	0.156	0.008	0.04
54	4.50	0.23	0.045	0.156	0.008	0.04

55	4.58	0.23	0.045	0.155	0.008	0.04
56	4.67	0.23	0.045	0.154	0.008	0.04
57	4.75	0.23	0.045	0.154	0.008	0.04
58	4.83	0.27	0.051	0.153	0.009	0.04
59	4.92	0.27	0.051	0.152	0.009	0.04
60	5.00	0.27	0.051	0.152	0.009	0.04
61	5.08	0.20	0.038	0.151	0.007	0.03
62	5.17	0.20	0.038	0.150	0.007	0.03
63	5.25	0.20	0.038	0.150	0.007	0.03
64	5.33	0.23	0.045	0.149	0.008	0.04
65	5.42	0.23	0.045	0.148	0.008	0.04
66	5.50	0.23	0.045	0.148	0.008	0.04
67	5.58	0.27	0.051	0.147	0.009	0.04
68	5.67	0.27	0.051	0.147	0.009	0.04
69	5.75	0.27	0.051	0.146	0.009	0.04
70	5.83	0.27	0.051	0.145	0.009	0.04
71	5.92	0.27	0.051	0.145	0.009	0.04
72	6.00	0.27	0.051	0.144	0.009	0.04
73	6.08	0.30	0.058	0.143	0.010	0.05
74	6.17	0.30	0.058	0.143	0.010	0.05
75	6.25	0.30	0.058	0.142	0.010	0.05
76	6.33	0.30	0.058	0.141	0.010	0.05
77	6.42	0.30	0.058	0.141	0.010	0.05
78	6.50	0.30	0.058	0.140	0.010	0.05
79	6.58	0.33	0.064	0.140	0.012	0.05
80	6.67	0.33	0.064	0.139	0.012	0.05
81	6.75	0.33	0.064	0.138	0.012	0.05
82	6.83	0.33	0.064	0.138	0.012	0.05
83	6.92	0.33	0.064	0.137	0.012	0.05
84	7.00	0.33	0.064	0.136	0.012	0.05
85	7.08	0.33	0.064	0.136	0.012	0.05
86	7.17	0.33	0.064	0.135	0.012	0.05
87	7.25	0.33	0.064	0.135	0.012	0.05
88	7.33	0.37	0.070	0.134	0.013	0.06
89	7.42	0.37	0.070	0.133	0.013	0.06
90	7.50	0.37	0.070	0.133	0.013	0.06
91	7.58	0.40	0.077	0.132	0.014	0.06
92	7.67	0.40	0.077	0.131	0.014	0.06
93	7.75	0.40	0.077	0.131	0.014	0.06
94	7.83	0.43	0.083	0.130	0.015	0.07
95	7.92	0.43	0.083	0.130	0.015	0.07
96	8.00	0.43	0.083	0.129	0.015	0.07
97	8.08	0.50	0.096	0.128	0.017	0.08
98	8.17	0.50	0.096	0.128	0.017	0.08
99	8.25	0.50	0.096	0.127	0.017	0.08
100	8.33	0.50	0.096	0.127	0.017	0.08
101	8.42	0.50	0.096	0.126	0.017	0.08
102	8.50	0.50	0.096	0.125	0.017	0.08
103	8.58	0.53	0.102	0.125	0.018	0.08
104	8.67	0.53	0.102	0.124	0.018	0.08
105	8.75	0.53	0.102	0.124	0.018	0.08
106	8.83	0.57	0.109	0.123	0.020	0.09
107	8.92	0.57	0.109	0.123	0.020	0.09
108	9.00	0.57	0.109	0.122	0.020	0.09

109	9.08	0.63	0.122	0.121	---	0.00
110	9.17	0.63	0.122	0.121	---	0.00
111	9.25	0.63	0.122	0.120	---	0.00
112	9.33	0.67	0.128	0.120	---	0.01
113	9.42	0.67	0.128	0.119	---	0.01
114	9.50	0.67	0.128	0.119	---	0.01
115	9.58	0.70	0.134	0.118	---	0.02
116	9.67	0.70	0.134	0.117	---	0.02
117	9.75	0.70	0.134	0.117	---	0.02
118	9.83	0.73	0.141	0.116	---	0.02
119	9.92	0.73	0.141	0.116	---	0.03
120	10.00	0.73	0.141	0.115	---	0.03
121	10.08	0.50	0.096	0.115	0.017	0.08
122	10.17	0.50	0.096	0.114	0.017	0.08
123	10.25	0.50	0.096	0.113	0.017	0.08
124	10.33	0.50	0.096	0.113	0.017	0.08
125	10.42	0.50	0.096	0.112	0.017	0.08
126	10.50	0.50	0.096	0.112	0.017	0.08
127	10.58	0.67	0.128	0.111	---	0.02
128	10.67	0.67	0.128	0.111	---	0.02
129	10.75	0.67	0.128	0.110	---	0.02
130	10.83	0.67	0.128	0.110	---	0.02
131	10.92	0.67	0.128	0.109	---	0.02
132	11.00	0.67	0.128	0.109	---	0.02
133	11.08	0.63	0.122	0.108	---	0.01
134	11.17	0.63	0.122	0.108	---	0.01
135	11.25	0.63	0.122	0.107	---	0.01
136	11.33	0.63	0.122	0.106	---	0.02
137	11.42	0.63	0.122	0.106	---	0.02
138	11.50	0.63	0.122	0.105	---	0.02
139	11.58	0.57	0.109	0.105	---	0.00
140	11.67	0.57	0.109	0.104	---	0.00
141	11.75	0.57	0.109	0.104	---	0.00
142	11.83	0.60	0.115	0.103	---	0.01
143	11.92	0.60	0.115	0.103	---	0.01
144	12.00	0.60	0.115	0.102	---	0.01
145	12.08	0.83	0.160	0.102	---	0.06
146	12.17	0.83	0.160	0.101	---	0.06
147	12.25	0.83	0.160	0.101	---	0.06
148	12.33	0.87	0.166	0.100	---	0.07
149	12.42	0.87	0.166	0.100	---	0.07
150	12.50	0.87	0.166	0.099	---	0.07
151	12.58	0.93	0.179	0.099	---	0.08
152	12.67	0.93	0.179	0.098	---	0.08
153	12.75	0.93	0.179	0.098	---	0.08
154	12.83	0.97	0.186	0.097	---	0.09
155	12.92	0.97	0.186	0.097	---	0.09
156	13.00	0.97	0.186	0.096	---	0.09
157	13.08	1.13	0.218	0.096	---	0.12
158	13.17	1.13	0.218	0.095	---	0.12
159	13.25	1.13	0.218	0.095	---	0.12
160	13.33	1.13	0.218	0.094	---	0.12
161	13.42	1.13	0.218	0.094	---	0.12
162	13.50	1.13	0.218	0.093	---	0.12

163	13.58	0.77	0.147	0.093	---	0.05
164	13.67	0.77	0.147	0.092	---	0.05
165	13.75	0.77	0.147	0.092	---	0.06
166	13.83	0.77	0.147	0.092	---	0.06
167	13.92	0.77	0.147	0.091	---	0.06
168	14.00	0.77	0.147	0.091	---	0.06
169	14.08	0.90	0.173	0.090	---	0.08
170	14.17	0.90	0.173	0.090	---	0.08
171	14.25	0.90	0.173	0.089	---	0.08
172	14.33	0.87	0.166	0.089	---	0.08
173	14.42	0.87	0.166	0.088	---	0.08
174	14.50	0.87	0.166	0.088	---	0.08
175	14.58	0.87	0.166	0.087	---	0.08
176	14.67	0.87	0.166	0.087	---	0.08
177	14.75	0.87	0.166	0.086	---	0.08
178	14.83	0.83	0.160	0.086	---	0.07
179	14.92	0.83	0.160	0.086	---	0.07
180	15.00	0.83	0.160	0.085	---	0.07
181	15.08	0.80	0.154	0.085	---	0.07
182	15.17	0.80	0.154	0.084	---	0.07
183	15.25	0.80	0.154	0.084	---	0.07
184	15.33	0.77	0.147	0.083	---	0.06
185	15.42	0.77	0.147	0.083	---	0.06
186	15.50	0.77	0.147	0.083	---	0.06
187	15.58	0.63	0.122	0.082	---	0.04
188	15.67	0.63	0.122	0.082	---	0.04
189	15.75	0.63	0.122	0.081	---	0.04
190	15.83	0.63	0.122	0.081	---	0.04
191	15.92	0.63	0.122	0.080	---	0.04
192	16.00	0.63	0.122	0.080	---	0.04
193	16.08	0.13	0.026	0.080	0.005	0.02
194	16.17	0.13	0.026	0.079	0.005	0.02
195	16.25	0.13	0.026	0.079	0.005	0.02
196	16.33	0.13	0.026	0.078	0.005	0.02
197	16.42	0.13	0.026	0.078	0.005	0.02
198	16.50	0.13	0.026	0.078	0.005	0.02
199	16.58	0.10	0.019	0.077	0.003	0.02
200	16.67	0.10	0.019	0.077	0.003	0.02
201	16.75	0.10	0.019	0.076	0.003	0.02
202	16.83	0.10	0.019	0.076	0.003	0.02
203	16.92	0.10	0.019	0.076	0.003	0.02
204	17.00	0.10	0.019	0.075	0.003	0.02
205	17.08	0.17	0.032	0.075	0.006	0.03
206	17.17	0.17	0.032	0.075	0.006	0.03
207	17.25	0.17	0.032	0.074	0.006	0.03
208	17.33	0.17	0.032	0.074	0.006	0.03
209	17.42	0.17	0.032	0.073	0.006	0.03
210	17.50	0.17	0.032	0.073	0.006	0.03
211	17.58	0.17	0.032	0.073	0.006	0.03
212	17.67	0.17	0.032	0.072	0.006	0.03
213	17.75	0.17	0.032	0.072	0.006	0.03
214	17.83	0.13	0.026	0.072	0.005	0.02
215	17.92	0.13	0.026	0.071	0.005	0.02
216	18.00	0.13	0.026	0.071	0.005	0.02

217	18.08	0.13	0.026	0.071	0.005	0.02
218	18.17	0.13	0.026	0.070	0.005	0.02
219	18.25	0.13	0.026	0.070	0.005	0.02
220	18.33	0.13	0.026	0.070	0.005	0.02
221	18.42	0.13	0.026	0.069	0.005	0.02
222	18.50	0.13	0.026	0.069	0.005	0.02
223	18.58	0.10	0.019	0.069	0.003	0.02
224	18.67	0.10	0.019	0.068	0.003	0.02
225	18.75	0.10	0.019	0.068	0.003	0.02
226	18.83	0.07	0.013	0.068	0.002	0.01
227	18.92	0.07	0.013	0.067	0.002	0.01
228	19.00	0.07	0.013	0.067	0.002	0.01
229	19.08	0.10	0.019	0.067	0.003	0.02
230	19.17	0.10	0.019	0.066	0.003	0.02
231	19.25	0.10	0.019	0.066	0.003	0.02
232	19.33	0.13	0.026	0.066	0.005	0.02
233	19.42	0.13	0.026	0.065	0.005	0.02
234	19.50	0.13	0.026	0.065	0.005	0.02
235	19.58	0.10	0.019	0.065	0.003	0.02
236	19.67	0.10	0.019	0.064	0.003	0.02
237	19.75	0.10	0.019	0.064	0.003	0.02
238	19.83	0.07	0.013	0.064	0.002	0.01
239	19.92	0.07	0.013	0.064	0.002	0.01
240	20.00	0.07	0.013	0.063	0.002	0.01
241	20.08	0.10	0.019	0.063	0.003	0.02
242	20.17	0.10	0.019	0.063	0.003	0.02
243	20.25	0.10	0.019	0.062	0.003	0.02
244	20.33	0.10	0.019	0.062	0.003	0.02
245	20.42	0.10	0.019	0.062	0.003	0.02
246	20.50	0.10	0.019	0.062	0.003	0.02
247	20.58	0.10	0.019	0.061	0.003	0.02
248	20.67	0.10	0.019	0.061	0.003	0.02
249	20.75	0.10	0.019	0.061	0.003	0.02
250	20.83	0.07	0.013	0.061	0.002	0.01
251	20.92	0.07	0.013	0.060	0.002	0.01
252	21.00	0.07	0.013	0.060	0.002	0.01
253	21.08	0.10	0.019	0.060	0.003	0.02
254	21.17	0.10	0.019	0.060	0.003	0.02
255	21.25	0.10	0.019	0.059	0.003	0.02
256	21.33	0.07	0.013	0.059	0.002	0.01
257	21.42	0.07	0.013	0.059	0.002	0.01
258	21.50	0.07	0.013	0.059	0.002	0.01
259	21.58	0.10	0.019	0.059	0.003	0.02
260	21.67	0.10	0.019	0.058	0.003	0.02
261	21.75	0.10	0.019	0.058	0.003	0.02
262	21.83	0.07	0.013	0.058	0.002	0.01
263	21.92	0.07	0.013	0.058	0.002	0.01
264	22.00	0.07	0.013	0.058	0.002	0.01
265	22.08	0.10	0.019	0.057	0.003	0.02
266	22.17	0.10	0.019	0.057	0.003	0.02
267	22.25	0.10	0.019	0.057	0.003	0.02
268	22.33	0.07	0.013	0.057	0.002	0.01
269	22.42	0.07	0.013	0.057	0.002	0.01
270	22.50	0.07	0.013	0.057	0.002	0.01

271	22.58	0.07	0.013	0.056	0.002	0.01
272	22.67	0.07	0.013	0.056	0.002	0.01
273	22.75	0.07	0.013	0.056	0.002	0.01
274	22.83	0.07	0.013	0.056	0.002	0.01
275	22.92	0.07	0.013	0.056	0.002	0.01
276	23.00	0.07	0.013	0.056	0.002	0.01
277	23.08	0.07	0.013	0.055	0.002	0.01
278	23.17	0.07	0.013	0.055	0.002	0.01
279	23.25	0.07	0.013	0.055	0.002	0.01
280	23.33	0.07	0.013	0.055	0.002	0.01
281	23.42	0.07	0.013	0.055	0.002	0.01
282	23.50	0.07	0.013	0.055	0.002	0.01
283	23.58	0.07	0.013	0.055	0.002	0.01
284	23.67	0.07	0.013	0.055	0.002	0.01
285	23.75	0.07	0.013	0.055	0.002	0.01
286	23.83	0.07	0.013	0.055	0.002	0.01
287	23.92	0.07	0.013	0.055	0.002	0.01
288	24.00	0.07	0.013	0.055	0.002	0.01
Sum =	100.0				Sum =	10.1

Flood volume = Effective rainfall 0.85(In)
times area 37.4(Ac.)/[(In)/(Ft.)] = 2.6(Ac.Ft)
Total soil loss = 0.75(In)
Total soil loss = 2.350(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 114825.3 Cubic Feet
Total soil loss = 102378.1 Cubic Feet

Peak flow rate of this hydrograph = 4.593(CFS)

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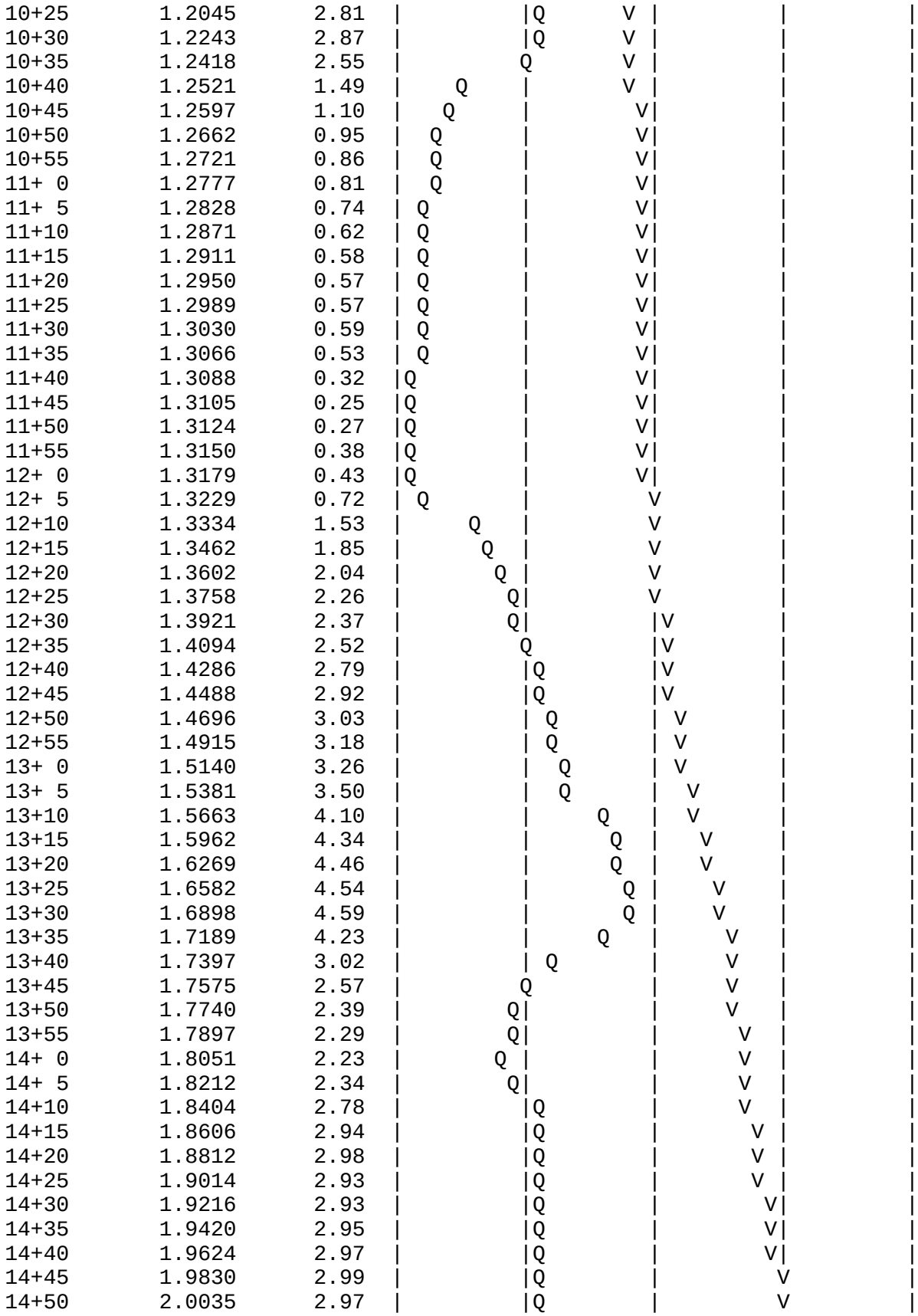
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.06	Q	|	|	|	|
0+10	0.0021	0.25	Q	|	|	|	|
0+15	0.0043	0.32	VQ	|	|	|	|
0+20	0.0069	0.38	VQ	|	|	|	|
0+25	0.0103	0.49	VQ	|	|	|	|
0+30	0.0140	0.54	V Q	|	|	|	|
0+35	0.0178	0.56	V Q	|	|	|	|
0+40	0.0217	0.57	V Q	|	|	|	|
0+45	0.0258	0.58	V Q	|	|	|	|
0+50	0.0300	0.62	V Q	|	|	|	|
0+55	0.0349	0.71	V Q	|	|	|	|
1+ 0	0.0401	0.75	V Q	|	|	|	|
1+ 5	0.0452	0.74	V Q	|	|	|	|
1+10	0.0497	0.65	V Q	|	|	|	|
1+15	0.0540	0.62	V Q	|	|	|	|
1+20	0.0582	0.61	V Q	|	|	|	|

1+25	0.0624	0.61	V Q	|	|	|	|
1+30	0.0665	0.60	|VQ	|	|	|	|
1+35	0.0706	0.60	|VQ	|	|	|	|
1+40	0.0747	0.60	|VQ	|	|	|	|
1+45	0.0788	0.59	|VQ	|	|	|	|
1+50	0.0831	0.62	|VQ	|	|	|	|
1+55	0.0881	0.72	|VQ	|	|	|	|
2+ 0	0.0933	0.75	|V Q	|	|	|	|
2+ 5	0.0985	0.77	|V Q	|	|	|	|
2+10	0.1039	0.78	|V Q	|	|	|	|
2+15	0.1093	0.78	|V Q	|	|	|	|
2+20	0.1147	0.79	|V Q	|	|	|	|
2+25	0.1201	0.79	|V Q	|	|	|	|
2+30	0.1256	0.79	|V Q	|	|	|	|
2+35	0.1312	0.82	|V Q	|	|	|	|
2+40	0.1375	0.91	| VQ	|	|	|	|
2+45	0.1441	0.95	| VQ	|	|	|	|
2+50	0.1507	0.97	| VQ	|	|	|	|
2+55	0.1574	0.97	| VQ	|	|	|	|
3+ 0	0.1642	0.98	| VQ	|	|	|	|
3+ 5	0.1710	0.98	| VQ	|	|	|	|
3+10	0.1777	0.99	| VQ	|	|	|	|
3+15	0.1846	0.99	| VQ	|	|	|	|
3+20	0.1914	0.99	| VQ	|	|	|	|
3+25	0.1982	0.99	| Q	|	|	|	|
3+30	0.2050	0.99	| Q	|	|	|	|
3+35	0.2118	0.99	| Q	|	|	|	|
3+40	0.2186	0.99	| Q	|	|	|	|
3+45	0.2254	0.99	| Q	|	|	|	|
3+50	0.2325	1.02	| VQ	|	|	|	|
3+55	0.2401	1.11	| VQ	|	|	|	|
4+ 0	0.2480	1.15	| VQ	|	|	|	|
4+ 5	0.2560	1.16	| VQ	|	|	|	|
4+10	0.2641	1.17	| Q	|	|	|	|
4+15	0.2722	1.18	| Q	|	|	|	|
4+20	0.2806	1.21	| Q	|	|	|	|
4+25	0.2896	1.31	| VQ	|	|	|	|
4+30	0.2988	1.34	| VQ	|	|	|	|
4+35	0.3082	1.36	| VQ	|	|	|	|
4+40	0.3177	1.37	| VQ	|	|	|	|
4+45	0.3271	1.38	| VQ	|	|	|	|
4+50	0.3368	1.41	| Q	|	|	|	|
4+55	0.3472	1.51	| VQ	|	|	|	|
5+ 0	0.3578	1.54	| VQ	|	|	|	|
5+ 5	0.3682	1.50	| Q	|	|	|	|
5+10	0.3773	1.32	| Q	|	|	|	|
5+15	0.3859	1.26	| Q	|	|	|	|
5+20	0.3946	1.26	| Q	|	|	|	|
5+25	0.4038	1.34	| QV	|	|	|	|
5+30	0.4132	1.36	| QV	|	|	|	|
5+35	0.4229	1.40	| QV	|	|	|	|
5+40	0.4332	1.50	| QV	|	|	|	|
5+45	0.4438	1.54	| Q	|	|	|	|
5+50	0.4545	1.55	| Q	|	|	|	|

```
 5+55       0.4652      1.57  |     QV  |         |         |         |
 6+ 0       0.4761      1.57  |     QV  |         |         |         |
 6+ 5       0.4872      1.61  |     QV  |         |         |         |
 6+10       0.4989      1.70  |     QV  |         |         |         |
 6+15       0.5109      1.74  |     QV  |         |         |         |
 6+20       0.5230      1.76  |      Q  |         |         |         |
 6+25       0.5351      1.77  |      QV |         |         |         |
 6+30       0.5473      1.77  |      QV |         |         |         |
 6+35       0.5598      1.81  |      QV |         |         |         |
 6+40       0.5729      1.90  |      QV |         |         |         |
 6+45       0.5862      1.94  |      QV |         |         |         |
 6+50       0.5997      1.95  |      Q V|         |         |         |
 6+55       0.6132      1.96  |      Q V|         |         |         |
 7+ 0       0.6268      1.97  |      Q V|         |         |         |
 7+ 5       0.6404      1.97  |      Q V|         |         |         |
 7+10       0.6540      1.98  |      Q V|         |         |         |
 7+15       0.6676      1.98  |      Q  V         |         |         |
 7+20       0.6814      2.01  |       Q V         |         |         |
 7+25       0.6959      2.10  |       Q V         |         |         |
 7+30       0.7106      2.14  |       Q V         |         |         |
 7+35       0.7257      2.18  |       Q |V        |         |         |
 7+40       0.7414      2.28  |        Q|V        |         |         |
 7+45       0.7574      2.33  |        Q|V        |         |         |
 7+50       0.7738      2.38  |        Q|V        |         |         |
 7+55       0.7909      2.48  |        Q| V       |         |         |
 8+ 0       0.8082      2.52  |         Q V       |         |         |
 8+ 5       0.8262      2.60  |         Q V       |         |         |
 8+10       0.8454      2.80  |         |QV       |         |         |
 8+15       0.8653      2.88  |         |Q V      |         |         |
 8+20       0.8853      2.91  |         |Q V      |         |         |
 8+25       0.9056      2.94  |         |Q V      |         |         |
 8+30       0.9259      2.95  |         |Q  V     |         |         |
 8+35       0.9465      2.99  |         |Q  V     |         |         |
 8+40       0.9677      3.09  |         | Q V     |         |         |
 8+45       0.9892      3.12  |         | Q  V    |         |         |
 8+50       1.0111      3.17  |         | Q  V    |         |         |
 8+55       1.0336      3.27  |         |  Q V    |         |         |
 9+ 0       1.0565      3.32  |         |  Q  V   |         |         |
 9+ 5       1.0758      2.81  |         |Q    V   |         |         |
 9+10       1.0846      1.27  |    Q    |     V   |         |         |
 9+15       1.0893      0.68  | Q       |     V   |         |         |
 9+20       1.0926      0.48  |Q        |     V   |         |         |
 9+25       1.0958      0.46  |Q        |     V   |         |         |
 9+30       1.0988      0.43  |Q        |     V   |         |         |
 9+35       1.1018      0.44  |Q        |     V   |         |         |
 9+40       1.1055      0.54  | Q       |     V   |         |         |
 9+45       1.1096      0.58  | Q       |     V   |         |         |
 9+50       1.1140      0.65  | Q       |     V   |         |         |
 9+55       1.1195      0.80  |  Q      |     V   |         |         |
10+ 0       1.1255      0.87  |  Q      |      V  |         |         |
10+ 5       1.1339      1.22  |   Q     |      V  |         |         |
10+10       1.1489      2.18  |       Q |      V  |         |         |
10+15       1.1665      2.55  |         Q      V  |         |         |
10+20       1.1852      2.71  |         Q      V  |         |         |
```



14+55	2.0232	2.87		Q		V
15+ 0	2.0428	2.84		Q		V
15+ 5	2.0621	2.80		Q		V
15+10	2.0807	2.69		Q		V
15+15	2.0990	2.66		Q		V
15+20	2.1170	2.62		Q		V
15+25	2.1343	2.51		Q		V
15+30	2.1513	2.47		Q		V
15+35	2.1672	2.31		Q		V
15+40	2.1800	1.86		Q		V
15+45	2.1917	1.70		Q		V
15+50	2.2029	1.63		Q		V
15+55	2.2140	1.60		Q		V
16+ 0	2.2249	1.59		Q		V
16+ 5	2.2349	1.46		Q		V
16+10	2.2424	1.09		Q		V
16+15	2.2490	0.95		Q		V
16+20	2.2550	0.88		Q		V
16+25	2.2609	0.85		Q		V
16+30	2.2666	0.83		Q		V
16+35	2.2720	0.78		Q		V
16+40	2.2767	0.68		Q		V
16+45	2.2811	0.64		Q		V
16+50	2.2853	0.62		Q		V
16+55	2.2895	0.61		Q		V
17+ 0	2.2937	0.60		Q		V
17+ 5	2.2982	0.66		Q		V
17+10	2.3040	0.84		Q		V
17+15	2.3103	0.91		Q		V
17+20	2.3168	0.94		Q		V
17+25	2.3234	0.96		Q		V
17+30	2.3301	0.97		Q		V
17+35	2.3368	0.98		Q		V
17+40	2.3436	0.98		Q		V
17+45	2.3504	0.99		Q		V
17+50	2.3570	0.96		Q		V
17+55	2.3629	0.87		Q		V
18+ 0	2.3687	0.83		Q		V
18+ 5	2.3743	0.82		Q		V
18+10	2.3798	0.81		Q		V
18+15	2.3854	0.80		Q		V
18+20	2.3908	0.80		Q		V
18+25	2.3963	0.79		Q		V
18+30	2.4018	0.79		Q		V
18+35	2.4070	0.76		Q		V
18+40	2.4116	0.67		Q		V
18+45	2.4160	0.63		Q		V
18+50	2.4200	0.59		Q		V
18+55	2.4234	0.49		Q		V
19+ 0	2.4264	0.44		Q		V
19+ 5	2.4296	0.46		Q		V
19+10	2.4333	0.54		Q		V
19+15	2.4372	0.56		Q		V
19+20	2.4413	0.61		Q		V

19+25	2.4462	0.70	| Q	|	|	|	V |
19+30	2.4513	0.74	| Q	|	|	|	V |
19+35	2.4563	0.73	| Q	|	|	|	V |
19+40	2.4608	0.65	| Q	|	|	|	V |
19+45	2.4651	0.62	| Q	|	|	|	V |
19+50	2.4691	0.58	| Q	|	|	|	V |
19+55	2.4724	0.48	|Q	|	|	|	V |
20+ 0	2.4755	0.44	|Q	|	|	|	V |
20+ 5	2.4786	0.46	|Q	|	|	|	V |
20+10	2.4823	0.54	| Q	|	|	|	V |
20+15	2.4862	0.56	| Q	|	|	|	V |
20+20	2.4902	0.58	| Q	|	|	|	V |
20+25	2.4942	0.58	| Q	|	|	|	V |
20+30	2.4982	0.59	| Q	|	|	|	V |
20+35	2.5023	0.59	| Q	|	|	|	V |
20+40	2.5063	0.59	| Q	|	|	|	V |
20+45	2.5104	0.59	| Q	|	|	|	V |
20+50	2.5143	0.56	| Q	|	|	|	V |
20+55	2.5175	0.47	|Q	|	|	|	V |
21+ 0	2.5205	0.44	|Q	|	|	|	V |
21+ 5	2.5236	0.45	|Q	|	|	|	V |
21+10	2.5273	0.53	| Q	|	|	|	V |
21+15	2.5312	0.56	| Q	|	|	|	V |
21+20	2.5350	0.54	| Q	|	|	|	V |
21+25	2.5381	0.46	|Q	|	|	|	V |
21+30	2.5411	0.43	|Q	|	|	|	V |
21+35	2.5441	0.45	|Q	|	|	|	V |
21+40	2.5478	0.53	| Q	|	|	|	V |
21+45	2.5517	0.56	| Q	|	|	|	V |
21+50	2.5554	0.54	| Q	|	|	|	V |
21+55	2.5586	0.46	|Q	|	|	|	V |
22+ 0	2.5615	0.43	|Q	|	|	|	V |
22+ 5	2.5646	0.45	|Q	|	|	|	V |
22+10	2.5682	0.53	| Q	|	|	|	V |
22+15	2.5721	0.56	| Q	|	|	|	V|
22+20	2.5758	0.54	| Q	|	|	|	V|
22+25	2.5790	0.46	|Q	|	|	|	V|
22+30	2.5819	0.43	|Q	|	|	|	V|
22+35	2.5848	0.41	|Q	|	|	|	V|
22+40	2.5876	0.41	|Q	|	|	|	V|
22+45	2.5904	0.40	|Q	|	|	|	V|
22+50	2.5932	0.40	|Q	|	|	|	V|
22+55	2.5959	0.40	|Q	|	|	|	V|
23+ 0	2.5986	0.40	|Q	|	|	|	V|
23+ 5	2.6014	0.40	|Q	|	|	|	V|
23+10	2.6041	0.40	|Q	|	|	|	V|
23+15	2.6068	0.40	|Q	|	|	|	V|
23+20	2.6095	0.40	|Q	|	|	|	V|
23+25	2.6123	0.40	|Q	|	|	|	V|
23+30	2.6150	0.40	|Q	|	|	|	V|
23+35	2.6177	0.40	|Q	|	|	|	V|
23+40	2.6204	0.40	|Q	|	|	|	V|
23+45	2.6232	0.40	|Q	|	|	|	V|
23+50	2.6259	0.40	|Q	|	|	|	V|

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   23+55       2.6286      0.40  |Q        |          |          |        V|
   24+ 0       2.6313      0.40  |Q        |          |          |        V|
   24+ 5       2.6336      0.33  |Q        |          |          |        V|
   24+10       2.6347      0.15  Q         |          |          |        V|
   24+15       2.6352      0.08  Q         |          |          |        V|
   24+20       2.6356      0.05  Q         |          |          |        V|
   24+25       2.6358      0.03  Q         |          |          |        V|
   24+30       2.6359      0.02  Q         |          |          |        V|
   24+35       2.6360      0.01  Q         |          |          |        V|
   24+40       2.6360      0.01  Q         |          |          |        V|
   24+45       2.6360      0.00  Q         |          |          |         V
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
Study date 11/13/19 File: 4163UHP5245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 5 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 3
4163UHP5.UM1

Drainage Area = 37.40(Ac.) = 0.058 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 37.40(Ac.) = 0.058 Sq. Mi.
Length along longest watercourse = 3120.00(Ft.)
Length along longest watercourse measured to centroid = 1850.00(Ft.)
Length along longest watercourse = 0.591 Mi.
Length along longest watercourse measured to centroid = 0.350 Mi.
Difference in elevation = 28.00(Ft.)
Slope along watercourse = 47.3846 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.43 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	1.60	59.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	4.00	149.60

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.162(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.162(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
37.400	69.00	0.900

Total Area Entered = 37.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.657	15.489	5.838
2	0.167	175.313	46.596	17.563
3	0.250	262.970	17.939	6.762
4	0.333	350.627	7.777	2.931
5	0.417	438.284	4.555	1.717
6	0.500	525.940	2.875	1.084
7	0.583	613.597	2.007	0.757
8	0.667	701.254	1.306	0.492
9	0.750	788.910	0.907	0.342
10	0.833	876.567	0.549	0.207
			Sum = 100.000	Sum= 37.692

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.017	0.193	0.003	0.01
2	0.17	0.07	0.017	0.193	0.003	0.01
3	0.25	0.07	0.017	0.192	0.003	0.01
4	0.33	0.10	0.026	0.191	0.005	0.02
5	0.42	0.10	0.026	0.190	0.005	0.02
6	0.50	0.10	0.026	0.190	0.005	0.02
7	0.58	0.10	0.026	0.189	0.005	0.02
8	0.67	0.10	0.026	0.188	0.005	0.02
9	0.75	0.10	0.026	0.187	0.005	0.02
10	0.83	0.13	0.035	0.187	0.006	0.03
11	0.92	0.13	0.035	0.186	0.006	0.03
12	1.00	0.13	0.035	0.185	0.006	0.03
13	1.08	0.10	0.026	0.184	0.005	0.02
14	1.17	0.10	0.026	0.184	0.005	0.02
15	1.25	0.10	0.026	0.183	0.005	0.02
16	1.33	0.10	0.026	0.182	0.005	0.02
17	1.42	0.10	0.026	0.182	0.005	0.02
18	1.50	0.10	0.026	0.181	0.005	0.02
19	1.58	0.10	0.026	0.180	0.005	0.02
20	1.67	0.10	0.026	0.179	0.005	0.02
21	1.75	0.10	0.026	0.179	0.005	0.02
22	1.83	0.13	0.035	0.178	0.006	0.03
23	1.92	0.13	0.035	0.177	0.006	0.03
24	2.00	0.13	0.035	0.176	0.006	0.03
25	2.08	0.13	0.035	0.176	0.006	0.03
26	2.17	0.13	0.035	0.175	0.006	0.03
27	2.25	0.13	0.035	0.174	0.006	0.03
28	2.33	0.13	0.035	0.174	0.006	0.03
29	2.42	0.13	0.035	0.173	0.006	0.03
30	2.50	0.13	0.035	0.172	0.006	0.03
31	2.58	0.17	0.043	0.172	0.008	0.04
32	2.67	0.17	0.043	0.171	0.008	0.04
33	2.75	0.17	0.043	0.170	0.008	0.04
34	2.83	0.17	0.043	0.169	0.008	0.04
35	2.92	0.17	0.043	0.169	0.008	0.04
36	3.00	0.17	0.043	0.168	0.008	0.04
37	3.08	0.17	0.043	0.167	0.008	0.04
38	3.17	0.17	0.043	0.167	0.008	0.04
39	3.25	0.17	0.043	0.166	0.008	0.04
40	3.33	0.17	0.043	0.165	0.008	0.04
41	3.42	0.17	0.043	0.165	0.008	0.04
42	3.50	0.17	0.043	0.164	0.008	0.04
43	3.58	0.17	0.043	0.163	0.008	0.04
44	3.67	0.17	0.043	0.162	0.008	0.04
45	3.75	0.17	0.043	0.162	0.008	0.04
46	3.83	0.20	0.052	0.161	0.009	0.04
47	3.92	0.20	0.052	0.160	0.009	0.04
48	4.00	0.20	0.052	0.160	0.009	0.04
49	4.08	0.20	0.052	0.159	0.009	0.04
50	4.17	0.20	0.052	0.158	0.009	0.04
51	4.25	0.20	0.052	0.158	0.009	0.04
52	4.33	0.23	0.061	0.157	0.011	0.05
53	4.42	0.23	0.061	0.156	0.011	0.05
54	4.50	0.23	0.061	0.156	0.011	0.05

55	4.58	0.23	0.061	0.155	0.011	0.05
56	4.67	0.23	0.061	0.154	0.011	0.05
57	4.75	0.23	0.061	0.154	0.011	0.05
58	4.83	0.27	0.069	0.153	0.012	0.06
59	4.92	0.27	0.069	0.152	0.012	0.06
60	5.00	0.27	0.069	0.152	0.012	0.06
61	5.08	0.20	0.052	0.151	0.009	0.04
62	5.17	0.20	0.052	0.150	0.009	0.04
63	5.25	0.20	0.052	0.150	0.009	0.04
64	5.33	0.23	0.061	0.149	0.011	0.05
65	5.42	0.23	0.061	0.148	0.011	0.05
66	5.50	0.23	0.061	0.148	0.011	0.05
67	5.58	0.27	0.069	0.147	0.012	0.06
68	5.67	0.27	0.069	0.147	0.012	0.06
69	5.75	0.27	0.069	0.146	0.012	0.06
70	5.83	0.27	0.069	0.145	0.012	0.06
71	5.92	0.27	0.069	0.145	0.012	0.06
72	6.00	0.27	0.069	0.144	0.012	0.06
73	6.08	0.30	0.078	0.143	0.014	0.06
74	6.17	0.30	0.078	0.143	0.014	0.06
75	6.25	0.30	0.078	0.142	0.014	0.06
76	6.33	0.30	0.078	0.141	0.014	0.06
77	6.42	0.30	0.078	0.141	0.014	0.06
78	6.50	0.30	0.078	0.140	0.014	0.06
79	6.58	0.33	0.086	0.140	0.016	0.07
80	6.67	0.33	0.086	0.139	0.016	0.07
81	6.75	0.33	0.086	0.138	0.016	0.07
82	6.83	0.33	0.086	0.138	0.016	0.07
83	6.92	0.33	0.086	0.137	0.016	0.07
84	7.00	0.33	0.086	0.136	0.016	0.07
85	7.08	0.33	0.086	0.136	0.016	0.07
86	7.17	0.33	0.086	0.135	0.016	0.07
87	7.25	0.33	0.086	0.135	0.016	0.07
88	7.33	0.37	0.095	0.134	0.017	0.08
89	7.42	0.37	0.095	0.133	0.017	0.08
90	7.50	0.37	0.095	0.133	0.017	0.08
91	7.58	0.40	0.104	0.132	0.019	0.09
92	7.67	0.40	0.104	0.131	0.019	0.09
93	7.75	0.40	0.104	0.131	0.019	0.09
94	7.83	0.43	0.112	0.130	0.020	0.09
95	7.92	0.43	0.112	0.130	0.020	0.09
96	8.00	0.43	0.112	0.129	0.020	0.09
97	8.08	0.50	0.130	0.128	---	0.00
98	8.17	0.50	0.130	0.128	---	0.00
99	8.25	0.50	0.130	0.127	---	0.00
100	8.33	0.50	0.130	0.127	---	0.00
101	8.42	0.50	0.130	0.126	---	0.00
102	8.50	0.50	0.130	0.125	---	0.00
103	8.58	0.53	0.138	0.125	---	0.01
104	8.67	0.53	0.138	0.124	---	0.01
105	8.75	0.53	0.138	0.124	---	0.01
106	8.83	0.57	0.147	0.123	---	0.02
107	8.92	0.57	0.147	0.123	---	0.02
108	9.00	0.57	0.147	0.122	---	0.03

109	9.08	0.63	0.164	0.121	---	0.04
110	9.17	0.63	0.164	0.121	---	0.04
111	9.25	0.63	0.164	0.120	---	0.04
112	9.33	0.67	0.173	0.120	---	0.05
113	9.42	0.67	0.173	0.119	---	0.05
114	9.50	0.67	0.173	0.119	---	0.05
115	9.58	0.70	0.182	0.118	---	0.06
116	9.67	0.70	0.182	0.117	---	0.06
117	9.75	0.70	0.182	0.117	---	0.06
118	9.83	0.73	0.190	0.116	---	0.07
119	9.92	0.73	0.190	0.116	---	0.07
120	10.00	0.73	0.190	0.115	---	0.08
121	10.08	0.50	0.130	0.115	---	0.02
122	10.17	0.50	0.130	0.114	---	0.02
123	10.25	0.50	0.130	0.113	---	0.02
124	10.33	0.50	0.130	0.113	---	0.02
125	10.42	0.50	0.130	0.112	---	0.02
126	10.50	0.50	0.130	0.112	---	0.02
127	10.58	0.67	0.173	0.111	---	0.06
128	10.67	0.67	0.173	0.111	---	0.06
129	10.75	0.67	0.173	0.110	---	0.06
130	10.83	0.67	0.173	0.110	---	0.06
131	10.92	0.67	0.173	0.109	---	0.06
132	11.00	0.67	0.173	0.109	---	0.06
133	11.08	0.63	0.164	0.108	---	0.06
134	11.17	0.63	0.164	0.108	---	0.06
135	11.25	0.63	0.164	0.107	---	0.06
136	11.33	0.63	0.164	0.106	---	0.06
137	11.42	0.63	0.164	0.106	---	0.06
138	11.50	0.63	0.164	0.105	---	0.06
139	11.58	0.57	0.147	0.105	---	0.04
140	11.67	0.57	0.147	0.104	---	0.04
141	11.75	0.57	0.147	0.104	---	0.04
142	11.83	0.60	0.156	0.103	---	0.05
143	11.92	0.60	0.156	0.103	---	0.05
144	12.00	0.60	0.156	0.102	---	0.05
145	12.08	0.83	0.216	0.102	---	0.11
146	12.17	0.83	0.216	0.101	---	0.11
147	12.25	0.83	0.216	0.101	---	0.12
148	12.33	0.87	0.225	0.100	---	0.12
149	12.42	0.87	0.225	0.100	---	0.13
150	12.50	0.87	0.225	0.099	---	0.13
151	12.58	0.93	0.242	0.099	---	0.14
152	12.67	0.93	0.242	0.098	---	0.14
153	12.75	0.93	0.242	0.098	---	0.14
154	12.83	0.97	0.251	0.097	---	0.15
155	12.92	0.97	0.251	0.097	---	0.15
156	13.00	0.97	0.251	0.096	---	0.15
157	13.08	1.13	0.294	0.096	---	0.20
158	13.17	1.13	0.294	0.095	---	0.20
159	13.25	1.13	0.294	0.095	---	0.20
160	13.33	1.13	0.294	0.094	---	0.20
161	13.42	1.13	0.294	0.094	---	0.20
162	13.50	1.13	0.294	0.093	---	0.20

163	13.58	0.77	0.199	0.093	---	0.11
164	13.67	0.77	0.199	0.092	---	0.11
165	13.75	0.77	0.199	0.092	---	0.11
166	13.83	0.77	0.199	0.092	---	0.11
167	13.92	0.77	0.199	0.091	---	0.11
168	14.00	0.77	0.199	0.091	---	0.11
169	14.08	0.90	0.233	0.090	---	0.14
170	14.17	0.90	0.233	0.090	---	0.14
171	14.25	0.90	0.233	0.089	---	0.14
172	14.33	0.87	0.225	0.089	---	0.14
173	14.42	0.87	0.225	0.088	---	0.14
174	14.50	0.87	0.225	0.088	---	0.14
175	14.58	0.87	0.225	0.087	---	0.14
176	14.67	0.87	0.225	0.087	---	0.14
177	14.75	0.87	0.225	0.086	---	0.14
178	14.83	0.83	0.216	0.086	---	0.13
179	14.92	0.83	0.216	0.086	---	0.13
180	15.00	0.83	0.216	0.085	---	0.13
181	15.08	0.80	0.208	0.085	---	0.12
182	15.17	0.80	0.208	0.084	---	0.12
183	15.25	0.80	0.208	0.084	---	0.12
184	15.33	0.77	0.199	0.083	---	0.12
185	15.42	0.77	0.199	0.083	---	0.12
186	15.50	0.77	0.199	0.083	---	0.12
187	15.58	0.63	0.164	0.082	---	0.08
188	15.67	0.63	0.164	0.082	---	0.08
189	15.75	0.63	0.164	0.081	---	0.08
190	15.83	0.63	0.164	0.081	---	0.08
191	15.92	0.63	0.164	0.080	---	0.08
192	16.00	0.63	0.164	0.080	---	0.08
193	16.08	0.13	0.035	0.080	0.006	0.03
194	16.17	0.13	0.035	0.079	0.006	0.03
195	16.25	0.13	0.035	0.079	0.006	0.03
196	16.33	0.13	0.035	0.078	0.006	0.03
197	16.42	0.13	0.035	0.078	0.006	0.03
198	16.50	0.13	0.035	0.078	0.006	0.03
199	16.58	0.10	0.026	0.077	0.005	0.02
200	16.67	0.10	0.026	0.077	0.005	0.02
201	16.75	0.10	0.026	0.076	0.005	0.02
202	16.83	0.10	0.026	0.076	0.005	0.02
203	16.92	0.10	0.026	0.076	0.005	0.02
204	17.00	0.10	0.026	0.075	0.005	0.02
205	17.08	0.17	0.043	0.075	0.008	0.04
206	17.17	0.17	0.043	0.075	0.008	0.04
207	17.25	0.17	0.043	0.074	0.008	0.04
208	17.33	0.17	0.043	0.074	0.008	0.04
209	17.42	0.17	0.043	0.073	0.008	0.04
210	17.50	0.17	0.043	0.073	0.008	0.04
211	17.58	0.17	0.043	0.073	0.008	0.04
212	17.67	0.17	0.043	0.072	0.008	0.04
213	17.75	0.17	0.043	0.072	0.008	0.04
214	17.83	0.13	0.035	0.072	0.006	0.03
215	17.92	0.13	0.035	0.071	0.006	0.03
216	18.00	0.13	0.035	0.071	0.006	0.03

217	18.08	0.13	0.035	0.071	0.006	0.03
218	18.17	0.13	0.035	0.070	0.006	0.03
219	18.25	0.13	0.035	0.070	0.006	0.03
220	18.33	0.13	0.035	0.070	0.006	0.03
221	18.42	0.13	0.035	0.069	0.006	0.03
222	18.50	0.13	0.035	0.069	0.006	0.03
223	18.58	0.10	0.026	0.069	0.005	0.02
224	18.67	0.10	0.026	0.068	0.005	0.02
225	18.75	0.10	0.026	0.068	0.005	0.02
226	18.83	0.07	0.017	0.068	0.003	0.01
227	18.92	0.07	0.017	0.067	0.003	0.01
228	19.00	0.07	0.017	0.067	0.003	0.01
229	19.08	0.10	0.026	0.067	0.005	0.02
230	19.17	0.10	0.026	0.066	0.005	0.02
231	19.25	0.10	0.026	0.066	0.005	0.02
232	19.33	0.13	0.035	0.066	0.006	0.03
233	19.42	0.13	0.035	0.065	0.006	0.03
234	19.50	0.13	0.035	0.065	0.006	0.03
235	19.58	0.10	0.026	0.065	0.005	0.02
236	19.67	0.10	0.026	0.064	0.005	0.02
237	19.75	0.10	0.026	0.064	0.005	0.02
238	19.83	0.07	0.017	0.064	0.003	0.01
239	19.92	0.07	0.017	0.064	0.003	0.01
240	20.00	0.07	0.017	0.063	0.003	0.01
241	20.08	0.10	0.026	0.063	0.005	0.02
242	20.17	0.10	0.026	0.063	0.005	0.02
243	20.25	0.10	0.026	0.062	0.005	0.02
244	20.33	0.10	0.026	0.062	0.005	0.02
245	20.42	0.10	0.026	0.062	0.005	0.02
246	20.50	0.10	0.026	0.062	0.005	0.02
247	20.58	0.10	0.026	0.061	0.005	0.02
248	20.67	0.10	0.026	0.061	0.005	0.02
249	20.75	0.10	0.026	0.061	0.005	0.02
250	20.83	0.07	0.017	0.061	0.003	0.01
251	20.92	0.07	0.017	0.060	0.003	0.01
252	21.00	0.07	0.017	0.060	0.003	0.01
253	21.08	0.10	0.026	0.060	0.005	0.02
254	21.17	0.10	0.026	0.060	0.005	0.02
255	21.25	0.10	0.026	0.059	0.005	0.02
256	21.33	0.07	0.017	0.059	0.003	0.01
257	21.42	0.07	0.017	0.059	0.003	0.01
258	21.50	0.07	0.017	0.059	0.003	0.01
259	21.58	0.10	0.026	0.059	0.005	0.02
260	21.67	0.10	0.026	0.058	0.005	0.02
261	21.75	0.10	0.026	0.058	0.005	0.02
262	21.83	0.07	0.017	0.058	0.003	0.01
263	21.92	0.07	0.017	0.058	0.003	0.01
264	22.00	0.07	0.017	0.058	0.003	0.01
265	22.08	0.10	0.026	0.057	0.005	0.02
266	22.17	0.10	0.026	0.057	0.005	0.02
267	22.25	0.10	0.026	0.057	0.005	0.02
268	22.33	0.07	0.017	0.057	0.003	0.01
269	22.42	0.07	0.017	0.057	0.003	0.01
270	22.50	0.07	0.017	0.057	0.003	0.01

271	22.58	0.07	0.017	0.056	0.003	0.01
272	22.67	0.07	0.017	0.056	0.003	0.01
273	22.75	0.07	0.017	0.056	0.003	0.01
274	22.83	0.07	0.017	0.056	0.003	0.01
275	22.92	0.07	0.017	0.056	0.003	0.01
276	23.00	0.07	0.017	0.056	0.003	0.01
277	23.08	0.07	0.017	0.055	0.003	0.01
278	23.17	0.07	0.017	0.055	0.003	0.01
279	23.25	0.07	0.017	0.055	0.003	0.01
280	23.33	0.07	0.017	0.055	0.003	0.01
281	23.42	0.07	0.017	0.055	0.003	0.01
282	23.50	0.07	0.017	0.055	0.003	0.01
283	23.58	0.07	0.017	0.055	0.003	0.01
284	23.67	0.07	0.017	0.055	0.003	0.01
285	23.75	0.07	0.017	0.055	0.003	0.01
286	23.83	0.07	0.017	0.055	0.003	0.01
287	23.92	0.07	0.017	0.055	0.003	0.01
288	24.00	0.07	0.017	0.055	0.003	0.01
	Sum =	100.0			Sum =	14.7

Flood volume = Effective rainfall 1.22(In)
times area 37.4(Ac.)/[(In)/(Ft.)] = 3.8(Ac.Ft)
Total soil loss = 0.94(In)
Total soil loss = 2.928(Ac.Ft)
Total rainfall = 2.16(In)
Flood volume = 165954.5 Cubic Feet
Total soil loss = 127560.3 Cubic Feet

Peak flow rate of this hydrograph = 7.455(CFS)

++

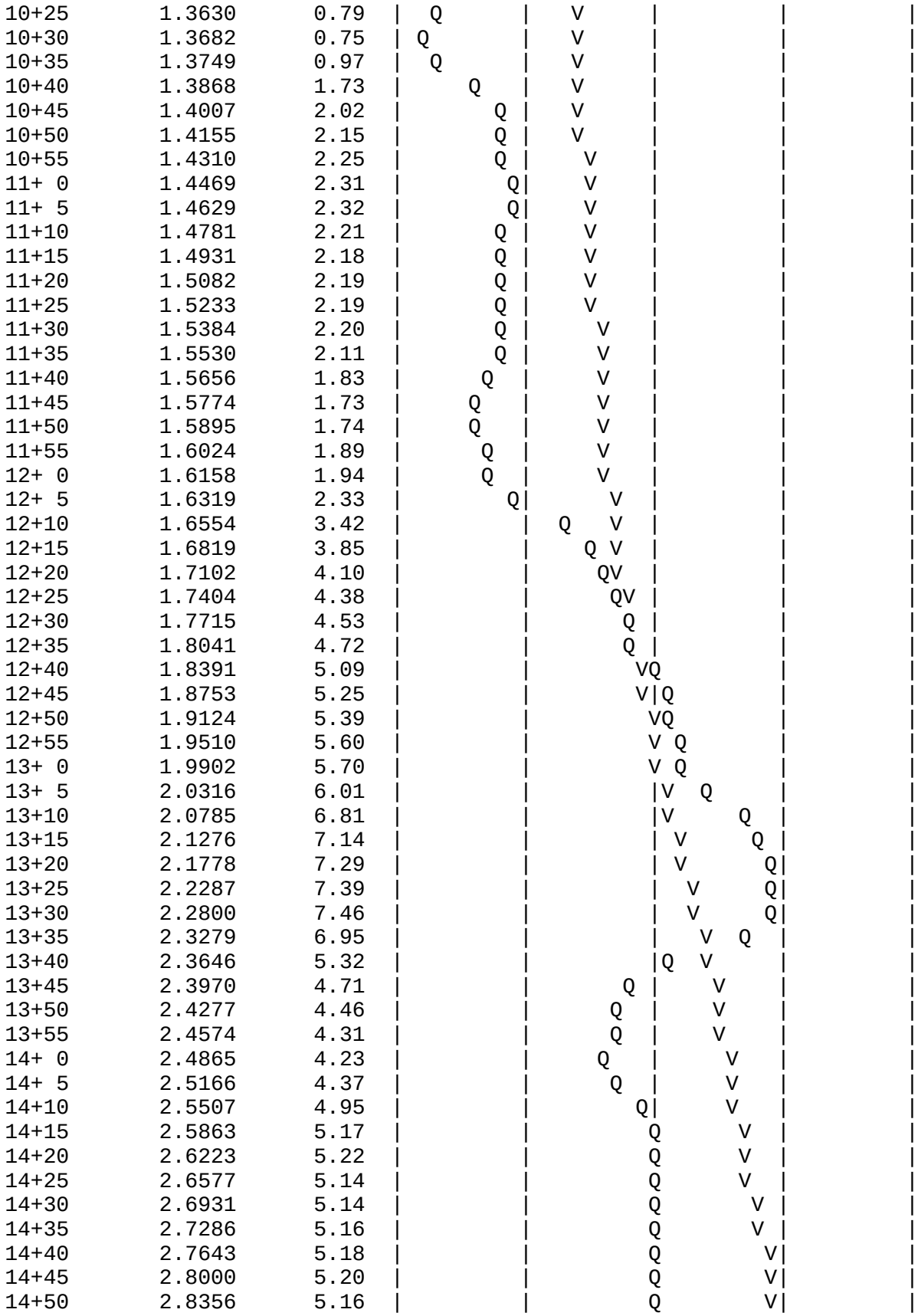
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

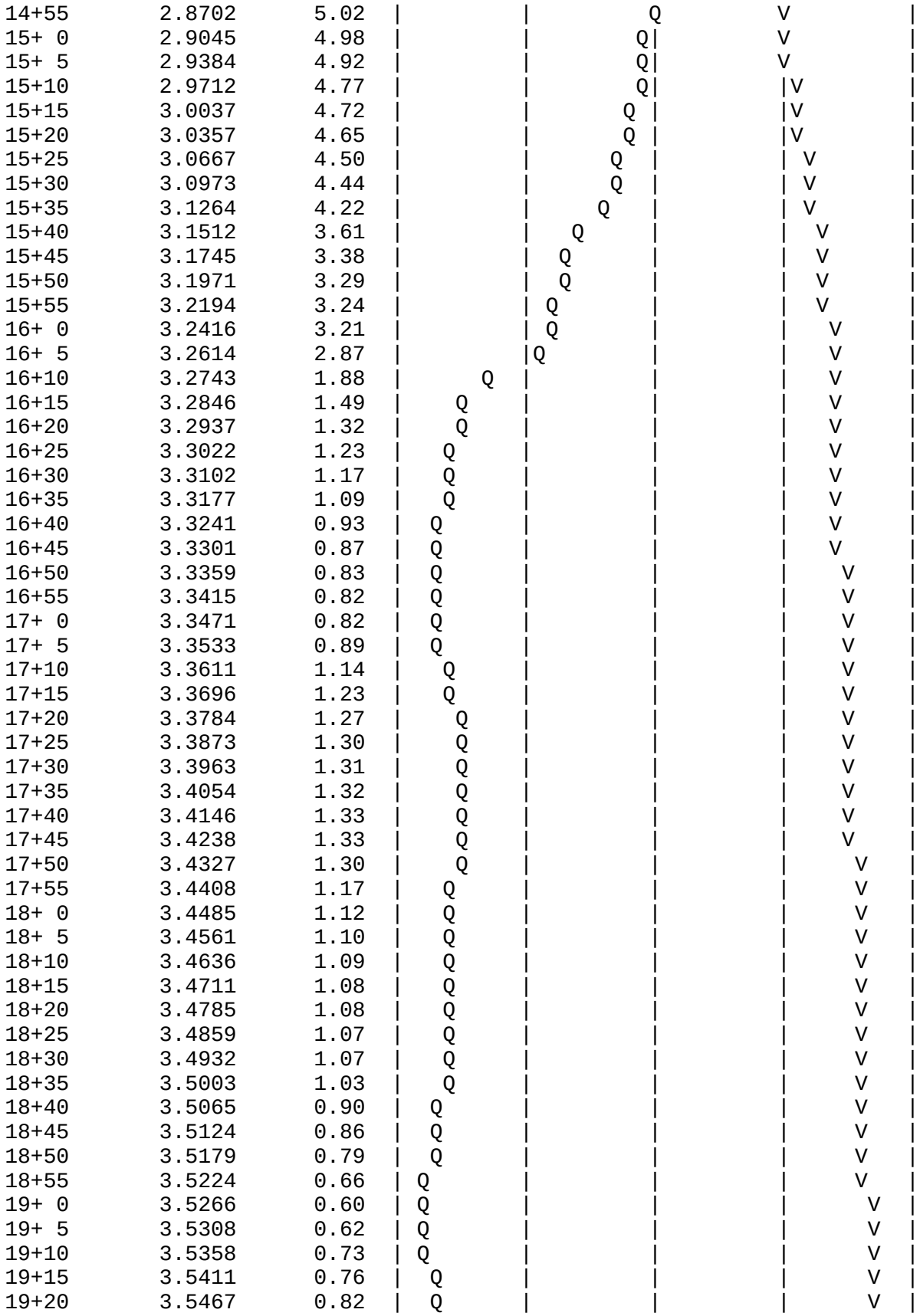
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0006	0.08	Q	|	|	|	|
0+10	0.0029	0.33	VQ	|	|	|	|
0+15	0.0058	0.43	VQ	|	|	|	|
0+20	0.0093	0.51	V Q	|	|	|	|
0+25	0.0139	0.66	V Q	|	|	|	|
0+30	0.0189	0.72	V Q	|	|	|	|
0+35	0.0241	0.75	V Q	|	|	|	|
0+40	0.0294	0.77	V Q	|	|	|	|
0+45	0.0348	0.79	V Q	|	|	|	|
0+50	0.0406	0.84	V Q	|	|	|	|
0+55	0.0472	0.96	V Q	|	|	|	|
1+ 0	0.0542	1.01	V Q	|	|	|	|
1+ 5	0.0610	1.00	V Q	|	|	|	|
1+10	0.0671	0.88	V Q	|	|	|	|
1+15	0.0729	0.84	V Q	|	|	|	|
1+20	0.0786	0.83	V Q	|	|	|	|

1+25	0.0843	0.82	V Q	|	|	|
1+30	0.0899	0.81	V Q	|	|	|
1+35	0.0955	0.81	|V Q	|	|	|
1+40	0.1010	0.81	|V Q	|	|	|
1+45	0.1065	0.80	|V Q	|	|	|
1+50	0.1124	0.84	|V Q	|	|	|
1+55	0.1190	0.97	|V Q	|	|	|
2+ 0	0.1260	1.02	|V Q	|	|	|
2+ 5	0.1332	1.04	|V Q	|	|	|
2+10	0.1404	1.05	|V Q	|	|	|
2+15	0.1477	1.06	|V Q	|	|	|
2+20	0.1550	1.06	|V Q	|	|	|
2+25	0.1623	1.07	|V Q	|	|	|
2+30	0.1697	1.07	|V Q	|	|	|
2+35	0.1773	1.11	|V Q	|	|	|
2+40	0.1858	1.24	|V Q	|	|	|
2+45	0.1947	1.28	| V Q	|	|	|
2+50	0.2037	1.30	| V Q	|	|	|
2+55	0.2127	1.32	| V Q	|	|	|
3+ 0	0.2219	1.32	| V Q	|	|	|
3+ 5	0.2310	1.33	| V Q	|	|	|
3+10	0.2402	1.33	| V Q	|	|	|
3+15	0.2494	1.34	| V Q	|	|	|
3+20	0.2586	1.34	| V Q	|	|	|
3+25	0.2678	1.34	| V Q	|	|	|
3+30	0.2770	1.34	| V Q	|	|	|
3+35	0.2862	1.34	| V Q	|	|	|
3+40	0.2954	1.34	| V Q	|	|	|
3+45	0.3046	1.34	| V Q	|	|	|
3+50	0.3141	1.38	| V Q	|	|	|
3+55	0.3245	1.50	| V Q	|	|	|
4+ 0	0.3352	1.55	| V Q	|	|	|
4+ 5	0.3460	1.57	| V Q	|	|	|
4+10	0.3569	1.58	| V Q	|	|	|
4+15	0.3679	1.59	| V Q	|	|	|
4+20	0.3792	1.64	| V Q	|	|	|
4+25	0.3913	1.77	| V Q	|	|	|
4+30	0.4038	1.82	| V Q	|	|	|
4+35	0.4165	1.84	| V Q	|	|	|
4+40	0.4293	1.85	| V Q	|	|	|
4+45	0.4421	1.86	| V Q	|	|	|
4+50	0.4552	1.91	| V Q	|	|	|
4+55	0.4692	2.03	| V Q	|	|	|
5+ 0	0.4836	2.08	| V Q	|	|	|
5+ 5	0.4975	2.02	| V Q	|	|	|
5+10	0.5098	1.79	| V Q	|	|	|
5+15	0.5215	1.70	| VQ	|	|	|
5+20	0.5332	1.70	| VQ	|	|	|
5+25	0.5457	1.81	| V Q	|	|	|
5+30	0.5584	1.84	| V Q	|	|	|
5+35	0.5714	1.90	| V Q	|	|	|
5+40	0.5854	2.03	| V Q	|	|	|
5+45	0.5997	2.08	| V Q	|	|	|
5+50	0.6141	2.10	| V Q	|	|	|

5+55	0.6287	2.12	V Q			
6+ 0	0.6433	2.13	V Q			
6+ 5	0.6583	2.17	V Q			
6+10	0.6742	2.30	V Q			
6+15	0.6904	2.35	V Q			
6+20	0.7067	2.37	V Q			
6+25	0.7231	2.39	V Q			
6+30	0.7396	2.39	V Q			
6+35	0.7564	2.44	V Q			
6+40	0.7741	2.57	V Q			
6+45	0.7922	2.62	V Q			
6+50	0.8104	2.64	V Q			
6+55	0.8286	2.65	V Q			
7+ 0	0.8470	2.66	V Q			
7+ 5	0.8653	2.67	VQ			
7+10	0.8837	2.67	VQ			
7+15	0.9021	2.67	VQ			
7+20	0.9208	2.72	VQ			
7+25	0.9404	2.84	V|Q			
7+30	0.9603	2.89	VQ			
7+35	0.9806	2.95	VQ			
7+40	1.0019	3.09	V Q			
7+45	1.0235	3.14	V Q			
7+50	1.0456	3.21	V Q			
7+55	1.0687	3.35	|V Q			
8+ 0	1.0922	3.41	|V Q			
8+ 5	1.1122	2.91	|Q			
8+10	1.1213	1.33	Q |V			
8+15	1.1264	0.74	Q |V			
8+20	1.1298	0.49	Q |V			
8+25	1.1323	0.36	Q |V			
8+30	1.1343	0.29	Q |V			
8+35	1.1362	0.29	Q |V			
8+40	1.1391	0.42	Q |V			
8+45	1.1424	0.47	Q |V			
8+50	1.1461	0.55	Q | V			
8+55	1.1512	0.74	Q | V			
9+ 0	1.1569	0.83	Q | V			
9+ 5	1.1636	0.98	Q | V			
9+10	1.1728	1.33	Q | V			
9+15	1.1829	1.48	Q | V			
9+20	1.1940	1.61	Q | V			
9+25	1.2065	1.82	Q | V			
9+30	1.2197	1.92	Q | V			
9+35	1.2337	2.03	Q | V			
9+40	1.2490	2.23	Q | V			
9+45	1.2650	2.32	Q| V			
9+50	1.2817	2.43	Q| V			
9+55	1.2998	2.62	Q V			
10+ 0	1.3185	2.71	Q V			
10+ 5	1.3351	2.41	Q| V			
10+10	1.3447	1.39	Q | V			
10+15	1.3517	1.01	Q | V			
10+20	1.3576	0.87	Q | V			





19+25	3.5533	0.95	| Q	|	|	| V	|
19+30	3.5602	1.00	| Q	|	|	| V	|
19+35	3.5670	0.99	| Q	|	|	| V	|
19+40	3.5730	0.88	| Q	|	|	| V	|
19+45	3.5788	0.84	| Q	|	|	| V	|
19+50	3.5842	0.79	| Q	|	|	| V	|
19+55	3.5887	0.65	| Q	|	|	| V	|
20+ 0	3.5929	0.60	| Q	|	|	| V	|
20+ 5	3.5971	0.62	| Q	|	|	| V	|
20+10	3.6021	0.73	| Q	|	|	| V	|
20+15	3.6074	0.76	| Q	|	|	| V	|
20+20	3.6127	0.78	| Q	|	|	| V	|
20+25	3.6181	0.79	| Q	|	|	| V	|
20+30	3.6236	0.79	| Q	|	|	| V	|
20+35	3.6291	0.79	| Q	|	|	| V	|
20+40	3.6346	0.80	| Q	|	|	| V	|
20+45	3.6401	0.80	| Q	|	|	| V	|
20+50	3.6453	0.76	| Q	|	|	| V	|
20+55	3.6497	0.64	| Q	|	|	| V	|
21+ 0	3.6537	0.59	| Q	|	|	| V	|
21+ 5	3.6579	0.61	| Q	|	|	| V	|
21+10	3.6629	0.72	| Q	|	|	| V	|
21+15	3.6681	0.76	| Q	|	|	| V	|
21+20	3.6732	0.74	| Q	|	|	| V	|
21+25	3.6775	0.62	| Q	|	|	| V	|
21+30	3.6815	0.58	| Q	|	|	| V	|
21+35	3.6856	0.60	| Q	|	|	| V	|
21+40	3.6905	0.72	| Q	|	|	| V	|
21+45	3.6958	0.76	| Q	|	|	| V	|
21+50	3.7008	0.74	| Q	|	|	| V	|
21+55	3.7051	0.62	| Q	|	|	| V	|
22+ 0	3.7091	0.58	| Q	|	|	| V	|
22+ 5	3.7132	0.60	| Q	|	|	| V	|
22+10	3.7182	0.72	| Q	|	|	| V	|
22+15	3.7234	0.76	| Q	|	|	| V	|
22+20	3.7285	0.74	| Q	|	|	| V	|
22+25	3.7327	0.62	| Q	|	|	| V	|
22+30	3.7367	0.58	| Q	|	|	| V	|
22+35	3.7406	0.56	| Q	|	|	| V	|
22+40	3.7444	0.55	| Q	|	|	| V	|
22+45	3.7481	0.55	| Q	|	|	| V	|
22+50	3.7519	0.54	| Q	|	|	| V	|
22+55	3.7556	0.54	| Q	|	|	| V	|
23+ 0	3.7593	0.54	| Q	|	|	| V	|
23+ 5	3.7629	0.53	| Q	|	|	| V	|
23+10	3.7666	0.53	| Q	|	|	| V	|
23+15	3.7703	0.53	| Q	|	|	| V	|
23+20	3.7740	0.53	| Q	|	|	| V	|
23+25	3.7777	0.53	| Q	|	|	| V	|
23+30	3.7814	0.53	| Q	|	|	| V	|
23+35	3.7850	0.53	| Q	|	|	| V	|
23+40	3.7887	0.53	| Q	|	|	| V	|
23+45	3.7924	0.53	| Q	|	|	| V	|
23+50	3.7961	0.53	| Q	|	|	| V	|

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   23+55       3.7998      0.53  | Q       |         |         |        V|
   24+ 0       3.8035      0.53  | Q       |         |         |        V|
   24+ 5       3.8066      0.45  |Q        |         |         |        V|
   24+10       3.8080      0.20  Q         |         |         |        V|
   24+15       3.8087      0.11  Q         |         |         |        V|
   24+20       3.8092      0.07  Q         |         |         |        V|
   24+25       3.8094      0.04  Q         |         |         |        V|
   24+30       3.8096      0.03  Q         |         |         |        V|
   24+35       3.8097      0.01  Q         |         |         |        V|
   24+40       3.8098      0.01  Q         |         |         |        V|
   24+45       3.8098      0.00  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/13/19 File: 4163UHP102410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 10 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 3
4163UHP10.UM1

Drainage Area = 37.40(Ac.) = 0.058 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 37.40(Ac.) = 0.058 Sq. Mi.
Length along longest watercourse = 3120.00(Ft.)
Length along longest watercourse measured to centroid = 1850.00(Ft.)
Length along longest watercourse = 0.591 Mi.
Length along longest watercourse measured to centroid = 0.350 Mi.
Difference in elevation = 28.00(Ft.)
Slope along watercourse = 47.3846 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.43 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	1.60	59.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	4.00	149.60

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.587(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.587(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
37.400	69.00	0.900

Total Area Entered = 37.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.657	15.489	5.838
2	0.167	175.313	46.596	17.563
3	0.250	262.970	17.939	6.762
4	0.333	350.627	7.777	2.931
5	0.417	438.284	4.555	1.717
6	0.500	525.940	2.875	1.084
7	0.583	613.597	2.007	0.757
8	0.667	701.254	1.306	0.492
9	0.750	788.910	0.907	0.342
10	0.833	876.567	0.549	0.207
			Sum = 100.000	Sum= 37.692

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.021	0.126	0.004	0.02
2	0.17	0.07	0.021	0.125	0.004	0.02
3	0.25	0.07	0.021	0.125	0.004	0.02
4	0.33	0.10	0.031	0.124	0.006	0.03
5	0.42	0.10	0.031	0.124	0.006	0.03
6	0.50	0.10	0.031	0.123	0.006	0.03
7	0.58	0.10	0.031	0.123	0.006	0.03
8	0.67	0.10	0.031	0.122	0.006	0.03
9	0.75	0.10	0.031	0.122	0.006	0.03
10	0.83	0.13	0.041	0.121	0.007	0.03
11	0.92	0.13	0.041	0.121	0.007	0.03
12	1.00	0.13	0.041	0.120	0.007	0.03
13	1.08	0.10	0.031	0.120	0.006	0.03
14	1.17	0.10	0.031	0.119	0.006	0.03
15	1.25	0.10	0.031	0.119	0.006	0.03
16	1.33	0.10	0.031	0.118	0.006	0.03
17	1.42	0.10	0.031	0.118	0.006	0.03
18	1.50	0.10	0.031	0.117	0.006	0.03
19	1.58	0.10	0.031	0.117	0.006	0.03
20	1.67	0.10	0.031	0.117	0.006	0.03
21	1.75	0.10	0.031	0.116	0.006	0.03
22	1.83	0.13	0.041	0.116	0.007	0.03
23	1.92	0.13	0.041	0.115	0.007	0.03
24	2.00	0.13	0.041	0.115	0.007	0.03
25	2.08	0.13	0.041	0.114	0.007	0.03
26	2.17	0.13	0.041	0.114	0.007	0.03
27	2.25	0.13	0.041	0.113	0.007	0.03
28	2.33	0.13	0.041	0.113	0.007	0.03
29	2.42	0.13	0.041	0.112	0.007	0.03
30	2.50	0.13	0.041	0.112	0.007	0.03
31	2.58	0.17	0.052	0.111	0.009	0.04
32	2.67	0.17	0.052	0.111	0.009	0.04
33	2.75	0.17	0.052	0.110	0.009	0.04
34	2.83	0.17	0.052	0.110	0.009	0.04
35	2.92	0.17	0.052	0.110	0.009	0.04
36	3.00	0.17	0.052	0.109	0.009	0.04
37	3.08	0.17	0.052	0.109	0.009	0.04
38	3.17	0.17	0.052	0.108	0.009	0.04
39	3.25	0.17	0.052	0.108	0.009	0.04
40	3.33	0.17	0.052	0.107	0.009	0.04
41	3.42	0.17	0.052	0.107	0.009	0.04
42	3.50	0.17	0.052	0.106	0.009	0.04
43	3.58	0.17	0.052	0.106	0.009	0.04
44	3.67	0.17	0.052	0.106	0.009	0.04
45	3.75	0.17	0.052	0.105	0.009	0.04
46	3.83	0.20	0.062	0.105	0.011	0.05
47	3.92	0.20	0.062	0.104	0.011	0.05
48	4.00	0.20	0.062	0.104	0.011	0.05
49	4.08	0.20	0.062	0.103	0.011	0.05
50	4.17	0.20	0.062	0.103	0.011	0.05
51	4.25	0.20	0.062	0.102	0.011	0.05
52	4.33	0.23	0.072	0.102	0.013	0.06
53	4.42	0.23	0.072	0.102	0.013	0.06
54	4.50	0.23	0.072	0.101	0.013	0.06

55	4.58	0.23	0.072	0.101	0.013	0.06
56	4.67	0.23	0.072	0.100	0.013	0.06
57	4.75	0.23	0.072	0.100	0.013	0.06
58	4.83	0.27	0.083	0.099	0.015	0.07
59	4.92	0.27	0.083	0.099	0.015	0.07
60	5.00	0.27	0.083	0.099	0.015	0.07
61	5.08	0.20	0.062	0.098	0.011	0.05
62	5.17	0.20	0.062	0.098	0.011	0.05
63	5.25	0.20	0.062	0.097	0.011	0.05
64	5.33	0.23	0.072	0.097	0.013	0.06
65	5.42	0.23	0.072	0.096	0.013	0.06
66	5.50	0.23	0.072	0.096	0.013	0.06
67	5.58	0.27	0.083	0.096	0.015	0.07
68	5.67	0.27	0.083	0.095	0.015	0.07
69	5.75	0.27	0.083	0.095	0.015	0.07
70	5.83	0.27	0.083	0.094	0.015	0.07
71	5.92	0.27	0.083	0.094	0.015	0.07
72	6.00	0.27	0.083	0.093	0.015	0.07
73	6.08	0.30	0.093	0.093	---	0.00
74	6.17	0.30	0.093	0.093	---	0.00
75	6.25	0.30	0.093	0.092	---	0.00
76	6.33	0.30	0.093	0.092	---	0.00
77	6.42	0.30	0.093	0.091	---	0.00
78	6.50	0.30	0.093	0.091	---	0.00
79	6.58	0.33	0.103	0.091	---	0.01
80	6.67	0.33	0.103	0.090	---	0.01
81	6.75	0.33	0.103	0.090	---	0.01
82	6.83	0.33	0.103	0.089	---	0.01
83	6.92	0.33	0.103	0.089	---	0.01
84	7.00	0.33	0.103	0.089	---	0.01
85	7.08	0.33	0.103	0.088	---	0.02
86	7.17	0.33	0.103	0.088	---	0.02
87	7.25	0.33	0.103	0.087	---	0.02
88	7.33	0.37	0.114	0.087	---	0.03
89	7.42	0.37	0.114	0.087	---	0.03
90	7.50	0.37	0.114	0.086	---	0.03
91	7.58	0.40	0.124	0.086	---	0.04
92	7.67	0.40	0.124	0.085	---	0.04
93	7.75	0.40	0.124	0.085	---	0.04
94	7.83	0.43	0.135	0.085	---	0.05
95	7.92	0.43	0.135	0.084	---	0.05
96	8.00	0.43	0.135	0.084	---	0.05
97	8.08	0.50	0.155	0.083	---	0.07
98	8.17	0.50	0.155	0.083	---	0.07
99	8.25	0.50	0.155	0.083	---	0.07
100	8.33	0.50	0.155	0.082	---	0.07
101	8.42	0.50	0.155	0.082	---	0.07
102	8.50	0.50	0.155	0.082	---	0.07
103	8.58	0.53	0.166	0.081	---	0.08
104	8.67	0.53	0.166	0.081	---	0.08
105	8.75	0.53	0.166	0.080	---	0.09
106	8.83	0.57	0.176	0.080	---	0.10
107	8.92	0.57	0.176	0.080	---	0.10
108	9.00	0.57	0.176	0.079	---	0.10

109	9.08	0.63	0.197	0.079	---	0.12
110	9.17	0.63	0.197	0.078	---	0.12
111	9.25	0.63	0.197	0.078	---	0.12
112	9.33	0.67	0.207	0.078	---	0.13
113	9.42	0.67	0.207	0.077	---	0.13
114	9.50	0.67	0.207	0.077	---	0.13
115	9.58	0.70	0.217	0.077	---	0.14
116	9.67	0.70	0.217	0.076	---	0.14
117	9.75	0.70	0.217	0.076	---	0.14
118	9.83	0.73	0.228	0.076	---	0.15
119	9.92	0.73	0.228	0.075	---	0.15
120	10.00	0.73	0.228	0.075	---	0.15
121	10.08	0.50	0.155	0.074	---	0.08
122	10.17	0.50	0.155	0.074	---	0.08
123	10.25	0.50	0.155	0.074	---	0.08
124	10.33	0.50	0.155	0.073	---	0.08
125	10.42	0.50	0.155	0.073	---	0.08
126	10.50	0.50	0.155	0.073	---	0.08
127	10.58	0.67	0.207	0.072	---	0.13
128	10.67	0.67	0.207	0.072	---	0.14
129	10.75	0.67	0.207	0.072	---	0.14
130	10.83	0.67	0.207	0.071	---	0.14
131	10.92	0.67	0.207	0.071	---	0.14
132	11.00	0.67	0.207	0.071	---	0.14
133	11.08	0.63	0.197	0.070	---	0.13
134	11.17	0.63	0.197	0.070	---	0.13
135	11.25	0.63	0.197	0.069	---	0.13
136	11.33	0.63	0.197	0.069	---	0.13
137	11.42	0.63	0.197	0.069	---	0.13
138	11.50	0.63	0.197	0.068	---	0.13
139	11.58	0.57	0.176	0.068	---	0.11
140	11.67	0.57	0.176	0.068	---	0.11
141	11.75	0.57	0.176	0.067	---	0.11
142	11.83	0.60	0.186	0.067	---	0.12
143	11.92	0.60	0.186	0.067	---	0.12
144	12.00	0.60	0.186	0.066	---	0.12
145	12.08	0.83	0.259	0.066	---	0.19
146	12.17	0.83	0.259	0.066	---	0.19
147	12.25	0.83	0.259	0.065	---	0.19
148	12.33	0.87	0.269	0.065	---	0.20
149	12.42	0.87	0.269	0.065	---	0.20
150	12.50	0.87	0.269	0.064	---	0.20
151	12.58	0.93	0.290	0.064	---	0.23
152	12.67	0.93	0.290	0.064	---	0.23
153	12.75	0.93	0.290	0.064	---	0.23
154	12.83	0.97	0.300	0.063	---	0.24
155	12.92	0.97	0.300	0.063	---	0.24
156	13.00	0.97	0.300	0.063	---	0.24
157	13.08	1.13	0.352	0.062	---	0.29
158	13.17	1.13	0.352	0.062	---	0.29
159	13.25	1.13	0.352	0.062	---	0.29
160	13.33	1.13	0.352	0.061	---	0.29
161	13.42	1.13	0.352	0.061	---	0.29
162	13.50	1.13	0.352	0.061	---	0.29

163	13.58	0.77	0.238	0.060	---	0.18
164	13.67	0.77	0.238	0.060	---	0.18
165	13.75	0.77	0.238	0.060	---	0.18
166	13.83	0.77	0.238	0.059	---	0.18
167	13.92	0.77	0.238	0.059	---	0.18
168	14.00	0.77	0.238	0.059	---	0.18
169	14.08	0.90	0.279	0.059	---	0.22
170	14.17	0.90	0.279	0.058	---	0.22
171	14.25	0.90	0.279	0.058	---	0.22
172	14.33	0.87	0.269	0.058	---	0.21
173	14.42	0.87	0.269	0.057	---	0.21
174	14.50	0.87	0.269	0.057	---	0.21
175	14.58	0.87	0.269	0.057	---	0.21
176	14.67	0.87	0.269	0.056	---	0.21
177	14.75	0.87	0.269	0.056	---	0.21
178	14.83	0.83	0.259	0.056	---	0.20
179	14.92	0.83	0.259	0.056	---	0.20
180	15.00	0.83	0.259	0.055	---	0.20
181	15.08	0.80	0.248	0.055	---	0.19
182	15.17	0.80	0.248	0.055	---	0.19
183	15.25	0.80	0.248	0.054	---	0.19
184	15.33	0.77	0.238	0.054	---	0.18
185	15.42	0.77	0.238	0.054	---	0.18
186	15.50	0.77	0.238	0.054	---	0.18
187	15.58	0.63	0.197	0.053	---	0.14
188	15.67	0.63	0.197	0.053	---	0.14
189	15.75	0.63	0.197	0.053	---	0.14
190	15.83	0.63	0.197	0.053	---	0.14
191	15.92	0.63	0.197	0.052	---	0.14
192	16.00	0.63	0.197	0.052	---	0.14
193	16.08	0.13	0.041	0.052	0.007	0.03
194	16.17	0.13	0.041	0.051	0.007	0.03
195	16.25	0.13	0.041	0.051	0.007	0.03
196	16.33	0.13	0.041	0.051	0.007	0.03
197	16.42	0.13	0.041	0.051	0.007	0.03
198	16.50	0.13	0.041	0.050	0.007	0.03
199	16.58	0.10	0.031	0.050	0.006	0.03
200	16.67	0.10	0.031	0.050	0.006	0.03
201	16.75	0.10	0.031	0.050	0.006	0.03
202	16.83	0.10	0.031	0.049	0.006	0.03
203	16.92	0.10	0.031	0.049	0.006	0.03
204	17.00	0.10	0.031	0.049	0.006	0.03
205	17.08	0.17	0.052	0.049	---	0.00
206	17.17	0.17	0.052	0.048	---	0.00
207	17.25	0.17	0.052	0.048	---	0.00
208	17.33	0.17	0.052	0.048	---	0.00
209	17.42	0.17	0.052	0.048	---	0.00
210	17.50	0.17	0.052	0.047	---	0.00
211	17.58	0.17	0.052	0.047	---	0.00
212	17.67	0.17	0.052	0.047	---	0.00
213	17.75	0.17	0.052	0.047	---	0.00
214	17.83	0.13	0.041	0.047	0.007	0.03
215	17.92	0.13	0.041	0.046	0.007	0.03
216	18.00	0.13	0.041	0.046	0.007	0.03

217	18.08	0.13	0.041	0.046	0.007	0.03
218	18.17	0.13	0.041	0.046	0.007	0.03
219	18.25	0.13	0.041	0.045	0.007	0.03
220	18.33	0.13	0.041	0.045	0.007	0.03
221	18.42	0.13	0.041	0.045	0.007	0.03
222	18.50	0.13	0.041	0.045	0.007	0.03
223	18.58	0.10	0.031	0.045	0.006	0.03
224	18.67	0.10	0.031	0.044	0.006	0.03
225	18.75	0.10	0.031	0.044	0.006	0.03
226	18.83	0.07	0.021	0.044	0.004	0.02
227	18.92	0.07	0.021	0.044	0.004	0.02
228	19.00	0.07	0.021	0.043	0.004	0.02
229	19.08	0.10	0.031	0.043	0.006	0.03
230	19.17	0.10	0.031	0.043	0.006	0.03
231	19.25	0.10	0.031	0.043	0.006	0.03
232	19.33	0.13	0.041	0.043	0.007	0.03
233	19.42	0.13	0.041	0.042	0.007	0.03
234	19.50	0.13	0.041	0.042	0.007	0.03
235	19.58	0.10	0.031	0.042	0.006	0.03
236	19.67	0.10	0.031	0.042	0.006	0.03
237	19.75	0.10	0.031	0.042	0.006	0.03
238	19.83	0.07	0.021	0.041	0.004	0.02
239	19.92	0.07	0.021	0.041	0.004	0.02
240	20.00	0.07	0.021	0.041	0.004	0.02
241	20.08	0.10	0.031	0.041	0.006	0.03
242	20.17	0.10	0.031	0.041	0.006	0.03
243	20.25	0.10	0.031	0.041	0.006	0.03
244	20.33	0.10	0.031	0.040	0.006	0.03
245	20.42	0.10	0.031	0.040	0.006	0.03
246	20.50	0.10	0.031	0.040	0.006	0.03
247	20.58	0.10	0.031	0.040	0.006	0.03
248	20.67	0.10	0.031	0.040	0.006	0.03
249	20.75	0.10	0.031	0.040	0.006	0.03
250	20.83	0.07	0.021	0.039	0.004	0.02
251	20.92	0.07	0.021	0.039	0.004	0.02
252	21.00	0.07	0.021	0.039	0.004	0.02
253	21.08	0.10	0.031	0.039	0.006	0.03
254	21.17	0.10	0.031	0.039	0.006	0.03
255	21.25	0.10	0.031	0.039	0.006	0.03
256	21.33	0.07	0.021	0.038	0.004	0.02
257	21.42	0.07	0.021	0.038	0.004	0.02
258	21.50	0.07	0.021	0.038	0.004	0.02
259	21.58	0.10	0.031	0.038	0.006	0.03
260	21.67	0.10	0.031	0.038	0.006	0.03
261	21.75	0.10	0.031	0.038	0.006	0.03
262	21.83	0.07	0.021	0.038	0.004	0.02
263	21.92	0.07	0.021	0.038	0.004	0.02
264	22.00	0.07	0.021	0.037	0.004	0.02
265	22.08	0.10	0.031	0.037	0.006	0.03
266	22.17	0.10	0.031	0.037	0.006	0.03
267	22.25	0.10	0.031	0.037	0.006	0.03
268	22.33	0.07	0.021	0.037	0.004	0.02
269	22.42	0.07	0.021	0.037	0.004	0.02
270	22.50	0.07	0.021	0.037	0.004	0.02

271	22.58	0.07	0.021	0.037	0.004	0.02
272	22.67	0.07	0.021	0.036	0.004	0.02
273	22.75	0.07	0.021	0.036	0.004	0.02
274	22.83	0.07	0.021	0.036	0.004	0.02
275	22.92	0.07	0.021	0.036	0.004	0.02
276	23.00	0.07	0.021	0.036	0.004	0.02
277	23.08	0.07	0.021	0.036	0.004	0.02
278	23.17	0.07	0.021	0.036	0.004	0.02
279	23.25	0.07	0.021	0.036	0.004	0.02
280	23.33	0.07	0.021	0.036	0.004	0.02
281	23.42	0.07	0.021	0.036	0.004	0.02
282	23.50	0.07	0.021	0.036	0.004	0.02
283	23.58	0.07	0.021	0.036	0.004	0.02
284	23.67	0.07	0.021	0.036	0.004	0.02
285	23.75	0.07	0.021	0.036	0.004	0.02
286	23.83	0.07	0.021	0.035	0.004	0.02
287	23.92	0.07	0.021	0.035	0.004	0.02
288	24.00	0.07	0.021	0.035	0.004	0.02
Sum =	100.0				Sum =	21.0

Flood volume = Effective rainfall 1.75(In)
times area 37.4(Ac.)/[(In)/(Ft.)] = 5.4(Ac.Ft)
Total soil loss = 0.84(In)
Total soil loss = 2.621(Ac.Ft)
Total rainfall = 2.59(In)
Flood volume = 237083.4 Cubic Feet
Total soil loss = 114158.7 Cubic Feet

Peak flow rate of this hydrograph = 10.866(CFS)

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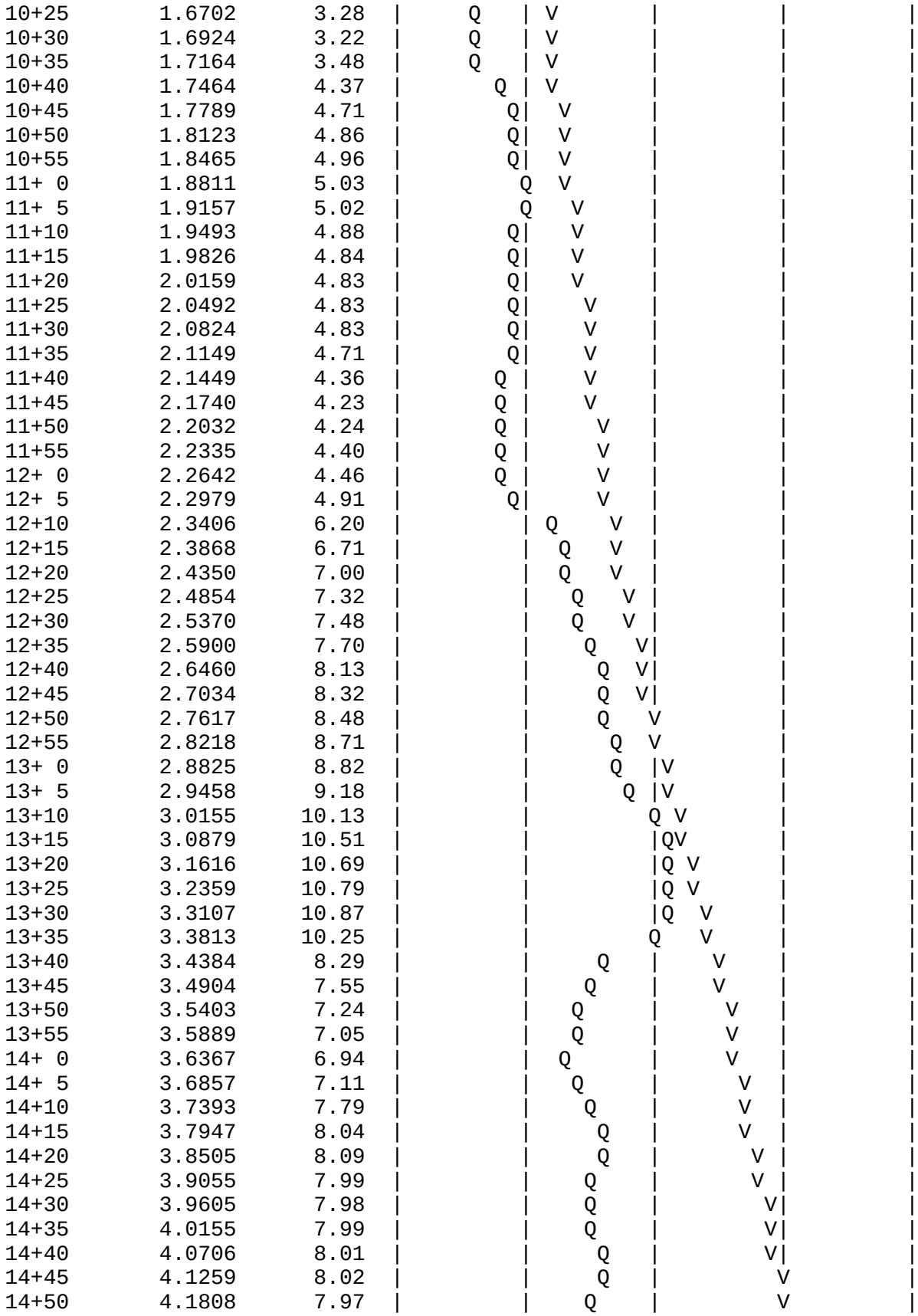
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0007	0.10	Q	|	|	|	|
0+10	0.0034	0.40	Q	|	|	|	|
0+15	0.0069	0.51	VQ	|	|	|	|
0+20	0.0112	0.61	VQ	|	|	|	|
0+25	0.0166	0.79	VQ	|	|	|	|
0+30	0.0226	0.87	VQ	|	|	|	|
0+35	0.0288	0.90	VQ	|	|	|	|
0+40	0.0352	0.93	VQ	|	|	|	|
0+45	0.0416	0.94	VQ	|	|	|	|
0+50	0.0485	1.00	V Q	|	|	|	|
0+55	0.0565	1.15	V Q	|	|	|	|
1+ 0	0.0648	1.21	V Q	|	|	|	|
1+ 5	0.0731	1.19	V Q	|	|	|	|
1+10	0.0803	1.06	V Q	|	|	|	|
1+15	0.0873	1.01	V Q	|	|	|	|
1+20	0.0941	0.99	VQ	|	|	|	|

1+25	0.1008	0.98	VQ	|	|	|	|
1+30	0.1076	0.97	VQ	|	|	|	|
1+35	0.1142	0.97	VQ	|	|	|	|
1+40	0.1209	0.96	VQ	|	|	|	|
1+45	0.1275	0.96	VQ	|	|	|	|
1+50	0.1344	1.01	V Q	|	|	|	|
1+55	0.1424	1.16	|VQ	|	|	|	|
2+ 0	0.1508	1.22	|VQ	|	|	|	|
2+ 5	0.1594	1.24	|VQ	|	|	|	|
2+10	0.1680	1.26	|VQ	|	|	|	|
2+15	0.1767	1.26	|VQ	|	|	|	|
2+20	0.1855	1.27	|VQ	|	|	|	|
2+25	0.1942	1.28	|VQ	|	|	|	|
2+30	0.2031	1.28	|VQ	|	|	|	|
2+35	0.2122	1.33	|VQ	|	|	|	|
2+40	0.2224	1.48	|VQ	|	|	|	|
2+45	0.2330	1.54	|V Q	|	|	|	|
2+50	0.2437	1.56	|V Q	|	|	|	|
2+55	0.2546	1.58	|V Q	|	|	|	|
3+ 0	0.2655	1.58	|V Q	|	|	|	|
3+ 5	0.2764	1.59	| VQ	|	|	|	|
3+10	0.2874	1.60	| VQ	|	|	|	|
3+15	0.2984	1.60	| VQ	|	|	|	|
3+20	0.3095	1.60	| VQ	|	|	|	|
3+25	0.3205	1.60	| VQ	|	|	|	|
3+30	0.3315	1.60	| VQ	|	|	|	|
3+35	0.3425	1.60	| VQ	|	|	|	|
3+40	0.3535	1.60	| VQ	|	|	|	|
3+45	0.3646	1.60	| VQ	|	|	|	|
3+50	0.3759	1.65	| VQ	|	|	|	|
3+55	0.3883	1.80	| VQ	|	|	|	|
4+ 0	0.4011	1.86	| VQ	|	|	|	|
4+ 5	0.4141	1.88	| Q	|	|	|	|
4+10	0.4271	1.90	| Q	|	|	|	|
4+15	0.4402	1.90	| Q	|	|	|	|
4+20	0.4537	1.96	| Q	|	|	|	|
4+25	0.4683	2.11	| VQ	|	|	|	|
4+30	0.4833	2.17	| VQ	|	|	|	|
4+35	0.4984	2.20	| VQ	|	|	|	|
4+40	0.5137	2.22	| VQ	|	|	|	|
4+45	0.5290	2.22	| VQ	|	|	|	|
4+50	0.5447	2.28	| Q	|	|	|	|
4+55	0.5615	2.43	| Q	|	|	|	|
5+ 0	0.5787	2.49	| Q	|	|	|	|
5+ 5	0.5953	2.42	| Q	|	|	|	|
5+10	0.6101	2.14	| Q	|	|	|	|
5+15	0.6241	2.03	| Q	|	|	|	|
5+20	0.6381	2.04	| Q	|	|	|	|
5+25	0.6530	2.16	| Q	|	|	|	|
5+30	0.6682	2.20	| Q	|	|	|	|
5+35	0.6838	2.27	| QV	|	|	|	|
5+40	0.7005	2.42	| QV	|	|	|	|
5+45	0.7176	2.48	| QV	|	|	|	|
5+50	0.7349	2.51	| Q	|	|	|	|

5+55	0.7524	2.53	| Q |	|	|	|
6+ 0	0.7699	2.54	| Q |	|	|	|
6+ 5	0.7847	2.16	| QV |	|	|	|
6+10	0.7914	0.97	|Q V |	|	|	|
6+15	0.7950	0.52	|Q V |	|	|	|
6+20	0.7973	0.34	Q V |	|	|	|
6+25	0.7990	0.24	Q V |	|	|	|
6+30	0.8002	0.18	Q V |	|	|	|
6+35	0.8016	0.20	Q V |	|	|	|
6+40	0.8041	0.36	Q V |	|	|	|
6+45	0.8070	0.43	Q V |	|	|	|
6+50	0.8101	0.46	Q V |	|	|	|
6+55	0.8135	0.49	Q V |	|	|	|
7+ 0	0.8171	0.52	|Q V |	|	|	|
7+ 5	0.8208	0.54	|Q V |	|	|	|
7+10	0.8247	0.56	|Q V |	|	|	|
7+15	0.8287	0.58	|Q V |	|	|	|
7+20	0.8332	0.66	|Q V |	|	|	|
7+25	0.8391	0.85	|Q V |	|	|	|
7+30	0.8455	0.94	|Q V |	|	|	|
7+35	0.8527	1.04	| Q V |	|	|	|
7+40	0.8614	1.26	| Q V |	|	|	|
7+45	0.8707	1.36	| Q V |	|	|	|
7+50	0.8809	1.47	| Q V |	|	|	|
7+55	0.8925	1.69	| Q V |	|	|	|
8+ 0	0.9048	1.79	| Q V |	|	|	|
8+ 5	0.9183	1.96	| Q V |	|	|	|
8+10	0.9346	2.37	| Q V |	|	|	|
8+15	0.9521	2.53	| QV |	|	|	|
8+20	0.9701	2.62	| Q V |	|	|	|
8+25	0.9885	2.68	| Q V |	|	|	|
8+30	1.0072	2.72	| Q V |	|	|	|
8+35	1.0266	2.81	| Q V |	|	|	|
8+40	1.0474	3.02	| QV |	|	|	|
8+45	1.0688	3.11	| QV |	|	|	|
8+50	1.0909	3.22	| Q V |	|	|	|
8+55	1.1145	3.43	| Q V |	|	|	|
9+ 0	1.1388	3.53	| QV |	|	|	|
9+ 5	1.1643	3.70	| QV |	|	|	|
9+10	1.1925	4.10	| Q |	|	|	|
9+15	1.2219	4.27	| Q |	|	|	|
9+20	1.2523	4.41	| QV|	|	|	|
9+25	1.2843	4.65	| Q|	|	|	|
9+30	1.3171	4.76	| Q|	|	|	|
9+35	1.3508	4.88	| Q|	|	|	|
9+40	1.3859	5.11	| Q	|	|	|
9+45	1.4218	5.21	| Q	|	|	|
9+50	1.4585	5.33	| Q	|	|	|
9+55	1.4967	5.54	| VQ	|	|	|
10+ 0	1.5355	5.64	| |Q	|	|	|
10+ 5	1.5718	5.27	| QV	|	|	|
10+10	1.5997	4.04	| Q |V	|	|	|
10+15	1.6243	3.58	| Q |V	|	|	|
10+20	1.6476	3.39	| Q | V	|	|	|



14+55	4.2345	7.79	|	Q	|	V |
15+ 0	4.2877	7.73	|	Q	|	V |
15+ 5	4.3404	7.65	|	Q	|	V |
15+10	4.3918	7.46	|	Q	|	V |
15+15	4.4427	7.39	|	Q	|	V |
15+20	4.4930	7.30	|	Q	|	V |
15+25	4.5419	7.11	|	Q	|	V |
15+30	4.5904	7.03	|	Q	|	V |
15+35	4.6369	6.76	|	Q	|	V |
15+40	4.6784	6.02	|	Q	|	V |
15+45	4.7179	5.74	|	Q	|	V |
15+50	4.7566	5.62	|	Q	|	V |
15+55	4.7948	5.55	|	Q	|	V |
16+ 0	4.8328	5.51	|	Q	|	V |
16+ 5	4.8661	4.84	|	Q |	|	V |
16+10	4.8860	2.88	|	Q |	|	V |
16+15	4.9006	2.12	|	Q |	|	V |
16+20	4.9129	1.79	|	Q |	|	V |
16+25	4.9239	1.60	|	Q |	|	V |
16+30	4.9341	1.48	|	Q |	|	V |
16+35	4.9433	1.35	|	Q |	|	V |
16+40	4.9512	1.14	|	Q |	|	V |
16+45	4.9584	1.05	|	Q |	|	V |
16+50	4.9653	1.00	|	Q |	|	V |
16+55	4.9721	0.98	|	Q |	|	V |
17+ 0	4.9788	0.98	|	Q |	|	V |
17+ 5	4.9846	0.84	|	Q |	|	V |
17+10	4.9876	0.44	|	Q |	|	V |
17+15	4.9896	0.29	|	Q |	|	V |
17+20	4.9912	0.23	|	Q |	|	V |
17+25	4.9926	0.20	|	Q |	|	V |
17+30	4.9939	0.19	|	Q |	|	V |
17+35	4.9952	0.18	|	Q |	|	V |
17+40	4.9964	0.18	|	Q |	|	V |
17+45	4.9976	0.18	|	Q |	|	V |
17+50	5.0000	0.35	|	Q |	|	V |
17+55	5.0059	0.86	|	Q |	|	V |
18+ 0	5.0132	1.06	|	Q |	|	V |
18+ 5	5.0211	1.15	|	Q |	|	V |
18+10	5.0293	1.20	|	Q |	|	V |
18+15	5.0378	1.23	|	Q |	|	V |
18+20	5.0464	1.25	|	Q |	|	V |
18+25	5.0551	1.26	|	Q |	|	V |
18+30	5.0639	1.27	|	Q |	|	V |
18+35	5.0724	1.23	|	Q |	|	V |
18+40	5.0798	1.08	|	Q |	|	V |
18+45	5.0869	1.02	|	Q |	|	V |
18+50	5.0934	0.95	|	Q |	|	V |
18+55	5.0988	0.79	|	Q |	|	V |
19+ 0	5.1038	0.72	|	Q |	|	V |
19+ 5	5.1088	0.74	|	Q |	|	V |
19+10	5.1148	0.87	|	Q |	|	V |
19+15	5.1211	0.91	|	Q |	|	V |
19+20	5.1279	0.98	|	Q |	|	V |

19+25	5.1357	1.14	| Q	|	|	|	V |
19+30	5.1440	1.20	| Q	|	|	|	V |
19+35	5.1521	1.18	| Q	|	|	|	V |
19+40	5.1594	1.05	| Q	|	|	|	V |
19+45	5.1663	1.01	| Q	|	|	|	V |
19+50	5.1728	0.94	|Q	|	|	|	V |
19+55	5.1782	0.78	|Q	|	|	|	V |
20+ 0	5.1831	0.72	|Q	|	|	|	V |
20+ 5	5.1882	0.74	|Q	|	|	|	V |
20+10	5.1942	0.87	|Q	|	|	|	V |
20+15	5.2005	0.91	|Q	|	|	|	V |
20+20	5.2069	0.93	|Q	|	|	|	V |
20+25	5.2133	0.94	|Q	|	|	|	V |
20+30	5.2198	0.95	|Q	|	|	|	V |
20+35	5.2264	0.95	|Q	|	|	|	V |
20+40	5.2330	0.96	|Q	|	|	|	V |
20+45	5.2396	0.96	|Q	|	|	|	V |
20+50	5.2459	0.91	|Q	|	|	|	V |
20+55	5.2511	0.76	|Q	|	|	|	V |
21+ 0	5.2559	0.70	|Q	|	|	|	V |
21+ 5	5.2610	0.73	|Q	|	|	|	V |
21+10	5.2669	0.86	|Q	|	|	|	V |
21+15	5.2732	0.91	|Q	|	|	|	V |
21+20	5.2792	0.88	|Q	|	|	|	V |
21+25	5.2844	0.74	|Q	|	|	|	V |
21+30	5.2891	0.69	|Q	|	|	|	V |
21+35	5.2941	0.72	|Q	|	|	|	V |
21+40	5.3000	0.86	|Q	|	|	|	V |
21+45	5.3062	0.91	|Q	|	|	|	V |
21+50	5.3123	0.88	|Q	|	|	|	V|
21+55	5.3174	0.74	|Q	|	|	|	V|
22+ 0	5.3222	0.69	|Q	|	|	|	V|
22+ 5	5.3271	0.72	|Q	|	|	|	V|
22+10	5.3330	0.86	|Q	|	|	|	V|
22+15	5.3393	0.91	|Q	|	|	|	V|
22+20	5.3454	0.88	|Q	|	|	|	V|
22+25	5.3505	0.74	|Q	|	|	|	V|
22+30	5.3552	0.69	|Q	|	|	|	V|
22+35	5.3598	0.67	|Q	|	|	|	V|
22+40	5.3644	0.66	|Q	|	|	|	V|
22+45	5.3689	0.65	|Q	|	|	|	V|
22+50	5.3734	0.65	|Q	|	|	|	V|
22+55	5.3778	0.64	|Q	|	|	|	V|
23+ 0	5.3822	0.64	|Q	|	|	|	V|
23+ 5	5.3866	0.64	|Q	|	|	|	V|
23+10	5.3910	0.64	|Q	|	|	|	V|
23+15	5.3954	0.64	|Q	|	|	|	V|
23+20	5.3999	0.64	|Q	|	|	|	V|
23+25	5.4043	0.64	|Q	|	|	|	V|
23+30	5.4087	0.64	|Q	|	|	|	V|
23+35	5.4131	0.64	|Q	|	|	|	V|
23+40	5.4175	0.64	|Q	|	|	|	V|
23+45	5.4219	0.64	|Q	|	|	|	V|
23+50	5.4263	0.64	|Q	|	|	|	V|

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   23+55       5.4307      0.64  |Q        |         |         |        V|
   24+ 0       5.4351      0.64  |Q        |         |         |        V|
   24+ 5       5.4388      0.54  |Q        |         |         |        V|
   24+10       5.4405      0.24  Q         |         |         |        V|
   24+15       5.4414      0.13  Q         |         |         |        V|
   24+20       5.4419      0.08  Q         |         |         |        V|
   24+25       5.4423      0.05  Q         |         |         |        V|
   24+30       5.4425      0.03  Q         |         |         |        V|
   24+35       5.4426      0.02  Q         |         |         |        V|
   24+40       5.4427      0.01  Q         |         |         |        V|
   24+45       5.4427      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/13/19 File: 4163UHP252425.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 25 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 3
4163UHP25.UM1

Drainage Area = 37.40(Ac.) = 0.058 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 37.40(Ac.) = 0.058 Sq. Mi.
Length along longest watercourse = 3120.00(Ft.)
Length along longest watercourse measured to centroid = 1850.00(Ft.)
Length along longest watercourse = 0.591 Mi.
Length along longest watercourse measured to centroid = 0.350 Mi.
Difference in elevation = 28.00(Ft.)
Slope along watercourse = 47.3846 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.43 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	1.60	59.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	4.00	149.60

STORM EVENT (YEAR) = 25.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.149(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
37.400	69.00	0.900

Total Area Entered = 37.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.657	15.489	5.838
2	0.167	175.313	46.596	17.563
3	0.250	262.970	17.939	6.762
4	0.333	350.627	7.777	2.931
5	0.417	438.284	4.555	1.717
6	0.500	525.940	2.875	1.084
7	0.583	613.597	2.007	0.757
8	0.667	701.254	1.306	0.492
9	0.750	788.910	0.907	0.342
10	0.833	876.567	0.549	0.207
			Sum = 100.000	Sum= 37.692

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.025	0.126	0.005	0.02
2	0.17	0.07	0.025	0.125	0.005	0.02
3	0.25	0.07	0.025	0.125	0.005	0.02
4	0.33	0.10	0.038	0.124	0.007	0.03
5	0.42	0.10	0.038	0.124	0.007	0.03
6	0.50	0.10	0.038	0.123	0.007	0.03
7	0.58	0.10	0.038	0.123	0.007	0.03
8	0.67	0.10	0.038	0.122	0.007	0.03
9	0.75	0.10	0.038	0.122	0.007	0.03
10	0.83	0.13	0.050	0.121	0.009	0.04
11	0.92	0.13	0.050	0.121	0.009	0.04
12	1.00	0.13	0.050	0.120	0.009	0.04
13	1.08	0.10	0.038	0.120	0.007	0.03
14	1.17	0.10	0.038	0.119	0.007	0.03
15	1.25	0.10	0.038	0.119	0.007	0.03
16	1.33	0.10	0.038	0.118	0.007	0.03
17	1.42	0.10	0.038	0.118	0.007	0.03
18	1.50	0.10	0.038	0.117	0.007	0.03
19	1.58	0.10	0.038	0.117	0.007	0.03
20	1.67	0.10	0.038	0.117	0.007	0.03
21	1.75	0.10	0.038	0.116	0.007	0.03
22	1.83	0.13	0.050	0.116	0.009	0.04
23	1.92	0.13	0.050	0.115	0.009	0.04
24	2.00	0.13	0.050	0.115	0.009	0.04
25	2.08	0.13	0.050	0.114	0.009	0.04
26	2.17	0.13	0.050	0.114	0.009	0.04
27	2.25	0.13	0.050	0.113	0.009	0.04
28	2.33	0.13	0.050	0.113	0.009	0.04
29	2.42	0.13	0.050	0.112	0.009	0.04
30	2.50	0.13	0.050	0.112	0.009	0.04
31	2.58	0.17	0.063	0.111	0.011	0.05
32	2.67	0.17	0.063	0.111	0.011	0.05
33	2.75	0.17	0.063	0.110	0.011	0.05
34	2.83	0.17	0.063	0.110	0.011	0.05
35	2.92	0.17	0.063	0.110	0.011	0.05
36	3.00	0.17	0.063	0.109	0.011	0.05
37	3.08	0.17	0.063	0.109	0.011	0.05
38	3.17	0.17	0.063	0.108	0.011	0.05
39	3.25	0.17	0.063	0.108	0.011	0.05
40	3.33	0.17	0.063	0.107	0.011	0.05
41	3.42	0.17	0.063	0.107	0.011	0.05
42	3.50	0.17	0.063	0.106	0.011	0.05
43	3.58	0.17	0.063	0.106	0.011	0.05
44	3.67	0.17	0.063	0.106	0.011	0.05
45	3.75	0.17	0.063	0.105	0.011	0.05
46	3.83	0.20	0.076	0.105	0.014	0.06
47	3.92	0.20	0.076	0.104	0.014	0.06
48	4.00	0.20	0.076	0.104	0.014	0.06
49	4.08	0.20	0.076	0.103	0.014	0.06
50	4.17	0.20	0.076	0.103	0.014	0.06
51	4.25	0.20	0.076	0.102	0.014	0.06
52	4.33	0.23	0.088	0.102	0.016	0.07
53	4.42	0.23	0.088	0.102	0.016	0.07
54	4.50	0.23	0.088	0.101	0.016	0.07

55	4.58	0.23	0.088	0.101	0.016	0.07
56	4.67	0.23	0.088	0.100	0.016	0.07
57	4.75	0.23	0.088	0.100	0.016	0.07
58	4.83	0.27	0.101	0.099	---	0.00
59	4.92	0.27	0.101	0.099	---	0.00
60	5.00	0.27	0.101	0.099	---	0.00
61	5.08	0.20	0.076	0.098	0.014	0.06
62	5.17	0.20	0.076	0.098	0.014	0.06
63	5.25	0.20	0.076	0.097	0.014	0.06
64	5.33	0.23	0.088	0.097	0.016	0.07
65	5.42	0.23	0.088	0.096	0.016	0.07
66	5.50	0.23	0.088	0.096	0.016	0.07
67	5.58	0.27	0.101	0.096	---	0.01
68	5.67	0.27	0.101	0.095	---	0.01
69	5.75	0.27	0.101	0.095	---	0.01
70	5.83	0.27	0.101	0.094	---	0.01
71	5.92	0.27	0.101	0.094	---	0.01
72	6.00	0.27	0.101	0.093	---	0.01
73	6.08	0.30	0.113	0.093	---	0.02
74	6.17	0.30	0.113	0.093	---	0.02
75	6.25	0.30	0.113	0.092	---	0.02
76	6.33	0.30	0.113	0.092	---	0.02
77	6.42	0.30	0.113	0.091	---	0.02
78	6.50	0.30	0.113	0.091	---	0.02
79	6.58	0.33	0.126	0.091	---	0.04
80	6.67	0.33	0.126	0.090	---	0.04
81	6.75	0.33	0.126	0.090	---	0.04
82	6.83	0.33	0.126	0.089	---	0.04
83	6.92	0.33	0.126	0.089	---	0.04
84	7.00	0.33	0.126	0.089	---	0.04
85	7.08	0.33	0.126	0.088	---	0.04
86	7.17	0.33	0.126	0.088	---	0.04
87	7.25	0.33	0.126	0.087	---	0.04
88	7.33	0.37	0.139	0.087	---	0.05
89	7.42	0.37	0.139	0.087	---	0.05
90	7.50	0.37	0.139	0.086	---	0.05
91	7.58	0.40	0.151	0.086	---	0.07
92	7.67	0.40	0.151	0.085	---	0.07
93	7.75	0.40	0.151	0.085	---	0.07
94	7.83	0.43	0.164	0.085	---	0.08
95	7.92	0.43	0.164	0.084	---	0.08
96	8.00	0.43	0.164	0.084	---	0.08
97	8.08	0.50	0.189	0.083	---	0.11
98	8.17	0.50	0.189	0.083	---	0.11
99	8.25	0.50	0.189	0.083	---	0.11
100	8.33	0.50	0.189	0.082	---	0.11
101	8.42	0.50	0.189	0.082	---	0.11
102	8.50	0.50	0.189	0.082	---	0.11
103	8.58	0.53	0.202	0.081	---	0.12
104	8.67	0.53	0.202	0.081	---	0.12
105	8.75	0.53	0.202	0.080	---	0.12
106	8.83	0.57	0.214	0.080	---	0.13
107	8.92	0.57	0.214	0.080	---	0.13
108	9.00	0.57	0.214	0.079	---	0.13

109	9.08	0.63	0.239	0.079	---	0.16
110	9.17	0.63	0.239	0.078	---	0.16
111	9.25	0.63	0.239	0.078	---	0.16
112	9.33	0.67	0.252	0.078	---	0.17
113	9.42	0.67	0.252	0.077	---	0.17
114	9.50	0.67	0.252	0.077	---	0.17
115	9.58	0.70	0.265	0.077	---	0.19
116	9.67	0.70	0.265	0.076	---	0.19
117	9.75	0.70	0.265	0.076	---	0.19
118	9.83	0.73	0.277	0.076	---	0.20
119	9.92	0.73	0.277	0.075	---	0.20
120	10.00	0.73	0.277	0.075	---	0.20
121	10.08	0.50	0.189	0.074	---	0.11
122	10.17	0.50	0.189	0.074	---	0.11
123	10.25	0.50	0.189	0.074	---	0.12
124	10.33	0.50	0.189	0.073	---	0.12
125	10.42	0.50	0.189	0.073	---	0.12
126	10.50	0.50	0.189	0.073	---	0.12
127	10.58	0.67	0.252	0.072	---	0.18
128	10.67	0.67	0.252	0.072	---	0.18
129	10.75	0.67	0.252	0.072	---	0.18
130	10.83	0.67	0.252	0.071	---	0.18
131	10.92	0.67	0.252	0.071	---	0.18
132	11.00	0.67	0.252	0.071	---	0.18
133	11.08	0.63	0.239	0.070	---	0.17
134	11.17	0.63	0.239	0.070	---	0.17
135	11.25	0.63	0.239	0.069	---	0.17
136	11.33	0.63	0.239	0.069	---	0.17
137	11.42	0.63	0.239	0.069	---	0.17
138	11.50	0.63	0.239	0.068	---	0.17
139	11.58	0.57	0.214	0.068	---	0.15
140	11.67	0.57	0.214	0.068	---	0.15
141	11.75	0.57	0.214	0.067	---	0.15
142	11.83	0.60	0.227	0.067	---	0.16
143	11.92	0.60	0.227	0.067	---	0.16
144	12.00	0.60	0.227	0.066	---	0.16
145	12.08	0.83	0.315	0.066	---	0.25
146	12.17	0.83	0.315	0.066	---	0.25
147	12.25	0.83	0.315	0.065	---	0.25
148	12.33	0.87	0.328	0.065	---	0.26
149	12.42	0.87	0.328	0.065	---	0.26
150	12.50	0.87	0.328	0.064	---	0.26
151	12.58	0.93	0.353	0.064	---	0.29
152	12.67	0.93	0.353	0.064	---	0.29
153	12.75	0.93	0.353	0.064	---	0.29
154	12.83	0.97	0.365	0.063	---	0.30
155	12.92	0.97	0.365	0.063	---	0.30
156	13.00	0.97	0.365	0.063	---	0.30
157	13.08	1.13	0.428	0.062	---	0.37
158	13.17	1.13	0.428	0.062	---	0.37
159	13.25	1.13	0.428	0.062	---	0.37
160	13.33	1.13	0.428	0.061	---	0.37
161	13.42	1.13	0.428	0.061	---	0.37
162	13.50	1.13	0.428	0.061	---	0.37

163	13.58	0.77	0.290	0.060	---	0.23
164	13.67	0.77	0.290	0.060	---	0.23
165	13.75	0.77	0.290	0.060	---	0.23
166	13.83	0.77	0.290	0.059	---	0.23
167	13.92	0.77	0.290	0.059	---	0.23
168	14.00	0.77	0.290	0.059	---	0.23
169	14.08	0.90	0.340	0.059	---	0.28
170	14.17	0.90	0.340	0.058	---	0.28
171	14.25	0.90	0.340	0.058	---	0.28
172	14.33	0.87	0.328	0.058	---	0.27
173	14.42	0.87	0.328	0.057	---	0.27
174	14.50	0.87	0.328	0.057	---	0.27
175	14.58	0.87	0.328	0.057	---	0.27
176	14.67	0.87	0.328	0.056	---	0.27
177	14.75	0.87	0.328	0.056	---	0.27
178	14.83	0.83	0.315	0.056	---	0.26
179	14.92	0.83	0.315	0.056	---	0.26
180	15.00	0.83	0.315	0.055	---	0.26
181	15.08	0.80	0.302	0.055	---	0.25
182	15.17	0.80	0.302	0.055	---	0.25
183	15.25	0.80	0.302	0.054	---	0.25
184	15.33	0.77	0.290	0.054	---	0.24
185	15.42	0.77	0.290	0.054	---	0.24
186	15.50	0.77	0.290	0.054	---	0.24
187	15.58	0.63	0.239	0.053	---	0.19
188	15.67	0.63	0.239	0.053	---	0.19
189	15.75	0.63	0.239	0.053	---	0.19
190	15.83	0.63	0.239	0.053	---	0.19
191	15.92	0.63	0.239	0.052	---	0.19
192	16.00	0.63	0.239	0.052	---	0.19
193	16.08	0.13	0.050	0.052	0.009	0.04
194	16.17	0.13	0.050	0.051	0.009	0.04
195	16.25	0.13	0.050	0.051	0.009	0.04
196	16.33	0.13	0.050	0.051	0.009	0.04
197	16.42	0.13	0.050	0.051	0.009	0.04
198	16.50	0.13	0.050	0.050	0.009	0.04
199	16.58	0.10	0.038	0.050	0.007	0.03
200	16.67	0.10	0.038	0.050	0.007	0.03
201	16.75	0.10	0.038	0.050	0.007	0.03
202	16.83	0.10	0.038	0.049	0.007	0.03
203	16.92	0.10	0.038	0.049	0.007	0.03
204	17.00	0.10	0.038	0.049	0.007	0.03
205	17.08	0.17	0.063	0.049	---	0.01
206	17.17	0.17	0.063	0.048	---	0.01
207	17.25	0.17	0.063	0.048	---	0.01
208	17.33	0.17	0.063	0.048	---	0.02
209	17.42	0.17	0.063	0.048	---	0.02
210	17.50	0.17	0.063	0.047	---	0.02
211	17.58	0.17	0.063	0.047	---	0.02
212	17.67	0.17	0.063	0.047	---	0.02
213	17.75	0.17	0.063	0.047	---	0.02
214	17.83	0.13	0.050	0.047	---	0.00
215	17.92	0.13	0.050	0.046	---	0.00
216	18.00	0.13	0.050	0.046	---	0.00

217	18.08	0.13	0.050	0.046	---	0.00
218	18.17	0.13	0.050	0.046	---	0.00
219	18.25	0.13	0.050	0.045	---	0.00
220	18.33	0.13	0.050	0.045	---	0.01
221	18.42	0.13	0.050	0.045	---	0.01
222	18.50	0.13	0.050	0.045	---	0.01
223	18.58	0.10	0.038	0.045	0.007	0.03
224	18.67	0.10	0.038	0.044	0.007	0.03
225	18.75	0.10	0.038	0.044	0.007	0.03
226	18.83	0.07	0.025	0.044	0.005	0.02
227	18.92	0.07	0.025	0.044	0.005	0.02
228	19.00	0.07	0.025	0.043	0.005	0.02
229	19.08	0.10	0.038	0.043	0.007	0.03
230	19.17	0.10	0.038	0.043	0.007	0.03
231	19.25	0.10	0.038	0.043	0.007	0.03
232	19.33	0.13	0.050	0.043	---	0.01
233	19.42	0.13	0.050	0.042	---	0.01
234	19.50	0.13	0.050	0.042	---	0.01
235	19.58	0.10	0.038	0.042	0.007	0.03
236	19.67	0.10	0.038	0.042	0.007	0.03
237	19.75	0.10	0.038	0.042	0.007	0.03
238	19.83	0.07	0.025	0.041	0.005	0.02
239	19.92	0.07	0.025	0.041	0.005	0.02
240	20.00	0.07	0.025	0.041	0.005	0.02
241	20.08	0.10	0.038	0.041	0.007	0.03
242	20.17	0.10	0.038	0.041	0.007	0.03
243	20.25	0.10	0.038	0.041	0.007	0.03
244	20.33	0.10	0.038	0.040	0.007	0.03
245	20.42	0.10	0.038	0.040	0.007	0.03
246	20.50	0.10	0.038	0.040	0.007	0.03
247	20.58	0.10	0.038	0.040	0.007	0.03
248	20.67	0.10	0.038	0.040	0.007	0.03
249	20.75	0.10	0.038	0.040	0.007	0.03
250	20.83	0.07	0.025	0.039	0.005	0.02
251	20.92	0.07	0.025	0.039	0.005	0.02
252	21.00	0.07	0.025	0.039	0.005	0.02
253	21.08	0.10	0.038	0.039	0.007	0.03
254	21.17	0.10	0.038	0.039	0.007	0.03
255	21.25	0.10	0.038	0.039	0.007	0.03
256	21.33	0.07	0.025	0.038	0.005	0.02
257	21.42	0.07	0.025	0.038	0.005	0.02
258	21.50	0.07	0.025	0.038	0.005	0.02
259	21.58	0.10	0.038	0.038	0.007	0.03
260	21.67	0.10	0.038	0.038	0.007	0.03
261	21.75	0.10	0.038	0.038	---	0.00
262	21.83	0.07	0.025	0.038	0.005	0.02
263	21.92	0.07	0.025	0.038	0.005	0.02
264	22.00	0.07	0.025	0.037	0.005	0.02
265	22.08	0.10	0.038	0.037	---	0.00
266	22.17	0.10	0.038	0.037	---	0.00
267	22.25	0.10	0.038	0.037	---	0.00
268	22.33	0.07	0.025	0.037	0.005	0.02
269	22.42	0.07	0.025	0.037	0.005	0.02
270	22.50	0.07	0.025	0.037	0.005	0.02

271	22.58	0.07	0.025	0.037	0.005	0.02
272	22.67	0.07	0.025	0.036	0.005	0.02
273	22.75	0.07	0.025	0.036	0.005	0.02
274	22.83	0.07	0.025	0.036	0.005	0.02
275	22.92	0.07	0.025	0.036	0.005	0.02
276	23.00	0.07	0.025	0.036	0.005	0.02
277	23.08	0.07	0.025	0.036	0.005	0.02
278	23.17	0.07	0.025	0.036	0.005	0.02
279	23.25	0.07	0.025	0.036	0.005	0.02
280	23.33	0.07	0.025	0.036	0.005	0.02
281	23.42	0.07	0.025	0.036	0.005	0.02
282	23.50	0.07	0.025	0.036	0.005	0.02
283	23.58	0.07	0.025	0.036	0.005	0.02
284	23.67	0.07	0.025	0.036	0.005	0.02
285	23.75	0.07	0.025	0.036	0.005	0.02
286	23.83	0.07	0.025	0.035	0.005	0.02
287	23.92	0.07	0.025	0.035	0.005	0.02
288	24.00	0.07	0.025	0.035	0.005	0.02
Sum =	100.0				Sum =	26.2

Flood volume = Effective rainfall 2.18(In)
times area 37.4(Ac.)/[(In)/(Ft.)] = 6.8(Ac.Ft)
Total soil loss = 0.97(In)
Total soil loss = 3.010(Ac.Ft)
Total rainfall = 3.15(In)
Flood volume = 296453.7 Cubic Feet
Total soil loss = 131099.9 Cubic Feet

Peak flow rate of this hydrograph = 13.728(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

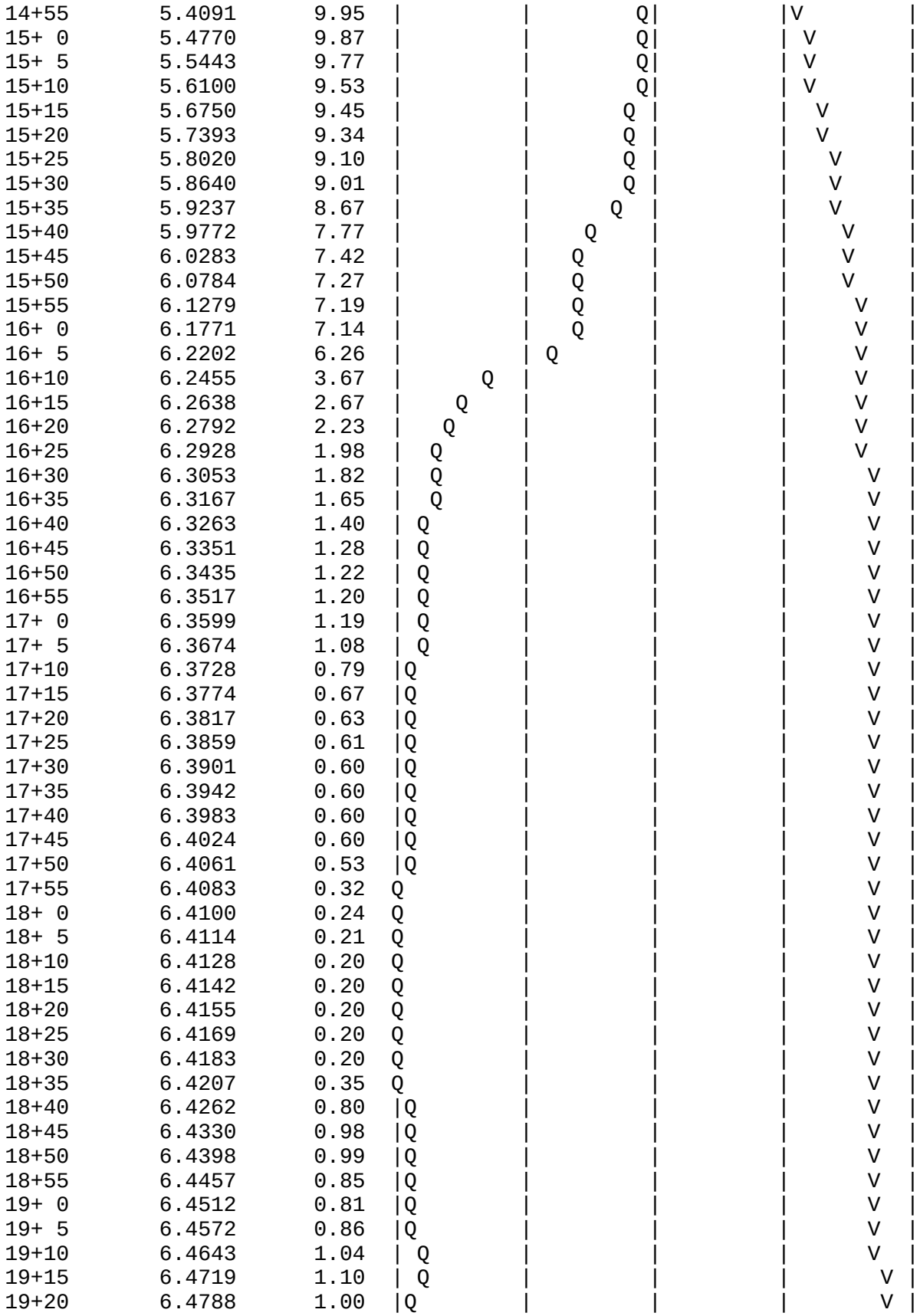
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0008	0.12	Q	|	|	|	|
0+10	0.0042	0.48	Q	|	|	|	|
0+15	0.0085	0.62	VQ	|	|	|	|
0+20	0.0136	0.74	VQ	|	|	|	|
0+25	0.0202	0.96	VQ	|	|	|	|
0+30	0.0275	1.05	V Q	|	|	|	|
0+35	0.0350	1.10	V Q	|	|	|	|
0+40	0.0428	1.13	V Q	|	|	|	|
0+45	0.0507	1.15	V Q	|	|	|	|
0+50	0.0591	1.22	V Q	|	|	|	|
0+55	0.0688	1.40	V Q	|	|	|	|
1+ 0	0.0789	1.48	V Q	|	|	|	|
1+ 5	0.0889	1.45	V Q	|	|	|	|
1+10	0.0978	1.29	V Q	|	|	|	|
1+15	0.1062	1.23	V Q	|	|	|	|
1+20	0.1145	1.21	V Q	|	|	|	|

1+25	0.1228	1.19	V Q	|	|	|	|
1+30	0.1309	1.19	V Q	|	|	|	|
1+35	0.1390	1.18	V Q	|	|	|	|
1+40	0.1471	1.17	V Q	|	|	|	|
1+45	0.1552	1.17	V Q	|	|	|	|
1+50	0.1637	1.23	V Q	|	|	|	|
1+55	0.1734	1.41	|VQ	|	|	|	|
2+ 0	0.1836	1.48	|VQ	|	|	|	|
2+ 5	0.1940	1.51	|V Q	|	|	|	|
2+10	0.2045	1.53	|V Q	|	|	|	|
2+15	0.2151	1.54	|V Q	|	|	|	|
2+20	0.2258	1.55	|V Q	|	|	|	|
2+25	0.2365	1.55	|V Q	|	|	|	|
2+30	0.2472	1.56	|V Q	|	|	|	|
2+35	0.2583	1.62	|V Q	|	|	|	|
2+40	0.2707	1.80	|V Q	|	|	|	|
2+45	0.2836	1.87	|V Q	|	|	|	|
2+50	0.2967	1.90	|V Q	|	|	|	|
2+55	0.3099	1.92	|V Q	|	|	|	|
3+ 0	0.3232	1.93	|V Q	|	|	|	|
3+ 5	0.3365	1.94	|V Q	|	|	|	|
3+10	0.3499	1.94	| VQ	|	|	|	|
3+15	0.3633	1.95	| VQ	|	|	|	|
3+20	0.3767	1.95	| VQ	|	|	|	|
3+25	0.3901	1.95	| VQ	|	|	|	|
3+30	0.4035	1.95	| VQ	|	|	|	|
3+35	0.4169	1.95	| VQ	|	|	|	|
3+40	0.4304	1.95	| VQ	|	|	|	|
3+45	0.4438	1.95	| VQ	|	|	|	|
3+50	0.4576	2.01	| V Q	|	|	|	|
3+55	0.4727	2.19	| V Q	|	|	|	|
4+ 0	0.4882	2.26	| V Q	|	|	|	|
4+ 5	0.5040	2.29	| V Q	|	|	|	|
4+10	0.5199	2.31	| VQ	|	|	|	|
4+15	0.5359	2.32	| VQ	|	|	|	|
4+20	0.5523	2.39	| VQ	|	|	|	|
4+25	0.5700	2.57	| V Q	|	|	|	|
4+30	0.5883	2.65	| V Q	|	|	|	|
4+35	0.6067	2.68	| V Q	|	|	|	|
4+40	0.6253	2.70	| V Q	|	|	|	|
4+45	0.6439	2.71	| V Q	|	|	|	|
4+50	0.6598	2.30	| VQ	|	|	|	|
4+55	0.6671	1.06	| QV	|	|	|	|
5+ 0	0.6712	0.60	|Q V	|	|	|	|
5+ 5	0.6764	0.75	|Q V	|	|	|	|
5+10	0.6880	1.68	| QV	|	|	|	|
5+15	0.7018	2.01	| Q	|	|	|	|
5+20	0.7169	2.19	| Q	|	|	|	|
5+25	0.7338	2.44	| Q	|	|	|	|
5+30	0.7514	2.56	| VQ	|	|	|	|
5+35	0.7667	2.22	| Q	|	|	|	|
5+40	0.7742	1.10	| Q V	|	|	|	|
5+45	0.7789	0.68	|Q V	|	|	|	|
5+50	0.7825	0.52	|Q V	|	|	|	|

5+55	0.7854	0.42	Q V	|	|	|	|
6+ 0	0.7879	0.37	Q V	|	|	|	|
6+ 5	0.7908	0.41	Q V	|	|	|	|
6+10	0.7950	0.61	|Q V	|	|	|	|
6+15	0.7997	0.69	|Q V	|	|	|	|
6+20	0.8047	0.73	|Q V	|	|	|	|
6+25	0.8100	0.76	|Q V	|	|	|	|
6+30	0.8154	0.79	|Q V	|	|	|	|
6+35	0.8216	0.89	|Q V	|	|	|	|
6+40	0.8294	1.14	| Q V	|	|	|	|
6+45	0.8379	1.24	| Q V	|	|	|	|
6+50	0.8469	1.30	| Q V	|	|	|	|
6+55	0.8560	1.33	| Q V	|	|	|	|
7+ 0	0.8654	1.36	| Q V	|	|	|	|
7+ 5	0.8750	1.39	| Q V	|	|	|	|
7+10	0.8847	1.41	| Q V	|	|	|	|
7+15	0.8945	1.43	| Q V	|	|	|	|
7+20	0.9049	1.52	| Q V	|	|	|	|
7+25	0.9170	1.75	| Q V	|	|	|	|
7+30	0.9298	1.85	| Q V	|	|	|	|
7+35	0.9434	1.98	| Q V	|	|	|	|
7+40	0.9588	2.24	| QV	|	|	|	|
7+45	0.9750	2.35	| QV	|	|	|	|
7+50	0.9922	2.49	| QV	|	|	|	|
7+55	1.0111	2.75	| Q	|	|	|	|
8+ 0	1.0309	2.87	| QV	|	|	|	|
8+ 5	1.0521	3.08	| Q	|	|	|	|
8+10	1.0766	3.57	| VQ	|	|	|	|
8+15	1.1026	3.77	| VQ	|	|	|	|
8+20	1.1292	3.87	| VQ	|	|	|	|
8+25	1.1563	3.93	| VQ	|	|	|	|
8+30	1.1837	3.98	| VQ	|	|	|	|
8+35	1.2119	4.09	| VQ |	|	|	|	|
8+40	1.2418	4.34	| VQ |	|	|	|	|
8+45	1.2724	4.45	| VQ |	|	|	|	|
8+50	1.3039	4.58	| V Q|	|	|	|	|
8+55	1.3372	4.83	| V Q|	|	|	|	|
9+ 0	1.3712	4.95	| VQ|	|	|	|	|
9+ 5	1.4067	5.15	| V Q	|	|	|	|
9+10	1.4456	5.64	| V |Q	|	|	|	|
9+15	1.4858	5.84	| V |Q	|	|	|	|
9+20	1.5272	6.01	| V | Q	|	|	|	|
9+25	1.5706	6.30	| V| Q	|	|	|	|
9+30	1.6149	6.43	| V| Q	|	|	|	|
9+35	1.6602	6.58	| V| Q	|	|	|	|
9+40	1.7073	6.85	| V Q	|	|	|	|
9+45	1.7553	6.97	| V Q	|	|	|	|
9+50	1.8043	7.11	| V Q	|	|	|	|
9+55	1.8550	7.37	| V Q	|	|	|	|
10+ 0	1.9066	7.49	| |V Q	|	|	|	|
10+ 5	1.9550	7.03	| |V Q	|	|	|	|
10+10	1.9931	5.53	| |Q	|	|	|	|
10+15	2.0273	4.96	| Q|V	|	|	|	|
10+20	2.0598	4.73	| Q| V	|	|	|	|

10+25	2.0915	4.60	Q| V	|	|	|
10+30	2.1226	4.52	Q| V	|	|	|
10+35	2.1559	4.84	Q| V	|	|	|
10+40	2.1967	5.91	|QV	|	|	|
10+45	2.2402	6.32	| QV	|	|	|
10+50	2.2850	6.50	| Q	|	|	|
10+55	2.3306	6.62	| Q	|	|	|
11+ 0	2.3768	6.71	| Q	|	|	|
11+ 5	2.4229	6.69	| QV	|	|	|
11+10	2.4677	6.52	| QV	|	|	|
11+15	2.5123	6.46	| Q V	|	|	|
11+20	2.5567	6.45	| Q V	|	|	|
11+25	2.6011	6.45	| Q V	|	|	|
11+30	2.6455	6.44	| Q V	|	|	|
11+35	2.6889	6.30	| Q V	|	|	|
11+40	2.7293	5.86	|Q V	|	|	|
11+45	2.7685	5.70	|Q V	|	|	|
11+50	2.8079	5.71	|Q V	|	|	|
11+55	2.8485	5.90	|Q V	|	|	|
12+ 0	2.8897	5.97	|Q V	|	|	|
12+ 5	2.9346	6.52	| Q V	|	|	|
12+10	2.9903	8.09	| QV	|	|	|
12+15	3.0502	8.70	| Q	|	|	|
12+20	3.1126	9.05	| Q	|	|	|
12+25	3.1776	9.45	| Q	|	|	|
12+30	3.2441	9.64	| Q|	|	|	|
12+35	3.3123	9.91	| Q|	|	|	|
12+40	3.3841	10.43	| VQ	|	|	|
12+45	3.4575	10.66	| VQ	|	|	|
12+50	3.5322	10.84	| VQ	|	|	|
12+55	3.6088	11.13	| |VQ	|	|	|
13+ 0	3.6863	11.25	| |VQ	|	|	|
13+ 5	3.7668	11.69	| | VQ	|	|	|
13+10	3.8553	12.85	| | V Q	|	|	|
13+15	3.9469	13.31	| | V Q	|	|	|
13+20	4.0400	13.52	| | V Q	|	|	|
13+25	4.1340	13.64	| | V Q	|	|	|
13+30	4.2285	13.73	| | V Q	|	|	|
13+35	4.3179	12.98	| | Q	|	|	|
13+40	4.3909	10.59	| |Q V	|	|	|
13+45	4.4576	9.68	| Q| V	|	|	|
13+50	4.5216	9.30	| Q | V	|	|	|
13+55	4.5841	9.08	| Q | V	|	|	|
14+ 0	4.6457	8.94	| Q | V	|	|	|
14+ 5	4.7086	9.14	| Q | V	|	|	|
14+10	4.7773	9.97	| Q| V	|	|	|
14+15	4.8480	10.27	| Q V	|	|	|
14+20	4.9191	10.33	| Q V	|	|	|
14+25	4.9894	10.20	| Q V|	|	|	|
14+30	5.0596	10.19	| Q V|	|	|	|
14+35	5.1298	10.20	| Q V	|	|	|
14+40	5.2001	10.21	| Q V	|	|	|
14+45	5.2705	10.23	| Q V	|	|	|
14+50	5.3405	10.16	| Q |V	|	|	|



19+25	6.4829	0.60	|Q	|	|	|	V |
19+30	6.4860	0.46	Q	|	|	|	V |
19+35	6.4897	0.53	|Q	|	|	|	V |
19+40	6.4959	0.90	|Q	|	|	|	V |
19+45	6.5030	1.03	| Q	|	|	|	V |
19+50	6.5101	1.03	| Q	|	|	|	V |
19+55	6.5161	0.87	|Q	|	|	|	V |
20+ 0	6.5218	0.82	|Q	|	|	|	V |
20+ 5	6.5277	0.86	|Q	|	|	|	V |
20+10	6.5349	1.04	| Q	|	|	|	V |
20+15	6.5425	1.10	| Q	|	|	|	V |
20+20	6.5503	1.13	| Q	|	|	|	V |
20+25	6.5582	1.14	| Q	|	|	|	V |
20+30	6.5661	1.15	| Q	|	|	|	V |
20+35	6.5741	1.16	| Q	|	|	|	V |
20+40	6.5821	1.16	| Q	|	|	|	V |
20+45	6.5901	1.17	| Q	|	|	|	V |
20+50	6.5977	1.11	| Q	|	|	|	V |
20+55	6.6041	0.93	|Q	|	|	|	V |
21+ 0	6.6100	0.86	|Q	|	|	|	V |
21+ 5	6.6161	0.89	|Q	|	|	|	V |
21+10	6.6234	1.05	| Q	|	|	|	V |
21+15	6.6310	1.11	| Q	|	|	|	V |
21+20	6.6384	1.07	| Q	|	|	|	V|
21+25	6.6446	0.90	|Q	|	|	|	V|
21+30	6.6504	0.84	|Q	|	|	|	V|
21+35	6.6564	0.88	|Q	|	|	|	V|
21+40	6.6636	1.05	| Q	|	|	|	V|
21+45	6.6700	0.93	|Q	|	|	|	V|
21+50	6.6736	0.53	|Q	|	|	|	V|
21+55	6.6784	0.69	|Q	|	|	|	V|
22+ 0	6.6836	0.75	|Q	|	|	|	V|
22+ 5	6.6880	0.64	|Q	|	|	|	V|
22+10	6.6901	0.30	Q	|	|	|	V|
22+15	6.6912	0.17	Q	|	|	|	V|
22+20	6.6928	0.23	Q	|	|	|	V|
22+25	6.6966	0.55	|Q	|	|	|	V|
22+30	6.7011	0.66	|Q	|	|	|	V|
22+35	6.7060	0.71	|Q	|	|	|	V|
22+40	6.7110	0.73	|Q	|	|	|	V|
22+45	6.7162	0.75	|Q	|	|	|	V|
22+50	6.7214	0.76	|Q	|	|	|	V|
22+55	6.7267	0.77	|Q	|	|	|	V|
23+ 0	6.7320	0.77	|Q	|	|	|	V|
23+ 5	6.7374	0.78	|Q	|	|	|	V|
23+10	6.7428	0.78	|Q	|	|	|	V|
23+15	6.7481	0.78	|Q	|	|	|	V|
23+20	6.7535	0.78	|Q	|	|	|	V|
23+25	6.7589	0.78	|Q	|	|	|	V|
23+30	6.7642	0.78	|Q	|	|	|	V|
23+35	6.7696	0.78	|Q	|	|	|	V|
23+40	6.7750	0.78	|Q	|	|	|	V|
23+45	6.7803	0.78	|Q	|	|	|	V|
23+50	6.7857	0.78	|Q	|	|	|	V|

```
   23+55       6.7911      0.78  |Q        |         |         |        V|
   24+ 0       6.7964      0.78  |Q        |         |         |        V|
   24+ 5       6.8010      0.66  |Q        |         |         |        V|
   24+10       6.8030      0.30  Q         |         |         |        V|
   24+15       6.8041      0.16  Q         |         |         |        V|
   24+20       6.8047      0.10  Q         |         |         |        V|
   24+25       6.8051      0.06  Q         |         |         |        V|
   24+30       6.8054      0.04  Q         |         |         |        V|
   24+35       6.8055      0.02  Q         |         |         |        V|
   24+40       6.8056      0.01  Q         |         |         |        V|
   24+45       6.8056      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
Study date 11/13/19 File: 4163UHP10024100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

PROPOSED 100 YEAR UNIT HYDROGRAPH
MJPA 304163
BASIN 3
4163UHP100.UM1

Drainage Area = 37.40(Ac.) = 0.058 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 37.40(Ac.) = 0.058 Sq. Mi.
Length along longest watercourse = 3120.00(Ft.)
Length along longest watercourse measured to centroid = 1850.00(Ft.)
Length along longest watercourse = 0.591 Mi.
Length along longest watercourse measured to centroid = 0.350 Mi.
Difference in elevation = 28.00(Ft.)
Slope along watercourse = 47.3846 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.43 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	1.60	59.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
37.40	4.00	149.60

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 4.000(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
37.400	69.00	0.900

Total Area Entered = 37.40(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	84.4	0.194	0.900	0.037	1.000	0.037
					Sum (F) =	0.037

Area averaged mean soil loss (F) (In/Hr) = 0.037
Minimum soil loss rate ((In/Hr)) = 0.018
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.657	15.489	5.838
2	0.167	175.313	46.596	17.563
3	0.250	262.970	17.939	6.762
4	0.333	350.627	7.777	2.931
5	0.417	438.284	4.555	1.717
6	0.500	525.940	2.875	1.084
7	0.583	613.597	2.007	0.757
8	0.667	701.254	1.306	0.492
9	0.750	788.910	0.907	0.342
10	0.833	876.567	0.549	0.207
			Sum = 100.000	Sum= 37.692

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	0.07	0.032	0.065	0.006	0.03
2	0.17	0.07	0.032	0.065	0.006	0.03
3	0.25	0.07	0.032	0.065	0.006	0.03
4	0.33	0.10	0.048	0.065	0.009	0.04
5	0.42	0.10	0.048	0.064	0.009	0.04
6	0.50	0.10	0.048	0.064	0.009	0.04
7	0.58	0.10	0.048	0.064	0.009	0.04
8	0.67	0.10	0.048	0.064	0.009	0.04
9	0.75	0.10	0.048	0.063	0.009	0.04
10	0.83	0.13	0.064	0.063	---	0.00
11	0.92	0.13	0.064	0.063	---	0.00
12	1.00	0.13	0.064	0.063	---	0.00
13	1.08	0.10	0.048	0.062	0.009	0.04
14	1.17	0.10	0.048	0.062	0.009	0.04
15	1.25	0.10	0.048	0.062	0.009	0.04
16	1.33	0.10	0.048	0.062	0.009	0.04
17	1.42	0.10	0.048	0.061	0.009	0.04
18	1.50	0.10	0.048	0.061	0.009	0.04
19	1.58	0.10	0.048	0.061	0.009	0.04
20	1.67	0.10	0.048	0.061	0.009	0.04
21	1.75	0.10	0.048	0.060	0.009	0.04
22	1.83	0.13	0.064	0.060	---	0.00
23	1.92	0.13	0.064	0.060	---	0.00
24	2.00	0.13	0.064	0.060	---	0.00
25	2.08	0.13	0.064	0.059	---	0.00
26	2.17	0.13	0.064	0.059	---	0.00
27	2.25	0.13	0.064	0.059	---	0.01
28	2.33	0.13	0.064	0.059	---	0.01
29	2.42	0.13	0.064	0.058	---	0.01
30	2.50	0.13	0.064	0.058	---	0.01
31	2.58	0.17	0.080	0.058	---	0.02
32	2.67	0.17	0.080	0.058	---	0.02
33	2.75	0.17	0.080	0.057	---	0.02
34	2.83	0.17	0.080	0.057	---	0.02
35	2.92	0.17	0.080	0.057	---	0.02
36	3.00	0.17	0.080	0.057	---	0.02
37	3.08	0.17	0.080	0.057	---	0.02
38	3.17	0.17	0.080	0.056	---	0.02
39	3.25	0.17	0.080	0.056	---	0.02
40	3.33	0.17	0.080	0.056	---	0.02
41	3.42	0.17	0.080	0.056	---	0.02
42	3.50	0.17	0.080	0.055	---	0.02
43	3.58	0.17	0.080	0.055	---	0.02
44	3.67	0.17	0.080	0.055	---	0.03
45	3.75	0.17	0.080	0.055	---	0.03
46	3.83	0.20	0.096	0.054	---	0.04
47	3.92	0.20	0.096	0.054	---	0.04
48	4.00	0.20	0.096	0.054	---	0.04
49	4.08	0.20	0.096	0.054	---	0.04
50	4.17	0.20	0.096	0.054	---	0.04
51	4.25	0.20	0.096	0.053	---	0.04
52	4.33	0.23	0.112	0.053	---	0.06
53	4.42	0.23	0.112	0.053	---	0.06
54	4.50	0.23	0.112	0.053	---	0.06

55	4.58	0.23	0.112	0.052	---	0.06
56	4.67	0.23	0.112	0.052	---	0.06
57	4.75	0.23	0.112	0.052	---	0.06
58	4.83	0.27	0.128	0.052	---	0.08
59	4.92	0.27	0.128	0.051	---	0.08
60	5.00	0.27	0.128	0.051	---	0.08
61	5.08	0.20	0.096	0.051	---	0.04
62	5.17	0.20	0.096	0.051	---	0.05
63	5.25	0.20	0.096	0.051	---	0.05
64	5.33	0.23	0.112	0.050	---	0.06
65	5.42	0.23	0.112	0.050	---	0.06
66	5.50	0.23	0.112	0.050	---	0.06
67	5.58	0.27	0.128	0.050	---	0.08
68	5.67	0.27	0.128	0.049	---	0.08
69	5.75	0.27	0.128	0.049	---	0.08
70	5.83	0.27	0.128	0.049	---	0.08
71	5.92	0.27	0.128	0.049	---	0.08
72	6.00	0.27	0.128	0.049	---	0.08
73	6.08	0.30	0.144	0.048	---	0.10
74	6.17	0.30	0.144	0.048	---	0.10
75	6.25	0.30	0.144	0.048	---	0.10
76	6.33	0.30	0.144	0.048	---	0.10
77	6.42	0.30	0.144	0.048	---	0.10
78	6.50	0.30	0.144	0.047	---	0.10
79	6.58	0.33	0.160	0.047	---	0.11
80	6.67	0.33	0.160	0.047	---	0.11
81	6.75	0.33	0.160	0.047	---	0.11
82	6.83	0.33	0.160	0.046	---	0.11
83	6.92	0.33	0.160	0.046	---	0.11
84	7.00	0.33	0.160	0.046	---	0.11
85	7.08	0.33	0.160	0.046	---	0.11
86	7.17	0.33	0.160	0.046	---	0.11
87	7.25	0.33	0.160	0.045	---	0.11
88	7.33	0.37	0.176	0.045	---	0.13
89	7.42	0.37	0.176	0.045	---	0.13
90	7.50	0.37	0.176	0.045	---	0.13
91	7.58	0.40	0.192	0.045	---	0.15
92	7.67	0.40	0.192	0.044	---	0.15
93	7.75	0.40	0.192	0.044	---	0.15
94	7.83	0.43	0.208	0.044	---	0.16
95	7.92	0.43	0.208	0.044	---	0.16
96	8.00	0.43	0.208	0.044	---	0.16
97	8.08	0.50	0.240	0.043	---	0.20
98	8.17	0.50	0.240	0.043	---	0.20
99	8.25	0.50	0.240	0.043	---	0.20
100	8.33	0.50	0.240	0.043	---	0.20
101	8.42	0.50	0.240	0.043	---	0.20
102	8.50	0.50	0.240	0.042	---	0.20
103	8.58	0.53	0.256	0.042	---	0.21
104	8.67	0.53	0.256	0.042	---	0.21
105	8.75	0.53	0.256	0.042	---	0.21
106	8.83	0.57	0.272	0.042	---	0.23
107	8.92	0.57	0.272	0.041	---	0.23
108	9.00	0.57	0.272	0.041	---	0.23

109	9.08	0.63	0.304	0.041	---	0.26
110	9.17	0.63	0.304	0.041	---	0.26
111	9.25	0.63	0.304	0.041	---	0.26
112	9.33	0.67	0.320	0.040	---	0.28
113	9.42	0.67	0.320	0.040	---	0.28
114	9.50	0.67	0.320	0.040	---	0.28
115	9.58	0.70	0.336	0.040	---	0.30
116	9.67	0.70	0.336	0.040	---	0.30
117	9.75	0.70	0.336	0.039	---	0.30
118	9.83	0.73	0.352	0.039	---	0.31
119	9.92	0.73	0.352	0.039	---	0.31
120	10.00	0.73	0.352	0.039	---	0.31
121	10.08	0.50	0.240	0.039	---	0.20
122	10.17	0.50	0.240	0.039	---	0.20
123	10.25	0.50	0.240	0.038	---	0.20
124	10.33	0.50	0.240	0.038	---	0.20
125	10.42	0.50	0.240	0.038	---	0.20
126	10.50	0.50	0.240	0.038	---	0.20
127	10.58	0.67	0.320	0.038	---	0.28
128	10.67	0.67	0.320	0.037	---	0.28
129	10.75	0.67	0.320	0.037	---	0.28
130	10.83	0.67	0.320	0.037	---	0.28
131	10.92	0.67	0.320	0.037	---	0.28
132	11.00	0.67	0.320	0.037	---	0.28
133	11.08	0.63	0.304	0.036	---	0.27
134	11.17	0.63	0.304	0.036	---	0.27
135	11.25	0.63	0.304	0.036	---	0.27
136	11.33	0.63	0.304	0.036	---	0.27
137	11.42	0.63	0.304	0.036	---	0.27
138	11.50	0.63	0.304	0.036	---	0.27
139	11.58	0.57	0.272	0.035	---	0.24
140	11.67	0.57	0.272	0.035	---	0.24
141	11.75	0.57	0.272	0.035	---	0.24
142	11.83	0.60	0.288	0.035	---	0.25
143	11.92	0.60	0.288	0.035	---	0.25
144	12.00	0.60	0.288	0.035	---	0.25
145	12.08	0.83	0.400	0.034	---	0.37
146	12.17	0.83	0.400	0.034	---	0.37
147	12.25	0.83	0.400	0.034	---	0.37
148	12.33	0.87	0.416	0.034	---	0.38
149	12.42	0.87	0.416	0.034	---	0.38
150	12.50	0.87	0.416	0.034	---	0.38
151	12.58	0.93	0.448	0.033	---	0.41
152	12.67	0.93	0.448	0.033	---	0.41
153	12.75	0.93	0.448	0.033	---	0.41
154	12.83	0.97	0.464	0.033	---	0.43
155	12.92	0.97	0.464	0.033	---	0.43
156	13.00	0.97	0.464	0.033	---	0.43
157	13.08	1.13	0.544	0.032	---	0.51
158	13.17	1.13	0.544	0.032	---	0.51
159	13.25	1.13	0.544	0.032	---	0.51
160	13.33	1.13	0.544	0.032	---	0.51
161	13.42	1.13	0.544	0.032	---	0.51
162	13.50	1.13	0.544	0.032	---	0.51

163	13.58	0.77	0.368	0.031	---	0.34
164	13.67	0.77	0.368	0.031	---	0.34
165	13.75	0.77	0.368	0.031	---	0.34
166	13.83	0.77	0.368	0.031	---	0.34
167	13.92	0.77	0.368	0.031	---	0.34
168	14.00	0.77	0.368	0.031	---	0.34
169	14.08	0.90	0.432	0.030	---	0.40
170	14.17	0.90	0.432	0.030	---	0.40
171	14.25	0.90	0.432	0.030	---	0.40
172	14.33	0.87	0.416	0.030	---	0.39
173	14.42	0.87	0.416	0.030	---	0.39
174	14.50	0.87	0.416	0.030	---	0.39
175	14.58	0.87	0.416	0.030	---	0.39
176	14.67	0.87	0.416	0.029	---	0.39
177	14.75	0.87	0.416	0.029	---	0.39
178	14.83	0.83	0.400	0.029	---	0.37
179	14.92	0.83	0.400	0.029	---	0.37
180	15.00	0.83	0.400	0.029	---	0.37
181	15.08	0.80	0.384	0.029	---	0.36
182	15.17	0.80	0.384	0.028	---	0.36
183	15.25	0.80	0.384	0.028	---	0.36
184	15.33	0.77	0.368	0.028	---	0.34
185	15.42	0.77	0.368	0.028	---	0.34
186	15.50	0.77	0.368	0.028	---	0.34
187	15.58	0.63	0.304	0.028	---	0.28
188	15.67	0.63	0.304	0.028	---	0.28
189	15.75	0.63	0.304	0.027	---	0.28
190	15.83	0.63	0.304	0.027	---	0.28
191	15.92	0.63	0.304	0.027	---	0.28
192	16.00	0.63	0.304	0.027	---	0.28
193	16.08	0.13	0.064	0.027	---	0.04
194	16.17	0.13	0.064	0.027	---	0.04
195	16.25	0.13	0.064	0.027	---	0.04
196	16.33	0.13	0.064	0.026	---	0.04
197	16.42	0.13	0.064	0.026	---	0.04
198	16.50	0.13	0.064	0.026	---	0.04
199	16.58	0.10	0.048	0.026	---	0.02
200	16.67	0.10	0.048	0.026	---	0.02
201	16.75	0.10	0.048	0.026	---	0.02
202	16.83	0.10	0.048	0.026	---	0.02
203	16.92	0.10	0.048	0.026	---	0.02
204	17.00	0.10	0.048	0.025	---	0.02
205	17.08	0.17	0.080	0.025	---	0.05
206	17.17	0.17	0.080	0.025	---	0.05
207	17.25	0.17	0.080	0.025	---	0.05
208	17.33	0.17	0.080	0.025	---	0.06
209	17.42	0.17	0.080	0.025	---	0.06
210	17.50	0.17	0.080	0.025	---	0.06
211	17.58	0.17	0.080	0.025	---	0.06
212	17.67	0.17	0.080	0.024	---	0.06
213	17.75	0.17	0.080	0.024	---	0.06
214	17.83	0.13	0.064	0.024	---	0.04
215	17.92	0.13	0.064	0.024	---	0.04
216	18.00	0.13	0.064	0.024	---	0.04

217	18.08	0.13	0.064	0.024	---	0.04
218	18.17	0.13	0.064	0.024	---	0.04
219	18.25	0.13	0.064	0.024	---	0.04
220	18.33	0.13	0.064	0.023	---	0.04
221	18.42	0.13	0.064	0.023	---	0.04
222	18.50	0.13	0.064	0.023	---	0.04
223	18.58	0.10	0.048	0.023	---	0.02
224	18.67	0.10	0.048	0.023	---	0.02
225	18.75	0.10	0.048	0.023	---	0.03
226	18.83	0.07	0.032	0.023	---	0.01
227	18.92	0.07	0.032	0.023	---	0.01
228	19.00	0.07	0.032	0.023	---	0.01
229	19.08	0.10	0.048	0.022	---	0.03
230	19.17	0.10	0.048	0.022	---	0.03
231	19.25	0.10	0.048	0.022	---	0.03
232	19.33	0.13	0.064	0.022	---	0.04
233	19.42	0.13	0.064	0.022	---	0.04
234	19.50	0.13	0.064	0.022	---	0.04
235	19.58	0.10	0.048	0.022	---	0.03
236	19.67	0.10	0.048	0.022	---	0.03
237	19.75	0.10	0.048	0.022	---	0.03
238	19.83	0.07	0.032	0.022	---	0.01
239	19.92	0.07	0.032	0.021	---	0.01
240	20.00	0.07	0.032	0.021	---	0.01
241	20.08	0.10	0.048	0.021	---	0.03
242	20.17	0.10	0.048	0.021	---	0.03
243	20.25	0.10	0.048	0.021	---	0.03
244	20.33	0.10	0.048	0.021	---	0.03
245	20.42	0.10	0.048	0.021	---	0.03
246	20.50	0.10	0.048	0.021	---	0.03
247	20.58	0.10	0.048	0.021	---	0.03
248	20.67	0.10	0.048	0.021	---	0.03
249	20.75	0.10	0.048	0.021	---	0.03
250	20.83	0.07	0.032	0.020	---	0.01
251	20.92	0.07	0.032	0.020	---	0.01
252	21.00	0.07	0.032	0.020	---	0.01
253	21.08	0.10	0.048	0.020	---	0.03
254	21.17	0.10	0.048	0.020	---	0.03
255	21.25	0.10	0.048	0.020	---	0.03
256	21.33	0.07	0.032	0.020	---	0.01
257	21.42	0.07	0.032	0.020	---	0.01
258	21.50	0.07	0.032	0.020	---	0.01
259	21.58	0.10	0.048	0.020	---	0.03
260	21.67	0.10	0.048	0.020	---	0.03
261	21.75	0.10	0.048	0.020	---	0.03
262	21.83	0.07	0.032	0.020	---	0.01
263	21.92	0.07	0.032	0.020	---	0.01
264	22.00	0.07	0.032	0.019	---	0.01
265	22.08	0.10	0.048	0.019	---	0.03
266	22.17	0.10	0.048	0.019	---	0.03
267	22.25	0.10	0.048	0.019	---	0.03
268	22.33	0.07	0.032	0.019	---	0.01
269	22.42	0.07	0.032	0.019	---	0.01
270	22.50	0.07	0.032	0.019	---	0.01

271	22.58	0.07	0.032	0.019	---	0.01
272	22.67	0.07	0.032	0.019	---	0.01
273	22.75	0.07	0.032	0.019	---	0.01
274	22.83	0.07	0.032	0.019	---	0.01
275	22.92	0.07	0.032	0.019	---	0.01
276	23.00	0.07	0.032	0.019	---	0.01
277	23.08	0.07	0.032	0.019	---	0.01
278	23.17	0.07	0.032	0.019	---	0.01
279	23.25	0.07	0.032	0.019	---	0.01
280	23.33	0.07	0.032	0.019	---	0.01
281	23.42	0.07	0.032	0.019	---	0.01
282	23.50	0.07	0.032	0.019	---	0.01
283	23.58	0.07	0.032	0.019	---	0.01
284	23.67	0.07	0.032	0.018	---	0.01
285	23.75	0.07	0.032	0.018	---	0.01
286	23.83	0.07	0.032	0.018	---	0.01
287	23.92	0.07	0.032	0.018	---	0.01
288	24.00	0.07	0.032	0.018	---	0.01
Sum =	100.0				Sum =	38.4

Flood volume = Effective rainfall 3.20(In)
times area 37.4(Ac.)/[(In)/(Ft.)] = 10.0(Ac.Ft)
Total soil loss = 0.80(In)
Total soil loss = 2.501(Ac.Ft)
Total rainfall = 4.00(In)
Flood volume = 434079.1 Cubic Feet
Total soil loss = 108929.3 Cubic Feet

Peak flow rate of this hydrograph = 19.166(CFS)

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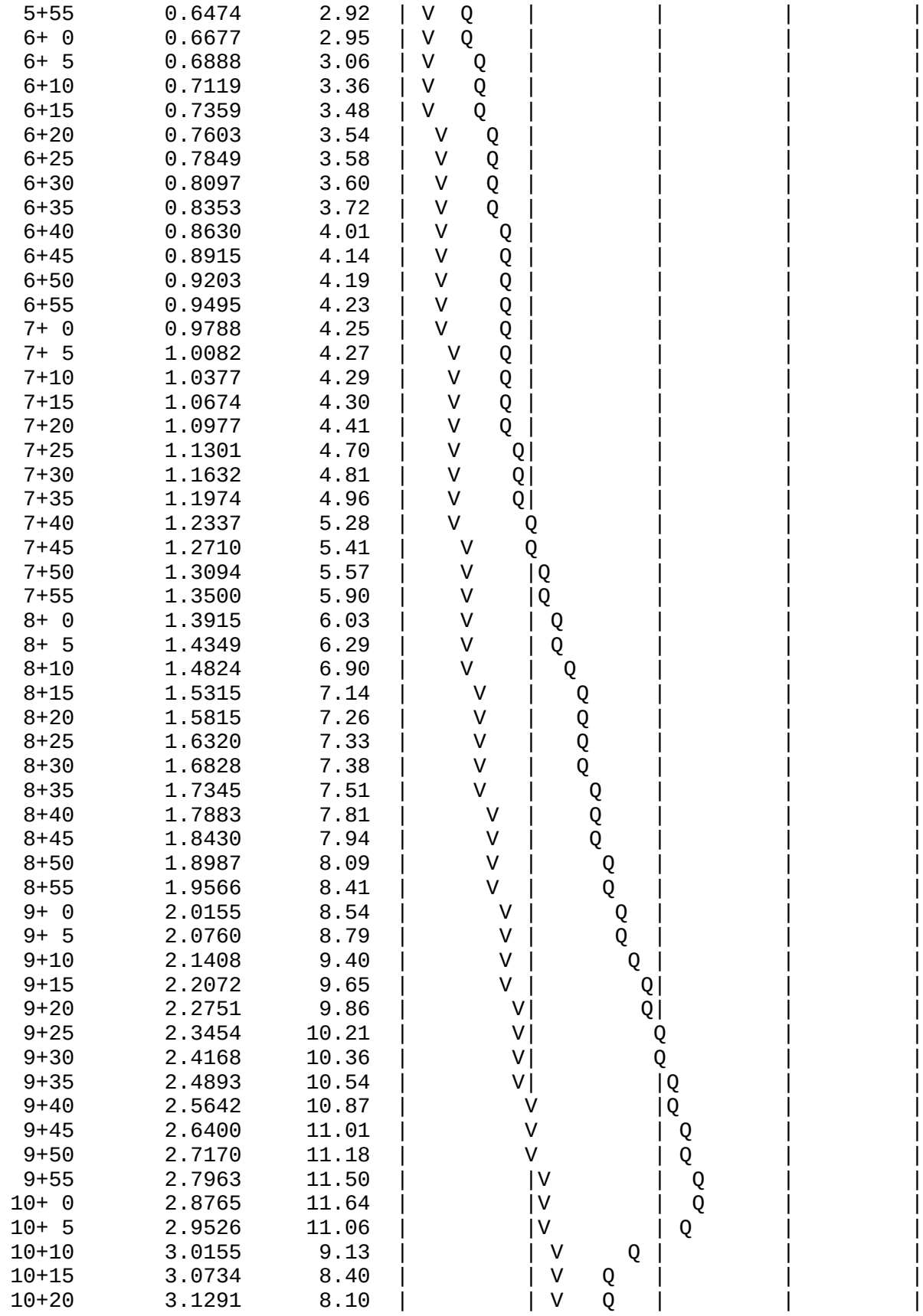
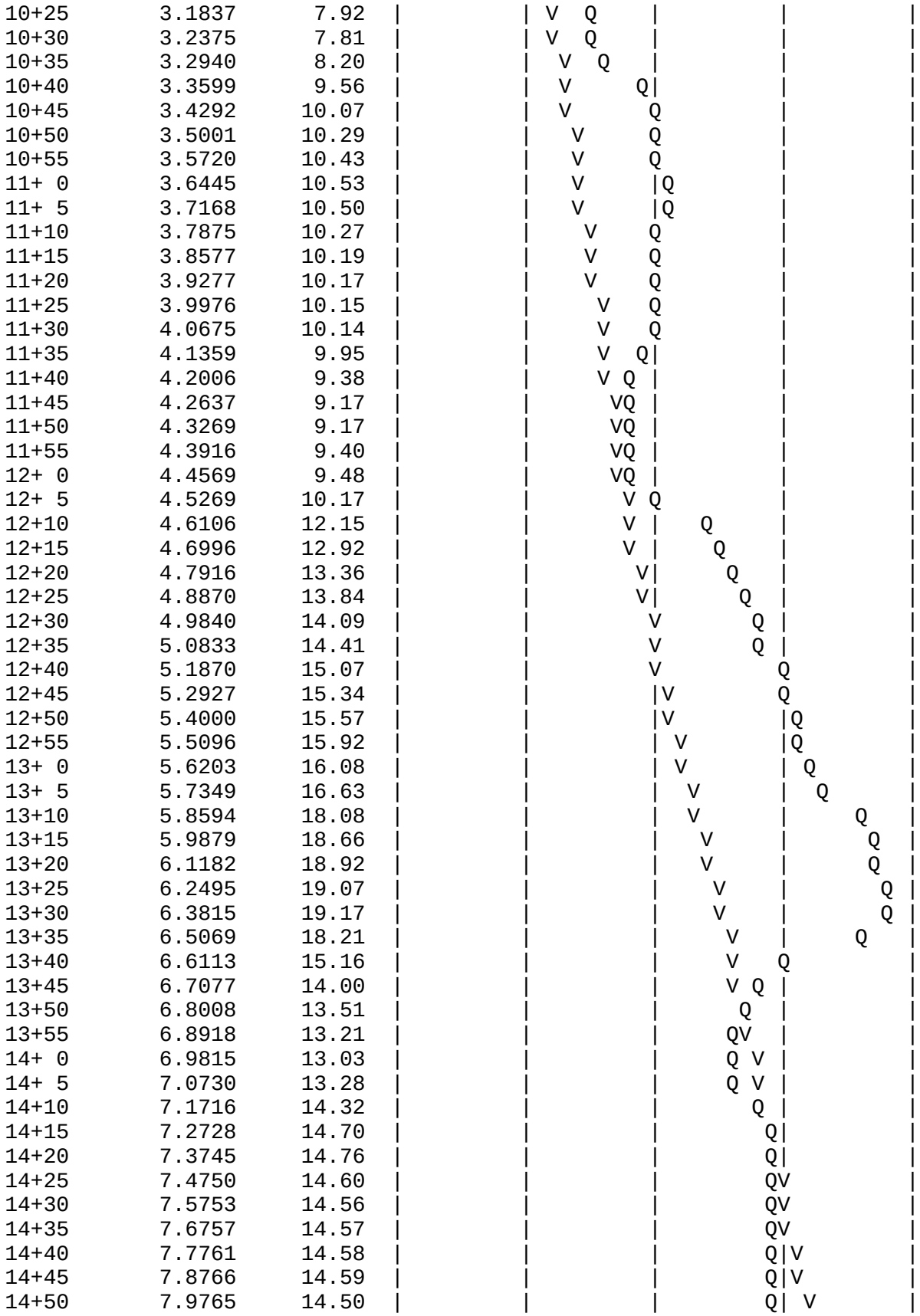
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

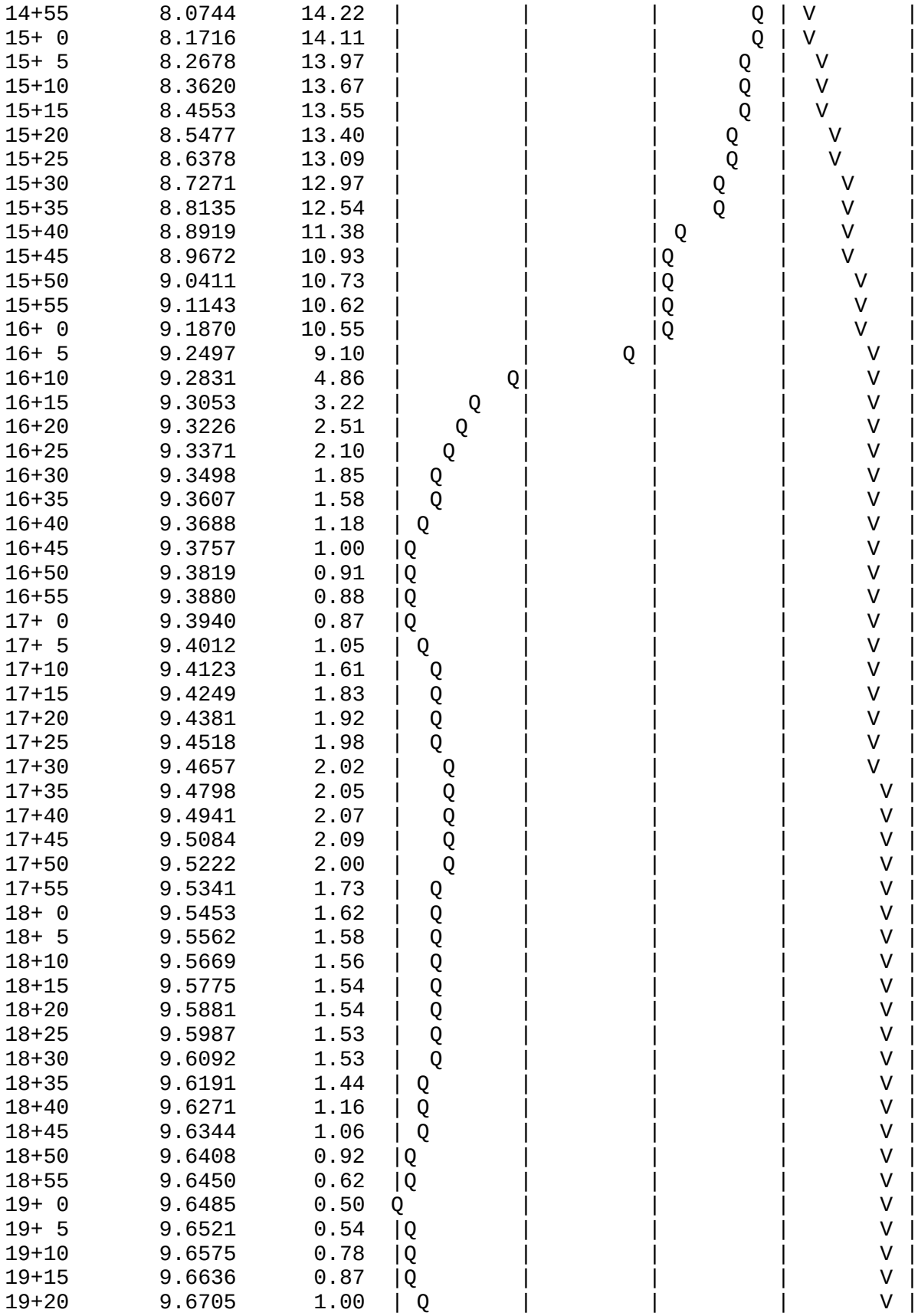
Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0011	0.15	Q	|	|	|	|
0+10	0.0053	0.61	VQ	|	|	|	|
0+15	0.0107	0.79	VQ	|	|	|	|
0+20	0.0173	0.95	VQ	|	|	|	|
0+25	0.0257	1.22	V Q	|	|	|	|
0+30	0.0349	1.34	V Q	|	|	|	|
0+35	0.0445	1.40	V Q	|	|	|	|
0+40	0.0544	1.43	V Q	|	|	|	|
0+45	0.0644	1.46	V Q	|	|	|	|
0+50	0.0730	1.25	V Q	|	|	|	|
0+55	0.0770	0.58	VQ	|	|	|	|
1+ 0	0.0792	0.33	Q	|	|	|	|
1+ 5	0.0823	0.45	Q	|	|	|	|
1+10	0.0895	1.05	V Q	|	|	|	|
1+15	0.0983	1.27	V Q	|	|	|	|
1+20	0.1075	1.35	V Q	|	|	|	|

1+25	0.1172	1.40	V Q	|	|	|	|
1+30	0.1270	1.42	V Q	|	|	|	|
1+35	0.1369	1.44	V Q	|	|	|	|
1+40	0.1470	1.46	V Q	|	|	|	|
1+45	0.1572	1.48	V Q	|	|	|	|
1+50	0.1660	1.28	V Q	|	|	|	|
1+55	0.1705	0.66	VQ	|	|	|	|
2+ 0	0.1734	0.42	Q	|	|	|	|
2+ 5	0.1756	0.32	Q	|	|	|	|
2+10	0.1775	0.27	Q	|	|	|	|
2+15	0.1791	0.24	Q	|	|	|	|
2+20	0.1807	0.22	Q	|	|	|	|
2+25	0.1822	0.21	Q	|	|	|	|
2+30	0.1836	0.21	Q	|	|	|	|
2+35	0.1857	0.31	Q	|	|	|	|
2+40	0.1898	0.60	VQ	|	|	|	|
2+45	0.1948	0.71	VQ	|	|	|	|
2+50	0.2001	0.77	VQ	|	|	|	|
2+55	0.2056	0.81	VQ	|	|	|	|
3+ 0	0.2114	0.83	VQ	|	|	|	|
3+ 5	0.2172	0.85	VQ	|	|	|	|
3+10	0.2232	0.87	VQ	|	|	|	|
3+15	0.2293	0.88	VQ	|	|	|	|
3+20	0.2355	0.90	VQ	|	|	|	|
3+25	0.2417	0.91	VQ	|	|	|	|
3+30	0.2480	0.91	VQ	|	|	|	|
3+35	0.2544	0.92	|Q	|	|	|	|
3+40	0.2608	0.93	|Q	|	|	|	|
3+45	0.2673	0.94	|Q	|	|	|	|
3+50	0.2745	1.04	|VQ	|	|	|	|
3+55	0.2837	1.33	|VQ	|	|	|	|
4+ 0	0.2936	1.45	|VQ	|	|	|	|
4+ 5	0.3040	1.51	|V Q	|	|	|	|
4+10	0.3146	1.54	|V Q	|	|	|	|
4+15	0.3254	1.57	|V Q	|	|	|	|
4+20	0.3370	1.68	|V Q	|	|	|	|
4+25	0.3506	1.98	|V Q	|	|	|	|
4+30	0.3651	2.10	|V Q	|	|	|	|
4+35	0.3800	2.16	|V Q	|	|	|	|
4+40	0.3951	2.20	|V Q	|	|	|	|
4+45	0.4104	2.22	|V Q	|	|	|	|
4+50	0.4265	2.34	|V Q	|	|	|	|
4+55	0.4446	2.63	|V Q	|	|	|	|
5+ 0	0.4636	2.76	|V Q	|	|	|	|
5+ 5	0.4817	2.63	|V Q	|	|	|	|
5+10	0.4962	2.10	|V Q	|	|	|	|
5+15	0.5093	1.91	| VQ	|	|	|	|
5+20	0.5226	1.93	| VQ	|	|	|	|
5+25	0.5376	2.17	| V Q	|	|	|	|
5+30	0.5532	2.26	| V Q	|	|	|	|
5+35	0.5696	2.39	| V Q	|	|	|	|
5+40	0.5881	2.69	| V Q	|	|	|	|
5+45	0.6075	2.81	| V Q	|	|	|	|
5+50	0.6273	2.87	| V Q	|	|	|	|


5+55 0.6474 2.92
6+ 0 0.6677 2.95
6+ 5 0.6888 3.06
6+10 0.7119 3.36
6+15 0.7359 3.48
6+20 0.7603 3.54
6+25 0.7849 3.58
6+30 0.8097 3.60
6+35 0.8353 3.72
6+40 0.8630 4.01
6+45 0.8915 4.14
6+50 0.9203 4.19
6+55 0.9495 4.23
7+ 0 0.9788 4.25
7+ 5 1.0082 4.27
7+10 1.0377 4.29
7+15 1.0674 4.30
7+20 1.0977 4.41
7+25 1.1301 4.70
7+30 1.1632 4.81
7+35 1.1974 4.96
7+40 1.2337 5.28
7+45 1.2710 5.41
7+50 1.3094 5.57
7+55 1.3500 5.90
8+ 0 1.3915 6.03
8+ 5 1.4349 6.29
8+10 1.4824 6.90
8+15 1.5315 7.14
8+20 1.5815 7.26
8+25 1.6320 7.33
8+30 1.6828 7.38
8+35 1.7345 7.51
8+40 1.7883 7.81
8+45 1.8430 7.94
8+50 1.8987 8.09
8+55 1.9566 8.41
9+ 0 2.0155 8.54
9+ 5 2.0760 8.79
9+10 2.1408 9.40
9+15 2.2072 9.65
9+20 2.2751 9.86
9+25 2.3454 10.21
9+30 2.4168 10.36
9+35 2.4893 10.54
9+40 2.5642 10.87
9+45 2.6400 11.01
9+50 2.7170 11.18
9+55 2.7963 11.50
10+ 0 2.8765 11.64
10+ 5 2.9526 11.06
10+10 3.0155 9.13
10+15 3.0734 8.40
10+20 3.1291 8.10





19+25	9.6795	1.31	| Q	|	|	|	V |
19+30	9.6894	1.43	| Q	|	|	|	V |
19+35	9.6990	1.40	| Q	|	|	|	V |
19+40	9.7069	1.16	| Q	|	|	|	V |
19+45	9.7143	1.07	| Q	|	|	|	V |
19+50	9.7209	0.95	|Q	|	|	|	V|
19+55	9.7254	0.66	|Q	|	|	|	V|
20+ 0	9.7291	0.54	|Q	|	|	|	V|
20+ 5	9.7332	0.58	|Q	|	|	|	V|
20+10	9.7389	0.83	|Q	|	|	|	V|
20+15	9.7452	0.92	|Q	|	|	|	V|
20+20	9.7518	0.95	|Q	|	|	|	V|
20+25	9.7585	0.98	|Q	|	|	|	V|
20+30	9.7654	0.99	|Q	|	|	|	V|
20+35	9.7723	1.01	| Q	|	|	|	V|
20+40	9.7793	1.02	| Q	|	|	|	V|
20+45	9.7863	1.03	| Q	|	|	|	V|
20+50	9.7928	0.94	|Q	|	|	|	V|
20+55	9.7973	0.66	|Q	|	|	|	V|
21+ 0	9.8012	0.56	|Q	|	|	|	V|
21+ 5	9.8053	0.60	|Q	|	|	|	V|
21+10	9.8113	0.86	|Q	|	|	|	V|
21+15	9.8178	0.96	|Q	|	|	|	V|
21+20	9.8240	0.90	|Q	|	|	|	V|
21+25	9.8285	0.64	|Q	|	|	|	V|
21+30	9.8322	0.55	|Q	|	|	|	V|
21+35	9.8364	0.61	|Q	|	|	|	V|
21+40	9.8424	0.87	|Q	|	|	|	V|
21+45	9.8491	0.97	|Q	|	|	|	V|
21+50	9.8554	0.92	|Q	|	|	|	V|
21+55	9.8599	0.66	|Q	|	|	|	V|
22+ 0	9.8638	0.56	|Q	|	|	|	V|
22+ 5	9.8681	0.62	|Q	|	|	|	V|
22+10	9.8742	0.89	|Q	|	|	|	V|
22+15	9.8810	0.98	|Q	|	|	|	V|
22+20	9.8874	0.93	|Q	|	|	|	V|
22+25	9.8920	0.67	|Q	|	|	|	V|
22+30	9.8960	0.58	|Q	|	|	|	V|
22+35	9.8997	0.54	|Q	|	|	|	V|
22+40	9.9034	0.52	|Q	|	|	|	V|
22+45	9.9069	0.52	|Q	|	|	|	V|
22+50	9.9104	0.51	|Q	|	|	|	V|
22+55	9.9139	0.50	|Q	|	|	|	V|
23+ 0	9.9173	0.50	Q	|	|	|	V|
23+ 5	9.9207	0.50	Q	|	|	|	V|
23+10	9.9242	0.50	Q	|	|	|	V|
23+15	9.9276	0.50	|Q	|	|	|	V|
23+20	9.9311	0.50	|Q	|	|	|	V|
23+25	9.9345	0.50	|Q	|	|	|	V|
23+30	9.9380	0.50	|Q	|	|	|	V|
23+35	9.9415	0.51	|Q	|	|	|	V|
23+40	9.9450	0.51	|Q	|	|	|	V|
23+45	9.9485	0.51	|Q	|	|	|	V|
23+50	9.9520	0.51	|Q	|	|	|	V|

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   23+55       9.9555      0.51  |Q        |          |          |        V|
   24+ 0       9.9590      0.51  |Q        |          |          |        V|
   24+ 5       9.9620      0.43  Q         |          |          |        V|
   24+10       9.9633      0.19  Q         |          |          |        V|
   24+15       9.9640      0.10  Q         |          |          |        V|
   24+20       9.9645      0.06  Q         |          |          |        V|
   24+25       9.9647      0.04  Q         |          |          |        V|
   24+30       9.9649      0.02  Q         |          |          |        V|
   24+35       9.9650      0.01  Q         |          |          |        V|
   24+40       9.9651      0.01  Q         |          |          |        V|
   24+45       9.9651      0.00  Q         |          |          |         V
-------------------------------------------------------------------------
```

Appendix D

Basin 1 Routing Analysis for 1, 2, 5, 10, 25, and 100 year storms
Basin 2 Routing Analysis for 1, 2, 5, 10, 25, and 100 year storms
Basin 3 Routing Analysis for 1, 2, 5, 10, 25, and 100 year storms

AREA A - BASIN 1 (60.2 ac.)

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	5.08	7.36	11.96	17.45	22.05	30.79
EXISTING RUNOFF	0.94	1.29	1.72	11.50	16.01	28.28
REQUIRED MITIGATION:	**4.14**	**6.07**	**10.24**	**5.95**	**6.04**	**2.51**
DISCHARGE FROM BASIN AFTER ROUTING*	0.92	1.06	1.87	8.02	13.32	20.40
ALLOWABLE TOTAL DISCHARGE	**0.94**	**1.29**	**1.72**	**11.50**	**16.01**	**28.28**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)

AREA B - BASIN 2 (29.1 ac.)*

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	2.47	3.62	5.86	8.52	10.76	15.00
EXISTING RUNOFF	0.46	0.62	0.84	5.58	7.77	13.71
REQUIRED MITIGATION:	**2.01**	**3.00**	**5.02**	**2.94**	**2.99**	**1.29**
DISCHARGE FROM BASIN AFTER ROUTING*	0.46	0.51	0.82	1.92	6.41	11.11
ALLOWABLE TOTAL DISCHARGE	**0.46**	**0.62**	**0.84**	**5.58**	**7.77**	**13.71**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)
* 43.8% OF AREA B

AREA B - BASIN 3 (37.4 ac.)*

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	3.16	4.59	7.46	10.87	13.73	19.17
EXISTING RUNOFF	0.58	0.80	1.07	7.17	9.98	17.59
REQUIRED MITIGATION:	**2.58**	**3.79**	**6.39**	**3.70**	**3.75**	**1.58**
DISCHARGE FROM BASIN AFTER ROUTING*	0.51	0.63	1.04	6.37	9.47	15.24
ALLOWABLE TOTAL DISCHARGE	**0.58**	**0.80**	**1.07**	**7.17**	**9.98**	**17.59**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)
* 56.2% OF AREA B

DETENTION BASIN #1

elevation	depth	outflow	storage	open basin storage area	media factor	volume	cumulative volume	ac-ft volume
1498.0				0	0.0	0	0	0.000
1499.0	1.0	0.33	0.322	70,202	0.4	14,040	14,040	0.322
1500.0	2.0	0.58	0.967	70,202	0.4	28,081	42,121	0.967
1501.0	3.0	0.74	1.450	70,202	0.3	21,061	63,182	1.450
1502.0	4.0	0.88	1.934	70,202	0.3	21,061	84,242	1.934
1502.5	4.5	0.94	2.753	72,566	1.0	35,692	119,934	2.753
1503.0	5.0	1.60	3.600	74,929	1.0	36,874	156,808	3.600
1504.0	6.0	2.31	5.375	79,757	1.0	77,343	234,151	5.375
1505.0	7.0	17.92	7.263	84,685	1.0	82,221	316,372	7.263
1506.0	8.0	24.58	9.265	89,714	1.0	87,200	403,571	9.265
1507.0	9.0	29.74	11.383	94,854	1.0	92,284	495,855	11.383
1508.0	10.0	34.11	13.621	100,086	1.0	97,470	593,325	13.621

invert of 6" perf pipe = 1498.25
top of overflow grate = 1504.00
top of media = 1502.00
24" pipe invert = 1496.00
2' media

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                    FLOOD HYDROGRAPH ROUTING PROGRAM
                Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
                            Study date: 10/28/19


 ----------------------------------------------------------------------
 1 YEAR FLOOD ROUTING
 MJPA 304163
 BUILDING 1
 4163FR1.HYD
 ----------------------------------------------------------------------


 Program License Serial Number 6145

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 ********************* HYDROGRAPH INFORMATION **********************

            From study/file name: 4163UHP1241.rte
 ****************************HYDROGRAPH DATA*****************************
            Number of intervals =   297
            Time interval =    5.0 (Min.)
            Maximum/Peak flow rate =        5.078 (CFS)
            Total volume =       3.452 (Ac.Ft)
      Status of hydrographs being held in storage
                  Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
      Peak (CFS)      0.000     0.000     0.000     0.000     0.000
      Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
 ************************************************************************



 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 Process from Point/Station        1.000 to Point/Station        2.000
 **** RETARDING BASIN ROUTING ****
 ________________________________________________________________________

 User entry of depth-outflow-storage data
 ----------------------------------------------------------------------
 Total number of inflow hydrograph intervals = 297
 Hydrograph time unit =  5.000 (Min.)
 Initial depth in storage basin =   0.00(Ft.)
 ----------------------------------------------------------------------
 ----------------------------------------------------------------------
 Initial basin depth =   0.00 (Ft.)
 Initial basin storage =      0.00 (Ac.Ft)
 Initial basin outflow =   0.00 (CFS)
 ----------------------------------------------------------------------
 ----------------------------------------------------------------------
 Depth vs. Storage and Depth vs. Discharge data:
  Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
      (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
 ----------------------------------------------------------------------
```

0.000	0.000	0.000	0.000	0.000
1.000	0.301	0.340	0.300	0.302
2.000	0.903	0.580	0.901	0.905
3.000	1.355	0.740	1.352	1.358
4.000	1.807	0.880	1.804	1.810
4.500	2.572	0.940	2.569	2.575
5.000	3.365	11.690	3.325	3.405
6.000	5.031	19.620	4.963	5.099
7.000	6.806	25.100	6.720	6.892
8.000	8.694	27.200	8.600	8.788
9.000	10.696	28.660	10.597	10.795
10.000	12.814	30.030	12.711	12.917
11.000	15.052	31.350	14.944	15.160

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.3	2.54	3.81	5.08	Depth (Ft.)
0.083	0.06	0.00	0.000	O	|	|	|	|	0.00
0.167	0.27	0.00	0.001	OI	|	|	|	|	0.00
0.250	0.36	0.00	0.004	O I	|	|	|	|	0.01
0.333	0.43	0.01	0.006	O I	|	|	|	|	0.02
0.417	0.56	0.01	0.010	O I	|	|	|	|	0.03
0.500	0.62	0.02	0.014	O I	|	|	|	|	0.05
0.583	0.65	0.02	0.018	O I	|	|	|	|	0.06
0.667	0.67	0.03	0.022	O I	|	|	|	|	0.07
0.750	0.68	0.03	0.027	O I	|	|	|	|	0.09
0.833	0.72	0.04	0.031	O I	|	|	|	|	0.10
0.917	0.83	0.04	0.036	O I	|	|	|	|	0.12
1.000	0.88	0.05	0.042	O I	|	|	|	|	0.14
1.083	0.87	0.05	0.048	O I	|	|	|	|	0.16
1.167	0.78	0.06	0.053	O I	|	|	|	|	0.18
1.250	0.74	0.07	0.058	O I	|	|	|	|	0.19
1.333	0.73	0.07	0.062	O I	|	|	|	|	0.21
1.417	0.72	0.08	0.067	O I	|	|	|	|	0.22
1.500	0.71	0.08	0.071	O I	|	|	|	|	0.24
1.583	0.71	0.09	0.076	O I	|	|	|	|	0.25
1.667	0.71	0.09	0.080	O I	|	|	|	|	0.27
1.750	0.70	0.09	0.084	O I	|	|	|	|	0.28
1.833	0.73	0.10	0.088	O I	|	|	|	|	0.29
1.917	0.84	0.11	0.093	O I	|	|	|	|	0.31
2.000	0.88	0.11	0.098	O I	|	|	|	|	0.33
2.083	0.90	0.12	0.104	O I	|	|	|	|	0.34
2.167	0.91	0.12	0.109	O I	|	|	|	|	0.36
2.250	0.92	0.13	0.114	O I	|	|	|	|	0.38
2.333	0.93	0.14	0.120	O I	|	|	|	|	0.40
2.417	0.93	0.14	0.125	O I	|	|	|	|	0.42
2.500	0.93	0.15	0.131	O I	|	|	|	|	0.43
2.583	0.97	0.15	0.136	O I	|	|	|	|	0.45
2.667	1.07	0.16	0.142	|O I	|	|	|	|	0.47
2.750	1.12	0.17	0.149	|O I	|	|	|	|	0.49

2.833	1.14	0.18	0.155	O	I				0.52
2.917	1.15	0.18	0.162	O	I				0.54
3.000	1.16	0.19	0.168	O	I				0.56
3.083	1.16	0.20	0.175	O	I				0.58
3.167	1.16	0.21	0.182	O	I				0.60
3.250	1.17	0.21	0.188	O	I				0.63
3.333	1.17	0.22	0.195	O	I				0.65
3.417	1.17	0.23	0.201	O	I				0.67
3.500	1.17	0.23	0.208	O	I				0.69
3.583	1.17	0.24	0.214	O	I				0.71
3.667	1.17	0.25	0.221	O	I				0.73
3.750	1.17	0.26	0.227	O	I				0.75
3.833	1.20	0.26	0.233	O	I				0.78
3.917	1.30	0.27	0.240	O	I				0.80
4.000	1.35	0.28	0.247	O	I				0.82
4.083	1.37	0.29	0.255	O	I				0.85
4.167	1.38	0.30	0.262	O	I				0.87
4.250	1.39	0.30	0.270	O	I				0.90
4.333	1.43	0.31	0.277	O	I				0.92
4.417	1.53	0.32	0.285	O	I				0.95
4.500	1.58	0.33	0.294	O	I				0.98
4.583	1.60	0.34	0.302	O	I				1.00
4.667	1.62	0.34	0.311	O	I				1.02
4.750	1.62	0.35	0.320	O	I				1.03
4.833	1.66	0.35	0.329	O	I				1.05
4.917	1.77	0.35	0.338	O	I				1.06
5.000	1.82	0.36	0.348	O	I				1.08
5.083	1.78	0.36	0.358	O	I				1.09
5.167	1.58	0.37	0.367	O	I				1.11
5.250	1.49	0.37	0.375	O	I				1.12
5.333	1.49	0.37	0.383	O	I				1.14
5.417	1.58	0.38	0.391	O	I				1.15
5.500	1.61	0.38	0.399	O	I				1.16
5.583	1.65	0.38	0.408	O	I				1.18
5.667	1.76	0.39	0.417	O	I				1.19
5.750	1.81	0.39	0.427	O	I				1.21
5.833	1.83	0.39	0.436	O	I				1.22
5.917	1.84	0.40	0.446	O	I				1.24
6.000	1.85	0.40	0.456	O	I				1.26
6.083	1.89	0.41	0.466	O	I				1.27
6.167	2.00	0.41	0.477	O	I				1.29
6.250	2.05	0.41	0.488	O	I				1.31
6.333	2.07	0.42	0.499	O	I				1.33
6.417	2.08	0.42	0.511	O	I				1.35
6.500	2.09	0.43	0.522	O	I				1.37
6.583	2.13	0.43	0.534	O	I				1.39
6.667	2.24	0.44	0.546	O	I				1.41
6.750	2.28	0.44	0.558	O	I				1.43
6.833	2.31	0.45	0.571	O	I				1.45
6.917	2.32	0.45	0.584	O	I				1.47
7.000	2.33	0.46	0.597	O	I				1.49
7.083	2.33	0.46	0.610	O	I				1.51
7.167	2.33	0.47	0.623	O	I				1.53
7.250	2.34	0.47	0.635	O	I				1.56

7.333	2.37	0.48	0.648	O	I			1.58
7.417	2.47	0.48	0.662	O	I			1.60
7.500	2.52	0.49	0.676	O	I			1.62
7.583	2.57	0.49	0.690	O	I			1.65
7.667	2.69	0.50	0.704	O	I			1.67
7.750	2.74	0.51	0.720	O	I			1.70
7.833	2.80	0.51	0.735	O	I			1.72
7.917	2.92	0.52	0.751	O	I			1.75
8.000	2.97	0.53	0.768	O	I			1.78
8.083	3.06	0.53	0.785	O	I			1.80
8.167	3.28	0.54	0.803	O	I			1.83
8.250	3.39	0.55	0.823	O	I			1.87
8.333	3.43	0.56	0.842	O	I			1.90
8.417	3.46	0.56	0.862	O	I			1.93
8.500	3.48	0.57	0.882	O	I			1.97
8.583	3.52	0.58	0.902	O	I			2.00
8.667	3.63	0.59	0.923	O	I			2.04
8.750	3.69	0.59	0.944	O	I			2.09
8.833	3.74	0.60	0.965	O	I			2.14
8.917	3.86	0.61	0.987	O	I			2.19
9.000	3.91	0.62	1.010	O	I			2.24
9.083	4.00	0.63	1.033	O	I			2.29
9.167	4.22	0.63	1.057	O	I			2.34
9.250	4.32	0.64	1.082	O	I			2.40
9.333	4.40	0.65	1.107	O	I			2.45
9.417	4.53	0.66	1.134	O	I			2.51
9.500	4.60	0.67	1.161	O	I			2.57
9.583	4.66	0.68	1.188	O	I			2.63
9.667	4.78	0.69	1.216	O	I			2.69
9.750	4.84	0.70	1.244	O	I			2.75
9.833	4.90	0.71	1.273	O	I			2.82
9.917	5.02	0.72	1.302	O	I			2.88
10.000	5.08	0.73	1.332	O	I			2.95
10.083	4.89	0.74	1.361	O	I			3.01
10.167	4.17	0.75	1.387	O	I			3.07
10.250	3.86	0.76	1.409	O	I			3.12
10.333	3.73	0.76	1.430	O	I			3.17
10.417	3.65	0.77	1.450	O	I			3.21
10.500	3.60	0.78	1.470	O	I			3.25
10.583	3.73	0.78	1.490	O	I			3.30
10.667	4.22	0.79	1.512	O	I			3.35
10.750	4.44	0.80	1.536	O	I			3.40
10.833	4.51	0.80	1.562	O	I			3.46
10.917	4.57	0.81	1.587	O	I			3.51
11.000	4.61	0.82	1.613	O	I			3.57
11.083	4.60	0.83	1.639	O	I			3.63
11.167	4.52	0.84	1.665	O	I			3.69
11.250	4.48	0.84	1.690	O	I			3.74
11.333	4.48	0.85	1.715	O	I			3.80
11.417	4.47	0.86	1.740	O	I			3.85
11.500	4.46	0.87	1.765	O	I			3.91
11.583	4.39	0.87	1.789	O	I			3.96
11.667	4.18	0.88	1.813	O	I			4.00
11.750	4.08	0.88	1.835	O	I			4.02

11.833	4.07	0.88	1.857	| O |	|	|	I |	4.03
11.917	4.15	0.89	1.880	| O |	|	| I |	4.05
12.000	4.19	0.89	1.902	| O |	|	| I |	4.06
12.083	3.76	0.89	1.923	| O |	|	I |	|	4.08
12.167	2.32	0.89	1.938	| O |	I |	|	|	4.09
12.250	1.69	0.89	1.946	| O | I |	|	|	|	4.09
12.333	1.49	0.89	1.951	| O |I |	|	|	|	4.09
12.417	1.48	0.89	1.955	| O |I |	|	|	|	4.10
12.500	1.47	0.89	1.959	| O |I |	|	|	|	4.10
12.583	1.52	0.89	1.963	| O |I |	|	|	|	4.10
12.667	1.77	0.89	1.968	| O | I |	|	|	|	4.11
12.750	1.89	0.89	1.975	| O | I |	|	|	|	4.11
12.833	1.97	0.89	1.982	| O | I |	|	|	|	4.11
12.917	2.16	0.89	1.990	| O | I |	|	|	|	4.12
13.000	2.27	0.90	1.999	| O | I |	|	|	|	4.13
13.083	2.53	0.90	2.009	| O | I |	|	|	|	4.13
13.167	3.21	0.90	2.023	| O | |	I |	|	|	4.14
13.250	3.54	0.90	2.040	| O | |	I |	|	|	4.15
13.333	3.70	0.90	2.059	| O | |	I |	|	|	4.16
13.417	3.81	0.90	2.078	| O | |	I |	|	|	4.18
13.500	3.88	0.90	2.099	| O | |	I |	|	|	4.19
13.583	3.53	0.90	2.118	| O | |	I |	|	|	4.20
13.667	2.19	0.91	2.131	| O | I |	|	|	|	4.21
13.750	1.61	0.91	2.138	| O | I |	|	|	|	4.22
13.833	1.39	0.91	2.142	| O | I |	|	|	|	4.22
13.917	1.27	0.91	2.145	| O I| |	|	|	|	4.22
14.000	1.20	0.91	2.148	| O I| |	|	|	|	4.22
14.083	1.31	0.91	2.150	| O | I |	|	|	|	4.22
14.167	1.79	0.91	2.154	| O | I |	|	|	|	4.23
14.250	2.02	0.91	2.161	| O | I |	|	|	|	4.23
14.333	2.06	0.91	2.169	| O | I |	|	|	|	4.24
14.417	2.02	0.91	2.177	| O | I |	|	|	|	4.24
14.500	2.03	0.91	2.185	| O | I |	|	|	|	4.25
14.583	2.06	0.91	2.192	| O | I |	|	|	|	4.25
14.667	2.09	0.91	2.200	| O | I |	|	|	|	4.26
14.750	2.12	0.91	2.209	| O | I |	|	|	|	4.26
14.833	2.11	0.91	2.217	| O | I |	|	|	|	4.27
14.917	2.01	0.91	2.225	| O | I |	|	|	|	4.27
15.000	1.98	0.91	2.232	| O | I |	|	|	|	4.28
15.083	1.94	0.91	2.239	| O | I |	|	|	|	4.28
15.167	1.82	0.91	2.246	| O | I |	|	|	|	4.29
15.250	1.79	0.91	2.252	| O | I |	|	|	|	4.29
15.333	1.74	0.92	2.258	| O | I |	|	|	|	4.29
15.417	1.63	0.92	2.263	| O | I |	|	|	|	4.30
15.500	1.58	0.92	2.268	| O |I |	|	|	|	4.30
15.583	1.42	0.92	2.272	| O | I |	|	|	|	4.30
15.667	0.92	0.92	2.274	| O | |	|	|	|	4.31
15.750	0.71	0.92	2.273	| IO | |	|	|	|	4.30
15.833	0.63	0.92	2.271	| I O | |	|	|	|	4.30
15.917	0.60	0.92	2.269	| I O | |	|	|	|	4.30
16.000	0.58	0.92	2.267	| I O | |	|	|	|	4.30
16.083	0.63	0.92	2.265	| I O | |	|	|	|	4.30
16.167	0.79	0.92	2.264	| IO | |	|	|	|	4.30
16.250	0.86	0.92	2.263	| O | |	|	|	|	4.30

16.333	0.88	0.92	2.263	O				4.30
16.417	0.90	0.92	2.262	O				4.30
16.500	0.91	0.92	2.262	O				4.30
16.583	0.89	0.92	2.262	O				4.30
16.667	0.79	0.92	2.262	IO				4.30
16.750	0.75	0.92	2.261	IO				4.30
16.833	0.73	0.92	2.259	IO				4.30
16.917	0.72	0.92	2.258	IO				4.29
17.000	0.72	0.92	2.257	IO				4.29
17.083	0.77	0.92	2.256	IO				4.29
17.167	0.98	0.92	2.255	OI				4.29
17.250	1.07	0.92	2.256	OI				4.29
17.333	1.10	0.92	2.257	OI				4.29
17.417	1.13	0.92	2.259	O I				4.30
17.500	1.14	0.92	2.260	O I				4.30
17.583	1.15	0.92	2.262	O I				4.30
17.667	1.16	0.92	2.263	O I				4.30
17.750	1.16	0.92	2.265	O I				4.30
17.833	1.14	0.92	2.267	O I				4.30
17.917	1.03	0.92	2.268	OI				4.30
18.000	0.99	0.92	2.269	OI				4.30
18.083	0.97	0.92	2.269	OI				4.30
18.167	0.96	0.92	2.269	OI				4.30
18.250	0.95	0.92	2.270	O				4.30
18.333	0.94	0.92	2.270	O				4.30
18.417	0.94	0.92	2.270	O				4.30
18.500	0.94	0.92	2.270	O				4.30
18.583	0.90	0.92	2.270	O				4.30
18.667	0.80	0.92	2.270	O				4.30
18.750	0.75	0.92	2.269	IO				4.30
18.833	0.70	0.92	2.267	IO				4.30
18.917	0.59	0.92	2.266	I O				4.30
19.000	0.53	0.92	2.263	I O				4.30
19.083	0.54	0.92	2.261	I O				4.30
19.167	0.63	0.92	2.258	I O				4.29
19.250	0.67	0.92	2.256	IO				4.29
19.333	0.71	0.92	2.255	IO				4.29
19.417	0.82	0.92	2.254	O				4.29
19.500	0.87	0.92	2.253	O				4.29
19.583	0.86	0.91	2.253	O				4.29
19.667	0.77	0.91	2.252	IO				4.29
19.750	0.74	0.91	2.251	IO				4.29
19.833	0.69	0.91	2.250	IO				4.29
19.917	0.58	0.91	2.248	I O				4.29
20.000	0.53	0.91	2.246	I O				4.29
20.083	0.54	0.91	2.243	I O				4.28
20.167	0.63	0.91	2.241	I O				4.28
20.250	0.67	0.91	2.239	IO				4.28
20.333	0.68	0.91	2.237	IO				4.28
20.417	0.69	0.91	2.236	IO				4.28
20.500	0.69	0.91	2.234	IO				4.28
20.583	0.69	0.91	2.233	IO				4.28
20.667	0.70	0.91	2.231	IO				4.28
20.750	0.70	0.91	2.230	IO				4.28

20.833	0.67	0.91	2.228	| IO |	|	|	|	4.28
20.917	0.57	0.91	2.226	| I O |	|	|	|	4.27
21.000	0.52	0.91	2.223	| I O |	|	|	|	4.27
21.083	0.53	0.91	2.221	| I O |	|	|	|	4.27
21.167	0.62	0.91	2.218	| I O |	|	|	|	4.27
21.250	0.66	0.91	2.217	| IO |	|	|	|	4.27
21.333	0.65	0.91	2.215	| IO |	|	|	|	4.27
21.417	0.55	0.91	2.213	| I O |	|	|	|	4.27
21.500	0.51	0.91	2.210	| I O |	|	|	|	4.26
21.583	0.52	0.91	2.207	| I O |	|	|	|	4.26
21.667	0.62	0.91	2.205	| I O |	|	|	|	4.26
21.750	0.66	0.91	2.203	| IO |	|	|	|	4.26
21.833	0.65	0.91	2.201	| IO |	|	|	|	4.26
21.917	0.55	0.91	2.199	| I O |	|	|	|	4.26
22.000	0.51	0.91	2.197	| I O |	|	|	|	4.25
22.083	0.52	0.91	2.194	| I O |	|	|	|	4.25
22.167	0.62	0.91	2.192	| I O |	|	|	|	4.25
22.250	0.66	0.91	2.190	| IO |	|	|	|	4.25
22.333	0.65	0.91	2.188	| IO |	|	|	|	4.25
22.417	0.55	0.91	2.186	| I O |	|	|	|	4.25
22.500	0.51	0.91	2.183	| I O |	|	|	|	4.25
22.583	0.49	0.91	2.180	| I O |	|	|	|	4.24
22.667	0.48	0.91	2.177	| I O |	|	|	|	4.24
22.750	0.48	0.91	2.174	| I O |	|	|	|	4.24
22.833	0.48	0.91	2.171	| I O |	|	|	|	4.24
22.917	0.47	0.91	2.169	| I O |	|	|	|	4.24
23.000	0.47	0.91	2.166	| I O |	|	|	|	4.23
23.083	0.47	0.91	2.162	| I O |	|	|	|	4.23
23.167	0.47	0.91	2.159	| I O |	|	|	|	4.23
23.250	0.47	0.91	2.156	| I O |	|	|	|	4.23
23.333	0.47	0.91	2.153	| I O |	|	|	|	4.23
23.417	0.47	0.91	2.150	| I O |	|	|	|	4.22
23.500	0.47	0.91	2.147	| I O |	|	|	|	4.22
23.583	0.47	0.91	2.144	| I O |	|	|	|	4.22
23.667	0.47	0.91	2.141	| I O |	|	|	|	4.22
23.750	0.47	0.91	2.138	| I O |	|	|	|	4.22
23.833	0.47	0.91	2.135	| I O |	|	|	|	4.21
23.917	0.47	0.91	2.132	| I O |	|	|	|	4.21
24.000	0.47	0.91	2.129	| I O |	|	|	|	4.21
24.083	0.41	0.91	2.126	| I O |	|	|	|	4.21
24.167	0.20	0.90	2.122	|I O |	|	|	|	4.21
24.250	0.10	0.90	2.117	I O |	|	|	|	4.20
24.333	0.07	0.90	2.111	I O |	|	|	|	4.20
24.417	0.04	0.90	2.105	I O |	|	|	|	4.19
24.500	0.03	0.90	2.099	I O |	|	|	|	4.19
24.583	0.02	0.90	2.093	I O |	|	|	|	4.19
24.667	0.01	0.90	2.087	I O |	|	|	|	4.18
24.750	0.01	0.90	2.081	I O |	|	|	|	4.18
24.833	0.00	0.90	2.075	I O |	|	|	|	4.17
24.917	0.00	0.90	2.068	I O |	|	|	|	4.17
25.000	0.00	0.90	2.062	I O |	|	|	|	4.17
25.083	0.00	0.90	2.056	I O |	|	|	|	4.16
25.167	0.00	0.90	2.050	I O |	|	|	|	4.16
25.250	0.00	0.90	2.044	I O |	|	|	|	4.15

25.333	0.00	0.90	2.038	I	O	|	|	|	|	4.15
25.417	0.00	0.90	2.031	I	O	|	|	|	|	4.15
25.500	0.00	0.90	2.025	I	O	|	|	|	|	4.14
25.583	0.00	0.90	2.019	I	O	|	|	|	|	4.14
25.667	0.00	0.90	2.013	I	O	|	|	|	|	4.13
25.750	0.00	0.90	2.007	I	O	|	|	|	|	4.13
25.833	0.00	0.90	2.000	I	O	|	|	|	|	4.13
25.917	0.00	0.89	1.994	I	O	|	|	|	|	4.12
26.000	0.00	0.89	1.988	I	O	|	|	|	|	4.12
26.083	0.00	0.89	1.982	I	O	|	|	|	|	4.11
26.167	0.00	0.89	1.976	I	O	|	|	|	|	4.11
26.250	0.00	0.89	1.970	I	O	|	|	|	|	4.11
26.333	0.00	0.89	1.964	I	O	|	|	|	|	4.10
26.417	0.00	0.89	1.957	I	O	|	|	|	|	4.10
26.500	0.00	0.89	1.951	I	O	|	|	|	|	4.09
26.583	0.00	0.89	1.945	I	O	|	|	|	|	4.09
26.667	0.00	0.89	1.939	I	O	|	|	|	|	4.09
26.750	0.00	0.89	1.933	I	O	|	|	|	|	4.08
26.833	0.00	0.89	1.927	I	O	|	|	|	|	4.08
26.917	0.00	0.89	1.921	I	O	|	|	|	|	4.07
27.000	0.00	0.89	1.914	I	O	|	|	|	|	4.07
27.083	0.00	0.89	1.908	I	O	|	|	|	|	4.07
27.167	0.00	0.89	1.902	I	O	|	|	|	|	4.06
27.250	0.00	0.89	1.896	I	O	|	|	|	|	4.06
27.333	0.00	0.89	1.890	I	O	|	|	|	|	4.05
27.417	0.00	0.89	1.884	I	O	|	|	|	|	4.05
27.500	0.00	0.89	1.878	I	O	|	|	|	|	4.05
27.583	0.00	0.89	1.872	I	O	|	|	|	|	4.04
27.667	0.00	0.88	1.866	I	O	|	|	|	|	4.04
27.750	0.00	0.88	1.860	I	O	|	|	|	|	4.03
27.833	0.00	0.88	1.853	I	O	|	|	|	|	4.03
27.917	0.00	0.88	1.847	I	O	|	|	|	|	4.03
28.000	0.00	0.88	1.841	I	O	|	|	|	|	4.02
28.083	0.00	0.88	1.835	I	O	|	|	|	|	4.02
28.167	0.00	0.88	1.829	I	O	|	|	|	|	4.01
28.250	0.00	0.88	1.823	I	O	|	|	|	|	4.01
28.333	0.00	0.88	1.817	I	O	|	|	|	|	4.01
28.417	0.00	0.88	1.811	I	O	|	|	|	|	4.00
28.500	0.00	0.88	1.805	I	O	|	|	|	|	4.00
28.583	0.00	0.88	1.799	I	O	|	|	|	|	3.98
28.667	0.00	0.88	1.793	I	O	|	|	|	|	3.97
28.750	0.00	0.87	1.787	I	O	|	|	|	|	3.96
28.833	0.00	0.87	1.781	I	O	|	|	|	|	3.94
28.917	0.00	0.87	1.775	I	O	|	|	|	|	3.93
29.000	0.00	0.87	1.769	I	O	|	|	|	|	3.92
29.083	0.00	0.87	1.763	I	O	|	|	|	|	3.90
29.167	0.00	0.86	1.757	I	O	|	|	|	|	3.89
29.250	0.00	0.86	1.751	I	O	|	|	|	|	3.88
29.333	0.00	0.86	1.745	I	O	|	|	|	|	3.86
29.417	0.00	0.86	1.739	I	O	|	|	|	|	3.85
29.500	0.00	0.86	1.733	I	O	|	|	|	|	3.84
29.583	0.00	0.86	1.727	I	O	|	|	|	|	3.82
29.667	0.00	0.85	1.721	I	O	|	|	|	|	3.81
29.750	0.00	0.85	1.715	I	O	|	|	|	|	3.80

29.833	0.00	0.85	1.710	I	O	|	|	|	|	3.78
29.917	0.00	0.85	1.704	I	O	|	|	|	|	3.77
30.000	0.00	0.85	1.698	I	O	|	|	|	|	3.76
30.083	0.00	0.84	1.692	I	O	|	|	|	|	3.75
30.167	0.00	0.84	1.686	I	O	|	|	|	|	3.73
30.250	0.00	0.84	1.681	I	O	|	|	|	|	3.72
30.333	0.00	0.84	1.675	I	O	|	|	|	|	3.71
30.417	0.00	0.84	1.669	I	O	|	|	|	|	3.69
30.500	0.00	0.84	1.663	I	O	|	|	|	|	3.68
30.583	0.00	0.83	1.657	I	O	|	|	|	|	3.67
30.667	0.00	0.83	1.652	I	O	|	|	|	|	3.66
30.750	0.00	0.83	1.646	I	O	|	|	|	|	3.64
30.833	0.00	0.83	1.640	I	O	|	|	|	|	3.63
30.917	0.00	0.83	1.635	I	O	|	|	|	|	3.62
31.000	0.00	0.82	1.629	I	O	|	|	|	|	3.61
31.083	0.00	0.82	1.623	I	O	|	|	|	|	3.59
31.167	0.00	0.82	1.618	I	O	|	|	|	|	3.58
31.250	0.00	0.82	1.612	I	O	|	|	|	|	3.57
31.333	0.00	0.82	1.606	I	O	|	|	|	|	3.56
31.417	0.00	0.82	1.601	I	O	|	|	|	|	3.54
31.500	0.00	0.81	1.595	I	O	|	|	|	|	3.53
31.583	0.00	0.81	1.589	I	O	|	|	|	|	3.52
31.667	0.00	0.81	1.584	I	O	|	|	|	|	3.51
31.750	0.00	0.81	1.578	I	O	|	|	|	|	3.49
31.833	0.00	0.81	1.573	I	O	|	|	|	|	3.48
31.917	0.00	0.81	1.567	I	O	|	|	|	|	3.47
32.000	0.00	0.80	1.562	I	O	|	|	|	|	3.46
32.083	0.00	0.80	1.556	I	O	|	|	|	|	3.44
32.167	0.00	0.80	1.551	I	O	|	|	|	|	3.43
32.250	0.00	0.80	1.545	I	O	|	|	|	|	3.42
32.333	0.00	0.80	1.540	I	O	|	|	|	|	3.41
32.417	0.00	0.80	1.534	I	O	|	|	|	|	3.40
32.500	0.00	0.79	1.529	I	O	|	|	|	|	3.38
32.583	0.00	0.79	1.523	I	O	|	|	|	|	3.37
32.667	0.00	0.79	1.518	I	O	|	|	|	|	3.36
32.750	0.00	0.79	1.512	I	O	|	|	|	|	3.35
32.833	0.00	0.79	1.507	I	O	|	|	|	|	3.34
32.917	0.00	0.79	1.501	I	O	|	|	|	|	3.32
33.000	0.00	0.78	1.496	I	O	|	|	|	|	3.31
33.083	0.00	0.78	1.491	I	O	|	|	|	|	3.30
33.167	0.00	0.78	1.485	I	O	|	|	|	|	3.29
33.250	0.00	0.78	1.480	I	O	|	|	|	|	3.28
33.333	0.00	0.78	1.474	I	O	|	|	|	|	3.26
33.417	0.00	0.78	1.469	I	O	|	|	|	|	3.25
33.500	0.00	0.77	1.464	I	O	|	|	|	|	3.24
33.583	0.00	0.77	1.458	I	O	|	|	|	|	3.23
33.667	0.00	0.77	1.453	I	O	|	|	|	|	3.22
33.750	0.00	0.77	1.448	I	O	|	|	|	|	3.21
33.833	0.00	0.77	1.443	I	O	|	|	|	|	3.19
33.917	0.00	0.77	1.437	I	O	|	|	|	|	3.18
34.000	0.00	0.76	1.432	I	O	|	|	|	|	3.17
34.083	0.00	0.76	1.427	I	O	|	|	|	|	3.16
34.167	0.00	0.76	1.422	I	O	|	|	|	|	3.15
34.250	0.00	0.76	1.416	I	O	|	|	|	|	3.14

34.333	0.00	0.76	1.411	I	O	|	|	|	|	3.12
34.417	0.00	0.76	1.406	I	O	|	|	|	|	3.11
34.500	0.00	0.75	1.401	I	O	|	|	|	|	3.10
34.583	0.00	0.75	1.395	I	O	|	|	|	|	3.09
34.667	0.00	0.75	1.390	I	O	|	|	|	|	3.08
34.750	0.00	0.75	1.385	I	O	|	|	|	|	3.07
34.833	0.00	0.75	1.380	I	O	|	|	|	|	3.06
34.917	0.00	0.75	1.375	I	O	|	|	|	|	3.04
35.000	0.00	0.74	1.370	I	O	|	|	|	|	3.03
35.083	0.00	0.74	1.365	I	O	|	|	|	|	3.02
35.167	0.00	0.74	1.359	I	O	|	|	|	|	3.01
35.250	0.00	0.74	1.354	I	O	|	|	|	|	3.00
35.333	0.00	0.74	1.349	I	O	|	|	|	|	2.99
35.417	0.00	0.74	1.344	I	O	|	|	|	|	2.98
35.500	0.00	0.73	1.339	I	O	|	|	|	|	2.96
35.583	0.00	0.73	1.334	I	O	|	|	|	|	2.95
35.667	0.00	0.73	1.329	I	O	|	|	|	|	2.94
35.750	0.00	0.73	1.324	I	O	|	|	|	|	2.93
35.833	0.00	0.73	1.319	I	O	|	|	|	|	2.92
35.917	0.00	0.73	1.314	I	O	|	|	|	|	2.91
36.000	0.00	0.72	1.309	I	O	|	|	|	|	2.90
36.083	0.00	0.72	1.304	I	O	|	|	|	|	2.89
36.167	0.00	0.72	1.299	I	O	|	|	|	|	2.88
36.250	0.00	0.72	1.294	I	O	|	|	|	|	2.87
36.333	0.00	0.72	1.289	I	O	|	|	|	|	2.85
36.417	0.00	0.71	1.284	I	O	|	|	|	|	2.84
36.500	0.00	0.71	1.279	I	O	|	|	|	|	2.83
36.583	0.00	0.71	1.274	I	O	|	|	|	|	2.82
36.667	0.00	0.71	1.270	I	O	|	|	|	|	2.81
36.750	0.00	0.71	1.265	I	O	|	|	|	|	2.80
36.833	0.00	0.71	1.260	I	O	|	|	|	|	2.79
36.917	0.00	0.70	1.255	I	O	|	|	|	|	2.78
37.000	0.00	0.70	1.250	I	O	|	|	|	|	2.77
37.083	0.00	0.70	1.245	I	O	|	|	|	|	2.76
37.167	0.00	0.70	1.240	I	O	|	|	|	|	2.75
37.250	0.00	0.70	1.236	I	O	|	|	|	|	2.74
37.333	0.00	0.70	1.231	I	O	|	|	|	|	2.73
37.417	0.00	0.69	1.226	I	O	|	|	|	|	2.71
37.500	0.00	0.69	1.221	I	O	|	|	|	|	2.70
37.583	0.00	0.69	1.216	I	O	|	|	|	|	2.69
37.667	0.00	0.69	1.212	I	O	|	|	|	|	2.68
37.750	0.00	0.69	1.207	I	O	|	|	|	|	2.67
37.833	0.00	0.69	1.202	I	O	|	|	|	|	2.66
37.917	0.00	0.68	1.198	I	O	|	|	|	|	2.65
38.000	0.00	0.68	1.193	I	O	|	|	|	|	2.64
38.083	0.00	0.68	1.188	I	O	|	|	|	|	2.63
38.167	0.00	0.68	1.183	I	O	|	|	|	|	2.62
38.250	0.00	0.68	1.179	I	O	|	|	|	|	2.61
38.333	0.00	0.68	1.174	I	O	|	|	|	|	2.60
38.417	0.00	0.67	1.169	I	O	|	|	|	|	2.59
38.500	0.00	0.67	1.165	I	O	|	|	|	|	2.58
38.583	0.00	0.67	1.160	I	O	|	|	|	|	2.57
38.667	0.00	0.67	1.156	I	O	|	|	|	|	2.56
38.750	0.00	0.67	1.151	I	O	|	|	|	|	2.55

38.833	0.00	0.67	1.146	I	O	|	|	|	|	2.54
38.917	0.00	0.66	1.142	I	O	|	|	|	|	2.53
39.000	0.00	0.66	1.137	I	O	|	|	|	|	2.52
39.083	0.00	0.66	1.133	I	O	|	|	|	|	2.51
39.167	0.00	0.66	1.128	I	O	|	|	|	|	2.50
39.250	0.00	0.66	1.124	I	O	|	|	|	|	2.49
39.333	0.00	0.66	1.119	I	O	|	|	|	|	2.48
39.417	0.00	0.65	1.115	I	O	|	|	|	|	2.47
39.500	0.00	0.65	1.110	I	O	|	|	|	|	2.46
39.583	0.00	0.65	1.106	I	O	|	|	|	|	2.45
39.667	0.00	0.65	1.101	I	O	|	|	|	|	2.44
39.750	0.00	0.65	1.097	I	O	|	|	|	|	2.43
39.833	0.00	0.65	1.092	I	O	|	|	|	|	2.42
39.917	0.00	0.65	1.088	I	O	|	|	|	|	2.41
40.000	0.00	0.64	1.083	I	O	|	|	|	|	2.40
40.083	0.00	0.64	1.079	I	O	|	|	|	|	2.39
40.167	0.00	0.64	1.074	I	O	|	|	|	|	2.38
40.250	0.00	0.64	1.070	I	O	|	|	|	|	2.37
40.333	0.00	0.64	1.066	I	O	|	|	|	|	2.36
40.417	0.00	0.64	1.061	I	O	|	|	|	|	2.35
40.500	0.00	0.63	1.057	I	O	|	|	|	|	2.34
40.583	0.00	0.63	1.052	I	O	|	|	|	|	2.33
40.667	0.00	0.63	1.048	I	O	|	|	|	|	2.32
40.750	0.00	0.63	1.044	I	O	|	|	|	|	2.31
40.833	0.00	0.63	1.039	I	O	|	|	|	|	2.30
40.917	0.00	0.63	1.035	I	O	|	|	|	|	2.29
41.000	0.00	0.63	1.031	I	O	|	|	|	|	2.28
41.083	0.00	0.62	1.027	I	O	|	|	|	|	2.27
41.167	0.00	0.62	1.022	I	O	|	|	|	|	2.26
41.250	0.00	0.62	1.018	I	O	|	|	|	|	2.25
41.333	0.00	0.62	1.014	I	O	|	|	|	|	2.24
41.417	0.00	0.62	1.009	I	O	|	|	|	|	2.24
41.500	0.00	0.62	1.005	I	O	|	|	|	|	2.23
41.583	0.00	0.61	1.001	I	O	|	|	|	|	2.22
41.667	0.00	0.61	0.997	I	O	|	|	|	|	2.21
41.750	0.00	0.61	0.992	I	O	|	|	|	|	2.20
41.833	0.00	0.61	0.988	I	O	|	|	|	|	2.19
41.917	0.00	0.61	0.984	I	O	|	|	|	|	2.18
42.000	0.00	0.61	0.980	I	O	|	|	|	|	2.17
42.083	0.00	0.61	0.976	I	O	|	|	|	|	2.16
42.167	0.00	0.60	0.972	I	O	|	|	|	|	2.15
42.250	0.00	0.60	0.967	I	O	|	|	|	|	2.14
42.333	0.00	0.60	0.963	I	O	|	|	|	|	2.13
42.417	0.00	0.60	0.959	I	O	|	|	|	|	2.12
42.500	0.00	0.60	0.955	I	O	|	|	|	|	2.11
42.583	0.00	0.60	0.951	I	O	|	|	|	|	2.11
42.667	0.00	0.60	0.947	I	O	|	|	|	|	2.10
42.750	0.00	0.59	0.943	I	O	|	|	|	|	2.09
42.833	0.00	0.59	0.939	I	O	|	|	|	|	2.08
42.917	0.00	0.59	0.934	I	O	|	|	|	|	2.07
43.000	0.00	0.59	0.930	I	O	|	|	|	|	2.06
43.083	0.00	0.59	0.926	I	O	|	|	|	|	2.05
43.167	0.00	0.59	0.922	I	O	|	|	|	|	2.04
43.250	0.00	0.59	0.918	I	O	|	|	|	|	2.03

43.333	0.00	0.58	0.914	I	O	|	|	|	|	2.02
43.417	0.00	0.58	0.910	I	O	|	|	|	|	2.02
43.500	0.00	0.58	0.906	I	O	|	|	|	|	2.01
43.583	0.00	0.58	0.902	I	O	|	|	|	|	2.00
43.667	0.00	0.58	0.898	I	O	|	|	|	|	1.99
43.750	0.00	0.58	0.894	I	O	|	|	|	|	1.99
43.833	0.00	0.57	0.890	I	O	|	|	|	|	1.98
43.917	0.00	0.57	0.886	I	O	|	|	|	|	1.97
44.000	0.00	0.57	0.882	I	O	|	|	|	|	1.97
44.083	0.00	0.57	0.878	I	O	|	|	|	|	1.96
44.167	0.00	0.57	0.875	I	O	|	|	|	|	1.95
44.250	0.00	0.57	0.871	I	O	|	|	|	|	1.95
44.333	0.00	0.57	0.867	I	O	|	|	|	|	1.94
44.417	0.00	0.56	0.863	I	O	|	|	|	|	1.93
44.500	0.00	0.56	0.859	I	O	|	|	|	|	1.93
44.583	0.00	0.56	0.855	I	O	|	|	|	|	1.92
44.667	0.00	0.56	0.851	I	O	|	|	|	|	1.91
44.750	0.00	0.56	0.847	I	O	|	|	|	|	1.91
44.833	0.00	0.56	0.844	I	O	|	|	|	|	1.90
44.917	0.00	0.55	0.840	I	O	|	|	|	|	1.89
45.000	0.00	0.55	0.836	I	O	|	|	|	|	1.89
45.083	0.00	0.55	0.832	I	O	|	|	|	|	1.88
45.167	0.00	0.55	0.828	I	O	|	|	|	|	1.88
45.250	0.00	0.55	0.825	I	O	|	|	|	|	1.87
45.333	0.00	0.55	0.821	I	O	|	|	|	|	1.86
45.417	0.00	0.55	0.817	I	O	|	|	|	|	1.86
45.500	0.00	0.54	0.813	I	O	|	|	|	|	1.85
45.583	0.00	0.54	0.810	I	O	|	|	|	|	1.84
45.667	0.00	0.54	0.806	I	O	|	|	|	|	1.84
45.750	0.00	0.54	0.802	I	O	|	|	|	|	1.83
45.833	0.00	0.54	0.798	I	O	|	|	|	|	1.83
45.917	0.00	0.54	0.795	I	O	|	|	|	|	1.82
46.000	0.00	0.54	0.791	I	O	|	|	|	|	1.81
46.083	0.00	0.53	0.787	I	O	|	|	|	|	1.81
46.167	0.00	0.53	0.784	I	O	|	|	|	|	1.80
46.250	0.00	0.53	0.780	I	O	|	|	|	|	1.80
46.333	0.00	0.53	0.776	I	O	|	|	|	|	1.79
46.417	0.00	0.53	0.773	I	O	|	|	|	|	1.78
46.500	0.00	0.53	0.769	I	O	|	|	|	|	1.78
46.583	0.00	0.53	0.765	I	O	|	|	|	|	1.77
46.667	0.00	0.52	0.762	I	O	|	|	|	|	1.77
46.750	0.00	0.52	0.758	I	O	|	|	|	|	1.76
46.833	0.00	0.52	0.755	I	O	|	|	|	|	1.75
46.917	0.00	0.52	0.751	I	O	|	|	|	|	1.75
47.000	0.00	0.52	0.747	I	O	|	|	|	|	1.74
47.083	0.00	0.52	0.744	I	O	|	|	|	|	1.74
47.167	0.00	0.52	0.740	I	O	|	|	|	|	1.73
47.250	0.00	0.51	0.737	I	O	|	|	|	|	1.72
47.333	0.00	0.51	0.733	I	O	|	|	|	|	1.72
47.417	0.00	0.51	0.730	I	O	|	|	|	|	1.71
47.500	0.00	0.51	0.726	I	O	|	|	|	|	1.71
47.583	0.00	0.51	0.723	I	O	|	|	|	|	1.70
47.667	0.00	0.51	0.719	I	O	|	|	|	|	1.69
47.750	0.00	0.51	0.716	I	O	|	|	|	|	1.69

47.833	0.00	0.50	0.712	I	O	|	|	|	1.68
47.917	0.00	0.50	0.709	I	O	|	|	|	1.68
48.000	0.00	0.50	0.705	I	O	|	|	|	1.67

**********HYDROGRAPH DATA**********

Number of intervals = 1467
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.917 (CFS)
Total volume = 3.451 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 10/29/19

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2 YEAR FLOOD ROUTING
MJPA 304163
BUILDING 1
4163FR2.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP2242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 7.363 (CFS)
Total volume = 4.244 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.322	0.330	0.321	0.323
2.000	0.967	0.580	0.965	0.969
3.000	1.450	0.740	1.447	1.453
4.000	1.934	0.880	1.931	1.937
4.500	2.753	0.940	2.750	2.756
5.000	3.600	1.600	3.594	3.606
6.000	5.375	2.310	5.367	5.383
7.000	7.263	17.920	7.201	7.325
8.000	9.265	24.580	9.180	9.350
9.000	11.383	29.740	11.281	11.485
10.000	13.621	32.460	13.509	13.733

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.8	3.68	5.52	7.36 (Ft.)	Depth
0.083	0.08	0.00	0.000	O	|	|	|	|	0.00
0.167	0.37	0.00	0.002	OI	|	|	|	|	0.01
0.250	0.50	0.00	0.005	O I	|	|	|	|	0.01
0.333	0.59	0.01	0.008	O I	|	|	|	|	0.03
0.417	0.76	0.01	0.013	O I	|	|	|	|	0.04
0.500	0.85	0.02	0.018	O I	|	|	|	|	0.06
0.583	0.89	0.02	0.024	O I	|	|	|	|	0.08
0.667	0.91	0.03	0.030	O I	|	|	|	|	0.09
0.750	0.93	0.04	0.036	O I	|	|	|	|	0.11
0.833	0.99	0.04	0.043	O I	|	|	|	|	0.13
0.917	1.13	0.05	0.050	O I	|	|	|	|	0.15
1.000	1.20	0.06	0.057	O I	|	|	|	|	0.18
1.083	1.19	0.07	0.065	O I	|	|	|	|	0.20
1.167	1.06	0.07	0.072	O I	|	|	|	|	0.22
1.250	1.01	0.08	0.079	O I	|	|	|	|	0.25
1.333	0.99	0.09	0.085	O I	|	|	|	|	0.26
1.417	0.98	0.09	0.091	O I	|	|	|	|	0.28
1.500	0.97	0.10	0.097	O I	|	|	|	|	0.30
1.583	0.97	0.11	0.103	O I	|	|	|	|	0.32
1.667	0.96	0.11	0.109	O I	|	|	|	|	0.34
1.750	0.96	0.12	0.115	O I	|	|	|	|	0.36
1.833	1.00	0.12	0.121	O I	|	|	|	|	0.38
1.917	1.14	0.13	0.128	O I	|	|	|	|	0.40
2.000	1.20	0.14	0.135	O I	|	|	|	|	0.42
2.083	1.23	0.15	0.142	O I	|	|	|	|	0.44
2.167	1.25	0.15	0.150	O I	|	|	|	|	0.46
2.250	1.26	0.16	0.157	O I	|	|	|	|	0.49
2.333	1.26	0.17	0.165	O I	|	|	|	|	0.51
2.417	1.27	0.18	0.172	O I	|	|	|	|	0.53
2.500	1.27	0.18	0.180	O I	|	|	|	|	0.56
2.583	1.32	0.19	0.187	O I	|	|	|	|	0.58
2.667	1.46	0.20	0.196	O I	|	|	|	|	0.61
2.750	1.52	0.21	0.204	O I	|	|	|	|	0.63
2.833	1.55	0.22	0.213	O I	|	|	|	|	0.66

2.917	1.56	0.23	0.223	O	I	|	|	|	0.69
3.000	1.57	0.24	0.232	|O	I	|	|	|	0.72
3.083	1.58	0.25	0.241	|O	I	|	|	|	0.75
3.167	1.59	0.26	0.250	|O	I	|	|	|	0.78
3.250	1.59	0.27	0.259	|O	I	|	|	|	0.81
3.333	1.59	0.28	0.268	|O	I	|	|	|	0.83
3.417	1.59	0.28	0.278	|O	I	|	|	|	0.86
3.500	1.59	0.29	0.286	|O	I	|	|	|	0.89
3.583	1.59	0.30	0.295	|O	I	|	|	|	0.92
3.667	1.59	0.31	0.304	|O	I	|	|	|	0.94
3.750	1.59	0.32	0.313	|O	I	|	|	|	0.97
3.833	1.64	0.33	0.322	|O	I	|	|	|	1.00
3.917	1.78	0.33	0.331	|O	I	|	|	|	1.01
4.000	1.84	0.34	0.342	|O	I	|	|	|	1.03
4.083	1.87	0.34	0.352	|O	I	|	|	|	1.05
4.167	1.88	0.35	0.363	|O	I	|	|	|	1.06
4.250	1.89	0.35	0.373	|O	I	|	|	|	1.08
4.333	1.94	0.35	0.384	|O	I	|	|	|	1.10
4.417	2.09	0.36	0.395	|O	|I	|	|	|	1.11
4.500	2.16	0.36	0.407	|O	|I	|	|	|	1.13
4.583	2.19	0.37	0.420	|O	|I	|	|	|	1.15
4.667	2.20	0.37	0.432	|O	|I	|	|	|	1.17
4.750	2.21	0.38	0.445	|O	|I	|	|	|	1.19
4.833	2.26	0.38	0.458	|O	|I	|	|	|	1.21
4.917	2.41	0.39	0.471	|O	| I	|	|	|	1.23
5.000	2.47	0.39	0.485	|O	| I	|	|	|	1.25
5.083	2.42	0.40	0.500	|O	| I	|	|	|	1.28
5.167	2.15	0.40	0.512	|O	|I	|	|	|	1.30
5.250	2.03	0.41	0.524	|O	I	|	|	|	1.31
5.333	2.03	0.41	0.535	|O	I	|	|	|	1.33
5.417	2.15	0.42	0.547	|O	|I	|	|	|	1.35
5.500	2.19	0.42	0.559	|O	|I	|	|	|	1.37
5.583	2.25	0.43	0.571	|O	|I	|	|	|	1.39
5.667	2.40	0.43	0.584	|O	| I	|	|	|	1.41
5.750	2.47	0.44	0.598	|O	| I	|	|	|	1.43
5.833	2.49	0.44	0.612	|O	| I	|	|	|	1.45
5.917	2.51	0.45	0.626	|O	| I	|	|	|	1.47
6.000	2.53	0.45	0.641	|O	| I	|	|	|	1.49
6.083	2.58	0.46	0.655	|O	| I	|	|	|	1.52
6.167	2.73	0.46	0.670	| O	| I	|	|	|	1.54
6.250	2.79	0.47	0.686	| O	| I	|	|	|	1.56
6.333	2.82	0.48	0.702	| O	| I	|	|	|	1.59
6.417	2.84	0.48	0.718	| O	| I	|	|	|	1.61
6.500	2.85	0.49	0.734	| O	| I	|	|	|	1.64
6.583	2.90	0.50	0.751	| O	| I	|	|	|	1.66
6.667	3.04	0.50	0.768	| O	| I	|	|	|	1.69
6.750	3.11	0.51	0.785	| O	| I	|	|	|	1.72
6.833	3.14	0.52	0.803	| O	| I	|	|	|	1.75
6.917	3.16	0.52	0.822	| O	| I	|	|	|	1.77
7.000	3.17	0.53	0.840	| O	| I	|	|	|	1.80
7.083	3.17	0.54	0.858	| O	| I	|	|	|	1.83
7.167	3.18	0.54	0.876	| O	| I	|	|	|	1.86
7.250	3.18	0.55	0.894	| O	| I	|	|	|	1.89
7.333	3.23	0.56	0.912	| O	| I	|	|	|	1.92

7.417	3.37	0.57	0.931	O		I		1.94
7.500	3.43	0.57	0.951	O		I		1.97
7.583	3.50	0.58	0.971	O		I		2.01
7.667	3.66	0.59	0.991	O		I		2.05
7.750	3.73	0.60	1.013	O		I		2.09
7.833	3.81	0.60	1.035	O		I		2.14
7.917	3.97	0.61	1.057	O		I		2.19
8.000	4.05	0.62	1.081	O		I		2.24
8.083	4.17	0.63	1.105	O		I		2.28
8.167	4.47	0.63	1.130	O		I		2.34
8.250	4.61	0.64	1.157	O		I		2.39
8.333	4.68	0.65	1.184	O		I		2.45
8.417	4.71	0.66	1.212	O		I		2.51
8.500	4.74	0.67	1.240	O		I		2.57
8.583	4.80	0.68	1.268	O		I		2.62
8.667	4.95	0.69	1.297	O		I		2.68
8.750	5.02	0.70	1.327	O		I		2.74
8.833	5.10	0.71	1.357	O		I		2.81
8.917	5.25	0.72	1.388	O		I		2.87
9.000	5.33	0.73	1.419	O		I		2.94
9.083	4.64	0.74	1.448	O		I		3.00
9.167	2.26	0.74	1.467	O	I			3.03
9.250	1.22	0.75	1.474	O I				3.05
9.333	0.86	0.75	1.476	O				3.05
9.417	0.80	0.75	1.476	O				3.05
9.500	0.75	0.75	1.477	O				3.05
9.583	0.75	0.75	1.477	O				3.05
9.667	0.89	0.75	1.477	O				3.06
9.750	0.96	0.75	1.478	OI				3.06
9.833	1.02	0.75	1.480	OI				3.06
9.917	1.25	0.75	1.482	O I				3.07
10.000	1.38	0.75	1.486	O I				3.08
10.083	1.88	0.75	1.492	O	I			3.09
10.167	3.35	0.76	1.505	O		I		3.11
10.250	4.02	0.76	1.525	O		I		3.16
10.333	4.30	0.77	1.549	O		I		3.20
10.417	4.47	0.78	1.574	O		I		3.26
10.500	4.58	0.78	1.600	O		I		3.31
10.583	4.16	0.79	1.624	O		I		3.36
10.667	2.54	0.80	1.642	O	I			3.40
10.750	1.84	0.80	1.651	O	I			3.42
10.833	1.59	0.80	1.658	O I				3.43
10.917	1.43	0.80	1.663	O I				3.44
11.000	1.35	0.80	1.667	O I				3.45
11.083	1.24	0.80	1.670	O I				3.45
11.167	1.04	0.80	1.672	OI				3.46
11.250	0.96	0.80	1.674	OI				3.46
11.333	0.91	0.80	1.675	O				3.46
11.417	0.92	0.81	1.675	OI				3.47
11.500	0.94	0.81	1.676	OI				3.47
11.583	0.86	0.81	1.677	O				3.47
11.667	0.55	0.81	1.676	IO				3.47
11.750	0.42	0.80	1.674	I O				3.46
11.833	0.43	0.80	1.671	I O				3.46

11.917	0.60	0.80	1.669	IO				3.45
12.000	0.68	0.80	1.668	IO				3.45
12.083	1.09	0.80	1.669	OI				3.45
12.167	2.34	0.81	1.675	O	I			3.47
12.250	2.92	0.81	1.688	O	I			3.49
12.333	3.22	0.81	1.703	O	I			3.52
12.417	3.57	0.82	1.721	O	I			3.56
12.500	3.76	0.82	1.741	O	I			3.60
12.583	3.99	0.83	1.762	O	I			3.64
12.667	4.43	0.84	1.785	O	I			3.69
12.750	4.66	0.84	1.810	O	I			3.74
12.833	4.84	0.85	1.837	O	I			3.80
12.917	5.09	0.86	1.866	O	I			3.86
13.000	5.23	0.87	1.895	O	I			3.92
13.083	5.57	0.88	1.926	O	I			3.98
13.167	6.49	0.88	1.962	O	I			4.02
13.250	6.93	0.88	2.002	O	I			4.04
13.333	7.14	0.89	2.044	O	I			4.07
13.417	7.27	0.89	2.088	O	I			4.09
13.500	7.36	0.89	2.132	O	I			4.12
13.583	6.87	0.90	2.175	O	I			4.15
13.667	5.03	0.90	2.210	O	I			4.17
13.750	4.23	0.90	2.235	O	I			4.18
13.833	3.93	0.90	2.257	O	I			4.20
13.917	3.75	0.91	2.277	O	I			4.21
14.000	3.64	0.91	2.297	O	I			4.22
14.083	3.78	0.91	2.316	O	I			4.23
14.167	4.43	0.91	2.338	O	I			4.25
14.250	4.73	0.91	2.363	O	I			4.26
14.333	4.78	0.91	2.390	O	I			4.28
14.417	4.71	0.92	2.416	O	I			4.29
14.500	4.71	0.92	2.442	O	I			4.31
14.583	4.74	0.92	2.468	O	I			4.33
14.667	4.77	0.92	2.495	O	I			4.34
14.750	4.80	0.92	2.521	O	I			4.36
14.833	4.79	0.92	2.548	O	I			4.37
14.917	4.64	0.93	2.574	O	I			4.39
15.000	4.58	0.93	2.600	O	I			4.41
15.083	4.52	0.93	2.624	O	I			4.42
15.167	4.36	0.93	2.649	O	I			4.44
15.250	4.29	0.93	2.672	O	I			4.45
15.333	4.23	0.94	2.695	O	I			4.46
15.417	4.06	0.94	2.717	O	I			4.48
15.500	3.99	0.94	2.738	O	I			4.49
15.583	3.76	0.94	2.758	O	I			4.50
15.667	3.07	0.96	2.775	O	I			4.51
15.750	2.77	0.97	2.789	O	I			4.52
15.833	2.66	0.98	2.801	O	I			4.53
15.917	2.60	0.99	2.812	O	I			4.53
16.000	2.57	0.99	2.823	O	I			4.54
16.083	2.39	1.00	2.833	O	I			4.55
16.167	1.82	1.01	2.841	O	I			4.55
16.250	1.56	1.01	2.846	O	I			4.55
16.333	1.44	1.01	2.849	O	I			4.56

16.417	1.38	1.02	2.852	O I				4.56
16.500	1.35	1.02	2.854	OI				4.56
16.583	1.28	1.02	2.856	OI				4.56
16.667	1.12	1.02	2.857	O				4.56
16.750	1.04	1.02	2.858	O				4.56
16.833	1.00	1.02	2.858	O				4.56
16.917	0.98	1.02	2.858	O				4.56
17.000	0.98	1.02	2.857	O				4.56
17.083	1.05	1.02	2.857	O				4.56
17.167	1.33	1.02	2.858	OI				4.56
17.250	1.45	1.02	2.861	O I				4.56
17.333	1.50	1.03	2.864	O I				4.57
17.417	1.53	1.03	2.867	O I				4.57
17.500	1.55	1.03	2.871	O I				4.57
17.583	1.57	1.03	2.875	O I				4.57
17.667	1.58	1.04	2.878	O I				4.57
17.750	1.59	1.04	2.882	O I				4.58
17.833	1.55	1.04	2.886	O I				4.58
17.917	1.41	1.05	2.889	O I				4.58
18.000	1.35	1.05	2.891	OI				4.58
18.083	1.32	1.05	2.893	OI				4.58
18.167	1.30	1.05	2.895	OI				4.58
18.250	1.29	1.05	2.896	OI				4.58
18.333	1.29	1.05	2.898	OI				4.59
18.417	1.28	1.05	2.900	OI				4.59
18.500	1.28	1.06	2.901	OI				4.59
18.583	1.23	1.06	2.903	OI				4.59
18.667	1.09	1.06	2.903	O				4.59
18.750	1.03	1.06	2.903	O				4.59
18.833	0.96	1.06	2.903	O				4.59
18.917	0.80	1.06	2.902	IO				4.59
19.000	0.73	1.05	2.900	IO				4.59
19.083	0.74	1.05	2.897	IO				4.59
19.167	0.86	1.05	2.896	IO				4.58
19.250	0.91	1.05	2.895	IO				4.58
19.333	0.97	1.05	2.894	O				4.58
19.417	1.12	1.05	2.894	O				4.58
19.500	1.19	1.05	2.894	OI				4.58
19.583	1.18	1.05	2.895	OI				4.58
19.667	1.05	1.05	2.896	O				4.58
19.750	1.00	1.05	2.896	O				4.58
19.833	0.95	1.05	2.895	O				4.58
19.917	0.79	1.05	2.894	IO				4.58
20.000	0.72	1.05	2.892	IO				4.58
20.083	0.74	1.05	2.890	IO				4.58
20.167	0.86	1.05	2.888	IO				4.58
20.250	0.91	1.04	2.887	IO				4.58
20.333	0.92	1.04	2.886	O				4.58
20.417	0.93	1.04	2.885	O				4.58
20.500	0.94	1.04	2.884	O				4.58
20.583	0.94	1.04	2.884	O				4.58
20.667	0.95	1.04	2.883	O				4.58
20.750	0.95	1.04	2.882	O				4.58
20.833	0.91	1.04	2.882	IO				4.58

20.917	0.77	1.04	2.880	| IO	|	|	|	4.58
21.000	0.71	1.04	2.878	| IO	|	|	|	4.57
21.083	0.72	1.04	2.876	| IO	|	|	|	4.57
21.167	0.85	1.03	2.874	| IO	|	|	|	4.57
21.250	0.90	1.03	2.873	| IO	|	|	|	4.57
21.333	0.88	1.03	2.872	| IO	|	|	|	4.57
21.417	0.75	1.03	2.871	| IO	|	|	|	4.57
21.500	0.69	1.03	2.869	| IO	|	|	|	4.57
21.583	0.71	1.03	2.866	| IO	|	|	|	4.57
21.667	0.84	1.03	2.865	| IO	|	|	|	4.57
21.750	0.90	1.03	2.864	| IO	|	|	|	4.57
21.833	0.88	1.03	2.863	| IO	|	|	|	4.56
21.917	0.75	1.02	2.861	| IO	|	|	|	4.56
22.000	0.69	1.02	2.859	| IO	|	|	|	4.56
22.083	0.71	1.02	2.857	| IO	|	|	|	4.56
22.167	0.84	1.02	2.855	| IO	|	|	|	4.56
22.250	0.90	1.02	2.854	| IO	|	|	|	4.56
22.333	0.88	1.02	2.853	| IO	|	|	|	4.56
22.417	0.75	1.02	2.852	| IO	|	|	|	4.56
22.500	0.69	1.02	2.850	| IO	|	|	|	4.56
22.583	0.67	1.01	2.848	| I O	|	|	|	4.56
22.667	0.66	1.01	2.845	| I O	|	|	|	4.55
22.750	0.65	1.01	2.843	| I O	|	|	|	4.55
22.833	0.65	1.01	2.840	| I O	|	|	|	4.55
22.917	0.64	1.01	2.838	| I O	|	|	|	4.55
23.000	0.64	1.00	2.835	| I O	|	|	|	4.55
23.083	0.64	1.00	2.833	| I O	|	|	|	4.55
23.167	0.64	1.00	2.830	| I O	|	|	|	4.55
23.250	0.64	1.00	2.828	| I O	|	|	|	4.54
23.333	0.64	1.00	2.825	| I O	|	|	|	4.54
23.417	0.64	0.99	2.823	| I O	|	|	|	4.54
23.500	0.64	0.99	2.821	| I O	|	|	|	4.54
23.583	0.64	0.99	2.818	| I O	|	|	|	4.54
23.667	0.64	0.99	2.816	| I O	|	|	|	4.54
23.750	0.64	0.99	2.813	| I O	|	|	|	4.54
23.833	0.64	0.99	2.811	| I O	|	|	|	4.53
23.917	0.64	0.98	2.808	| I O	|	|	|	4.53
24.000	0.64	0.98	2.806	| I O	|	|	|	4.53
24.083	0.55	0.98	2.803	| I O	|	|	|	4.53
24.167	0.27	0.98	2.800	|I O	|	|	|	4.53
24.250	0.14	0.97	2.794	I O	|	|	|	4.52
24.333	0.09	0.97	2.788	I O	|	|	|	4.52
24.417	0.06	0.96	2.782	I O	|	|	|	4.52
24.500	0.04	0.96	2.776	I O	|	|	|	4.51
24.583	0.02	0.95	2.770	I O	|	|	|	4.51
24.667	0.01	0.95	2.763	I O	|	|	|	4.51
24.750	0.01	0.94	2.757	I O	|	|	|	4.50
24.833	0.00	0.94	2.750	I O	|	|	|	4.50
24.917	0.00	0.94	2.744	I O	|	|	|	4.49
25.000	0.00	0.94	2.737	I O	|	|	|	4.49
25.083	0.00	0.94	2.731	I O	|	|	|	4.49
25.167	0.00	0.94	2.724	I O	|	|	|	4.48
25.250	0.00	0.94	2.718	I O	|	|	|	4.48
25.333	0.00	0.94	2.711	I O	|	|	|	4.47

25.417	0.00	0.94	2.705	I	O	|	|	|	|	4.47
25.500	0.00	0.94	2.699	I	O	|	|	|	|	4.47
25.583	0.00	0.94	2.692	I	O	|	|	|	|	4.46
25.667	0.00	0.94	2.686	I	O	|	|	|	|	4.46
25.750	0.00	0.93	2.679	I	O	|	|	|	|	4.45
25.833	0.00	0.93	2.673	I	O	|	|	|	|	4.45
25.917	0.00	0.93	2.666	I	O	|	|	|	|	4.45
26.000	0.00	0.93	2.660	I	O	|	|	|	|	4.44
26.083	0.00	0.93	2.654	I	O	|	|	|	|	4.44
26.167	0.00	0.93	2.647	I	O	|	|	|	|	4.44
26.250	0.00	0.93	2.641	I	O	|	|	|	|	4.43
26.333	0.00	0.93	2.634	I	O	|	|	|	|	4.43
26.417	0.00	0.93	2.628	I	O	|	|	|	|	4.42
26.500	0.00	0.93	2.621	I	O	|	|	|	|	4.42
26.583	0.00	0.93	2.615	I	O	|	|	|	|	4.42
26.667	0.00	0.93	2.609	I	O	|	|	|	|	4.41
26.750	0.00	0.93	2.602	I	O	|	|	|	|	4.41
26.833	0.00	0.93	2.596	I	O	|	|	|	|	4.40
26.917	0.00	0.93	2.589	I	O	|	|	|	|	4.40
27.000	0.00	0.93	2.583	I	O	|	|	|	|	4.40
27.083	0.00	0.93	2.577	I	O	|	|	|	|	4.39
27.167	0.00	0.93	2.570	I	O	|	|	|	|	4.39
27.250	0.00	0.93	2.564	I	O	|	|	|	|	4.38
27.333	0.00	0.93	2.558	I	O	|	|	|	|	4.38
27.417	0.00	0.93	2.551	I	O	|	|	|	|	4.38
27.500	0.00	0.92	2.545	I	O	|	|	|	|	4.37
27.583	0.00	0.92	2.538	I	O	|	|	|	|	4.37
27.667	0.00	0.92	2.532	I	O	|	|	|	|	4.37
27.750	0.00	0.92	2.526	I	O	|	|	|	|	4.36
27.833	0.00	0.92	2.519	I	O	|	|	|	|	4.36
27.917	0.00	0.92	2.513	I	O	|	|	|	|	4.35
28.000	0.00	0.92	2.507	I	O	|	|	|	|	4.35
28.083	0.00	0.92	2.500	I	O	|	|	|	|	4.35
28.167	0.00	0.92	2.494	I	O	|	|	|	|	4.34
28.250	0.00	0.92	2.488	I	O	|	|	|	|	4.34
28.333	0.00	0.92	2.481	I	O	|	|	|	|	4.33
28.417	0.00	0.92	2.475	I	O	|	|	|	|	4.33
28.500	0.00	0.92	2.469	I	O	|	|	|	|	4.33
28.583	0.00	0.92	2.462	I	O	|	|	|	|	4.32
28.667	0.00	0.92	2.456	I	O	|	|	|	|	4.32
28.750	0.00	0.92	2.450	I	O	|	|	|	|	4.31
28.833	0.00	0.92	2.443	I	O	|	|	|	|	4.31
28.917	0.00	0.92	2.437	I	O	|	|	|	|	4.31
29.000	0.00	0.92	2.431	I	O	|	|	|	|	4.30
29.083	0.00	0.92	2.424	I	O	|	|	|	|	4.30
29.167	0.00	0.92	2.418	I	O	|	|	|	|	4.30
29.250	0.00	0.92	2.412	I	O	|	|	|	|	4.29
29.333	0.00	0.91	2.405	I	O	|	|	|	|	4.29
29.417	0.00	0.91	2.399	I	O	|	|	|	|	4.28
29.500	0.00	0.91	2.393	I	O	|	|	|	|	4.28
29.583	0.00	0.91	2.387	I	O	|	|	|	|	4.28
29.667	0.00	0.91	2.380	I	O	|	|	|	|	4.27
29.750	0.00	0.91	2.374	I	O	|	|	|	|	4.27
29.833	0.00	0.91	2.368	I	O	|	|	|	|	4.26

29.917	0.00	0.91	2.361	I	O	|	|	|	|	4.26
30.000	0.00	0.91	2.355	I	O	|	|	|	|	4.26
30.083	0.00	0.91	2.349	I	O	|	|	|	|	4.25
30.167	0.00	0.91	2.343	I	O	|	|	|	|	4.25
30.250	0.00	0.91	2.336	I	O	|	|	|	|	4.25
30.333	0.00	0.91	2.330	I	O	|	|	|	|	4.24
30.417	0.00	0.91	2.324	I	O	|	|	|	|	4.24
30.500	0.00	0.91	2.318	I	O	|	|	|	|	4.23
30.583	0.00	0.91	2.311	I	O	|	|	|	|	4.23
30.667	0.00	0.91	2.305	I	O	|	|	|	|	4.23
30.750	0.00	0.91	2.299	I	O	|	|	|	|	4.22
30.833	0.00	0.91	2.293	I	O	|	|	|	|	4.22
30.917	0.00	0.91	2.286	I	O	|	|	|	|	4.22
31.000	0.00	0.91	2.280	I	O	|	|	|	|	4.21
31.083	0.00	0.90	2.274	I	O	|	|	|	|	4.21
31.167	0.00	0.90	2.268	I	O	|	|	|	|	4.20
31.250	0.00	0.90	2.261	I	O	|	|	|	|	4.20
31.333	0.00	0.90	2.255	I	O	|	|	|	|	4.20
31.417	0.00	0.90	2.249	I	O	|	|	|	|	4.19
31.500	0.00	0.90	2.243	I	O	|	|	|	|	4.19
31.583	0.00	0.90	2.237	I	O	|	|	|	|	4.18
31.667	0.00	0.90	2.230	I	O	|	|	|	|	4.18
31.750	0.00	0.90	2.224	I	O	|	|	|	|	4.18
31.833	0.00	0.90	2.218	I	O	|	|	|	|	4.17
31.917	0.00	0.90	2.212	I	O	|	|	|	|	4.17
32.000	0.00	0.90	2.206	I	O	|	|	|	|	4.17
32.083	0.00	0.90	2.199	I	O	|	|	|	|	4.16
32.167	0.00	0.90	2.193	I	O	|	|	|	|	4.16
32.250	0.00	0.90	2.187	I	O	|	|	|	|	4.15
32.333	0.00	0.90	2.181	I	O	|	|	|	|	4.15
32.417	0.00	0.90	2.175	I	O	|	|	|	|	4.15
32.500	0.00	0.90	2.168	I	O	|	|	|	|	4.14
32.583	0.00	0.90	2.162	I	O	|	|	|	|	4.14
32.667	0.00	0.90	2.156	I	O	|	|	|	|	4.14
32.750	0.00	0.90	2.150	I	O	|	|	|	|	4.13
32.833	0.00	0.90	2.144	I	O	|	|	|	|	4.13
32.917	0.00	0.89	2.138	I	O	|	|	|	|	4.12
33.000	0.00	0.89	2.131	I	O	|	|	|	|	4.12
33.083	0.00	0.89	2.125	I	O	|	|	|	|	4.12
33.167	0.00	0.89	2.119	I	O	|	|	|	|	4.11
33.250	0.00	0.89	2.113	I	O	|	|	|	|	4.11
33.333	0.00	0.89	2.107	I	O	|	|	|	|	4.11
33.417	0.00	0.89	2.101	I	O	|	|	|	|	4.10
33.500	0.00	0.89	2.094	I	O	|	|	|	|	4.10
33.583	0.00	0.89	2.088	I	O	|	|	|	|	4.09
33.667	0.00	0.89	2.082	I	O	|	|	|	|	4.09
33.750	0.00	0.89	2.076	I	O	|	|	|	|	4.09
33.833	0.00	0.89	2.070	I	O	|	|	|	|	4.08
33.917	0.00	0.89	2.064	I	O	|	|	|	|	4.08
34.000	0.00	0.89	2.058	I	O	|	|	|	|	4.08
34.083	0.00	0.89	2.052	I	O	|	|	|	|	4.07
34.167	0.00	0.89	2.045	I	O	|	|	|	|	4.07
34.250	0.00	0.89	2.039	I	O	|	|	|	|	4.06
34.333	0.00	0.89	2.033	I	O	|	|	|	|	4.06

34.417	0.00	0.89	2.027	I	O	|	|	|	|	4.06
34.500	0.00	0.89	2.021	I	O	|	|	|	|	4.05
34.583	0.00	0.89	2.015	I	O	|	|	|	|	4.05
34.667	0.00	0.89	2.009	I	O	|	|	|	|	4.05
34.750	0.00	0.89	2.003	I	O	|	|	|	|	4.04
34.833	0.00	0.88	1.997	I	O	|	|	|	|	4.04
34.917	0.00	0.88	1.991	I	O	|	|	|	|	4.03
35.000	0.00	0.88	1.984	I	O	|	|	|	|	4.03
35.083	0.00	0.88	1.978	I	O	|	|	|	|	4.03
35.167	0.00	0.88	1.972	I	O	|	|	|	|	4.02
35.250	0.00	0.88	1.966	I	O	|	|	|	|	4.02
35.333	0.00	0.88	1.960	I	O	|	|	|	|	4.02
35.417	0.00	0.88	1.954	I	O	|	|	|	|	4.01
35.500	0.00	0.88	1.948	I	O	|	|	|	|	4.01
35.583	0.00	0.88	1.942	I	O	|	|	|	|	4.00
35.667	0.00	0.88	1.936	I	O	|	|	|	|	4.00
35.750	0.00	0.88	1.930	I	O	|	|	|	|	3.99
35.833	0.00	0.88	1.924	I	O	|	|	|	|	3.98
35.917	0.00	0.88	1.918	I	O	|	|	|	|	3.97
36.000	0.00	0.87	1.912	I	O	|	|	|	|	3.95
36.083	0.00	0.87	1.906	I	O	|	|	|	|	3.94
36.167	0.00	0.87	1.900	I	O	|	|	|	|	3.93
36.250	0.00	0.87	1.894	I	O	|	|	|	|	3.92
36.333	0.00	0.87	1.888	I	O	|	|	|	|	3.90
36.417	0.00	0.86	1.882	I	O	|	|	|	|	3.89
36.500	0.00	0.86	1.876	I	O	|	|	|	|	3.88
36.583	0.00	0.86	1.870	I	O	|	|	|	|	3.87
36.667	0.00	0.86	1.864	I	O	|	|	|	|	3.86
36.750	0.00	0.86	1.858	I	O	|	|	|	|	3.84
36.833	0.00	0.86	1.852	I	O	|	|	|	|	3.83
36.917	0.00	0.85	1.846	I	O	|	|	|	|	3.82
37.000	0.00	0.85	1.840	I	O	|	|	|	|	3.81
37.083	0.00	0.85	1.834	I	O	|	|	|	|	3.79
37.167	0.00	0.85	1.829	I	O	|	|	|	|	3.78
37.250	0.00	0.85	1.823	I	O	|	|	|	|	3.77
37.333	0.00	0.85	1.817	I	O	|	|	|	|	3.76
37.417	0.00	0.84	1.811	I	O	|	|	|	|	3.75
37.500	0.00	0.84	1.805	I	O	|	|	|	|	3.73
37.583	0.00	0.84	1.800	I	O	|	|	|	|	3.72
37.667	0.00	0.84	1.794	I	O	|	|	|	|	3.71
37.750	0.00	0.84	1.788	I	O	|	|	|	|	3.70
37.833	0.00	0.84	1.782	I	O	|	|	|	|	3.69
37.917	0.00	0.83	1.776	I	O	|	|	|	|	3.67
38.000	0.00	0.83	1.771	I	O	|	|	|	|	3.66
38.083	0.00	0.83	1.765	I	O	|	|	|	|	3.65
38.167	0.00	0.83	1.759	I	O	|	|	|	|	3.64
38.250	0.00	0.83	1.754	I	O	|	|	|	|	3.63
38.333	0.00	0.83	1.748	I	O	|	|	|	|	3.62
38.417	0.00	0.82	1.742	I	O	|	|	|	|	3.60
38.500	0.00	0.82	1.736	I	O	|	|	|	|	3.59
38.583	0.00	0.82	1.731	I	O	|	|	|	|	3.58
38.667	0.00	0.82	1.725	I	O	|	|	|	|	3.57
38.750	0.00	0.82	1.720	I	O	|	|	|	|	3.56
38.833	0.00	0.82	1.714	I	O	|	|	|	|	3.55

38.917	0.00	0.81	1.708	I	O	|	|	|	|	3.53
39.000	0.00	0.81	1.703	I	O	|	|	|	|	3.52
39.083	0.00	0.81	1.697	I	O	|	|	|	|	3.51
39.167	0.00	0.81	1.692	I	O	|	|	|	|	3.50
39.250	0.00	0.81	1.686	I	O	|	|	|	|	3.49
39.333	0.00	0.81	1.680	I	O	|	|	|	|	3.48
39.417	0.00	0.81	1.675	I	O	|	|	|	|	3.46
39.500	0.00	0.80	1.669	I	O	|	|	|	|	3.45
39.583	0.00	0.80	1.664	I	O	|	|	|	|	3.44
39.667	0.00	0.80	1.658	I	O	|	|	|	|	3.43
39.750	0.00	0.80	1.653	I	O	|	|	|	|	3.42
39.833	0.00	0.80	1.647	I	O	|	|	|	|	3.41
39.917	0.00	0.80	1.642	I	O	|	|	|	|	3.40
40.000	0.00	0.79	1.636	I	O	|	|	|	|	3.38
40.083	0.00	0.79	1.631	I	O	|	|	|	|	3.37
40.167	0.00	0.79	1.625	I	O	|	|	|	|	3.36
40.250	0.00	0.79	1.620	I	O	|	|	|	|	3.35
40.333	0.00	0.79	1.615	I	O	|	|	|	|	3.34
40.417	0.00	0.79	1.609	I	O	|	|	|	|	3.33
40.500	0.00	0.78	1.604	I	O	|	|	|	|	3.32
40.583	0.00	0.78	1.598	I	O	|	|	|	|	3.31
40.667	0.00	0.78	1.593	I	O	|	|	|	|	3.30
40.750	0.00	0.78	1.588	I	O	|	|	|	|	3.28
40.833	0.00	0.78	1.582	I	O	|	|	|	|	3.27
40.917	0.00	0.78	1.577	I	O	|	|	|	|	3.26
41.000	0.00	0.78	1.571	I	O	|	|	|	|	3.25
41.083	0.00	0.77	1.566	I	O	|	|	|	|	3.24
41.167	0.00	0.77	1.561	I	O	|	|	|	|	3.23
41.250	0.00	0.77	1.555	I	O	|	|	|	|	3.22
41.333	0.00	0.77	1.550	I	O	|	|	|	|	3.21
41.417	0.00	0.77	1.545	I	O	|	|	|	|	3.20
41.500	0.00	0.77	1.540	I	O	|	|	|	|	3.19
41.583	0.00	0.76	1.534	I	O	|	|	|	|	3.17
41.667	0.00	0.76	1.529	I	O	|	|	|	|	3.16
41.750	0.00	0.76	1.524	I	O	|	|	|	|	3.15
41.833	0.00	0.76	1.519	I	O	|	|	|	|	3.14
41.917	0.00	0.76	1.513	I	O	|	|	|	|	3.13
42.000	0.00	0.76	1.508	I	O	|	|	|	|	3.12
42.083	0.00	0.76	1.503	I	O	|	|	|	|	3.11
42.167	0.00	0.75	1.498	I	O	|	|	|	|	3.10
42.250	0.00	0.75	1.493	I	O	|	|	|	|	3.09
42.333	0.00	0.75	1.487	I	O	|	|	|	|	3.08
42.417	0.00	0.75	1.482	I	O	|	|	|	|	3.07
42.500	0.00	0.75	1.477	I	O	|	|	|	|	3.06
42.583	0.00	0.75	1.472	I	O	|	|	|	|	3.05
42.667	0.00	0.74	1.467	I	O	|	|	|	|	3.03
42.750	0.00	0.74	1.462	I	O	|	|	|	|	3.02
42.833	0.00	0.74	1.457	I	O	|	|	|	|	3.01
42.917	0.00	0.74	1.451	I	O	|	|	|	|	3.00
43.000	0.00	0.74	1.446	I	O	|	|	|	|	2.99
43.083	0.00	0.74	1.441	I	O	|	|	|	|	2.98
43.167	0.00	0.74	1.436	I	O	|	|	|	|	2.97
43.250	0.00	0.73	1.431	I	O	|	|	|	|	2.96
43.333	0.00	0.73	1.426	I	O	|	|	|	|	2.95

43.417	0.00	0.73	1.421	I	O	|	|	|	2.94
43.500	0.00	0.73	1.416	I	O	|	|	|	2.93
43.583	0.00	0.73	1.411	I	O	|	|	|	2.92
43.667	0.00	0.73	1.406	I	O	|	|	|	2.91
43.750	0.00	0.72	1.401	I	O	|	|	|	2.90
43.833	0.00	0.72	1.396	I	O	|	|	|	2.89
43.917	0.00	0.72	1.391	I	O	|	|	|	2.88
44.000	0.00	0.72	1.386	I	O	|	|	|	2.87
44.083	0.00	0.72	1.381	I	O	|	|	|	2.86
44.167	0.00	0.72	1.376	I	O	|	|	|	2.85
44.250	0.00	0.71	1.371	I	O	|	|	|	2.84
44.333	0.00	0.71	1.366	I	O	|	|	|	2.83
44.417	0.00	0.71	1.362	I	O	|	|	|	2.82
44.500	0.00	0.71	1.357	I	O	|	|	|	2.81
44.583	0.00	0.71	1.352	I	O	|	|	|	2.80
44.667	0.00	0.71	1.347	I	O	|	|	|	2.79
44.750	0.00	0.70	1.342	I	O	|	|	|	2.78
44.833	0.00	0.70	1.337	I	O	|	|	|	2.77
44.917	0.00	0.70	1.332	I	O	|	|	|	2.76
45.000	0.00	0.70	1.328	I	O	|	|	|	2.75
45.083	0.00	0.70	1.323	I	O	|	|	|	2.74
45.167	0.00	0.70	1.318	I	O	|	|	|	2.73
45.250	0.00	0.69	1.313	I	O	|	|	|	2.72
45.333	0.00	0.69	1.308	I	O	|	|	|	2.71
45.417	0.00	0.69	1.304	I	O	|	|	|	2.70
45.500	0.00	0.69	1.299	I	O	|	|	|	2.69
45.583	0.00	0.69	1.294	I	O	|	|	|	2.68
45.667	0.00	0.69	1.289	I	O	|	|	|	2.67
45.750	0.00	0.69	1.285	I	O	|	|	|	2.66
45.833	0.00	0.68	1.280	I	O	|	|	|	2.65
45.917	0.00	0.68	1.275	I	O	|	|	|	2.64
46.000	0.00	0.68	1.270	I	O	|	|	|	2.63
46.083	0.00	0.68	1.266	I	O	|	|	|	2.62
46.167	0.00	0.68	1.261	I	O	|	|	|	2.61
46.250	0.00	0.68	1.256	I	O	|	|	|	2.60
46.333	0.00	0.67	1.252	I	O	|	|	|	2.59
46.417	0.00	0.67	1.247	I	O	|	|	|	2.58
46.500	0.00	0.67	1.243	I	O	|	|	|	2.57
46.583	0.00	0.67	1.238	I	O	|	|	|	2.56
46.667	0.00	0.67	1.233	I	O	|	|	|	2.55
46.750	0.00	0.67	1.229	I	O	|	|	|	2.54
46.833	0.00	0.67	1.224	I	O	|	|	|	2.53
46.917	0.00	0.66	1.220	I	O	|	|	|	2.52
47.000	0.00	0.66	1.215	I	O	|	|	|	2.51
47.083	0.00	0.66	1.210	I	O	|	|	|	2.50
47.167	0.00	0.66	1.206	I	O	|	|	|	2.49
47.250	0.00	0.66	1.201	I	O	|	|	|	2.49
47.333	0.00	0.66	1.197	I	O	|	|	|	2.48
47.417	0.00	0.65	1.192	I	O	|	|	|	2.47
47.500	0.00	0.65	1.188	I	O	|	|	|	2.46
47.583	0.00	0.65	1.183	I	O	|	|	|	2.45
47.667	0.00	0.65	1.179	I	O	|	|	|	2.44
47.750	0.00	0.65	1.174	I	O	|	|	|	2.43
47.833	0.00	0.65	1.170	I	O	|	|	|	2.42

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137.917    0.00    0.00      0.001  O       |       |       |       |     0.00

     ****************************HYDROGRAPH DATA****************************
               Number of intervals =  1655
               Time interval =    5.0 (Min.)
               Maximum/Peak flow rate =        1.057 (CFS)
               Total volume =       4.243 (Ac.Ft)
          Status of hydrographs being held in storage
                     Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
          Peak (CFS)      0.000     0.000     0.000     0.000     0.000
          Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
     ***********************************************************************

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1.06 CFS IS LESS THAN ALLOWABLE 1.29 CFS

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 10/29/19

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5 year flood routing
MJPA 304163
BUILDING 1
4163FR5.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP5245.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 11.962 (CFS)
Total volume = 6.134 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.322	0.330	0.321	0.323
2.000	0.967	0.580	0.965	0.969
3.000	1.450	0.740	1.447	1.453
4.000	1.934	0.880	1.931	1.937
4.500	2.753	0.940	2.750	2.756
5.000	3.600	1.600	3.594	3.606
6.000	5.375	2.310	5.367	5.383
7.000	7.263	17.920	7.201	7.325
8.000	9.265	24.580	9.180	9.350
9.000	11.383	29.740	11.281	11.485
10.000	13.621	32.460	13.509	13.733

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	3.0	5.98	8.97	11.96	Depth (Ft.)
0.083	0.11	0.00	0.000	O	|	|	|	|	0.00
0.167	0.50	0.00	0.002	OI	|	|	|	|	0.01
0.250	0.67	0.01	0.006	OI	|	|	|	|	0.02
0.333	0.80	0.01	0.011	O I	|	|	|	|	0.04
0.417	1.03	0.02	0.018	O I	|	|	|	|	0.05
0.500	1.14	0.03	0.025	O I	|	|	|	|	0.08
0.583	1.20	0.03	0.033	O I	|	|	|	|	0.10
0.667	1.23	0.04	0.041	O I	|	|	|	|	0.13
0.750	1.26	0.05	0.049	O I	|	|	|	|	0.15
0.833	1.33	0.06	0.058	O I	|	|	|	|	0.18
0.917	1.53	0.07	0.067	O I	|	|	|	|	0.21
1.000	1.62	0.08	0.078	O I	|	|	|	|	0.24
1.083	1.60	0.09	0.088	O I	|	|	|	|	0.27
1.167	1.43	0.10	0.098	O I	|	|	|	|	0.30
1.250	1.36	0.11	0.107	O I	|	|	|	|	0.33
1.333	1.34	0.12	0.115	O I	|	|	|	|	0.36
1.417	1.32	0.13	0.124	O I	|	|	|	|	0.38
1.500	1.31	0.14	0.132	O I	|	|	|	|	0.41
1.583	1.31	0.14	0.140	O I	|	|	|	|	0.43
1.667	1.30	0.15	0.148	O I	|	|	|	|	0.46
1.750	1.30	0.16	0.156	O I	|	|	|	|	0.48
1.833	1.35	0.17	0.164	O I	|	|	|	|	0.51
1.917	1.54	0.18	0.172	O I	|	|	|	|	0.54
2.000	1.63	0.19	0.182	O I	|	|	|	|	0.57
2.083	1.66	0.20	0.192	O I	|	|	|	|	0.60
2.167	1.68	0.21	0.202	O I	|	|	|	|	0.63
2.250	1.70	0.22	0.212	O I	|	|	|	|	0.66
2.333	1.71	0.23	0.223	O I	|	|	|	|	0.69
2.417	1.71	0.24	0.233	O I	|	|	|	|	0.72
2.500	1.72	0.25	0.243	O I	|	|	|	|	0.75
2.583	1.78	0.26	0.253	O I	|	|	|	|	0.79
2.667	1.97	0.27	0.264	O I	|	|	|	|	0.82
2.750	2.06	0.28	0.276	O I	|	|	|	|	0.86
2.833	2.09	0.30	0.288	O I	|	|	|	|	0.90

2.917	2.11	0.31	0.301	O	I	|	|	|	0.93
3.000	2.13	0.32	0.313	O	I	|	|	|	0.97
3.083	2.14	0.33	0.326	O	I	|	|	|	1.01
3.167	2.14	0.34	0.338	O	I	|	|	|	1.03
3.250	2.15	0.34	0.351	O	I	|	|	|	1.04
3.333	2.15	0.35	0.363	O	I	|	|	|	1.06
3.417	2.15	0.35	0.376	O	I	|	|	|	1.08
3.500	2.15	0.36	0.388	O	I	|	|	|	1.10
3.583	2.15	0.36	0.400	O	I	|	|	|	1.12
3.667	2.15	0.37	0.413	O	I	|	|	|	1.14
3.750	2.15	0.37	0.425	O	I	|	|	|	1.16
3.833	2.21	0.37	0.437	|O	I	|	|	|	1.18
3.917	2.40	0.38	0.451	|O	I	|	|	|	1.20
4.000	2.49	0.39	0.465	|O	I	|	|	|	1.22
4.083	2.52	0.39	0.479	|O	I	|	|	|	1.24
4.167	2.54	0.40	0.494	|O	I	|	|	|	1.27
4.250	2.56	0.40	0.509	|O	I	|	|	|	1.29
4.333	2.62	0.41	0.524	|O	I	|	|	|	1.31
4.417	2.82	0.41	0.540	|O	I	|	|	|	1.34
4.500	2.91	0.42	0.557	|O	I	|	|	|	1.36
4.583	2.95	0.43	0.574	|O	I	|	|	|	1.39
4.667	2.97	0.43	0.592	|O	I	|	|	|	1.42
4.750	2.99	0.44	0.609	|O	I	|	|	|	1.45
4.833	3.06	0.45	0.627	|O	I	|	|	|	1.47
4.917	3.25	0.46	0.645	|O	I	|	|	|	1.50
5.000	3.34	0.46	0.665	|O	I	|	|	|	1.53
5.083	3.27	0.47	0.685	|O	I	|	|	|	1.56
5.167	2.91	0.48	0.703	|O	I	|	|	|	1.59
5.250	2.75	0.48	0.719	|O	I	|	|	|	1.62
5.333	2.75	0.49	0.734	|O	I	|	|	|	1.64
5.417	2.90	0.50	0.750	|O	I	|	|	|	1.66
5.500	2.96	0.50	0.767	|O	I	|	|	|	1.69
5.583	3.04	0.51	0.784	|O	I	|	|	|	1.72
5.667	3.24	0.52	0.802	|O	I	|	|	|	1.74
5.750	3.33	0.52	0.821	|O	I	|	|	|	1.77
5.833	3.37	0.53	0.841	|O	|I	|	|	|	1.80
5.917	3.40	0.54	0.861	|O	|I	|	|	|	1.83
6.000	3.41	0.55	0.880	|O	|I	|	|	|	1.87
6.083	3.49	0.55	0.900	|O	|I	|	|	|	1.90
6.167	3.68	0.56	0.921	|O	|I	|	|	|	1.93
6.250	3.77	0.57	0.943	|O	| I	|	|	|	1.96
6.333	3.81	0.58	0.965	|O	| I	|	|	|	2.00
6.417	3.84	0.59	0.987	|O	| I	|	|	|	2.04
6.500	3.85	0.59	1.010	|O	| I	|	|	|	2.09
6.583	3.92	0.60	1.032	|O	| I	|	|	|	2.14
6.667	4.11	0.61	1.056	|O	| I	|	|	|	2.18
6.750	4.20	0.62	1.080	|O	| I	|	|	|	2.23
6.833	4.25	0.63	1.105	|O	| I	|	|	|	2.29
6.917	4.27	0.63	1.130	|O	| I	|	|	|	2.34
7.000	4.28	0.64	1.155	|O	| I	|	|	|	2.39
7.083	4.29	0.65	1.180	|O	| I	|	|	|	2.44
7.167	4.30	0.66	1.205	|O	| I	|	|	|	2.49
7.250	4.30	0.67	1.230	|O	| I	|	|	|	2.54
7.333	4.36	0.68	1.255	|O	| I	|	|	|	2.60

7.417	4.55	0.68	1.281	O	I			2.65
7.500	4.64	0.69	1.308	O	I			2.71
7.583	4.73	0.70	1.336	O	I			2.76
7.667	4.95	0.71	1.364	O	I			2.82
7.750	5.04	0.72	1.394	O	I			2.88
7.833	5.15	0.73	1.424	O	I			2.95
7.917	5.37	0.74	1.455	O	I			3.01
8.000	5.47	0.75	1.487	O	I			3.08
8.083	4.79	0.76	1.517	O	I			3.14
8.167	2.36	0.77	1.537	O I				3.18
8.250	1.30	0.77	1.544	OI				3.19
8.333	0.89	0.77	1.546	O				3.20
8.417	0.66	0.77	1.546	IO				3.20
8.500	0.52	0.77	1.545	IO				3.20
8.583	0.51	0.77	1.543	IO				3.19
8.667	0.69	0.77	1.542	IO				3.19
8.750	0.77	0.77	1.542	O				3.19
8.833	0.85	0.77	1.542	O				3.19
8.917	1.15	0.77	1.544	OI				3.19
9.000	1.30	0.77	1.547	OI				3.20
9.083	1.53	0.77	1.551	O I				3.21
9.167	2.07	0.77	1.559	O I				3.22
9.250	2.34	0.77	1.568	O I				3.24
9.333	2.55	0.78	1.580	O I				3.27
9.417	2.87	0.78	1.593	O I				3.30
9.500	3.05	0.79	1.608	O I				3.33
9.583	3.23	0.79	1.624	O I				3.36
9.667	3.54	0.80	1.642	O I				3.40
9.750	3.71	0.80	1.662	O I				3.44
9.833	3.88	0.81	1.682	O I				3.48
9.917	4.18	0.81	1.704	O I				3.53
10.000	4.34	0.82	1.728	O I				3.57
10.083	3.95	0.83	1.751	O I				3.62
10.167	2.38	0.83	1.767	O I				3.66
10.250	1.70	0.83	1.775	O I				3.67
10.333	1.45	0.84	1.781	OI				3.68
10.417	1.31	0.84	1.784	OI				3.69
10.500	1.24	0.84	1.787	OI				3.70
10.583	1.54	0.84	1.791	O I				3.70
10.667	2.69	0.84	1.800	O I				3.72
10.750	3.21	0.85	1.814	O I				3.75
10.833	3.41	0.85	1.831	O I				3.79
10.917	3.57	0.86	1.850	O I				3.83
11.000	3.69	0.86	1.869	O I				3.86
11.083	3.71	0.87	1.888	O I				3.91
11.167	3.55	0.87	1.907	O I				3.94
11.250	3.50	0.88	1.925	O I				3.98
11.333	3.53	0.88	1.944	O I				4.01
11.417	3.53	0.88	1.962	O I				4.02
11.500	3.55	0.88	1.980	O I				4.03
11.583	3.43	0.88	1.998	O I				4.04
11.667	2.98	0.89	2.014	O I				4.05
11.750	2.80	0.89	2.028	O I				4.06
11.833	2.81	0.89	2.041	O I				4.07

11.917	3.02	0.89	2.055	O	I			4.07
12.000	3.13	0.89	2.070	O	I			4.08
12.083	3.67	0.89	2.087	O	I			4.09
12.167	5.34	0.89	2.112	O	I			4.11
12.250	6.11	0.90	2.145	O	I			4.13
12.333	6.51	0.90	2.183	O	I			4.15
12.417	6.97	0.90	2.223	O	I			4.18
12.500	7.22	0.90	2.266	O	I			4.20
12.583	7.53	0.91	2.310	O	I			4.23
12.667	8.10	0.91	2.358	O	I			4.26
12.750	8.40	0.91	2.408	O	I			4.29
12.833	8.64	0.92	2.461	O	I			4.32
12.917	8.96	0.92	2.515	O	I			4.35
13.000	9.14	0.93	2.571	O	I			4.39
13.083	9.59	0.93	2.629	O	I			4.42
13.167	10.83	0.94	2.693	O	I			4.46
13.250	11.41	0.95	2.763	O	I			4.51
13.333	11.68	1.00	2.836	O	I			4.55
13.417	11.85	1.06	2.910	O	I			4.59
13.500	11.96	1.12	2.984	O	I			4.64
13.583	11.29	1.18	3.056	O	I			4.68
13.667	8.79	1.22	3.117	O	I			4.71
13.750	7.70	1.26	3.165	O	I			4.74
13.833	7.28	1.29	3.208	O	I			4.77
13.917	7.02	1.33	3.248	O	I			4.79
14.000	6.87	1.36	3.287	O	I			4.82
14.083	7.05	1.39	3.325	O	I			4.84
14.167	7.92	1.42	3.367	O	I			4.86
14.250	8.31	1.45	3.413	O	I			4.89
14.333	8.37	1.49	3.461	O	I			4.92
14.417	8.27	1.53	3.508	O	I			4.95
14.500	8.26	1.56	3.554	O	I			4.97
14.583	8.29	1.60	3.600	O	I			5.00
14.667	8.32	1.62	3.646	O	I			5.03
14.750	8.36	1.64	3.692	O	I			5.05
14.833	8.33	1.66	3.738	O	I			5.08
14.917	8.11	1.67	3.783	O	I			5.10
15.000	8.03	1.69	3.827	O	I			5.13
15.083	7.94	1.71	3.871	O	I			5.15
15.167	7.70	1.73	3.913	O	I			5.18
15.250	7.61	1.74	3.954	O	I			5.20
15.333	7.51	1.76	3.994	O	I			5.22
15.417	7.27	1.77	4.032	O	I			5.24
15.500	7.17	1.79	4.070	O	I			5.26
15.583	6.85	1.80	4.106	O	I			5.28
15.667	5.91	1.81	4.137	O	I			5.30
15.750	5.50	1.83	4.164	O	I			5.32
15.833	5.33	1.84	4.189	O	I			5.33
15.917	5.25	1.84	4.212	O	I			5.34
16.000	5.20	1.85	4.236	O	I			5.36
16.083	4.72	1.86	4.257	O	I			5.37
16.167	3.19	1.87	4.271	O	I			5.38
16.250	2.50	1.87	4.278	O	I			5.38
16.333	2.19	1.87	4.281	O				5.38

16.417	2.03	1.87	4.283	O				5.38
16.500	1.92	1.87	4.284	O				5.39
16.583	1.79	1.87	4.284	IO				5.39
16.667	1.55	1.87	4.282	IO				5.38
16.750	1.43	1.87	4.279	I O				5.38
16.833	1.35	1.87	4.276	I O				5.38
16.917	1.33	1.87	4.273	IO				5.38
17.000	1.32	1.87	4.269	IO				5.38
17.083	1.42	1.87	4.265	IO				5.37
17.167	1.80	1.87	4.264	O				5.37
17.250	1.97	1.87	4.264	OI				5.37
17.333	2.03	1.87	4.265	OI				5.37
17.417	2.07	1.87	4.266	OI				5.38
17.500	2.10	1.87	4.267	OI				5.38
17.583	2.12	1.87	4.269	OI				5.38
17.667	2.13	1.87	4.271	OI				5.38
17.750	2.14	1.87	4.273	OI				5.38
17.833	2.10	1.87	4.274	O				5.38
17.917	1.90	1.87	4.275	O				5.38
18.000	1.82	1.87	4.275	IO				5.38
18.083	1.78	1.87	4.275	IO				5.38
18.167	1.76	1.87	4.274	IO				5.38
18.250	1.75	1.87	4.273	IO				5.38
18.333	1.74	1.87	4.273	O				5.38
18.417	1.73	1.87	4.272	O				5.38
18.500	1.73	1.87	4.271	O				5.38
18.583	1.66	1.87	4.269	O				5.38
18.667	1.47	1.87	4.267	IO				5.38
18.750	1.39	1.87	4.264	IO				5.37
18.833	1.30	1.86	4.261	IO				5.37
18.917	1.08	1.86	4.256	I O				5.37
19.000	0.98	1.86	4.250	I O				5.37
19.083	1.00	1.86	4.244	I O				5.36
19.167	1.16	1.86	4.239	IO				5.36
19.250	1.23	1.85	4.235	IO				5.36
19.333	1.30	1.85	4.230	IO				5.36
19.417	1.51	1.85	4.227	O				5.35
19.500	1.61	1.85	4.225	O				5.35
19.583	1.59	1.85	4.224	O				5.35
19.667	1.42	1.85	4.221	IO				5.35
19.750	1.36	1.85	4.218	IO				5.35
19.833	1.28	1.85	4.215	IO				5.35
19.917	1.07	1.84	4.210	I O				5.34
20.000	0.98	1.84	4.204	I O				5.34
20.083	1.00	1.84	4.198	I O				5.34
20.167	1.16	1.84	4.193	IO				5.33
20.250	1.23	1.84	4.189	IO				5.33
20.333	1.25	1.83	4.185	IO				5.33
20.417	1.26	1.83	4.181	IO				5.33
20.500	1.27	1.83	4.177	IO				5.32
20.583	1.28	1.83	4.173	IO				5.32
20.667	1.28	1.83	4.169	IO				5.32
20.750	1.29	1.83	4.165	IO				5.32
20.833	1.23	1.82	4.161	IO				5.32

20.917	1.04	1.82	4.157	| I O	|	|	|	5.31
21.000	0.96	1.82	4.151	| I O	|	|	|	5.31
21.083	0.98	1.82	4.145	| I O	|	|	|	5.31
21.167	1.15	1.82	4.140	| IO	|	|	|	5.30
21.250	1.22	1.81	4.136	| IO	|	|	|	5.30
21.333	1.19	1.81	4.132	| IO	|	|	|	5.30
21.417	1.01	1.81	4.127	| I O	|	|	|	5.30
21.500	0.94	1.81	4.121	| I O	|	|	|	5.29
21.583	0.96	1.81	4.115	| I O	|	|	|	5.29
21.667	1.14	1.80	4.110	| IO	|	|	|	5.29
21.750	1.22	1.80	4.105	| IO	|	|	|	5.28
21.833	1.19	1.80	4.101	| IO	|	|	|	5.28
21.917	1.01	1.80	4.097	| I O	|	|	|	5.28
22.000	0.94	1.80	4.091	| I O	|	|	|	5.28
22.083	0.96	1.79	4.085	| I O	|	|	|	5.27
22.167	1.14	1.79	4.080	| IO	|	|	|	5.27
22.250	1.22	1.79	4.076	| IO	|	|	|	5.27
22.333	1.19	1.79	4.072	| IO	|	|	|	5.27
22.417	1.01	1.79	4.067	| I O	|	|	|	5.26
22.500	0.94	1.78	4.061	| I O	|	|	|	5.26
22.583	0.91	1.78	4.055	| I O	|	|	|	5.26
22.667	0.89	1.78	4.049	| I O	|	|	|	5.25
22.750	0.88	1.78	4.043	| I O	|	|	|	5.25
22.833	0.88	1.77	4.037	| I O	|	|	|	5.25
22.917	0.87	1.77	4.031	| I O	|	|	|	5.24
23.000	0.87	1.77	4.025	| I O	|	|	|	5.24
23.083	0.86	1.77	4.018	| I O	|	|	|	5.24
23.167	0.86	1.76	4.012	| I O	|	|	|	5.23
23.250	0.86	1.76	4.006	| I O	|	|	|	5.23
23.333	0.86	1.76	4.000	| I O	|	|	|	5.23
23.417	0.86	1.76	3.994	| I O	|	|	|	5.22
23.500	0.86	1.75	3.987	| I O	|	|	|	5.22
23.583	0.86	1.75	3.981	| I O	|	|	|	5.21
23.667	0.86	1.75	3.975	| I O	|	|	|	5.21
23.750	0.86	1.75	3.969	| I O	|	|	|	5.21
23.833	0.86	1.75	3.963	| I O	|	|	|	5.20
23.917	0.86	1.74	3.957	| I O	|	|	|	5.20
24.000	0.86	1.74	3.951	| I O	|	|	|	5.20
24.083	0.75	1.74	3.944	|I O	|	|	|	5.19
24.167	0.36	1.73	3.936	I O	|	|	|	5.19
24.250	0.19	1.73	3.926	I O	|	|	|	5.18
24.333	0.12	1.73	3.915	I O	|	|	|	5.18
24.417	0.08	1.72	3.904	I O	|	|	|	5.17
24.500	0.05	1.72	3.893	I O	|	|	|	5.16
24.583	0.03	1.71	3.881	I O	|	|	|	5.16
24.667	0.02	1.71	3.870	I O	|	|	|	5.15
24.750	0.01	1.70	3.858	I O	|	|	|	5.15
24.833	0.00	1.70	3.846	I O	|	|	|	5.14
24.917	0.00	1.69	3.835	I O	|	|	|	5.13
25.000	0.00	1.69	3.823	I O	|	|	|	5.13
25.083	0.00	1.68	3.811	I O	|	|	|	5.12
25.167	0.00	1.68	3.800	I O	|	|	|	5.11
25.250	0.00	1.68	3.788	I O	|	|	|	5.11
25.333	0.00	1.67	3.777	I O	|	|	|	5.10

25.417	0.00	1.67	3.765	I	O	|	|	|	|	5.09
25.500	0.00	1.66	3.754	I	O	|	|	|	|	5.09
25.583	0.00	1.66	3.742	I	O	|	|	|	|	5.08
25.667	0.00	1.65	3.731	I	O	|	|	|	|	5.07
25.750	0.00	1.65	3.720	I	O	|	|	|	|	5.07
25.833	0.00	1.64	3.708	I	O	|	|	|	|	5.06
25.917	0.00	1.64	3.697	I	O	|	|	|	|	5.05
26.000	0.00	1.63	3.686	I	O	|	|	|	|	5.05
26.083	0.00	1.63	3.674	I	O	|	|	|	|	5.04
26.167	0.00	1.63	3.663	I	O	|	|	|	|	5.04
26.250	0.00	1.62	3.652	I	O	|	|	|	|	5.03
26.333	0.00	1.62	3.641	I	O	|	|	|	|	5.02
26.417	0.00	1.61	3.630	I	O	|	|	|	|	5.02
26.500	0.00	1.61	3.619	I	O	|	|	|	|	5.01
26.583	0.00	1.60	3.608	I	O	|	|	|	|	5.00
26.667	0.00	1.60	3.597	I	O	|	|	|	|	5.00
26.750	0.00	1.59	3.586	I	O	|	|	|	|	4.99
26.833	0.00	1.58	3.575	I	O	|	|	|	|	4.99
26.917	0.00	1.57	3.564	I	O	|	|	|	|	4.98
27.000	0.00	1.56	3.553	I	O	|	|	|	|	4.97
27.083	0.00	1.56	3.542	I	O	|	|	|	|	4.97
27.167	0.00	1.55	3.532	I	O	|	|	|	|	4.96
27.250	0.00	1.54	3.521	I	O	|	|	|	|	4.95
27.333	0.00	1.53	3.511	I	O	|	|	|	|	4.95
27.417	0.00	1.52	3.500	I	O	|	|	|	|	4.94
27.500	0.00	1.51	3.490	I	O	|	|	|	|	4.93
27.583	0.00	1.51	3.479	I	O	|	|	|	|	4.93
27.667	0.00	1.50	3.469	I	O	|	|	|	|	4.92
27.750	0.00	1.49	3.459	I	O	|	|	|	|	4.92
27.833	0.00	1.48	3.448	I	O	|	|	|	|	4.91
27.917	0.00	1.47	3.438	I	O	|	|	|	|	4.90
28.000	0.00	1.47	3.428	I	O	|	|	|	|	4.90
28.083	0.00	1.46	3.418	I	O	|	|	|	|	4.89
28.167	0.00	1.45	3.408	I	O	|	|	|	|	4.89
28.250	0.00	1.44	3.398	I	O	|	|	|	|	4.88
28.333	0.00	1.43	3.388	I	O	|	|	|	|	4.87
28.417	0.00	1.43	3.378	I	O	|	|	|	|	4.87
28.500	0.00	1.42	3.368	I	O	|	|	|	|	4.86
28.583	0.00	1.41	3.359	I	O	|	|	|	|	4.86
28.667	0.00	1.40	3.349	I	O	|	|	|	|	4.85
28.750	0.00	1.40	3.339	I	O	|	|	|	|	4.85
28.833	0.00	1.39	3.330	I	O	|	|	|	|	4.84
28.917	0.00	1.38	3.320	I	O	|	|	|	|	4.83
29.000	0.00	1.37	3.311	I	O	|	|	|	|	4.83
29.083	0.00	1.37	3.301	I	O	|	|	|	|	4.82
29.167	0.00	1.36	3.292	I	O	|	|	|	|	4.82
29.250	0.00	1.35	3.282	I	O	|	|	|	|	4.81
29.333	0.00	1.35	3.273	I	O	|	|	|	|	4.81
29.417	0.00	1.34	3.264	I	O	|	|	|	|	4.80
29.500	0.00	1.33	3.255	I	O	|	|	|	|	4.80
29.583	0.00	1.32	3.246	I	O	|	|	|	|	4.79
29.667	0.00	1.32	3.237	I	O	|	|	|	|	4.79
29.750	0.00	1.31	3.227	I	O	|	|	|	|	4.78
29.833	0.00	1.30	3.218	I	O	|	|	|	|	4.77

29.917	0.00	1.30	3.210	I	O	|	|	|	4.77
30.000	0.00	1.29	3.201	I	O	|	|	|	4.76
30.083	0.00	1.28	3.192	I	O	|	|	|	4.76
30.167	0.00	1.28	3.183	I	O	|	|	|	4.75
30.250	0.00	1.27	3.174	I	O	|	|	|	4.75
30.333	0.00	1.26	3.166	I	O	|	|	|	4.74
30.417	0.00	1.25	3.157	I	O	|	|	|	4.74
30.500	0.00	1.25	3.148	I	O	|	|	|	4.73
30.583	0.00	1.24	3.140	I	O	|	|	|	4.73
30.667	0.00	1.23	3.131	I	O	|	|	|	4.72
30.750	0.00	1.23	3.123	I	O	|	|	|	4.72
30.833	0.00	1.22	3.114	I	O	|	|	|	4.71
30.917	0.00	1.21	3.106	I	O	|	|	|	4.71
31.000	0.00	1.21	3.097	I	O	|	|	|	4.70
31.083	0.00	1.20	3.089	I	O	|	|	|	4.70
31.167	0.00	1.20	3.081	I	O	|	|	|	4.69
31.250	0.00	1.19	3.073	I	O	|	|	|	4.69
31.333	0.00	1.18	3.065	I	O	|	|	|	4.68
31.417	0.00	1.18	3.056	I	O	|	|	|	4.68
31.500	0.00	1.17	3.048	I	O	|	|	|	4.67
31.583	0.00	1.16	3.040	I	O	|	|	|	4.67
31.667	0.00	1.16	3.032	I	O	|	|	|	4.66
31.750	0.00	1.15	3.024	I	O	|	|	|	4.66
31.833	0.00	1.15	3.016	I	O	|	|	|	4.66
31.917	0.00	1.14	3.009	I	O	|	|	|	4.65
32.000	0.00	1.13	3.001	I	O	|	|	|	4.65
32.083	0.00	1.13	2.993	I	O	|	|	|	4.64
32.167	0.00	1.12	2.985	I	O	|	|	|	4.64
32.250	0.00	1.11	2.978	I	O	|	|	|	4.63
32.333	0.00	1.11	2.970	I	O	|	|	|	4.63
32.417	0.00	1.10	2.962	I	O	|	|	|	4.62
32.500	0.00	1.10	2.955	I	O	|	|	|	4.62
32.583	0.00	1.09	2.947	I	O	|	|	|	4.61
32.667	0.00	1.09	2.940	I	O	|	|	|	4.61
32.750	0.00	1.08	2.932	I	O	|	|	|	4.61
32.833	0.00	1.07	2.925	I	O	|	|	|	4.60
32.917	0.00	1.07	2.917	I	O	|	|	|	4.60
33.000	0.00	1.06	2.910	I	O	|	|	|	4.59
33.083	0.00	1.06	2.903	I	O	|	|	|	4.59
33.167	0.00	1.05	2.896	I	O	|	|	|	4.58
33.250	0.00	1.05	2.888	I	O	|	|	|	4.58
33.333	0.00	1.04	2.881	I	O	|	|	|	4.58
33.417	0.00	1.03	2.874	I	O	|	|	|	4.57
33.500	0.00	1.03	2.867	I	O	|	|	|	4.57
33.583	0.00	1.02	2.860	I	O	|	|	|	4.56
33.667	0.00	1.02	2.853	I	O	|	|	|	4.56
33.750	0.00	1.01	2.846	I	O	|	|	|	4.55
33.833	0.00	1.01	2.839	I	O	|	|	|	4.55
33.917	0.00	1.00	2.832	I	O	|	|	|	4.55
34.000	0.00	1.00	2.825	I	O	|	|	|	4.54
34.083	0.00	0.99	2.818	I	O	|	|	|	4.54
34.167	0.00	0.99	2.811	I	O	|	|	|	4.53
34.250	0.00	0.98	2.805	I	O	|	|	|	4.53
34.333	0.00	0.97	2.798	I	O	|	|	|	4.53

34.417	0.00	0.97	2.791	I	O	|	|	|	| 4.52
34.500	0.00	0.96	2.785	I	O	|	|	|	| 4.52
34.583	0.00	0.96	2.778	I	O	|	|	|	| 4.51
34.667	0.00	0.95	2.771	I	O	|	|	|	| 4.51
34.750	0.00	0.95	2.765	I	O	|	|	|	| 4.51
34.833	0.00	0.94	2.758	I	O	|	|	|	| 4.50
34.917	0.00	0.94	2.752	I	O	|	|	|	| 4.50
35.000	0.00	0.94	2.745	I	O	|	|	|	| 4.50
35.083	0.00	0.94	2.739	I	O	|	|	|	| 4.49
35.167	0.00	0.94	2.732	I	O	|	|	|	| 4.49
35.250	0.00	0.94	2.726	I	O	|	|	|	| 4.48
35.333	0.00	0.94	2.719	I	O	|	|	|	| 4.48
35.417	0.00	0.94	2.713	I	O	|	|	|	| 4.48
35.500	0.00	0.94	2.707	I	O	|	|	|	| 4.47
35.583	0.00	0.94	2.700	I	O	|	|	|	| 4.47
35.667	0.00	0.94	2.694	I	O	|	|	|	| 4.46
35.750	0.00	0.94	2.687	I	O	|	|	|	| 4.46
35.833	0.00	0.93	2.681	I	O	|	|	|	| 4.46
35.917	0.00	0.93	2.674	I	O	|	|	|	| 4.45
36.000	0.00	0.93	2.668	I	O	|	|	|	| 4.45
36.083	0.00	0.93	2.661	I	O	|	|	|	| 4.44
36.167	0.00	0.93	2.655	I	O	|	|	|	| 4.44
36.250	0.00	0.93	2.649	I	O	|	|	|	| 4.44
36.333	0.00	0.93	2.642	I	O	|	|	|	| 4.43
36.417	0.00	0.93	2.636	I	O	|	|	|	| 4.43
36.500	0.00	0.93	2.629	I	O	|	|	|	| 4.42
36.583	0.00	0.93	2.623	I	O	|	|	|	| 4.42
36.667	0.00	0.93	2.617	I	O	|	|	|	| 4.42
36.750	0.00	0.93	2.610	I	O	|	|	|	| 4.41
36.833	0.00	0.93	2.604	I	O	|	|	|	| 4.41
36.917	0.00	0.93	2.597	I	O	|	|	|	| 4.40
37.000	0.00	0.93	2.591	I	O	|	|	|	| 4.40
37.083	0.00	0.93	2.585	I	O	|	|	|	| 4.40
37.167	0.00	0.93	2.578	I	O	|	|	|	| 4.39
37.250	0.00	0.93	2.572	I	O	|	|	|	| 4.39
37.333	0.00	0.93	2.565	I	O	|	|	|	| 4.39
37.417	0.00	0.93	2.559	I	O	|	|	|	| 4.38
37.500	0.00	0.93	2.553	I	O	|	|	|	| 4.38
37.583	0.00	0.92	2.546	I	O	|	|	|	| 4.37
37.667	0.00	0.92	2.540	I	O	|	|	|	| 4.37
37.750	0.00	0.92	2.534	I	O	|	|	|	| 4.37
37.833	0.00	0.92	2.527	I	O	|	|	|	| 4.36
37.917	0.00	0.92	2.521	I	O	|	|	|	| 4.36
38.000	0.00	0.92	2.514	I	O	|	|	|	| 4.35
38.083	0.00	0.92	2.508	I	O	|	|	|	| 4.35
38.167	0.00	0.92	2.502	I	O	|	|	|	| 4.35
38.250	0.00	0.92	2.495	I	O	|	|	|	| 4.34
38.333	0.00	0.92	2.489	I	O	|	|	|	| 4.34
38.417	0.00	0.92	2.483	I	O	|	|	|	| 4.34
38.500	0.00	0.92	2.476	I	O	|	|	|	| 4.33
38.583	0.00	0.92	2.470	I	O	|	|	|	| 4.33
38.667	0.00	0.92	2.464	I	O	|	|	|	| 4.32
38.750	0.00	0.92	2.457	I	O	|	|	|	| 4.32
38.833	0.00	0.92	2.451	I	O	|	|	|	| 4.32

38.917	0.00	0.92	2.445	I O	|	|	|	4.31
39.000	0.00	0.92	2.438	I O	|	|	|	4.31
39.083	0.00	0.92	2.432	I O	|	|	|	4.30
39.167	0.00	0.92	2.426	I O	|	|	|	4.30
39.250	0.00	0.92	2.420	I O	|	|	|	4.30
39.333	0.00	0.92	2.413	I O	|	|	|	4.29
39.417	0.00	0.91	2.407	I O	|	|	|	4.29
39.500	0.00	0.91	2.401	I O	|	|	|	4.28
39.583	0.00	0.91	2.394	I O	|	|	|	4.28
39.667	0.00	0.91	2.388	I O	|	|	|	4.28
39.750	0.00	0.91	2.382	I O	|	|	|	4.27
39.833	0.00	0.91	2.375	I O	|	|	|	4.27
39.917	0.00	0.91	2.369	I O	|	|	|	4.27
40.000	0.00	0.91	2.363	I O	|	|	|	4.26
40.083	0.00	0.91	2.357	I O	|	|	|	4.26
40.167	0.00	0.91	2.350	I O	|	|	|	4.25
40.250	0.00	0.91	2.344	I O	|	|	|	4.25
40.333	0.00	0.91	2.338	I O	|	|	|	4.25
40.417	0.00	0.91	2.332	I O	|	|	|	4.24
40.500	0.00	0.91	2.325	I O	|	|	|	4.24
40.583	0.00	0.91	2.319	I O	|	|	|	4.24
40.667	0.00	0.91	2.313	I O	|	|	|	4.23
40.750	0.00	0.91	2.307	I O	|	|	|	4.23
40.833	0.00	0.91	2.300	I O	|	|	|	4.22
40.917	0.00	0.91	2.294	I O	|	|	|	4.22
41.000	0.00	0.91	2.288	I O	|	|	|	4.22
41.083	0.00	0.91	2.282	I O	|	|	|	4.21
41.167	0.00	0.91	2.275	I O	|	|	|	4.21
41.250	0.00	0.90	2.269	I O	|	|	|	4.20
41.333	0.00	0.90	2.263	I O	|	|	|	4.20
41.417	0.00	0.90	2.257	I O	|	|	|	4.20
41.500	0.00	0.90	2.250	I O	|	|	|	4.19
41.583	0.00	0.90	2.244	I O	|	|	|	4.19
41.667	0.00	0.90	2.238	I O	|	|	|	4.19
41.750	0.00	0.90	2.232	I O	|	|	|	4.18
41.833	0.00	0.90	2.226	I O	|	|	|	4.18
41.917	0.00	0.90	2.219	I O	|	|	|	4.17
42.000	0.00	0.90	2.213	I O	|	|	|	4.17
42.083	0.00	0.90	2.207	I O	|	|	|	4.17
42.167	0.00	0.90	2.201	I O	|	|	|	4.16
42.250	0.00	0.90	2.195	I O	|	|	|	4.16
42.333	0.00	0.90	2.188	I O	|	|	|	4.16
42.417	0.00	0.90	2.182	I O	|	|	|	4.15
42.500	0.00	0.90	2.176	I O	|	|	|	4.15
42.583	0.00	0.90	2.170	I O	|	|	|	4.14
42.667	0.00	0.90	2.164	I O	|	|	|	4.14
42.750	0.00	0.90	2.157	I O	|	|	|	4.14
42.833	0.00	0.90	2.151	I O	|	|	|	4.13
42.917	0.00	0.90	2.145	I O	|	|	|	4.13
43.000	0.00	0.90	2.139	I O	|	|	|	4.13
43.083	0.00	0.89	2.133	I O	|	|	|	4.12
43.167	0.00	0.89	2.127	I O	|	|	|	4.12
43.250	0.00	0.89	2.120	I O	|	|	|	4.11
43.333	0.00	0.89	2.114	I O	|	|	|	4.11

43.417	0.00	0.89	2.108	I O	|	|	|	4.11
43.500	0.00	0.89	2.102	I O	|	|	|	4.10
43.583	0.00	0.89	2.096	I O	|	|	|	4.10
43.667	0.00	0.89	2.090	I O	|	|	|	4.10
43.750	0.00	0.89	2.084	I O	|	|	|	4.09
43.833	0.00	0.89	2.077	I O	|	|	|	4.09
43.917	0.00	0.89	2.071	I O	|	|	|	4.08
44.000	0.00	0.89	2.065	I O	|	|	|	4.08
44.083	0.00	0.89	2.059	I O	|	|	|	4.08
44.167	0.00	0.89	2.053	I O	|	|	|	4.07
44.250	0.00	0.89	2.047	I O	|	|	|	4.07
44.333	0.00	0.89	2.041	I O	|	|	|	4.07
44.417	0.00	0.89	2.035	I O	|	|	|	4.06
44.500	0.00	0.89	2.029	I O	|	|	|	4.06
44.583	0.00	0.89	2.022	I O	|	|	|	4.05
44.667	0.00	0.89	2.016	I O	|	|	|	4.05
44.750	0.00	0.89	2.010	I O	|	|	|	4.05
44.833	0.00	0.89	2.004	I O	|	|	|	4.04
44.917	0.00	0.88	1.998	I O	|	|	|	4.04
45.000	0.00	0.88	1.992	I O	|	|	|	4.04
45.083	0.00	0.88	1.986	I O	|	|	|	4.03
45.167	0.00	0.88	1.980	I O	|	|	|	4.03
45.250	0.00	0.88	1.974	I O	|	|	|	4.02
45.333	0.00	0.88	1.968	I O	|	|	|	4.02
45.417	0.00	0.88	1.962	I O	|	|	|	4.02
45.500	0.00	0.88	1.955	I O	|	|	|	4.01
45.583	0.00	0.88	1.949	I O	|	|	|	4.01
45.667	0.00	0.88	1.943	I O	|	|	|	4.01
45.750	0.00	0.88	1.937	I O	|	|	|	4.00
45.833	0.00	0.88	1.931	I O	|	|	|	3.99
45.917	0.00	0.88	1.925	I O	|	|	|	3.98
46.000	0.00	0.88	1.919	I O	|	|	|	3.97
46.083	0.00	0.87	1.913	I O	|	|	|	3.96
46.167	0.00	0.87	1.907	I O	|	|	|	3.94
46.250	0.00	0.87	1.901	I O	|	|	|	3.93
46.333	0.00	0.87	1.895	I O	|	|	|	3.92
46.417	0.00	0.87	1.889	I O	|	|	|	3.91
46.500	0.00	0.87	1.883	I O	|	|	|	3.89
46.583	0.00	0.86	1.877	I O	|	|	|	3.88
46.667	0.00	0.86	1.871	I O	|	|	|	3.87
46.750	0.00	0.86	1.865	I O	|	|	|	3.86
46.833	0.00	0.86	1.859	I O	|	|	|	3.85
46.917	0.00	0.86	1.853	I O	|	|	|	3.83
47.000	0.00	0.86	1.848	I O	|	|	|	3.82
47.083	0.00	0.85	1.842	I O	|	|	|	3.81
47.167	0.00	0.85	1.836	I O	|	|	|	3.80
47.250	0.00	0.85	1.830	I O	|	|	|	3.79
47.333	0.00	0.85	1.824	I O	|	|	|	3.77
47.417	0.00	0.85	1.818	I O	|	|	|	3.76
47.500	0.00	0.84	1.812	I O	|	|	|	3.75
47.583	0.00	0.84	1.807	I O	|	|	|	3.74
47.667	0.00	0.84	1.801	I O	|	|	|	3.72
47.750	0.00	0.84	1.795	I O	|	|	|	3.71
47.833	0.00	0.84	1.789	I O	|	|	|	3.70

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47.917    0.00    0.84      1.784  I O     |       |       |       |     3.69
48.000    0.00    0.83      1.778  I O     |       |       |       |     3.68

     ****************************HYDROGRAPH DATA****************************
                Number of intervals =  1777
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        1.873 (CFS)
                Total volume =       6.133 (Ac.Ft)
          Status of hydrographs being held in storage
                     Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
          Peak (CFS)      0.000     0.000     0.000     0.000     0.000
          Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 10/29/19

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10 year flood routing
MJPA 304163
BUILDING 1
4163FR10.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP102410.rte
**********HYDROGRAPH DATA**********
Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 17.448 (CFS)
Total volume = 8.763 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.322	0.330	0.321	0.323
2.000	0.967	0.580	0.965	0.969
3.000	1.450	0.740	1.447	1.453
4.000	1.934	0.880	1.931	1.937
4.500	2.753	0.940	2.750	2.756
5.000	3.600	1.600	3.594	3.606
6.000	5.375	2.310	5.367	5.383
7.000	7.263	17.920	7.201	7.325
8.000	9.265	24.580	9.180	9.350
9.000	11.383	29.740	11.281	11.485
10.000	13.621	32.460	13.509	13.733

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	4.4	8.72	13.09	17.45	Depth (Ft.)
0.083	0.14	0.00	0.000	O	|	|	|	|	0.00
0.167	0.60	0.00	0.003	OI	|	|	|	|	0.01
0.250	0.80	0.01	0.008	OI	|	|	|	|	0.02
0.333	0.95	0.01	0.014	OI	|	|	|	|	0.04
0.417	1.23	0.02	0.021	O I	|	|	|	|	0.07
0.500	1.37	0.03	0.030	O I	|	|	|	|	0.09
0.583	1.43	0.04	0.039	O I	|	|	|	|	0.12
0.667	1.48	0.05	0.049	O I	|	|	|	|	0.15
0.750	1.50	0.06	0.059	O I	|	|	|	|	0.18
0.833	1.59	0.07	0.069	O I	|	|	|	|	0.21
0.917	1.83	0.08	0.080	O I	|	|	|	|	0.25
1.000	1.94	0.10	0.093	O I	|	|	|	|	0.29
1.083	1.92	0.11	0.105	O I	|	|	|	|	0.33
1.167	1.72	0.12	0.117	O I	|	|	|	|	0.36
1.250	1.63	0.13	0.128	O I	|	|	|	|	0.40
1.333	1.60	0.14	0.138	O I	|	|	|	|	0.43
1.417	1.58	0.15	0.148	O I	|	|	|	|	0.46
1.500	1.57	0.16	0.158	O I	|	|	|	|	0.49
1.583	1.57	0.17	0.167	O I	|	|	|	|	0.52
1.667	1.56	0.18	0.177	O I	|	|	|	|	0.55
1.750	1.55	0.19	0.186	O I	|	|	|	|	0.58
1.833	1.61	0.20	0.196	O I	|	|	|	|	0.61
1.917	1.84	0.21	0.206	O I	|	|	|	|	0.64
2.000	1.95	0.22	0.218	O I	|	|	|	|	0.68
2.083	1.99	0.24	0.230	O I	|	|	|	|	0.71
2.167	2.01	0.25	0.242	O I	|	|	|	|	0.75
2.250	2.03	0.26	0.254	O I	|	|	|	|	0.79
2.333	2.04	0.27	0.266	O I	|	|	|	|	0.83
2.417	2.05	0.29	0.278	O I	|	|	|	|	0.86
2.500	2.05	0.30	0.291	O I	|	|	|	|	0.90
2.583	2.13	0.31	0.303	O I	|	|	|	|	0.94
2.667	2.36	0.32	0.316	O I	|	|	|	|	0.98
2.750	2.46	0.33	0.331	O I	|	|	|	|	1.01
2.833	2.50	0.34	0.345	O I	|	|	|	|	1.04

2.917	2.53	0.34	0.360	O	I	|	|	|	1.06
3.000	2.55	0.35	0.375	O	I	|	|	|	1.08
3.083	2.56	0.36	0.390	O	I	|	|	|	1.11
3.167	2.56	0.36	0.406	O	I	|	|	|	1.13
3.250	2.57	0.37	0.421	O	I	|	|	|	1.15
3.333	2.58	0.37	0.436	O	I	|	|	|	1.18
3.417	2.58	0.38	0.451	O	I	|	|	|	1.20
3.500	2.58	0.39	0.466	O	I	|	|	|	1.22
3.583	2.58	0.39	0.481	O	I	|	|	|	1.25
3.667	2.58	0.40	0.496	O	I	|	|	|	1.27
3.750	2.58	0.40	0.511	O	I	|	|	|	1.29
3.833	2.64	0.41	0.526	O	I	|	|	|	1.32
3.917	2.87	0.42	0.543	O	I	|	|	|	1.34
4.000	2.98	0.42	0.560	O	I	|	|	|	1.37
4.083	3.02	0.43	0.578	O	I	|	|	|	1.40
4.167	3.04	0.44	0.596	O	I	|	|	|	1.42
4.250	3.06	0.44	0.614	O	I	|	|	|	1.45
4.333	3.14	0.45	0.632	O	I	|	|	|	1.48
4.417	3.38	0.46	0.651	O	I	|	|	|	1.51
4.500	3.49	0.47	0.672	O	I	|	|	|	1.54
4.583	3.53	0.47	0.693	O	I	|	|	|	1.57
4.667	3.56	0.48	0.714	O	I	|	|	|	1.61
4.750	3.58	0.49	0.735	O	I	|	|	|	1.64
4.833	3.66	0.50	0.756	O	I	|	|	|	1.67
4.917	3.89	0.51	0.779	O	I	|	|	|	1.71
5.000	4.00	0.52	0.803	O	I	|	|	|	1.75
5.083	3.91	0.53	0.826	O	I	|	|	|	1.78
5.167	3.48	0.53	0.848	O	I	|	|	|	1.82
5.250	3.29	0.54	0.868	O	I	|	|	|	1.85
5.333	3.29	0.55	0.887	|O	I	|	|	|	1.88
5.417	3.47	0.56	0.906	|O	I	|	|	|	1.91
5.500	3.55	0.56	0.926	|O	I	|	|	|	1.94
5.583	3.64	0.57	0.947	|O	I	|	|	|	1.97
5.667	3.88	0.58	0.969	|O	I	|	|	|	2.00
5.750	3.99	0.59	0.992	|O	I	|	|	|	2.05
5.833	4.03	0.60	1.016	|O	I	|	|	|	2.10
5.917	4.06	0.60	1.039	|O	I	|	|	|	2.15
6.000	4.08	0.61	1.063	|O	I	|	|	|	2.20
6.083	3.55	0.62	1.085	|O	I	|	|	|	2.25
6.167	1.73	0.62	1.099	|O I		|	|	|	2.27
6.250	0.93	0.63	1.104	|O		|	|	|	2.28
6.333	0.62	0.63	1.105	|O		|	|	|	2.29
6.417	0.44	0.63	1.105	IO		|	|	|	2.28
6.500	0.33	0.63	1.103	IO		|	|	|	2.28
6.583	0.35	0.62	1.101	IO		|	|	|	2.28
6.667	0.59	0.62	1.100	|O		|	|	|	2.28
6.750	0.69	0.62	1.100	|O		|	|	|	2.28
6.833	0.72	0.62	1.101	|O		|	|	|	2.28
6.917	0.78	0.62	1.101	|O		|	|	|	2.28
7.000	0.82	0.62	1.103	|O		|	|	|	2.28
7.083	0.86	0.63	1.104	|O		|	|	|	2.28
7.167	0.89	0.63	1.106	|O		|	|	|	2.29
7.250	0.92	0.63	1.108	|O		|	|	|	2.29
7.333	1.04	0.63	1.110	|O		|	|	|	2.30

7.417	1.34	0.63	1.114	OI				2.30
7.500	1.49	0.63	1.120	OI				2.32
7.583	1.65	0.63	1.126	O I				2.33
7.667	1.99	0.64	1.134	O I				2.35
7.750	2.16	0.64	1.144	O I				2.37
7.833	2.33	0.64	1.155	O I				2.39
7.917	2.67	0.65	1.168	O I				2.42
8.000	2.85	0.65	1.182	O I				2.45
8.083	3.11	0.66	1.198	O I				2.48
8.167	3.74	0.66	1.218	O I				2.52
8.250	4.04	0.67	1.240	O I				2.56
8.333	4.18	0.68	1.263	O I				2.61
8.417	4.28	0.69	1.288	O I				2.66
8.500	4.35	0.69	1.313	O I				2.72
8.583	4.49	0.70	1.338	O I				2.77
8.667	4.81	0.71	1.366	O I				2.83
8.750	4.98	0.72	1.394	O I				2.88
8.833	5.15	0.73	1.424	O I				2.95
8.917	5.48	0.74	1.456	O I				3.01
9.000	5.65	0.75	1.489	O I				3.08
9.083	5.91	0.76	1.524	O I				3.15
9.167	6.53	0.77	1.561	O I				3.23
9.250	6.83	0.78	1.602	O I				3.31
9.333	7.06	0.80	1.644	O I				3.40
9.417	7.43	0.81	1.688	O I				3.49
9.500	7.63	0.82	1.735	O I				3.59
9.583	7.82	0.84	1.782	O I				3.69
9.667	8.17	0.85	1.831	O I				3.79
9.750	8.35	0.87	1.882	O I				3.89
9.833	8.54	0.88	1.935	O I				4.00
9.917	8.88	0.88	1.988	O I				4.03
10.000	9.06	0.89	2.044	O I				4.07
10.083	8.56	0.89	2.099	O I				4.10
10.167	6.67	0.90	2.145	O I				4.13
10.250	5.84	0.90	2.182	O I				4.15
10.333	5.53	0.90	2.215	O I				4.17
10.417	5.34	0.90	2.246	O I				4.19
10.500	5.23	0.91	2.276	O I				4.21
10.583	5.58	0.91	2.307	O I				4.23
10.667	6.93	0.91	2.344	O I				4.25
10.750	7.53	0.91	2.388	O I				4.28
10.833	7.76	0.92	2.434	O I				4.31
10.917	7.94	0.92	2.482	O I				4.33
11.000	8.06	0.92	2.530	O I				4.36
11.083	8.06	0.93	2.580	O I				4.39
11.167	7.85	0.93	2.628	O I				4.42
11.250	7.78	0.93	2.675	O I				4.45
11.333	7.79	0.94	2.723	O I				4.48
11.417	7.78	0.95	2.770	O I				4.51
11.500	7.78	0.99	2.817	O I				4.54
11.583	7.62	1.03	2.863	O I				4.56
11.667	7.07	1.06	2.906	O I				4.59
11.750	6.84	1.09	2.946	O I				4.61
11.833	6.83	1.12	2.986	O I				4.64

11.917	7.07	1.15	3.026	O	I			4.66
12.000	7.17	1.18	3.067	O	I			4.69
12.083	7.80	1.22	3.110	O	I			4.71
12.167	9.79	1.26	3.162	O	I			4.74
12.250	10.69	1.31	3.224	O	I			4.78
12.333	11.16	1.36	3.290	O	I			4.82
12.417	11.68	1.41	3.359	O	I			4.86
12.500	11.97	1.47	3.431	O	I			4.90
12.583	12.32	1.53	3.504	O	I			4.94
12.667	13.00	1.58	3.580	O	I			4.99
12.750	13.33	1.62	3.660	O	I			5.03
12.833	13.60	1.66	3.742	O	I			5.08
12.917	13.97	1.69	3.825	O	I			5.13
13.000	14.16	1.72	3.910	O	I			5.17
13.083	14.69	1.76	3.997	O	I			5.22
13.167	16.16	1.80	4.091	O	I			5.28
13.250	16.83	1.84	4.193	O	I			5.33
13.333	17.14	1.88	4.297	O	I			5.39
13.417	17.33	1.92	4.402	O	I			5.45
13.500	17.45	1.96	4.509	O	I			5.51
13.583	16.62	2.00	4.612	O	I			5.57
13.667	13.62	2.04	4.703	O	I			5.62
13.750	12.29	2.07	4.778	O	I			5.66
13.833	11.78	2.10	4.846	O	I			5.70
13.917	11.46	2.12	4.912	O	I			5.74
14.000	11.26	2.15	4.975	O	I			5.77
14.083	11.46	2.18	5.039	O	I			5.81
14.167	12.49	2.20	5.106	O	I			5.85
14.250	12.94	2.23	5.178	O	I			5.89
14.333	12.99	2.26	5.252	O	I			5.93
14.417	12.86	2.29	5.325	O	I			5.97
14.500	12.83	2.49	5.397	O	I			6.01
14.583	12.85	3.07	5.467	O	I			6.05
14.667	12.88	3.61	5.532	O	I			6.08
14.750	12.90	4.12	5.594	O	I			6.12
14.833	12.85	4.61	5.653	O	I			6.15
14.917	12.58	5.06	5.707	O	I			6.18
15.000	12.46	5.47	5.757	O	I			6.20
15.083	12.34	5.85	5.804	O	I			6.23
15.167	12.05	6.21	5.846	O	I			6.25
15.250	11.92	6.53	5.885	O	I			6.27
15.333	11.79	6.82	5.920	O	I			6.29
15.417	11.48	7.09	5.953	O	I			6.31
15.500	11.35	7.33	5.982	O	I			6.32
15.583	10.96	7.54	6.007	O	I			6.33
15.667	9.82	7.70	6.026	O	I			6.35
15.750	9.31	7.80	6.039	O	I			6.35
15.833	9.09	7.88	6.048	O	I			6.36
15.917	8.98	7.94	6.056	O	I			6.36
16.000	8.91	8.00	6.063	O	I			6.36
16.083	7.96	8.02	6.066	O				6.37
16.167	4.95	7.93	6.055	O	I			6.36
16.250	3.58	7.73	6.031	O	I			6.35
16.333	3.00	7.49	6.001	O	I			6.33

16.417	2.67	7.23	5.970	| I | O |				6.32
16.500	2.46	6.97	5.939	| I | O |				6.30
16.583	2.25	6.71	5.908	| I | O |				6.28
16.667	1.91	6.46	5.877	| I | O |				6.27
16.750	1.74	6.20	5.846	| I | O |				6.25
16.833	1.62	5.95	5.815	| I | O |				6.23
16.917	1.59	5.71	5.786	| I | O |				6.22
17.000	1.58	5.48	5.759	| I | O |				6.20
17.083	1.38	5.26	5.732	| I |O |				6.19
17.167	0.77	5.03	5.704	|I |O |				6.17
17.250	0.51	4.79	5.674	I | O |				6.16
17.333	0.40	4.55	5.645	I | O |				6.14
17.417	0.34	4.32	5.618	I | O|				6.13
17.500	0.32	4.09	5.591	I | O|				6.11
17.583	0.30	3.88	5.565	I | O|				6.10
17.667	0.29	3.69	5.541	I | O |				6.09
17.750	0.29	3.50	5.519	I | O |				6.08
17.833	0.52	3.33	5.498	I | O |				6.07
17.917	1.31	3.19	5.482	| I O |				6.06
18.000	1.66	3.10	5.470	| I O |				6.05
18.083	1.81	3.02	5.461	| I O |				6.05
18.167	1.90	2.96	5.453	| I O |				6.04
18.250	1.95	2.90	5.447	| I O |				6.04
18.333	1.99	2.85	5.440	| I O |				6.03
18.417	2.02	2.80	5.435	| I O |				6.03
18.500	2.04	2.76	5.430	| I O |				6.03
18.583	1.99	2.72	5.425	| IO |				6.03
18.667	1.76	2.67	5.419	| IO |				6.02
18.750	1.66	2.62	5.412	| IO |				6.02
18.833	1.55	2.56	5.406	| I O |				6.02
18.917	1.30	2.50	5.398	| I O |				6.01
19.000	1.18	2.43	5.390	| I O |				6.01
19.083	1.19	2.36	5.381	| I O |				6.00
19.167	1.39	2.31	5.374	| I O |				6.00
19.250	1.47	2.31	5.368	| I O |				6.00
19.333	1.56	2.30	5.362	| I O |				5.99
19.417	1.81	2.30	5.358	| IO |				5.99
19.500	1.92	2.30	5.355	| IO |				5.99
19.583	1.90	2.30	5.353	| IO |				5.99
19.667	1.70	2.30	5.349	| IO |				5.99
19.750	1.62	2.30	5.345	| I O |				5.98
19.833	1.53	2.30	5.340	| I O |				5.98
19.917	1.28	2.29	5.334	| I O |				5.98
20.000	1.17	2.29	5.326	| I O |				5.97
20.083	1.19	2.29	5.319	| I O |				5.97
20.167	1.39	2.28	5.312	| I O |				5.96
20.250	1.47	2.28	5.306	| I O |				5.96
20.333	1.49	2.28	5.300	| I O |				5.96
20.417	1.51	2.28	5.295	| I O |				5.95
20.500	1.52	2.28	5.290	| I O |				5.95
20.583	1.53	2.27	5.285	| I O |				5.95
20.667	1.53	2.27	5.280	| I O |				5.95
20.750	1.54	2.27	5.274	| I O |				5.94
20.833	1.48	2.27	5.269	| I O |				5.94

20.917	1.25	2.27	5.263	| I O |	|	|	|	5.94
21.000	1.15	2.26	5.256	| I O |	|	|	|	5.93
21.083	1.17	2.26	5.248	| I O |	|	|	|	5.93
21.167	1.38	2.26	5.241	| I O |	|	|	|	5.92
21.250	1.46	2.25	5.236	| I O |	|	|	|	5.92
21.333	1.42	2.25	5.230	| I O |	|	|	|	5.92
21.417	1.21	2.25	5.224	| I O |	|	|	|	5.91
21.500	1.12	2.25	5.216	| I O |	|	|	|	5.91
21.583	1.15	2.24	5.208	| I O |	|	|	|	5.91
21.667	1.36	2.24	5.202	| I O |	|	|	|	5.90
21.750	1.46	2.24	5.196	| I O |	|	|	|	5.90
21.833	1.42	2.24	5.190	| I O |	|	|	|	5.90
21.917	1.21	2.23	5.184	| I O |	|	|	|	5.89
22.000	1.12	2.23	5.177	| I O |	|	|	|	5.89
22.083	1.15	2.23	5.169	| I O |	|	|	|	5.88
22.167	1.36	2.23	5.163	| I O |	|	|	|	5.88
22.250	1.46	2.22	5.157	| I O |	|	|	|	5.88
22.333	1.42	2.22	5.152	| I O |	|	|	|	5.87
22.417	1.21	2.22	5.145	| I O |	|	|	|	5.87
22.500	1.12	2.22	5.138	| I O |	|	|	|	5.87
22.583	1.08	2.21	5.131	|I O |	|	|	|	5.86
22.667	1.07	2.21	5.123	|I O |	|	|	|	5.86
22.750	1.06	2.21	5.115	|I O |	|	|	|	5.85
22.833	1.05	2.20	5.107	|I O |	|	|	|	5.85
22.917	1.04	2.20	5.099	|I O |	|	|	|	5.84
23.000	1.04	2.20	5.091	|I O |	|	|	|	5.84
23.083	1.03	2.19	5.083	|I O |	|	|	|	5.84
23.167	1.03	2.19	5.075	|I O |	|	|	|	5.83
23.250	1.03	2.19	5.067	|I O |	|	|	|	5.83
23.333	1.03	2.18	5.059	|I O |	|	|	|	5.82
23.417	1.03	2.18	5.051	|I O |	|	|	|	5.82
23.500	1.03	2.18	5.043	|I O |	|	|	|	5.81
23.583	1.03	2.17	5.035	|I O |	|	|	|	5.81
23.667	1.03	2.17	5.027	|I O |	|	|	|	5.80
23.750	1.03	2.17	5.020	|I O |	|	|	|	5.80
23.833	1.03	2.16	5.012	|I O |	|	|	|	5.80
23.917	1.03	2.16	5.004	|I O |	|	|	|	5.79
24.000	1.03	2.16	4.996	|I O |	|	|	|	5.79
24.083	0.89	2.16	4.988	|I O |	|	|	|	5.78
24.167	0.44	2.15	4.978	I O |	|	|	|	5.78
24.250	0.23	2.15	4.965	I O |	|	|	|	5.77
24.333	0.15	2.14	4.952	I O |	|	|	|	5.76
24.417	0.09	2.14	4.938	I O |	|	|	|	5.75
24.500	0.06	2.13	4.924	I O |	|	|	|	5.75
24.583	0.04	2.12	4.909	I O |	|	|	|	5.74
24.667	0.02	2.12	4.895	I O |	|	|	|	5.73
24.750	0.01	2.11	4.881	I O |	|	|	|	5.72
24.833	0.00	2.11	4.866	I O |	|	|	|	5.71
24.917	0.00	2.10	4.852	I O |	|	|	|	5.71
25.000	0.00	2.09	4.837	I O |	|	|	|	5.70
25.083	0.00	2.09	4.823	I O |	|	|	|	5.69
25.167	0.00	2.08	4.808	I O |	|	|	|	5.68
25.250	0.00	2.08	4.794	I O |	|	|	|	5.67
25.333	0.00	2.07	4.780	I O |	|	|	|	5.66

25.417	0.00	2.07	4.765	I	O	|	|	|	|	5.66
25.500	0.00	2.06	4.751	I	O	|	|	|	|	5.65
25.583	0.00	2.05	4.737	I	O	|	|	|	|	5.64
25.667	0.00	2.05	4.723	I	O	|	|	|	|	5.63
25.750	0.00	2.04	4.709	I	O	|	|	|	|	5.62
25.833	0.00	2.04	4.695	I	O	|	|	|	|	5.62
25.917	0.00	2.03	4.681	I	O	|	|	|	|	5.61
26.000	0.00	2.03	4.667	I	O	|	|	|	|	5.60
26.083	0.00	2.02	4.653	I	O	|	|	|	|	5.59
26.167	0.00	2.02	4.639	I	O	|	|	|	|	5.59
26.250	0.00	2.01	4.625	I	O	|	|	|	|	5.58
26.333	0.00	2.00	4.611	I	O	|	|	|	|	5.57
26.417	0.00	2.00	4.598	I	O	|	|	|	|	5.56
26.500	0.00	1.99	4.584	I	O	|	|	|	|	5.55
26.583	0.00	1.99	4.570	I	O	|	|	|	|	5.55
26.667	0.00	1.98	4.556	I	O	|	|	|	|	5.54
26.750	0.00	1.98	4.543	I	O	|	|	|	|	5.53
26.833	0.00	1.97	4.529	I	O	|	|	|	|	5.52
26.917	0.00	1.97	4.516	I	O	|	|	|	|	5.52
27.000	0.00	1.96	4.502	I	O	|	|	|	|	5.51
27.083	0.00	1.96	4.489	I	O	|	|	|	|	5.50
27.167	0.00	1.95	4.475	I	O	|	|	|	|	5.49
27.250	0.00	1.94	4.462	I	O	|	|	|	|	5.49
27.333	0.00	1.94	4.448	I	O	|	|	|	|	5.48
27.417	0.00	1.93	4.435	I	O	|	|	|	|	5.47
27.500	0.00	1.93	4.422	I	O	|	|	|	|	5.46
27.583	0.00	1.92	4.408	I	O	|	|	|	|	5.46
27.667	0.00	1.92	4.395	I	O	|	|	|	|	5.45
27.750	0.00	1.91	4.382	I	O	|	|	|	|	5.44
27.833	0.00	1.91	4.369	I	O	|	|	|	|	5.43
27.917	0.00	1.90	4.356	I	O	|	|	|	|	5.43
28.000	0.00	1.90	4.343	I	O	|	|	|	|	5.42
28.083	0.00	1.89	4.330	I	O	|	|	|	|	5.41
28.167	0.00	1.89	4.317	I	O	|	|	|	|	5.40
28.250	0.00	1.88	4.304	I	O	|	|	|	|	5.40
28.333	0.00	1.88	4.291	I	O	|	|	|	|	5.39
28.417	0.00	1.87	4.278	I	O	|	|	|	|	5.38
28.500	0.00	1.87	4.265	I	O	|	|	|	|	5.37
28.583	0.00	1.86	4.252	I	O	|	|	|	|	5.37
28.667	0.00	1.86	4.239	I	O	|	|	|	|	5.36
28.750	0.00	1.85	4.227	I	O	|	|	|	|	5.35
28.833	0.00	1.85	4.214	I	O	|	|	|	|	5.35
28.917	0.00	1.84	4.201	I	O	|	|	|	|	5.34
29.000	0.00	1.84	4.188	I	O	|	|	|	|	5.33
29.083	0.00	1.83	4.176	I	O	|	|	|	|	5.32
29.167	0.00	1.83	4.163	I	O	|	|	|	|	5.32
29.250	0.00	1.82	4.151	I	O	|	|	|	|	5.31
29.333	0.00	1.82	4.138	I	O	|	|	|	|	5.30
29.417	0.00	1.81	4.126	I	O	|	|	|	|	5.30
29.500	0.00	1.81	4.113	I	O	|	|	|	|	5.29
29.583	0.00	1.80	4.101	I	O	|	|	|	|	5.28
29.667	0.00	1.80	4.088	I	O	|	|	|	|	5.28
29.750	0.00	1.79	4.076	I	O	|	|	|	|	5.27
29.833	0.00	1.79	4.064	I	O	|	|	|	|	5.26

29.917	0.00	1.78	4.051	I	O	|	|	|	5.25
30.000	0.00	1.78	4.039	I	O	|	|	|	5.25
30.083	0.00	1.77	4.027	I	O	|	|	|	5.24
30.167	0.00	1.77	4.015	I	O	|	|	|	5.23
30.250	0.00	1.76	4.003	I	O	|	|	|	5.23
30.333	0.00	1.76	3.991	I	O	|	|	|	5.22
30.417	0.00	1.75	3.979	I	O	|	|	|	5.21
30.500	0.00	1.75	3.966	I	O	|	|	|	5.21
30.583	0.00	1.74	3.954	I	O	|	|	|	5.20
30.667	0.00	1.74	3.942	I	O	|	|	|	5.19
30.750	0.00	1.73	3.931	I	O	|	|	|	5.19
30.833	0.00	1.73	3.919	I	O	|	|	|	5.18
30.917	0.00	1.72	3.907	I	O	|	|	|	5.17
31.000	0.00	1.72	3.895	I	O	|	|	|	5.17
31.083	0.00	1.71	3.883	I	O	|	|	|	5.16
31.167	0.00	1.71	3.871	I	O	|	|	|	5.15
31.250	0.00	1.70	3.860	I	O	|	|	|	5.15
31.333	0.00	1.70	3.848	I	O	|	|	|	5.14
31.417	0.00	1.69	3.836	I	O	|	|	|	5.13
31.500	0.00	1.69	3.824	I	O	|	|	|	5.13
31.583	0.00	1.69	3.813	I	O	|	|	|	5.12
31.667	0.00	1.68	3.801	I	O	|	|	|	5.11
31.750	0.00	1.68	3.790	I	O	|	|	|	5.11
31.833	0.00	1.67	3.778	I	O	|	|	|	5.10
31.917	0.00	1.67	3.767	I	O	|	|	|	5.09
32.000	0.00	1.66	3.755	I	O	|	|	|	5.09
32.083	0.00	1.66	3.744	I	O	|	|	|	5.08
32.167	0.00	1.65	3.732	I	O	|	|	|	5.07
32.250	0.00	1.65	3.721	I	O	|	|	|	5.07
32.333	0.00	1.64	3.710	I	O	|	|	|	5.06
32.417	0.00	1.64	3.698	I	O	|	|	|	5.06
32.500	0.00	1.63	3.687	I	O	|	|	|	5.05
32.583	0.00	1.63	3.676	I	O	|	|	|	5.04
32.667	0.00	1.63	3.665	I	O	|	|	|	5.04
32.750	0.00	1.62	3.653	I	O	|	|	|	5.03
32.833	0.00	1.62	3.642	I	O	|	|	|	5.02
32.917	0.00	1.61	3.631	I	O	|	|	|	5.02
33.000	0.00	1.61	3.620	I	O	|	|	|	5.01
33.083	0.00	1.60	3.609	I	O	|	|	|	5.01
33.167	0.00	1.60	3.598	I	O	|	|	|	5.00
33.250	0.00	1.59	3.587	I	O	|	|	|	4.99
33.333	0.00	1.58	3.576	I	O	|	|	|	4.99
33.417	0.00	1.57	3.565	I	O	|	|	|	4.98
33.500	0.00	1.56	3.554	I	O	|	|	|	4.97
33.583	0.00	1.56	3.544	I	O	|	|	|	4.97
33.667	0.00	1.55	3.533	I	O	|	|	|	4.96
33.750	0.00	1.54	3.522	I	O	|	|	|	4.95
33.833	0.00	1.53	3.512	I	O	|	|	|	4.95
33.917	0.00	1.52	3.501	I	O	|	|	|	4.94
34.000	0.00	1.51	3.491	I	O	|	|	|	4.94
34.083	0.00	1.51	3.480	I	O	|	|	|	4.93
34.167	0.00	1.50	3.470	I	O	|	|	|	4.92
34.250	0.00	1.49	3.460	I	O	|	|	|	4.92
34.333	0.00	1.48	3.450	I	O	|	|	|	4.91

34.417	0.00	1.47	3.439	I O	|	|	|	4.91
34.500	0.00	1.47	3.429	I O	|	|	|	4.90
34.583	0.00	1.46	3.419	I O	|	|	|	4.89
34.667	0.00	1.45	3.409	I O	|	|	|	4.89
34.750	0.00	1.44	3.399	I O	|	|	|	4.88
34.833	0.00	1.44	3.389	I O	|	|	|	4.88
34.917	0.00	1.43	3.379	I O	|	|	|	4.87
35.000	0.00	1.42	3.370	I O	|	|	|	4.86
35.083	0.00	1.41	3.360	I O	|	|	|	4.86
35.167	0.00	1.41	3.350	I O	|	|	|	4.85
35.250	0.00	1.40	3.340	I O	|	|	|	4.85
35.333	0.00	1.39	3.331	I O	|	|	|	4.84
35.417	0.00	1.38	3.321	I O	|	|	|	4.84
35.500	0.00	1.38	3.312	I O	|	|	|	4.83
35.583	0.00	1.37	3.302	I O	|	|	|	4.82
35.667	0.00	1.36	3.293	I O	|	|	|	4.82
35.750	0.00	1.35	3.284	I O	|	|	|	4.81
35.833	0.00	1.35	3.274	I O	|	|	|	4.81
35.917	0.00	1.34	3.265	I O	|	|	|	4.80
36.000	0.00	1.33	3.256	I O	|	|	|	4.80
36.083	0.00	1.32	3.247	I O	|	|	|	4.79
36.167	0.00	1.32	3.238	I O	|	|	|	4.79
36.250	0.00	1.31	3.229	I O	|	|	|	4.78
36.333	0.00	1.30	3.220	I O	|	|	|	4.78
36.417	0.00	1.30	3.211	I O	|	|	|	4.77
36.500	0.00	1.29	3.202	I O	|	|	|	4.76
36.583	0.00	1.28	3.193	I O	|	|	|	4.76
36.667	0.00	1.28	3.184	I O	|	|	|	4.75
36.750	0.00	1.27	3.175	I O	|	|	|	4.75
36.833	0.00	1.26	3.167	I O	|	|	|	4.74
36.917	0.00	1.26	3.158	I O	|	|	|	4.74
37.000	0.00	1.25	3.149	I O	|	|	|	4.73
37.083	0.00	1.24	3.141	I O	|	|	|	4.73
37.167	0.00	1.24	3.132	I O	|	|	|	4.72
37.250	0.00	1.23	3.124	I O	|	|	|	4.72
37.333	0.00	1.22	3.115	I O	|	|	|	4.71
37.417	0.00	1.22	3.107	I O	|	|	|	4.71
37.500	0.00	1.21	3.099	I O	|	|	|	4.70
37.583	0.00	1.20	3.090	I O	|	|	|	4.70
37.667	0.00	1.20	3.082	I O	|	|	|	4.69
37.750	0.00	1.19	3.074	I O	|	|	|	4.69
37.833	0.00	1.18	3.066	I O	|	|	|	4.68
37.917	0.00	1.18	3.057	I O	|	|	|	4.68
38.000	0.00	1.17	3.049	I O	|	|	|	4.67
38.083	0.00	1.16	3.041	I O	|	|	|	4.67
38.167	0.00	1.16	3.033	I O	|	|	|	4.67
38.250	0.00	1.15	3.025	I O	|	|	|	4.66
38.333	0.00	1.15	3.017	I O	|	|	|	4.66
38.417	0.00	1.14	3.010	I O	|	|	|	4.65
38.500	0.00	1.13	3.002	I O	|	|	|	4.65
38.583	0.00	1.13	2.994	I O	|	|	|	4.64
38.667	0.00	1.12	2.986	I O	|	|	|	4.64
38.750	0.00	1.12	2.978	I O	|	|	|	4.63
38.833	0.00	1.11	2.971	I O	|	|	|	4.63

38.917	0.00	1.10	2.963	I O					4.62
39.000	0.00	1.10	2.956	I O					4.62
39.083	0.00	1.09	2.948	I O					4.62
39.167	0.00	1.09	2.941	IO					4.61
39.250	0.00	1.08	2.933	IO					4.61
39.333	0.00	1.07	2.926	IO					4.60
39.417	0.00	1.07	2.918	IO					4.60
39.500	0.00	1.06	2.911	IO					4.59
39.583	0.00	1.06	2.904	IO					4.59
39.667	0.00	1.05	2.896	IO					4.58
39.750	0.00	1.05	2.889	IO					4.58
39.833	0.00	1.04	2.882	IO					4.58
39.917	0.00	1.03	2.875	IO					4.57
40.000	0.00	1.03	2.868	IO					4.57
40.083	0.00	1.02	2.861	IO					4.56
40.167	0.00	1.02	2.854	IO					4.56
40.250	0.00	1.01	2.847	IO					4.56
40.333	0.00	1.01	2.840	IO					4.55
40.417	0.00	1.00	2.833	IO					4.55
40.500	0.00	1.00	2.826	IO					4.54
40.583	0.00	0.99	2.819	IO					4.54
40.667	0.00	0.99	2.812	IO					4.53
40.750	0.00	0.98	2.805	IO					4.53
40.833	0.00	0.98	2.799	IO					4.53
40.917	0.00	0.97	2.792	IO					4.52
41.000	0.00	0.97	2.785	IO					4.52
41.083	0.00	0.96	2.779	IO					4.52
41.167	0.00	0.95	2.772	IO					4.51
41.250	0.00	0.95	2.766	IO					4.51
41.333	0.00	0.94	2.759	IO					4.50
41.417	0.00	0.94	2.753	IO					4.50
41.500	0.00	0.94	2.746	IO					4.50
41.583	0.00	0.94	2.740	IO					4.49
41.667	0.00	0.94	2.733	IO					4.49
41.750	0.00	0.94	2.727	IO					4.48
41.833	0.00	0.94	2.720	IO					4.48
41.917	0.00	0.94	2.714	IO					4.48
42.000	0.00	0.94	2.707	IO					4.47
42.083	0.00	0.94	2.701	IO					4.47
42.167	0.00	0.94	2.694	IO					4.46
42.250	0.00	0.94	2.688	IO					4.46
42.333	0.00	0.93	2.682	IO					4.46
42.417	0.00	0.93	2.675	IO					4.45
42.500	0.00	0.93	2.669	IO					4.45
42.583	0.00	0.93	2.662	IO					4.44
42.667	0.00	0.93	2.656	IO					4.44
42.750	0.00	0.93	2.649	IO					4.44
42.833	0.00	0.93	2.643	IO					4.43
42.917	0.00	0.93	2.637	IO					4.43
43.000	0.00	0.93	2.630	IO					4.42
43.083	0.00	0.93	2.624	IO					4.42
43.167	0.00	0.93	2.617	IO					4.42
43.250	0.00	0.93	2.611	IO					4.41
43.333	0.00	0.93	2.605	IO					4.41

43.417	0.00	0.93	2.598	IO					4.41
43.500	0.00	0.93	2.592	IO					4.40
43.583	0.00	0.93	2.585	IO					4.40
43.667	0.00	0.93	2.579	IO					4.39
43.750	0.00	0.93	2.573	IO					4.39
43.833	0.00	0.93	2.566	IO					4.39
43.917	0.00	0.93	2.560	IO					4.38
44.000	0.00	0.93	2.553	IO					4.38
44.083	0.00	0.92	2.547	IO					4.37
44.167	0.00	0.92	2.541	IO					4.37
44.250	0.00	0.92	2.534	IO					4.37
44.333	0.00	0.92	2.528	IO					4.36
44.417	0.00	0.92	2.522	IO					4.36
44.500	0.00	0.92	2.515	IO					4.35
44.583	0.00	0.92	2.509	IO					4.35
44.667	0.00	0.92	2.503	IO					4.35
44.750	0.00	0.92	2.496	IO					4.34
44.833	0.00	0.92	2.490	IO					4.34
44.917	0.00	0.92	2.484	IO					4.34
45.000	0.00	0.92	2.477	IO					4.33
45.083	0.00	0.92	2.471	IO					4.33
45.167	0.00	0.92	2.465	IO					4.32
45.250	0.00	0.92	2.458	IO					4.32
45.333	0.00	0.92	2.452	IO					4.32
45.417	0.00	0.92	2.446	IO					4.31
45.500	0.00	0.92	2.439	IO					4.31
45.583	0.00	0.92	2.433	IO					4.30
45.667	0.00	0.92	2.427	IO					4.30
45.750	0.00	0.92	2.420	IO					4.30
45.833	0.00	0.92	2.414	IO					4.29
45.917	0.00	0.91	2.408	IO					4.29
46.000	0.00	0.91	2.401	IO					4.29
46.083	0.00	0.91	2.395	IO					4.28
46.167	0.00	0.91	2.389	IO					4.28
46.250	0.00	0.91	2.383	IO					4.27
46.333	0.00	0.91	2.376	IO					4.27
46.417	0.00	0.91	2.370	IO					4.27
46.500	0.00	0.91	2.364	IO					4.26
46.583	0.00	0.91	2.357	IO					4.26
46.667	0.00	0.91	2.351	IO					4.25
46.750	0.00	0.91	2.345	IO					4.25
46.833	0.00	0.91	2.339	IO					4.25
46.917	0.00	0.91	2.332	IO					4.24
47.000	0.00	0.91	2.326	IO					4.24
47.083	0.00	0.91	2.320	IO					4.24
47.167	0.00	0.91	2.314	IO					4.23
47.250	0.00	0.91	2.307	IO					4.23
47.333	0.00	0.91	2.301	IO					4.22
47.417	0.00	0.91	2.295	IO					4.22
47.500	0.00	0.91	2.289	IO					4.22
47.583	0.00	0.91	2.282	IO					4.21
47.667	0.00	0.91	2.276	IO					4.21
47.750	0.00	0.90	2.270	IO					4.21
47.833	0.00	0.90	2.264	IO					4.20

47.917	0.00	0.90	2.257	IO	|	|	|	4.20
48.000	0.00	0.90	2.251	IO	|	|	|	4.19

**********HYDROGRAPH DATA**********

Number of intervals = 1855
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 8.021 (CFS)
Total volume = 8.762 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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                    FLOOD HYDROGRAPH ROUTING PROGRAM
                Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
                            Study date: 10/29/19


 ----------------------------------------------------------------------
 25 year flood routing
 MJPA 304163
 BUILDING 1
 4163FR25.HYD
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 Program License Serial Number 6145

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 ********************* HYDROGRAPH INFORMATION **********************

            From study/file name: 4163UHP252425.rte
 ****************************HYDROGRAPH DATA*****************************
            Number of intervals =   297
            Time interval =    5.0 (Min.)
            Maximum/Peak flow rate =       22.047 (CFS)
            Total volume =      10.957 (Ac.Ft)
      Status of hydrographs being held in storage
                  Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
      Peak (CFS)      0.000     0.000     0.000     0.000     0.000
      Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
 ************************************************************************



 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 Process from Point/Station        1.000 to Point/Station        2.000
 **** RETARDING BASIN ROUTING ****
 ________________________________________________________________________

 User entry of depth-outflow-storage data
 ----------------------------------------------------------------------
 Total number of inflow hydrograph intervals = 297
 Hydrograph time unit =  5.000 (Min.)
 Initial depth in storage basin =   0.00(Ft.)
 ----------------------------------------------------------------------
 ----------------------------------------------------------------------
 Initial basin depth =   0.00 (Ft.)
 Initial basin storage =      0.00 (Ac.Ft)
 Initial basin outflow =   0.00 (CFS)
 ----------------------------------------------------------------------
 ----------------------------------------------------------------------
 Depth vs. Storage and Depth vs. Discharge data:
  Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
      (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
 ----------------------------------------------------------------------
```

0.000	0.000	0.000	0.000	0.000
1.000	0.322	0.330	0.321	0.323
2.000	0.967	0.580	0.965	0.969
3.000	1.450	0.740	1.447	1.453
4.000	1.934	0.880	1.931	1.937
4.500	2.753	0.940	2.750	2.756
5.000	3.600	1.600	3.594	3.606
6.000	5.375	2.310	5.367	5.383
7.000	7.263	17.920	7.201	7.325
8.000	9.265	24.580	9.180	9.350
9.000	11.383	29.740	11.281	11.485
10.000	13.621	32.460	13.509	13.733

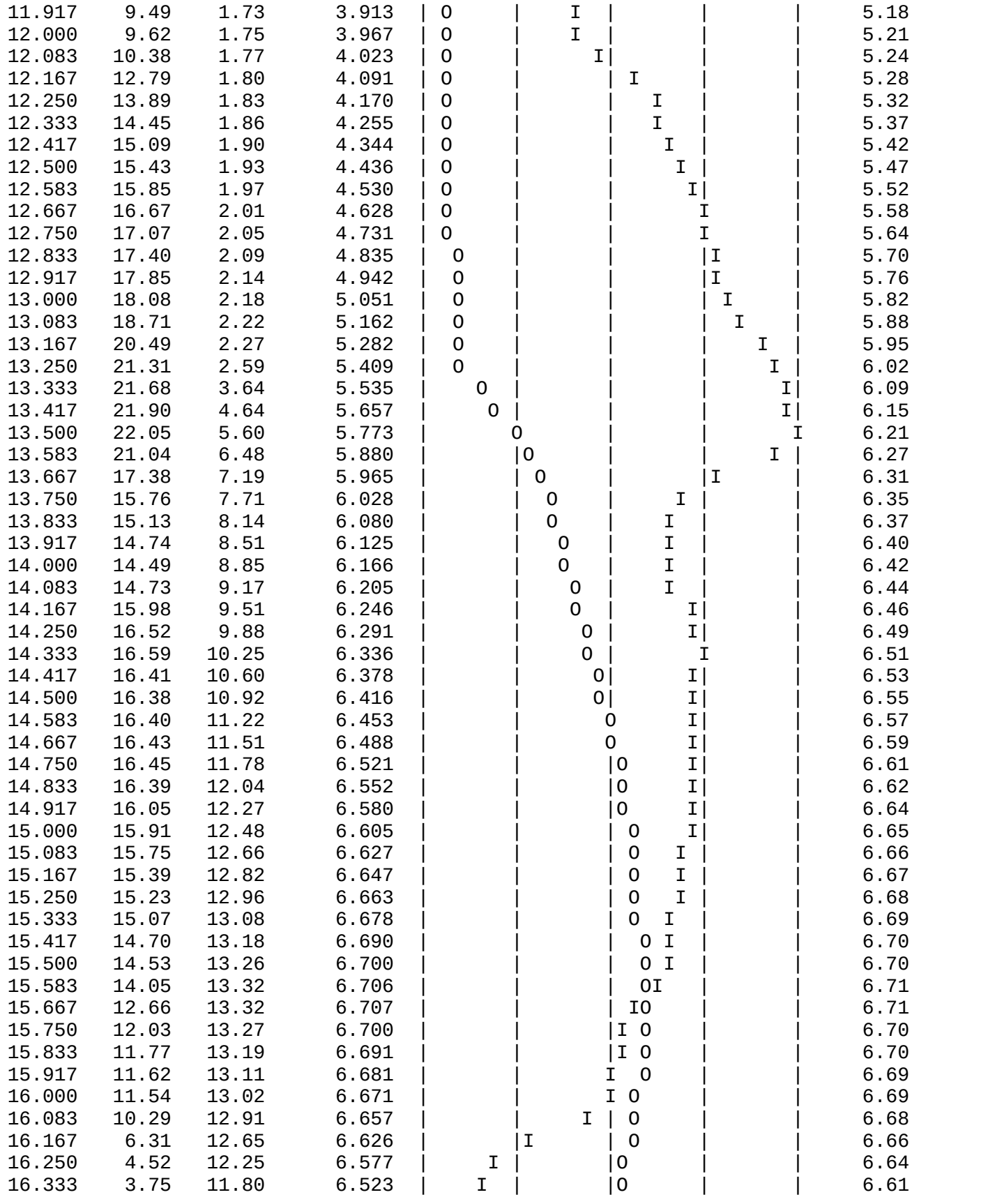
Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 5.5 11.02 16.54 22.05	Depth (Ft.)
0.083	0.17	0.00	0.001	O | | | |	0.00
0.167	0.72	0.00	0.004	OI | | | |	0.01
0.250	0.97	0.01	0.009	OI | | | |	0.03
0.333	1.16	0.02	0.017	OI | | | |	0.05
0.417	1.50	0.03	0.026	O I | | | |	0.08
0.500	1.67	0.04	0.036	O I | | | |	0.11
0.583	1.75	0.05	0.048	O I | | | |	0.15
0.667	1.80	0.06	0.060	O I | | | |	0.19
0.750	1.83	0.07	0.072	O I | | | |	0.22
0.833	1.94	0.09	0.084	O I | | | |	0.26
0.917	2.23	0.10	0.098	O I | | | |	0.30
1.000	2.36	0.12	0.113	O I | | | |	0.35
1.083	2.34	0.13	0.128	O I | | | |	0.40
1.167	2.09	0.15	0.143	O I | | | |	0.44
1.250	1.98	0.16	0.156	O I | | | |	0.48
1.333	1.95	0.17	0.168	O I | | | |	0.52
1.417	1.92	0.18	0.180	O I | | | |	0.56
1.500	1.91	0.20	0.192	O I | | | |	0.60
1.583	1.91	0.21	0.204	O I | | | |	0.63
1.667	1.90	0.22	0.215	O I | | | |	0.67
1.750	1.89	0.23	0.227	O I | | | |	0.70
1.833	1.97	0.24	0.238	O I | | | |	0.74
1.917	2.24	0.26	0.251	O I | | | |	0.78
2.000	2.37	0.27	0.265	O I | | | |	0.82
2.083	2.42	0.29	0.280	O I | | | |	0.87
2.167	2.45	0.30	0.295	O I | | | |	0.91
2.250	2.47	0.32	0.309	O I | | | |	0.96
2.333	2.49	0.33	0.324	O I | | | |	1.00
2.417	2.49	0.34	0.339	O I | | | |	1.03
2.500	2.50	0.34	0.354	O I | | | |	1.05
2.583	2.59	0.35	0.369	O I | | | |	1.07
2.667	2.87	0.35	0.385	O I | | | |	1.10
2.750	3.00	0.36	0.403	O I | | | |	1.13
2.833	3.05	0.37	0.421	O I | | | |	1.15

2.917	3.08	0.38	0.440	O I				1.18
3.000	3.10	0.38	0.459	O I				1.21
3.083	3.11	0.39	0.477	O I				1.24
3.167	3.12	0.40	0.496	O I				1.27
3.250	3.13	0.40	0.515	O I				1.30
3.333	3.14	0.41	0.534	O I				1.33
3.417	3.14	0.42	0.552	O I				1.36
3.500	3.14	0.43	0.571	O I				1.39
3.583	3.14	0.43	0.590	O I				1.42
3.667	3.14	0.44	0.608	O I				1.44
3.750	3.14	0.45	0.627	O I				1.47
3.833	3.22	0.46	0.646	O I				1.50
3.917	3.50	0.46	0.666	O I				1.53
4.000	3.62	0.47	0.687	O I				1.57
4.083	3.67	0.48	0.709	O I				1.60
4.167	3.71	0.49	0.731	O I				1.63
4.250	3.73	0.50	0.753	O I				1.67
4.333	3.82	0.51	0.776	O I				1.70
4.417	4.11	0.52	0.799	O I				1.74
4.500	4.24	0.52	0.825	O I				1.78
4.583	4.30	0.53	0.850	O I				1.82
4.667	4.33	0.54	0.876	O I				1.86
4.750	4.35	0.55	0.902	O I				1.90
4.833	3.79	0.56	0.927	O I				1.94
4.917	1.89	0.57	0.942	O I				1.96
5.000	1.05	0.57	0.949	OI				1.97
5.083	1.21	0.57	0.952	OI				1.98
5.167	2.61	0.58	0.962	O I				1.99
5.250	3.21	0.58	0.978	O I				2.02
5.333	3.49	0.59	0.997	O I				2.06
5.417	3.89	0.60	1.018	O I				2.11
5.500	4.08	0.60	1.041	O I				2.15
5.583	3.62	0.61	1.064	O I				2.20
5.667	1.90	0.62	1.078	O I				2.23
5.750	1.16	0.62	1.085	OI				2.24
5.833	0.90	0.62	1.088	OI				2.25
5.917	0.73	0.62	1.089	OI				2.25
6.000	0.64	0.62	1.089	O				2.25
6.083	0.68	0.62	1.090	O				2.25
6.167	0.98	0.62	1.091	OI				2.26
6.250	1.11	0.62	1.094	OI				2.26
6.333	1.15	0.62	1.097	OI				2.27
6.417	1.22	0.62	1.101	OI				2.28
6.500	1.26	0.63	1.106	OI				2.29
6.583	1.41	0.63	1.110	O I				2.30
6.667	1.78	0.63	1.117	O I				2.31
6.750	1.97	0.63	1.126	O I				2.33
6.833	2.07	0.64	1.135	O I				2.35
6.917	2.13	0.64	1.145	O I				2.37
7.000	2.18	0.64	1.156	O I				2.39
7.083	2.22	0.65	1.166	O I				2.41
7.167	2.26	0.65	1.177	O I				2.44
7.250	2.29	0.65	1.189	O I				2.46
7.333	2.42	0.66	1.200	O I				2.48

7.417	2.79	0.66	1.214	O	I	|	|	|	2.51
7.500	2.96	0.67	1.229	O	I	|	|	|	2.54
7.583	3.15	0.67	1.245	O	I	|	|	|	2.58
7.667	3.56	0.68	1.264	O	I	|	|	|	2.61
7.750	3.76	0.69	1.284	O	I	|	|	|	2.66
7.833	3.96	0.69	1.306	O	I	|	|	|	2.70
7.917	4.37	0.70	1.330	O	I	|	|	|	2.75
8.000	4.58	0.71	1.356	O	I	|	|	|	2.81
8.083	4.90	0.72	1.384	O	I	|	|	|	2.86
8.167	5.65	0.73	1.415	O	I	|	|	|	2.93
8.250	6.01	0.74	1.450	O	I	|	|	|	3.00
8.333	6.19	0.75	1.487	O	I	|	|	|	3.08
8.417	6.30	0.76	1.525	O	I	|	|	|	3.15
8.500	6.38	0.77	1.563	O	I	|	|	|	3.23
8.583	6.55	0.78	1.602	O	I	|	|	|	3.31
8.667	6.93	0.80	1.643	O	I	|	|	|	3.40
8.750	7.13	0.81	1.686	O	I	|	|	|	3.49
8.833	7.33	0.82	1.730	O	I	|	|	|	3.58
8.917	7.73	0.83	1.777	O	I	|	|	|	3.67
9.000	7.93	0.85	1.825	O	I	|	|	|	3.77
9.083	8.24	0.86	1.875	O	I	|	|	|	3.88
9.167	8.99	0.88	1.928	O	I	|	|	|	3.99
9.250	9.35	0.88	1.985	O	I	|	|	|	4.03
9.333	9.63	0.89	2.044	O	I	|	|	|	4.07
9.417	10.08	0.89	2.106	O	I	|	|	|	4.10
9.500	10.31	0.90	2.170	O	I	|	|	|	4.14
9.583	10.54	0.90	2.236	O	I	|	|	|	4.18
9.667	10.96	0.91	2.303	O	I	|	|	|	4.23
9.750	11.18	0.91	2.373	O	I	|	|	|	4.27
9.833	11.40	0.92	2.445	O	I	|	|	|	4.31
9.917	11.81	0.92	2.518	O	I	|	|	|	4.36
10.000	12.02	0.93	2.594	O	I	|	|	|	4.40
10.083	11.42	0.93	2.668	O	I	|	|	|	4.45
10.167	9.11	0.94	2.733	O	I	|	|	|	4.49
10.250	8.10	0.97	2.785	O	I	|	|	|	4.52
10.333	7.70	1.00	2.833	O	I	|	|	|	4.55
10.417	7.47	1.04	2.878	O	I	|	|	|	4.57
10.500	7.33	1.07	2.922	O	I	|	|	|	4.60
10.583	7.75	1.11	2.966	O	I	|	|	|	4.63
10.667	9.39	1.15	3.018	O	I	|	|	|	4.66
10.750	10.12	1.19	3.077	O	I	|	|	|	4.69
10.833	10.39	1.24	3.139	O	I	|	|	|	4.73
10.917	10.60	1.29	3.203	O	I	|	|	|	4.77
11.000	10.74	1.34	3.267	O	I	|	|	|	4.80
11.083	10.75	1.39	3.332	O	I	|	|	|	4.84
11.167	10.49	1.44	3.395	O	I	|	|	|	4.88
11.250	10.40	1.49	3.457	O	I	|	|	|	4.92
11.333	10.40	1.54	3.518	O	I	|	|	|	4.95
11.417	10.39	1.58	3.579	O	I	|	|	|	4.99
11.500	10.38	1.62	3.640	O	I	|	|	|	5.02
11.583	10.18	1.64	3.699	O	I	|	|	|	5.06
11.667	9.51	1.66	3.756	O	I	|	|	|	5.09
11.750	9.22	1.68	3.809	O	I	|	|	|	5.12
11.833	9.21	1.70	3.860	O	I	|	|	|	5.15



16.417	3.32	11.34	6.468	| I |	O	|	|	6.58
16.500	3.04	10.89	6.413	| I |	O|	|	|	6.55
16.583	2.76	10.45	6.359	| I |	O|	|	|	6.52
16.667	2.34	10.01	6.307	| I |	O |	|	|	6.49
16.750	2.13	9.58	6.255	| I |	O |	|	|	6.47
16.833	1.97	9.16	6.204	| I |	O |	|	|	6.44
16.917	1.94	8.77	6.156	| I |	O |	|	|	6.41
17.000	1.92	8.39	6.110	| I |	O |	|	|	6.39
17.083	1.77	8.02	6.066	| I |	O |	|	|	6.37
17.167	1.31	7.67	6.023	|I |	O |	|	|	6.34
17.250	1.11	7.31	5.980	|I |	O |	|	|	6.32
17.333	1.03	6.96	5.938	|I |	O |	|	|	6.30
17.417	1.00	6.63	5.898	|I |O |	|	|	6.28
17.500	0.98	6.32	5.860	|I |O |	|	|	6.26
17.583	0.97	6.03	5.824	|I O |	|	|	6.24
17.667	0.97	5.75	5.790	|I O |	|	|	6.22
17.750	0.97	5.48	5.758	|I O|	|	|	6.20
17.833	0.87	5.23	5.728	|I O|	|	|	6.19
17.917	0.54	4.98	5.698	I O|	|	|	6.17
18.000	0.41	4.73	5.668	I O |	|	|	6.15
18.083	0.36	4.49	5.638	I O |	|	|	6.14
18.167	0.33	4.26	5.611	I O |	|	|	6.12
18.250	0.32	4.04	5.584	I O |	|	|	6.11
18.333	0.32	3.84	5.559	I O |	|	|	6.10
18.417	0.32	3.64	5.536	I O |	|	|	6.09
18.500	0.33	3.46	5.514	I O |	|	|	6.07
18.583	0.53	3.29	5.493	I O |	|	|	6.06
18.667	1.22	3.16	5.477	|I O |	|	|	6.05
18.750	1.53	3.06	5.465	| I O |	|	|	6.05
18.833	1.58	2.97	5.455	| I O |	|	|	6.04
18.917	1.38	2.89	5.445	|I O |	|	|	6.04
19.000	1.30	2.81	5.435	|I O |	|	|	6.03
19.083	1.37	2.72	5.425	|I O |	|	|	6.03
19.167	1.64	2.66	5.417	| IO |	|	|	6.02
19.250	1.76	2.60	5.411	| IO |	|	|	6.02
19.333	1.63	2.55	5.404	| IO |	|	|	6.02
19.417	1.02	2.49	5.396	|I O |	|	|	6.01
19.500	0.76	2.40	5.386	|I O |	|	|	6.01
19.583	0.85	2.31	5.375	|I O |	|	|	6.00
19.667	1.41	2.31	5.367	| IO |	|	|	6.00
19.750	1.65	2.30	5.361	| IO |	|	|	5.99
19.833	1.65	2.30	5.357	| IO |	|	|	5.99
19.917	1.42	2.30	5.352	| IO |	|	|	5.99
20.000	1.33	2.30	5.345	|I O |	|	|	5.98
20.083	1.37	2.30	5.339	|I O |	|	|	5.98
20.167	1.64	2.29	5.333	| IO |	|	|	5.98
20.250	1.76	2.29	5.329	| IO |	|	|	5.97
20.333	1.82	2.29	5.326	| IO |	|	|	5.97
20.417	1.84	2.29	5.323	| IO |	|	|	5.97
20.500	1.85	2.29	5.320	| IO |	|	|	5.97
20.583	1.86	2.29	5.317	| IO |	|	|	5.97
20.667	1.87	2.29	5.314	| IO |	|	|	5.97
20.750	1.87	2.28	5.311	| IO |	|	|	5.96
20.833	1.80	2.28	5.308	| IO |	|	|	5.96

20.917	1.52	2.28	5.303	| IO	|	|	|	5.96
21.000	1.39	2.28	5.298	| IO	|	|	|	5.96
21.083	1.43	2.28	5.292	| IO	|	|	|	5.95
21.167	1.67	2.27	5.287	| IO	|	|	|	5.95
21.250	1.78	2.27	5.283	| IO	|	|	|	5.95
21.333	1.73	2.27	5.279	| IO	|	|	|	5.95
21.417	1.48	2.27	5.275	| IO	|	|	|	5.94
21.500	1.36	2.27	5.269	|I O	|	|	|	5.94
21.583	1.40	2.27	5.263	| IO	|	|	|	5.94
21.667	1.66	2.26	5.258	| IO	|	|	|	5.93
21.750	1.52	2.26	5.253	| IO	|	|	|	5.93
21.833	0.90	2.26	5.246	|I O	|	|	|	5.93
21.917	1.10	2.25	5.237	|I O	|	|	|	5.92
22.000	1.21	2.25	5.230	|I O	|	|	|	5.92
22.083	1.06	2.25	5.222	|I O	|	|	|	5.91
22.167	0.53	2.24	5.212	I O	|	|	|	5.91
22.250	0.30	2.24	5.200	I O	|	|	|	5.90
22.333	0.37	2.23	5.186	I O	|	|	|	5.89
22.417	0.85	2.23	5.175	|I O	|	|	|	5.89
22.500	1.04	2.23	5.166	|I O	|	|	|	5.88
22.583	1.13	2.22	5.159	|I O	|	|	|	5.88
22.667	1.17	2.22	5.151	|I O	|	|	|	5.87
22.750	1.20	2.22	5.144	|I O	|	|	|	5.87
22.833	1.21	2.21	5.137	|I O	|	|	|	5.87
22.917	1.23	2.21	5.130	|I O	|	|	|	5.86
23.000	1.24	2.21	5.124	|I O	|	|	|	5.86
23.083	1.25	2.21	5.117	|I O	|	|	|	5.85
23.167	1.25	2.20	5.110	|I O	|	|	|	5.85
23.250	1.25	2.20	5.104	|I O	|	|	|	5.85
23.333	1.25	2.20	5.097	|I O	|	|	|	5.84
23.417	1.25	2.20	5.091	|I O	|	|	|	5.84
23.500	1.25	2.19	5.084	|I O	|	|	|	5.84
23.583	1.25	2.19	5.078	|I O	|	|	|	5.83
23.667	1.25	2.19	5.071	|I O	|	|	|	5.83
23.750	1.25	2.19	5.065	|I O	|	|	|	5.83
23.833	1.25	2.18	5.059	|I O	|	|	|	5.82
23.917	1.25	2.18	5.052	|I O	|	|	|	5.82
24.000	1.25	2.18	5.046	|I O	|	|	|	5.81
24.083	1.09	2.18	5.039	|I O	|	|	|	5.81
24.167	0.53	2.17	5.030	I O	|	|	|	5.81
24.250	0.28	2.17	5.017	I O	|	|	|	5.80
24.333	0.18	2.16	5.004	I O	|	|	|	5.79
24.417	0.11	2.16	4.990	I O	|	|	|	5.78
24.500	0.08	2.15	4.976	I O	|	|	|	5.78
24.583	0.05	2.14	4.962	I O	|	|	|	5.77
24.667	0.03	2.14	4.947	I O	|	|	|	5.76
24.750	0.02	2.13	4.933	I O	|	|	|	5.75
24.833	0.00	2.13	4.918	I O	|	|	|	5.74
24.917	0.00	2.12	4.903	I O	|	|	|	5.73
25.000	0.00	2.12	4.889	I O	|	|	|	5.73
25.083	0.00	2.11	4.874	I O	|	|	|	5.72
25.167	0.00	2.10	4.860	I O	|	|	|	5.71
25.250	0.00	2.10	4.845	I O	|	|	|	5.70
25.333	0.00	2.09	4.831	I O	|	|	|	5.69

25.417	0.00	2.09	4.816	I O	|	|	|	5.69
25.500	0.00	2.08	4.802	I O	|	|	|	5.68
25.583	0.00	2.08	4.788	I O	|	|	|	5.67
25.667	0.00	2.07	4.773	I O	|	|	|	5.66
25.750	0.00	2.06	4.759	I O	|	|	|	5.65
25.833	0.00	2.06	4.745	I O	|	|	|	5.65
25.917	0.00	2.05	4.731	I O	|	|	|	5.64
26.000	0.00	2.05	4.717	I O	|	|	|	5.63
26.083	0.00	2.04	4.703	I O	|	|	|	5.62
26.167	0.00	2.04	4.689	I O	|	|	|	5.61
26.250	0.00	2.03	4.675	I O	|	|	|	5.61
26.333	0.00	2.02	4.661	I O	|	|	|	5.60
26.417	0.00	2.02	4.647	I O	|	|	|	5.59
26.500	0.00	2.01	4.633	I O	|	|	|	5.58
26.583	0.00	2.01	4.619	I O	|	|	|	5.57
26.667	0.00	2.00	4.605	I O	|	|	|	5.57
26.750	0.00	2.00	4.591	I O	|	|	|	5.56
26.833	0.00	1.99	4.578	I O	|	|	|	5.55
26.917	0.00	1.99	4.564	I O	|	|	|	5.54
27.000	0.00	1.98	4.550	I O	|	|	|	5.54
27.083	0.00	1.97	4.537	I O	|	|	|	5.53
27.167	0.00	1.97	4.523	I O	|	|	|	5.52
27.250	0.00	1.96	4.510	I O	|	|	|	5.51
27.333	0.00	1.96	4.496	I O	|	|	|	5.50
27.417	0.00	1.95	4.483	I O	|	|	|	5.50
27.500	0.00	1.95	4.469	I O	|	|	|	5.49
27.583	0.00	1.94	4.456	I O	|	|	|	5.48
27.667	0.00	1.94	4.442	I O	|	|	|	5.47
27.750	0.00	1.93	4.429	I O	|	|	|	5.47
27.833	0.00	1.93	4.416	I O	|	|	|	5.46
27.917	0.00	1.92	4.403	I O	|	|	|	5.45
28.000	0.00	1.92	4.389	I O	|	|	|	5.44
28.083	0.00	1.91	4.376	I O	|	|	|	5.44
28.167	0.00	1.91	4.363	I O	|	|	|	5.43
28.250	0.00	1.90	4.350	I O	|	|	|	5.42
28.333	0.00	1.89	4.337	I O	|	|	|	5.42
28.417	0.00	1.89	4.324	I O	|	|	|	5.41
28.500	0.00	1.88	4.311	I O	|	|	|	5.40
28.583	0.00	1.88	4.298	I O	|	|	|	5.39
28.667	0.00	1.87	4.285	I O	|	|	|	5.39
28.750	0.00	1.87	4.272	I O	|	|	|	5.38
28.833	0.00	1.86	4.259	I O	|	|	|	5.37
28.917	0.00	1.86	4.246	I O	|	|	|	5.36
29.000	0.00	1.85	4.234	I O	|	|	|	5.36
29.083	0.00	1.85	4.221	I O	|	|	|	5.35
29.167	0.00	1.84	4.208	I O	|	|	|	5.34
29.250	0.00	1.84	4.196	I O	|	|	|	5.34
29.333	0.00	1.83	4.183	I O	|	|	|	5.33
29.417	0.00	1.83	4.170	I O	|	|	|	5.32
29.500	0.00	1.82	4.158	I O	|	|	|	5.31
29.583	0.00	1.82	4.145	I O	|	|	|	5.31
29.667	0.00	1.81	4.133	I O	|	|	|	5.30
29.750	0.00	1.81	4.120	I O	|	|	|	5.29
29.833	0.00	1.80	4.108	I O	|	|	|	5.29

29.917	0.00	1.80	4.095	I O	|	|	|	5.28
30.000	0.00	1.79	4.083	I O	|	|	|	5.27
30.083	0.00	1.79	4.071	I O	|	|	|	5.27
30.167	0.00	1.78	4.058	I O	|	|	|	5.26
30.250	0.00	1.78	4.046	I O	|	|	|	5.25
30.333	0.00	1.77	4.034	I O	|	|	|	5.24
30.417	0.00	1.77	4.022	I O	|	|	|	5.24
30.500	0.00	1.76	4.009	I O	|	|	|	5.23
30.583	0.00	1.76	3.997	I O	|	|	|	5.22
30.667	0.00	1.75	3.985	I O	|	|	|	5.22
30.750	0.00	1.75	3.973	I O	|	|	|	5.21
30.833	0.00	1.74	3.961	I O	|	|	|	5.20
30.917	0.00	1.74	3.949	I O	|	|	|	5.20
31.000	0.00	1.73	3.937	I O	|	|	|	5.19
31.083	0.00	1.73	3.925	I O	|	|	|	5.18
31.167	0.00	1.73	3.913	I O	|	|	|	5.18
31.250	0.00	1.72	3.902	I O	|	|	|	5.17
31.333	0.00	1.72	3.890	I O	|	|	|	5.16
31.417	0.00	1.71	3.878	I O	|	|	|	5.16
31.500	0.00	1.71	3.866	I O	|	|	|	5.15
31.583	0.00	1.70	3.854	I O	|	|	|	5.14
31.667	0.00	1.70	3.843	I O	|	|	|	5.14
31.750	0.00	1.69	3.831	I O	|	|	|	5.13
31.833	0.00	1.69	3.819	I O	|	|	|	5.12
31.917	0.00	1.68	3.808	I O	|	|	|	5.12
32.000	0.00	1.68	3.796	I O	|	|	|	5.11
32.083	0.00	1.67	3.785	I O	|	|	|	5.10
32.167	0.00	1.67	3.773	I O	|	|	|	5.10
32.250	0.00	1.66	3.762	I O	|	|	|	5.09
32.333	0.00	1.66	3.750	I O	|	|	|	5.08
32.417	0.00	1.66	3.739	I O	|	|	|	5.08
32.500	0.00	1.65	3.727	I O	|	|	|	5.07
32.583	0.00	1.65	3.716	I O	|	|	|	5.07
32.667	0.00	1.64	3.705	I O	|	|	|	5.06
32.750	0.00	1.64	3.693	I O	|	|	|	5.05
32.833	0.00	1.63	3.682	I O	|	|	|	5.05
32.917	0.00	1.63	3.671	I O	|	|	|	5.04
33.000	0.00	1.62	3.660	I O	|	|	|	5.03
33.083	0.00	1.62	3.649	I O	|	|	|	5.03
33.167	0.00	1.61	3.637	I O	|	|	|	5.02
33.250	0.00	1.61	3.626	I O	|	|	|	5.01
33.333	0.00	1.61	3.615	I O	|	|	|	5.01
33.417	0.00	1.60	3.604	I O	|	|	|	5.00
33.500	0.00	1.59	3.593	I O	|	|	|	5.00
33.583	0.00	1.59	3.582	I O	|	|	|	4.99
33.667	0.00	1.58	3.571	I O	|	|	|	4.98
33.750	0.00	1.57	3.560	I O	|	|	|	4.98
33.833	0.00	1.56	3.550	I O	|	|	|	4.97
33.917	0.00	1.55	3.539	I O	|	|	|	4.96
34.000	0.00	1.54	3.528	I O	|	|	|	4.96
34.083	0.00	1.54	3.518	I O	|	|	|	4.95
34.167	0.00	1.53	3.507	I O	|	|	|	4.95
34.250	0.00	1.52	3.497	I O	|	|	|	4.94
34.333	0.00	1.51	3.486	I O	|	|	|	4.93

34.417	0.00	1.50	3.476	I O	|	|	|	|	4.93
34.500	0.00	1.50	3.466	I O	|	|	|	|	4.92
34.583	0.00	1.49	3.455	I O	|	|	|	|	4.91
34.667	0.00	1.48	3.445	I O	|	|	|	|	4.91
34.750	0.00	1.47	3.435	I O	|	|	|	|	4.90
34.833	0.00	1.46	3.425	I O	|	|	|	|	4.90
34.917	0.00	1.46	3.415	I O	|	|	|	|	4.89
35.000	0.00	1.45	3.405	I O	|	|	|	|	4.88
35.083	0.00	1.44	3.395	I O	|	|	|	|	4.88
35.167	0.00	1.43	3.385	I O	|	|	|	|	4.87
35.250	0.00	1.42	3.375	I O	|	|	|	|	4.87
35.333	0.00	1.42	3.365	I O	|	|	|	|	4.86
35.417	0.00	1.41	3.356	I O	|	|	|	|	4.86
35.500	0.00	1.40	3.346	I O	|	|	|	|	4.85
35.583	0.00	1.39	3.336	I O	|	|	|	|	4.84
35.667	0.00	1.39	3.327	I O	|	|	|	|	4.84
35.750	0.00	1.38	3.317	I O	|	|	|	|	4.83
35.833	0.00	1.37	3.308	IO	|	|	|	|	4.83
35.917	0.00	1.36	3.298	IO	|	|	|	|	4.82
36.000	0.00	1.36	3.289	IO	|	|	|	|	4.82
36.083	0.00	1.35	3.280	IO	|	|	|	|	4.81
36.167	0.00	1.34	3.270	IO	|	|	|	|	4.81
36.250	0.00	1.34	3.261	IO	|	|	|	|	4.80
36.333	0.00	1.33	3.252	IO	|	|	|	|	4.79
36.417	0.00	1.32	3.243	IO	|	|	|	|	4.79
36.500	0.00	1.31	3.234	IO	|	|	|	|	4.78
36.583	0.00	1.31	3.225	IO	|	|	|	|	4.78
36.667	0.00	1.30	3.216	IO	|	|	|	|	4.77
36.750	0.00	1.29	3.207	IO	|	|	|	|	4.77
36.833	0.00	1.29	3.198	IO	|	|	|	|	4.76
36.917	0.00	1.28	3.189	IO	|	|	|	|	4.76
37.000	0.00	1.27	3.180	IO	|	|	|	|	4.75
37.083	0.00	1.27	3.171	IO	|	|	|	|	4.75
37.167	0.00	1.26	3.163	IO	|	|	|	|	4.74
37.250	0.00	1.25	3.154	IO	|	|	|	|	4.74
37.333	0.00	1.25	3.146	IO	|	|	|	|	4.73
37.417	0.00	1.24	3.137	IO	|	|	|	|	4.73
37.500	0.00	1.23	3.128	IO	|	|	|	|	4.72
37.583	0.00	1.23	3.120	IO	|	|	|	|	4.72
37.667	0.00	1.22	3.112	IO	|	|	|	|	4.71
37.750	0.00	1.21	3.103	IO	|	|	|	|	4.71
37.833	0.00	1.21	3.095	IO	|	|	|	|	4.70
37.917	0.00	1.20	3.087	IO	|	|	|	|	4.70
38.000	0.00	1.19	3.078	IO	|	|	|	|	4.69
38.083	0.00	1.19	3.070	IO	|	|	|	|	4.69
38.167	0.00	1.18	3.062	IO	|	|	|	|	4.68
38.250	0.00	1.17	3.054	IO	|	|	|	|	4.68
38.333	0.00	1.17	3.046	IO	|	|	|	|	4.67
38.417	0.00	1.16	3.038	IO	|	|	|	|	4.67
38.500	0.00	1.16	3.030	IO	|	|	|	|	4.66
38.583	0.00	1.15	3.022	IO	|	|	|	|	4.66
38.667	0.00	1.14	3.014	IO	|	|	|	|	4.65
38.750	0.00	1.14	3.006	IO	|	|	|	|	4.65
38.833	0.00	1.13	2.998	IO	|	|	|	|	4.64

38.917	0.00	1.13	2.991	IO					4.64
39.000	0.00	1.12	2.983	IO					4.64
39.083	0.00	1.11	2.975	IO					4.63
39.167	0.00	1.11	2.967	IO					4.63
39.250	0.00	1.10	2.960	IO					4.62
39.333	0.00	1.10	2.952	IO					4.62
39.417	0.00	1.09	2.945	IO					4.61
39.500	0.00	1.08	2.937	IO					4.61
39.583	0.00	1.08	2.930	IO					4.60
39.667	0.00	1.07	2.922	IO					4.60
39.750	0.00	1.07	2.915	IO					4.60
39.833	0.00	1.06	2.908	IO					4.59
39.917	0.00	1.05	2.900	IO					4.59
40.000	0.00	1.05	2.893	IO					4.58
40.083	0.00	1.04	2.886	IO					4.58
40.167	0.00	1.04	2.879	IO					4.57
40.250	0.00	1.03	2.872	IO					4.57
40.333	0.00	1.03	2.865	IO					4.57
40.417	0.00	1.02	2.858	IO					4.56
40.500	0.00	1.02	2.851	IO					4.56
40.583	0.00	1.01	2.844	IO					4.55
40.667	0.00	1.01	2.837	IO					4.55
40.750	0.00	1.00	2.830	IO					4.55
40.833	0.00	0.99	2.823	IO					4.54
40.917	0.00	0.99	2.816	IO					4.54
41.000	0.00	0.98	2.809	IO					4.53
41.083	0.00	0.98	2.802	IO					4.53
41.167	0.00	0.97	2.796	IO					4.53
41.250	0.00	0.97	2.789	IO					4.52
41.333	0.00	0.96	2.782	IO					4.52
41.417	0.00	0.96	2.776	IO					4.51
41.500	0.00	0.95	2.769	IO					4.51
41.583	0.00	0.95	2.763	IO					4.51
41.667	0.00	0.94	2.756	IO					4.50
41.750	0.00	0.94	2.750	IO					4.50
41.833	0.00	0.94	2.743	IO					4.49
41.917	0.00	0.94	2.737	IO					4.49
42.000	0.00	0.94	2.730	IO					4.49
42.083	0.00	0.94	2.724	IO					4.48
42.167	0.00	0.94	2.717	IO					4.48
42.250	0.00	0.94	2.711	IO					4.47
42.333	0.00	0.94	2.704	IO					4.47
42.417	0.00	0.94	2.698	IO					4.47
42.500	0.00	0.94	2.692	IO					4.46
42.583	0.00	0.94	2.685	IO					4.46
42.667	0.00	0.93	2.679	IO					4.45
42.750	0.00	0.93	2.672	IO					4.45
42.833	0.00	0.93	2.666	IO					4.45
42.917	0.00	0.93	2.659	IO					4.44
43.000	0.00	0.93	2.653	IO					4.44
43.083	0.00	0.93	2.647	IO					4.44
43.167	0.00	0.93	2.640	IO					4.43
43.250	0.00	0.93	2.634	IO					4.43
43.333	0.00	0.93	2.627	IO					4.42

43.417	0.00	0.93	2.621	IO					4.42
43.500	0.00	0.93	2.614	IO					4.42
43.583	0.00	0.93	2.608	IO					4.41
43.667	0.00	0.93	2.602	IO					4.41
43.750	0.00	0.93	2.595	IO					4.40
43.833	0.00	0.93	2.589	IO					4.40
43.917	0.00	0.93	2.583	IO					4.40
44.000	0.00	0.93	2.576	IO					4.39
44.083	0.00	0.93	2.570	IO					4.39
44.167	0.00	0.93	2.563	IO					4.38
44.250	0.00	0.93	2.557	IO					4.38
44.333	0.00	0.93	2.551	IO					4.38
44.417	0.00	0.92	2.544	IO					4.37
44.500	0.00	0.92	2.538	IO					4.37
44.583	0.00	0.92	2.532	IO					4.36
44.667	0.00	0.92	2.525	IO					4.36
44.750	0.00	0.92	2.519	IO					4.36
44.833	0.00	0.92	2.512	IO					4.35
44.917	0.00	0.92	2.506	IO					4.35
45.000	0.00	0.92	2.500	IO					4.35
45.083	0.00	0.92	2.493	IO					4.34
45.167	0.00	0.92	2.487	IO					4.34
45.250	0.00	0.92	2.481	IO					4.33
45.333	0.00	0.92	2.474	IO					4.33
45.417	0.00	0.92	2.468	IO					4.33
45.500	0.00	0.92	2.462	IO					4.32
45.583	0.00	0.92	2.455	IO					4.32
45.667	0.00	0.92	2.449	IO					4.31
45.750	0.00	0.92	2.443	IO					4.31
45.833	0.00	0.92	2.436	IO					4.31
45.917	0.00	0.92	2.430	IO					4.30
46.000	0.00	0.92	2.424	IO					4.30
46.083	0.00	0.92	2.418	IO					4.30
46.167	0.00	0.91	2.411	IO					4.29
46.250	0.00	0.91	2.405	IO					4.29
46.333	0.00	0.91	2.399	IO					4.28
46.417	0.00	0.91	2.392	IO					4.28
46.500	0.00	0.91	2.386	IO					4.28
46.583	0.00	0.91	2.380	IO					4.27
46.667	0.00	0.91	2.373	IO					4.27
46.750	0.00	0.91	2.367	IO					4.26
46.833	0.00	0.91	2.361	IO					4.26
46.917	0.00	0.91	2.355	IO					4.26
47.000	0.00	0.91	2.348	IO					4.25
47.083	0.00	0.91	2.342	IO					4.25
47.167	0.00	0.91	2.336	IO					4.25
47.250	0.00	0.91	2.330	IO					4.24
47.333	0.00	0.91	2.323	IO					4.24
47.417	0.00	0.91	2.317	IO					4.23
47.500	0.00	0.91	2.311	IO					4.23
47.583	0.00	0.91	2.305	IO					4.23
47.667	0.00	0.91	2.298	IO					4.22
47.750	0.00	0.91	2.292	IO					4.22
47.833	0.00	0.91	2.286	IO					4.21

47.917	0.00	0.91	2.280	IO	|	|	|	4.21
48.000	0.00	0.90	2.273	IO	|	|	|	4.21

**********HYDROGRAPH DATA**********

Number of intervals = 1858
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 13.321 (CFS)
Total volume = 10.957 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 10/29/19

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100 YEAR FLOOD ROUTING
MJPA 304163
BUILDING 1
4163FR100.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP10024100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 30.791 (CFS)
Total volume = 16.044 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.322	0.330	0.321	0.323
2.000	0.967	0.580	0.965	0.969
3.000	1.450	0.740	1.447	1.453
4.000	1.934	0.880	1.931	1.937
4.500	2.753	0.940	2.750	2.756
5.000	3.600	1.600	3.594	3.606
6.000	5.375	2.310	5.367	5.383
7.000	7.263	17.920	7.201	7.325
8.000	9.265	24.580	9.180	9.350
9.000	11.383	29.740	11.281	11.485
10.000	13.621	32.460	13.509	13.733

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 7.7 15.40 23.09 30.79	Depth (Ft.)
0.083	0.21	0.00	0.001	O | | | |	0.00
0.167	0.92	0.00	0.005	O | | | |	0.01
0.250	1.24	0.01	0.012	OI | | | |	0.04
0.333	1.47	0.02	0.021	OI | | | |	0.07
0.417	1.91	0.03	0.033	OI | | | |	0.10
0.500	2.12	0.05	0.046	O I | | | |	0.14
0.583	2.22	0.06	0.061	O I | | | |	0.19
0.667	2.28	0.08	0.076	O I | | | |	0.24
0.750	2.32	0.09	0.091	O I | | | |	0.28
0.833	2.05	0.11	0.105	O I | | | |	0.33
0.917	1.03	0.12	0.115	OI | | | |	0.36
1.000	0.58	0.12	0.120	O | | | |	0.37
1.083	0.71	0.13	0.124	O | | | |	0.38
1.167	1.63	0.13	0.131	OI | | | |	0.41
1.250	2.01	0.15	0.142	O I | | | |	0.44
1.333	2.15	0.16	0.156	O I | | | |	0.48
1.417	2.23	0.17	0.169	O I | | | |	0.53
1.500	2.28	0.19	0.184	O I | | | |	0.57
1.583	2.30	0.20	0.198	O I | | | |	0.62
1.667	2.34	0.22	0.213	O I | | | |	0.66
1.750	2.36	0.23	0.227	O I | | | |	0.71
1.833	2.10	0.25	0.241	O I | | | |	0.75
1.917	1.15	0.26	0.251	OI | | | |	0.78
2.000	0.73	0.26	0.255	O | | | |	0.79
2.083	0.56	0.26	0.258	O | | | |	0.80
2.167	0.47	0.27	0.260	O | | | |	0.81
2.250	0.41	0.27	0.261	O | | | |	0.81
2.333	0.38	0.27	0.262	O | | | |	0.81
2.417	0.36	0.27	0.262	O | | | |	0.81
2.500	0.35	0.27	0.263	O | | | |	0.82
2.583	0.47	0.27	0.264	O | | | |	0.82
2.667	0.92	0.27	0.267	O | | | |	0.83
2.750	1.12	0.28	0.272	OI | | | |	0.84
2.833	1.22	0.28	0.278	OI | | | |	0.86

2.917	1.28	0.29	0.285	OI	|	|	|	0.88
3.000	1.33	0.30	0.292	OI	|	|	|	0.91
3.083	1.36	0.31	0.299	OI	|	|	|	0.93
3.167	1.39	0.31	0.306	OI	|	|	|	0.95
3.250	1.42	0.32	0.314	OI	|	|	|	0.97
3.333	1.44	0.33	0.321	OI	|	|	|	1.00
3.417	1.46	0.33	0.329	OI	|	|	|	1.01
3.500	1.47	0.34	0.337	OI	|	|	|	1.02
3.583	1.48	0.34	0.345	OI	|	|	|	1.04
3.667	1.50	0.34	0.353	OI	|	|	|	1.05
3.750	1.51	0.34	0.361	OI	|	|	|	1.06
3.833	1.66	0.35	0.369	OI	|	|	|	1.07
3.917	2.10	0.35	0.380	O I	|	|	|	1.09
4.000	2.31	0.36	0.392	O I	|	|	|	1.11
4.083	2.40	0.36	0.406	O I	|	|	|	1.13
4.167	2.47	0.37	0.420	O I	|	|	|	1.15
4.250	2.51	0.37	0.435	O I	|	|	|	1.17
4.333	2.67	0.38	0.450	O I	|	|	|	1.20
4.417	3.13	0.39	0.467	O I	|	|	|	1.23
4.500	3.35	0.39	0.487	O I	|	|	|	1.26
4.583	3.46	0.40	0.508	O I	|	|	|	1.29
4.667	3.52	0.41	0.529	O I	|	|	|	1.32
4.750	3.56	0.42	0.551	O I	|	|	|	1.35
4.833	3.73	0.43	0.573	O I	|	|	|	1.39
4.917	4.19	0.44	0.597	O I	|	|	|	1.43
5.000	4.41	0.45	0.624	O I	|	|	|	1.47
5.083	4.25	0.46	0.650	O I	|	|	|	1.51
5.167	3.45	0.47	0.674	O I	|	|	|	1.55
5.250	3.11	0.47	0.693	O I	|	|	|	1.58
5.333	3.11	0.48	0.711	O I	|	|	|	1.60
5.417	3.48	0.49	0.731	O I	|	|	|	1.63
5.500	3.63	0.50	0.752	O I	|	|	|	1.67
5.583	3.82	0.51	0.774	O I	|	|	|	1.70
5.667	4.29	0.51	0.798	O I	|	|	|	1.74
5.750	4.50	0.52	0.825	O I	|	|	|	1.78
5.833	4.59	0.54	0.853	O I	|	|	|	1.82
5.917	4.67	0.55	0.881	O I	|	|	|	1.87
6.000	4.72	0.56	0.909	O I	|	|	|	1.91
6.083	4.90	0.57	0.939	O I	|	|	|	1.96
6.167	5.36	0.58	0.970	O I	|	|	|	2.01
6.250	5.58	0.59	1.004	O I	|	|	|	2.08
6.333	5.68	0.60	1.038	O I	|	|	|	2.15
6.417	5.74	0.62	1.073	O I	|	|	|	2.22
6.500	5.79	0.63	1.109	O I	|	|	|	2.29
6.583	5.95	0.64	1.145	O I	|	|	|	2.37
6.667	6.41	0.65	1.183	O I	|	|	|	2.45
6.750	6.63	0.66	1.223	O I	|	|	|	2.53
6.833	6.73	0.68	1.265	O I	|	|	|	2.62
6.917	6.79	0.69	1.307	O I	|	|	|	2.70
7.000	6.84	0.71	1.349	O I	|	|	|	2.79
7.083	6.87	0.72	1.391	O I	|	|	|	2.88
7.167	6.90	0.73	1.433	O I	|	|	|	2.97
7.250	6.92	0.75	1.476	O I	|	|	|	3.05
7.333	7.07	0.76	1.519	O I	|	|	|	3.14

7.417	7.52	0.77	1.564	O	I|				3.24
7.500	7.72	0.79	1.611	O	I				3.33
7.583	7.95	0.80	1.659	O	I				3.43
7.667	8.44	0.82	1.710	O	I				3.54
7.750	8.67	0.83	1.764	O	|I				3.65
7.833	8.92	0.85	1.818	O	|I				3.76
7.917	9.43	0.86	1.876	O	|I				3.88
8.000	9.67	0.88	1.935	O	| I				4.00
8.083	10.06	0.88	1.997	O	| I				4.04
8.167	11.00	0.89	2.064	O	| I				4.08
8.250	11.43	0.89	2.135	O	| I				4.12
8.333	11.64	0.90	2.208	O	| I				4.17
8.417	11.76	0.91	2.282	O	| I				4.21
8.500	11.85	0.91	2.357	O	| I				4.26
8.583	12.04	0.92	2.433	O	| I				4.30
8.667	12.52	0.92	2.512	O	| I				4.35
8.750	12.74	0.93	2.592	O	| I				4.40
8.833	12.99	0.93	2.674	O	| I				4.45
8.917	13.48	0.94	2.759	O	| I				4.50
9.000	13.72	1.01	2.846	|O	| I				4.55
9.083	14.09	1.08	2.935	|O	| I				4.61
9.167	15.03	1.15	3.027	|O	| I|				4.66
9.250	15.47	1.23	3.124	|O	| I				4.72
9.333	15.80	1.31	3.223	|O	| I				4.78
9.417	16.35	1.39	3.324	|O	| I				4.84
9.500	16.63	1.47	3.428	|O	| |I				4.90
9.583	16.91	1.55	3.533	|O	| |I				4.96
9.667	17.43	1.62	3.641	|O	| | I				5.02
9.750	17.68	1.66	3.750	|O	| | I				5.08
9.833	17.95	1.70	3.861	|O	| | I				5.15
9.917	18.46	1.75	3.975	|O	| | I				5.21
10.000	18.70	1.80	4.090	|O	| | I				5.28
10.083	17.92	1.84	4.204	|O	| | I				5.34
10.167	14.97	1.88	4.304	|O	| I|				5.40
10.250	13.67	1.92	4.390	|O	| I				5.45
10.333	13.15	1.95	4.469	| O	| I				5.49
10.417	12.84	1.98	4.545	| O	| I				5.53
10.500	12.65	2.01	4.619	| O	| I				5.57
10.583	13.17	2.04	4.694	| O	| I				5.62
10.667	15.24	2.07	4.778	| O	| I|				5.66
10.750	16.14	2.11	4.872	| O	| I				5.72
10.833	16.47	2.15	4.969	| O	| |I				5.77
10.917	16.73	2.19	5.069	| O	| |I				5.83
11.000	16.89	2.23	5.169	| O	| |I				5.88
11.083	16.88	2.27	5.270	| O	| |I				5.94
11.167	16.53	2.31	5.369	| O	| |I				6.00
11.250	16.40	3.05	5.464	| O	| |I				6.05
11.333	16.39	3.79	5.554	| O	| |I				6.09
11.417	16.35	4.48	5.638	| O	| I				6.14
11.500	16.33	5.14	5.717	| O	| I				6.18
11.583	16.06	5.75	5.791	| O	| I				6.22
11.667	15.20	6.30	5.858	| O	| I|				6.26
11.750	14.81	6.78	5.916	| O|	I|				6.29
11.833	14.78	7.22	5.969	| O|	I|				6.31

11.917	15.12	7.65	6.021	|	O|	I|	|	6.34
12.000	15.27	8.07	6.072	|	O	I|	|	6.37
12.083	16.22	8.50	6.123	|	O	I	|	6.40
12.167	19.27	9.01	6.185	|	|O	I	|	6.43
12.250	20.65	9.61	6.258	|	|O	I	|	6.47
12.333	21.35	10.24	6.335	|	O	I	|	6.51
12.417	22.14	10.88	6.412	|	O	I|	|	6.55
12.500	22.56	11.52	6.488	|	O	I|	|	6.59
12.583	23.08	12.14	6.564	|	O	I|	|	6.63
12.667	24.10	12.78	6.641	|	O	|I	|	6.67
12.750	24.60	13.42	6.718	|	O	|I	|	6.71
12.833	25.01	14.05	6.795	|	O	|I	|	6.75
12.917	25.56	14.67	6.870	|	O|	I	|	6.79
13.000	25.83	15.28	6.944	|	O|	I	|	6.83
13.083	26.62	15.89	7.017	|	O	I	|	6.87
13.167	28.87	16.54	7.096	|	|O	I	|	6.91
13.250	29.90	17.25	7.182	|	|O	I|	|	6.96
13.333	30.35	17.94	7.269	|	O	I|	|	7.00
13.417	30.62	18.22	7.354	|	O	I|	|	7.05
13.500	30.79	18.51	7.439	|	O	I	|	7.09
13.583	29.50	18.77	7.518	|	O	I	|	7.13
13.667	24.83	18.96	7.576	|	O	|I	|	7.16
13.750	22.77	19.07	7.608	|	O	I|	|	7.17
13.833	21.95	19.14	7.631	|	O	I |	|	7.18
13.917	21.43	19.20	7.648	|	O	I |	|	7.19
14.000	21.11	19.25	7.662	|	OI	|	|	7.20
14.083	21.40	19.29	7.676	|	O I |	|	7.21
14.167	22.97	19.36	7.696	|	O	I|	|	7.22
14.250	23.64	19.45	7.723	|	O	I	|	7.23
14.333	23.71	19.54	7.751	|	O	I	|	7.24
14.417	23.48	19.64	7.779	|	O	I	|	7.26
14.500	23.42	19.72	7.805	|	O	I	|	7.27
14.583	23.44	19.81	7.830	|	O	I	|	7.28
14.667	23.46	19.89	7.855	|	O	I	|	7.30
14.750	23.48	19.97	7.879	|	O	I	|	7.31
14.833	23.38	20.05	7.903	|	O	I	|	7.32
14.917	22.95	20.12	7.924	|	O	I|	|	7.33
15.000	22.75	20.18	7.943	|	O	I|	|	7.34
15.083	22.54	20.24	7.959	|	O I|	|	|	7.35
15.167	22.07	20.28	7.974	|	OI |	|	|	7.35
15.250	21.85	20.32	7.985	|	OI |	|	|	7.36
15.333	21.63	20.35	7.995	|	OI |	|	|	7.37
15.417	21.14	20.38	8.002	|	O |	|	|	7.37
15.500	20.92	20.39	8.006	|	O |	|	|	7.37
15.583	20.30	20.40	8.008	|	O |	|	|	7.37
15.667	18.52	20.37	8.001	|	I O |	|	|	7.37
15.750	17.71	20.32	7.985	|	I O |	|	|	7.36
15.833	17.37	20.26	7.967	|	I O |	|	|	7.35
15.917	17.17	20.19	7.946	|	|I O |	|	|	7.34
16.000	17.04	20.12	7.925	|	|I O |	|	|	7.33
16.083	15.01	20.03	7.897	|	I| O |	|	|	7.32
16.167	8.49	19.84	7.841	|	I | O |	|	|	7.29
16.250	5.55	19.55	7.754	|	I | | O |	|	|	7.25
16.333	4.31	19.22	7.654	|	I | | O |	|	|	7.20

16.417	3.60	18.87	7.550	| I |	|	| O |	|	7.14
16.500	3.15	18.52	7.445	| I |	|	| O |	|	7.09
16.583	2.71	18.17	7.338	| I |	|	| O |	|	7.04
16.667	2.06	17.66	7.231	| I |	|	| O |	|	6.98
16.750	1.72	16.79	7.126	|I |	|	|O |	|	6.93
16.833	1.48	15.94	7.024	|I |	|	O |	|	6.87
16.917	1.44	15.14	6.927	|I |	|	O|	|	6.82
17.000	1.41	14.38	6.835	|I |	|	O |	|	6.77
17.083	1.66	13.67	6.749	|I |	|	O |	|	6.73
17.167	2.51	13.03	6.672	| I |	|	O |	|	6.69
17.250	2.90	12.46	6.602	| I |	|	O |	|	6.65
17.333	3.06	11.93	6.539	| I |	|	O |	|	6.62
17.417	3.16	11.44	6.480	| I |	|	O |	|	6.59
17.500	3.23	10.99	6.425	| I |	|	O |	|	6.56
17.583	3.28	10.56	6.373	| I |	|	O |	|	6.53
17.667	3.32	10.16	6.324	| I |	|	O |	|	6.50
17.750	3.34	9.78	6.278	| I |	|	O |	|	6.48
17.833	3.24	9.42	6.235	| I |	|O |	|	6.46
17.917	2.82	9.07	6.192	| I |	|O |	|	6.43
18.000	2.63	8.72	6.150	| I |	|O |	|	6.41
18.083	2.56	8.38	6.109	| I |	O |	|	6.39
18.167	2.52	8.05	6.070	| I |	O |	|	6.37
18.250	2.50	7.75	6.033	| I |	O |	|	6.35
18.333	2.48	7.46	5.997	| I |	O|	|	6.33
18.417	2.47	7.18	5.964	| I |	O|	|	6.31
18.500	2.47	6.92	5.933	| I |	O|	|	6.30
18.583	2.34	6.67	5.902	| I | O |	|	6.28
18.667	1.91	6.42	5.872	|I | O |	|	6.26
18.750	1.73	6.16	5.841	|I | O |	|	6.25
18.833	1.52	5.91	5.811	|I | O |	|	6.23
18.917	1.05	5.66	5.780	|I | O |	|	6.21
19.000	0.83	5.40	5.748	I | O |	|	6.20
19.083	0.87	5.14	5.718	I | O |	|	6.18
19.167	1.24	4.92	5.690	|I | O |	|	6.17
19.250	1.40	4.72	5.666	|I | O |	|	6.15
19.333	1.58	4.54	5.645	|I | O |	|	6.14
19.417	2.06	4.39	5.626	| I | O |	|	6.13
19.500	2.28	4.27	5.612	| I | O |	|	6.13
19.583	2.24	4.15	5.598	| I | O |	|	6.12
19.667	1.88	4.04	5.584	|I | O |	|	6.11
19.750	1.73	3.92	5.569	|I | O |	|	6.10
19.833	1.56	3.79	5.554	|I | O |	|	6.09
19.917	1.10	3.65	5.538	|I | O |	|	6.09
20.000	0.90	3.51	5.520	I | O |	|	6.08
20.083	0.94	3.36	5.502	I | O |	|	6.07
20.167	1.32	3.24	5.487	|I | O |	|	6.06
20.250	1.48	3.14	5.475	|I | O |	|	6.05
20.333	1.53	3.05	5.464	|I | O |	|	6.05
20.417	1.57	2.96	5.454	|I | O |	|	6.04
20.500	1.59	2.89	5.445	|I | O |	|	6.04
20.583	1.61	2.82	5.436	|IO |	|	6.03
20.667	1.63	2.75	5.428	|IO |	|	6.03
20.750	1.64	2.69	5.421	|IO |	|	6.02
20.833	1.53	2.63	5.413	|IO |	|	6.02

20.917	1.10	2.55	5.405	|IO	|	|	|	6.02
21.000	0.92	2.47	5.394	I O	|	|	|	6.01
21.083	0.97	2.38	5.384	|IO	|	|	|	6.00
21.167	1.36	2.32	5.376	|IO	|	|	|	6.00
21.250	1.53	2.31	5.370	|IO	|	|	|	6.00
21.333	1.46	2.31	5.364	|IO	|	|	|	5.99
21.417	1.07	2.30	5.357	|IO	|	|	|	5.99
21.500	0.90	2.30	5.348	I O	|	|	|	5.98
21.583	0.96	2.30	5.339	|IO	|	|	|	5.98
21.667	1.37	2.29	5.331	|IO	|	|	|	5.98
21.750	1.54	2.29	5.325	|IO	|	|	|	5.97
21.833	1.49	2.29	5.320	|IO	|	|	|	5.97
21.917	1.09	2.29	5.313	|IO	|	|	|	5.97
22.000	0.92	2.28	5.304	I O	|	|	|	5.96
22.083	0.99	2.28	5.295	|IO	|	|	|	5.95
22.167	1.39	2.28	5.288	|IO	|	|	|	5.95
22.250	1.57	2.27	5.282	|IO	|	|	|	5.95
22.333	1.51	2.27	5.277	|IO	|	|	|	5.94
22.417	1.12	2.27	5.270	|IO	|	|	|	5.94
22.500	0.95	2.26	5.262	I O	|	|	|	5.94
22.583	0.88	2.26	5.253	I O	|	|	|	5.93
22.667	0.85	2.26	5.243	I O	|	|	|	5.93
22.750	0.83	2.25	5.233	I O	|	|	|	5.92
22.833	0.83	2.25	5.224	I O	|	|	|	5.91
22.917	0.82	2.25	5.214	I O	|	|	|	5.91
23.000	0.81	2.24	5.204	I O	|	|	|	5.90
23.083	0.80	2.24	5.194	I O	|	|	|	5.90
23.167	0.80	2.23	5.184	I O	|	|	|	5.89
23.250	0.81	2.23	5.174	I O	|	|	|	5.89
23.333	0.81	2.23	5.164	I O	|	|	|	5.88
23.417	0.81	2.22	5.155	I O	|	|	|	5.88
23.500	0.81	2.22	5.145	I O	|	|	|	5.87
23.583	0.81	2.21	5.135	I O	|	|	|	5.86
23.667	0.82	2.21	5.126	I O	|	|	|	5.86
23.750	0.82	2.21	5.116	I O	|	|	|	5.85
23.833	0.82	2.20	5.107	I O	|	|	|	5.85
23.917	0.82	2.20	5.097	I O	|	|	|	5.84
24.000	0.82	2.20	5.088	I O	|	|	|	5.84
24.083	0.71	2.19	5.078	I O	|	|	|	5.83
24.167	0.35	2.19	5.066	I O	|	|	|	5.83
24.250	0.18	2.18	5.053	I O	|	|	|	5.82
24.333	0.12	2.18	5.039	I O	|	|	|	5.81
24.417	0.08	2.17	5.025	I O	|	|	|	5.80
24.500	0.05	2.16	5.010	I O	|	|	|	5.79
24.583	0.03	2.16	4.996	I O	|	|	|	5.79
24.667	0.02	2.15	4.981	I O	|	|	|	5.78
24.750	0.01	2.15	4.966	I O	|	|	|	5.77
24.833	0.00	2.14	4.952	I O	|	|	|	5.76
24.917	0.00	2.13	4.937	I O	|	|	|	5.75
25.000	0.00	2.13	4.922	I O	|	|	|	5.74
25.083	0.00	2.12	4.908	I O	|	|	|	5.74
25.167	0.00	2.12	4.893	I O	|	|	|	5.73
25.250	0.00	2.11	4.879	I O	|	|	|	5.72
25.333	0.00	2.11	4.864	I O	|	|	|	5.71

25.417	0.00	2.10	4.850	I O	|	|	|	|	5.70
25.500	0.00	2.09	4.835	I O	|	|	|	|	5.70
25.583	0.00	2.09	4.821	I O	|	|	|	|	5.69
25.667	0.00	2.08	4.806	I O	|	|	|	|	5.68
25.750	0.00	2.08	4.792	I O	|	|	|	|	5.67
25.833	0.00	2.07	4.778	I O	|	|	|	|	5.66
25.917	0.00	2.07	4.763	I O	|	|	|	|	5.66
26.000	0.00	2.06	4.749	I O	|	|	|	|	5.65
26.083	0.00	2.05	4.735	I O	|	|	|	|	5.64
26.167	0.00	2.05	4.721	I O	|	|	|	|	5.63
26.250	0.00	2.04	4.707	I O	|	|	|	|	5.62
26.333	0.00	2.04	4.693	I O	|	|	|	|	5.62
26.417	0.00	2.03	4.679	I O	|	|	|	|	5.61
26.500	0.00	2.03	4.665	I O	|	|	|	|	5.60
26.583	0.00	2.02	4.651	I O	|	|	|	|	5.59
26.667	0.00	2.01	4.637	I O	|	|	|	|	5.58
26.750	0.00	2.01	4.623	I O	|	|	|	|	5.58
26.833	0.00	2.00	4.609	I O	|	|	|	|	5.57
26.917	0.00	2.00	4.596	I O	|	|	|	|	5.56
27.000	0.00	1.99	4.582	I O	|	|	|	|	5.55
27.083	0.00	1.99	4.568	I O	|	|	|	|	5.55
27.167	0.00	1.98	4.554	I O	|	|	|	|	5.54
27.250	0.00	1.98	4.541	I O	|	|	|	|	5.53
27.333	0.00	1.97	4.527	I O	|	|	|	|	5.52
27.417	0.00	1.97	4.514	I O	|	|	|	|	5.51
27.500	0.00	1.96	4.500	I O	|	|	|	|	5.51
27.583	0.00	1.95	4.487	I O	|	|	|	|	5.50
27.667	0.00	1.95	4.473	I O	|	|	|	|	5.49
27.750	0.00	1.94	4.460	I O	|	|	|	|	5.48
27.833	0.00	1.94	4.446	I O	|	|	|	|	5.48
27.917	0.00	1.93	4.433	I O	|	|	|	|	5.47
28.000	0.00	1.93	4.420	I O	|	|	|	|	5.46
28.083	0.00	1.92	4.407	IO	|	|	|	|	5.45
28.167	0.00	1.92	4.393	IO	|	|	|	|	5.45
28.250	0.00	1.91	4.380	IO	|	|	|	|	5.44
28.333	0.00	1.91	4.367	IO	|	|	|	|	5.43
28.417	0.00	1.90	4.354	IO	|	|	|	|	5.42
28.500	0.00	1.90	4.341	IO	|	|	|	|	5.42
28.583	0.00	1.89	4.328	IO	|	|	|	|	5.41
28.667	0.00	1.89	4.315	IO	|	|	|	|	5.40
28.750	0.00	1.88	4.302	IO	|	|	|	|	5.40
28.833	0.00	1.88	4.289	IO	|	|	|	|	5.39
28.917	0.00	1.87	4.276	IO	|	|	|	|	5.38
29.000	0.00	1.87	4.263	IO	|	|	|	|	5.37
29.083	0.00	1.86	4.250	IO	|	|	|	|	5.37
29.167	0.00	1.85	4.237	IO	|	|	|	|	5.36
29.250	0.00	1.85	4.225	IO	|	|	|	|	5.35
29.333	0.00	1.84	4.212	IO	|	|	|	|	5.34
29.417	0.00	1.84	4.199	IO	|	|	|	|	5.34
29.500	0.00	1.83	4.187	IO	|	|	|	|	5.33
29.583	0.00	1.83	4.174	IO	|	|	|	|	5.32
29.667	0.00	1.82	4.161	IO	|	|	|	|	5.32
29.750	0.00	1.82	4.149	IO	|	|	|	|	5.31
29.833	0.00	1.81	4.136	IO	|	|	|	|	5.30

29.917	0.00	1.81	4.124	IO					5.30
30.000	0.00	1.80	4.111	IO					5.29
30.083	0.00	1.80	4.099	IO					5.28
30.167	0.00	1.79	4.087	IO					5.27
30.250	0.00	1.79	4.074	IO					5.27
30.333	0.00	1.78	4.062	IO					5.26
30.417	0.00	1.78	4.050	IO					5.25
30.500	0.00	1.77	4.037	IO					5.25
30.583	0.00	1.77	4.025	IO					5.24
30.667	0.00	1.77	4.013	IO					5.23
30.750	0.00	1.76	4.001	IO					5.23
30.833	0.00	1.76	3.989	IO					5.22
30.917	0.00	1.75	3.977	IO					5.21
31.000	0.00	1.75	3.965	IO					5.21
31.083	0.00	1.74	3.953	IO					5.20
31.167	0.00	1.74	3.941	IO					5.19
31.250	0.00	1.73	3.929	IO					5.19
31.333	0.00	1.73	3.917	IO					5.18
31.417	0.00	1.72	3.905	IO					5.17
31.500	0.00	1.72	3.893	IO					5.17
31.583	0.00	1.71	3.881	IO					5.16
31.667	0.00	1.71	3.870	IO					5.15
31.750	0.00	1.70	3.858	IO					5.15
31.833	0.00	1.70	3.846	IO					5.14
31.917	0.00	1.69	3.834	IO					5.13
32.000	0.00	1.69	3.823	IO					5.13
32.083	0.00	1.68	3.811	IO					5.12
32.167	0.00	1.68	3.800	IO					5.11
32.250	0.00	1.68	3.788	IO					5.11
32.333	0.00	1.67	3.777	IO					5.10
32.417	0.00	1.67	3.765	IO					5.09
32.500	0.00	1.66	3.754	IO					5.09
32.583	0.00	1.66	3.742	IO					5.08
32.667	0.00	1.65	3.731	IO					5.07
32.750	0.00	1.65	3.719	IO					5.07
32.833	0.00	1.64	3.708	IO					5.06
32.917	0.00	1.64	3.697	IO					5.05
33.000	0.00	1.63	3.686	IO					5.05
33.083	0.00	1.63	3.674	IO					5.04
33.167	0.00	1.63	3.663	IO					5.04
33.250	0.00	1.62	3.652	IO					5.03
33.333	0.00	1.62	3.641	IO					5.02
33.417	0.00	1.61	3.630	IO					5.02
33.500	0.00	1.61	3.619	IO					5.01
33.583	0.00	1.60	3.607	IO					5.00
33.667	0.00	1.60	3.596	IO					5.00
33.750	0.00	1.59	3.585	IO					4.99
33.833	0.00	1.58	3.575	IO					4.98
33.917	0.00	1.57	3.564	IO					4.98
34.000	0.00	1.56	3.553	IO					4.97
34.083	0.00	1.55	3.542	IO					4.97
34.167	0.00	1.55	3.532	IO					4.96
34.250	0.00	1.54	3.521	IO					4.95
34.333	0.00	1.53	3.510	IO					4.95

34.417	0.00	1.52	3.500	IO					4.94
34.500	0.00	1.51	3.489	IO					4.93
34.583	0.00	1.51	3.479	IO					4.93
34.667	0.00	1.50	3.469	IO					4.92
34.750	0.00	1.49	3.458	IO					4.92
34.833	0.00	1.48	3.448	IO					4.91
34.917	0.00	1.47	3.438	IO					4.90
35.000	0.00	1.47	3.428	IO					4.90
35.083	0.00	1.46	3.418	IO					4.89
35.167	0.00	1.45	3.408	IO					4.89
35.250	0.00	1.44	3.398	IO					4.88
35.333	0.00	1.43	3.388	IO					4.87
35.417	0.00	1.43	3.378	IO					4.87
35.500	0.00	1.42	3.368	IO					4.86
35.583	0.00	1.41	3.358	IO					4.86
35.667	0.00	1.40	3.349	IO					4.85
35.750	0.00	1.40	3.339	IO					4.85
35.833	0.00	1.39	3.330	IO					4.84
35.917	0.00	1.38	3.320	IO					4.83
36.000	0.00	1.37	3.310	IO					4.83
36.083	0.00	1.37	3.301	IO					4.82
36.167	0.00	1.36	3.292	IO					4.82
36.250	0.00	1.35	3.282	IO					4.81
36.333	0.00	1.35	3.273	IO					4.81
36.417	0.00	1.34	3.264	IO					4.80
36.500	0.00	1.33	3.255	IO					4.80
36.583	0.00	1.32	3.245	IO					4.79
36.667	0.00	1.32	3.236	IO					4.79
36.750	0.00	1.31	3.227	IO					4.78
36.833	0.00	1.30	3.218	IO					4.77
36.917	0.00	1.30	3.209	IO					4.77
37.000	0.00	1.29	3.200	IO					4.76
37.083	0.00	1.28	3.192	IO					4.76
37.167	0.00	1.27	3.183	IO					4.75
37.250	0.00	1.27	3.174	IO					4.75
37.333	0.00	1.26	3.165	IO					4.74
37.417	0.00	1.25	3.157	IO					4.74
37.500	0.00	1.25	3.148	IO					4.73
37.583	0.00	1.24	3.139	IO					4.73
37.667	0.00	1.23	3.131	IO					4.72
37.750	0.00	1.23	3.122	IO					4.72
37.833	0.00	1.22	3.114	IO					4.71
37.917	0.00	1.21	3.106	IO					4.71
38.000	0.00	1.21	3.097	IO					4.70
38.083	0.00	1.20	3.089	IO					4.70
38.167	0.00	1.20	3.081	IO					4.69
38.250	0.00	1.19	3.073	IO					4.69
38.333	0.00	1.18	3.064	IO					4.68
38.417	0.00	1.18	3.056	IO					4.68
38.500	0.00	1.17	3.048	IO					4.67
38.583	0.00	1.16	3.040	IO					4.67
38.667	0.00	1.16	3.032	IO					4.66
38.750	0.00	1.15	3.024	IO					4.66
38.833	0.00	1.15	3.016	IO					4.66

38.917	0.00	1.14	3.008	IO				4.65
39.000	0.00	1.13	3.001	IO				4.65
39.083	0.00	1.13	2.993	IO				4.64
39.167	0.00	1.12	2.985	IO				4.64
39.250	0.00	1.11	2.977	IO				4.63
39.333	0.00	1.11	2.970	IO				4.63
39.417	0.00	1.10	2.962	IO				4.62
39.500	0.00	1.10	2.955	IO				4.62
39.583	0.00	1.09	2.947	IO				4.61
39.667	0.00	1.09	2.940	IO				4.61
39.750	0.00	1.08	2.932	IO				4.61
39.833	0.00	1.07	2.925	IO				4.60
39.917	0.00	1.07	2.917	IO				4.60
40.000	0.00	1.06	2.910	IO				4.59
40.083	0.00	1.06	2.903	IO				4.59
40.167	0.00	1.05	2.895	IO				4.58
40.250	0.00	1.05	2.888	IO				4.58
40.333	0.00	1.04	2.881	IO				4.58
40.417	0.00	1.03	2.874	IO				4.57
40.500	0.00	1.03	2.867	IO				4.57
40.583	0.00	1.02	2.860	IO				4.56
40.667	0.00	1.02	2.853	IO				4.56
40.750	0.00	1.01	2.846	IO				4.55
40.833	0.00	1.01	2.839	IO				4.55
40.917	0.00	1.00	2.832	IO				4.55
41.000	0.00	1.00	2.825	IO				4.54
41.083	0.00	0.99	2.818	IO				4.54
41.167	0.00	0.99	2.811	IO				4.53
41.250	0.00	0.98	2.804	IO				4.53
41.333	0.00	0.97	2.798	IO				4.53
41.417	0.00	0.97	2.791	IO				4.52
41.500	0.00	0.96	2.784	IO				4.52
41.583	0.00	0.96	2.778	O				4.51
41.667	0.00	0.95	2.771	O				4.51
41.750	0.00	0.95	2.765	O				4.51
41.833	0.00	0.94	2.758	O				4.50
41.917	0.00	0.94	2.752	O				4.50
42.000	0.00	0.94	2.745	O				4.50
42.083	0.00	0.94	2.739	O				4.49
42.167	0.00	0.94	2.732	O				4.49
42.250	0.00	0.94	2.726	O				4.48
42.333	0.00	0.94	2.719	O				4.48
42.417	0.00	0.94	2.713	O				4.48
42.500	0.00	0.94	2.706	O				4.47
42.583	0.00	0.94	2.700	O				4.47
42.667	0.00	0.94	2.694	O				4.46
42.750	0.00	0.94	2.687	O				4.46
42.833	0.00	0.93	2.681	O				4.46
42.917	0.00	0.93	2.674	O				4.45
43.000	0.00	0.93	2.668	O				4.45
43.083	0.00	0.93	2.661	O				4.44
43.167	0.00	0.93	2.655	O				4.44
43.250	0.00	0.93	2.648	O				4.44
43.333	0.00	0.93	2.642	O				4.43

43.417	0.00	0.93	2.636	O					4.43
43.500	0.00	0.93	2.629	O					4.42
43.583	0.00	0.93	2.623	O					4.42
43.667	0.00	0.93	2.616	O					4.42
43.750	0.00	0.93	2.610	O					4.41
43.833	0.00	0.93	2.604	O					4.41
43.917	0.00	0.93	2.597	O					4.40
44.000	0.00	0.93	2.591	O					4.40
44.083	0.00	0.93	2.584	O					4.40
44.167	0.00	0.93	2.578	O					4.39
44.250	0.00	0.93	2.572	O					4.39
44.333	0.00	0.93	2.565	O					4.39
44.417	0.00	0.93	2.559	O					4.38
44.500	0.00	0.93	2.553	O					4.38
44.583	0.00	0.92	2.546	O					4.37
44.667	0.00	0.92	2.540	O					4.37
44.750	0.00	0.92	2.533	O					4.37
44.833	0.00	0.92	2.527	O					4.36
44.917	0.00	0.92	2.521	O					4.36
45.000	0.00	0.92	2.514	O					4.35
45.083	0.00	0.92	2.508	O					4.35
45.167	0.00	0.92	2.502	O					4.35
45.250	0.00	0.92	2.495	O					4.34
45.333	0.00	0.92	2.489	O					4.34
45.417	0.00	0.92	2.483	O					4.33
45.500	0.00	0.92	2.476	O					4.33
45.583	0.00	0.92	2.470	O					4.33
45.667	0.00	0.92	2.464	O					4.32
45.750	0.00	0.92	2.457	O					4.32
45.833	0.00	0.92	2.451	O					4.32
45.917	0.00	0.92	2.445	O					4.31
46.000	0.00	0.92	2.438	O					4.31
46.083	0.00	0.92	2.432	O					4.30
46.167	0.00	0.92	2.426	O					4.30
46.250	0.00	0.92	2.419	O					4.30
46.333	0.00	0.92	2.413	O					4.29
46.417	0.00	0.91	2.407	O					4.29
46.500	0.00	0.91	2.400	O					4.28
46.583	0.00	0.91	2.394	O					4.28
46.667	0.00	0.91	2.388	O					4.28
46.750	0.00	0.91	2.382	O					4.27
46.833	0.00	0.91	2.375	O					4.27
46.917	0.00	0.91	2.369	O					4.27
47.000	0.00	0.91	2.363	O					4.26
47.083	0.00	0.91	2.357	O					4.26
47.167	0.00	0.91	2.350	O					4.25
47.250	0.00	0.91	2.344	O					4.25
47.333	0.00	0.91	2.338	O					4.25
47.417	0.00	0.91	2.331	O					4.24
47.500	0.00	0.91	2.325	O					4.24
47.583	0.00	0.91	2.319	O					4.23
47.667	0.00	0.91	2.313	O					4.23
47.750	0.00	0.91	2.306	O					4.23
47.833	0.00	0.91	2.300	O					4.22

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47.917    0.00    0.91      2.294  O       |       |       |       |     4.22
48.000    0.00    0.91      2.288  O       |       |       |       |     4.22


     ****************************HYDROGRAPH DATA****************************
                Number of intervals =  1861
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       20.397 (CFS)
                Total volume =      16.044 (Ac.Ft)
          Status of hydrographs being held in storage
                     Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
          Peak (CFS)      0.000     0.000     0.000     0.000     0.000
          Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
     ***********************************************************************

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DETENTION BASIN #2

elevation	depth	outflow	storage	open basin storage area	media factor	volume	cumulative volume	ac-ft volume
1493.5	0.0	0	0.000	0				
1494.5	1.0	0.17	0.168	36,518	0.4	7,304	7,304	0.168
1495.5	2.0	0.29	0.503	36,518	0.4	14,607	21,911	0.503
1496.5	3.0	0.37	0.755	36,518	0.3	10,955	32,866	0.755
1497.5	4.0	0.44	1.006	36,518	0.3	10,955	43,822	1.006
1498.5	5.0	0.50	1.258	36,518	0.3	10,955	54,777	1.258
1499.0	5.5	0.53	1.691	38,930	1.0	18,862	73,639	1.691
1499.5	6.0	0.85	2.151	41,369	1.0	20,075	93,714	2.151
1500.5	7.0	1.20	3.158	46,321	1.0	43,845	137,559	3.158
1501.5	8.0	16.56	4.279	51,373	1.0	48,847	186,406	4.279
1502.0	8.5	20.06	4.884	53,937	1.0	26,328	212,733	4.884

invert of 6" perf pipe = 1493.75
top of overflow grate = 1500.50
top of media = 1498.50
24" pipe invert = 1491.50
3' media

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 11/13/19

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1 YEAR FLOOD ROUTING
BASIN 2
MJPA 304163
4163FR1.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP1241.rte

**********HYDROGRAPH DATA**********

Number of intervals = 294
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 2.473 (CFS)
Total volume = 1.668 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 294
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.168	0.170	0.167	0.169
2.000	0.503	0.290	0.502	0.504
3.000	0.755	0.370	0.754	0.756
4.000	1.006	0.440	1.004	1.008
5.000	1.258	0.500	1.256	1.260
5.500	1.691	0.530	1.689	1.693
6.000	2.151	1.150	2.147	2.155
7.000	3.158	1.810	3.152	3.164
8.000	4.279	17.360	4.219	4.339
8.500	4.884	20.950	4.812	4.956

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	0.6	1.24	1.85	2.47	Depth (Ft.)
0.083	0.06	0.00	0.000	O	|	|	|	|	0.00
0.167	0.17	0.00	0.001	O I	|	|	|	|	0.01
0.250	0.20	0.00	0.002	O I	|	|	|	|	0.01
0.333	0.24	0.00	0.004	O I	|	|	|	|	0.02
0.417	0.31	0.01	0.006	O I	|	|	|	|	0.03
0.500	0.32	0.01	0.008	O I	|	|	|	|	0.05
0.583	0.33	0.01	0.010	O I	|	|	|	|	0.06
0.667	0.34	0.01	0.012	O I	|	|	|	|	0.07
0.750	0.34	0.01	0.014	O I	|	|	|	|	0.09
0.833	0.37	0.02	0.017	O I	|	|	|	|	0.10
0.917	0.42	0.02	0.019	O I	|	|	|	|	0.12
1.000	0.44	0.02	0.022	O I	|	|	|	|	0.13
1.083	0.41	0.03	0.025	O I	|	|	|	|	0.15
1.167	0.36	0.03	0.027	O I	|	|	|	|	0.16
1.250	0.35	0.03	0.030	O I	|	|	|	|	0.18
1.333	0.35	0.03	0.032	O I	|	|	|	|	0.19
1.417	0.34	0.03	0.034	O I	|	|	|	|	0.20
1.500	0.34	0.04	0.036	O I	|	|	|	|	0.22
1.583	0.34	0.04	0.038	O I	|	|	|	|	0.23
1.667	0.34	0.04	0.040	O I	|	|	|	|	0.24
1.750	0.34	0.04	0.042	O I	|	|	|	|	0.25
1.833	0.37	0.05	0.044	O I	|	|	|	|	0.26
1.917	0.42	0.05	0.047	O I	|	|	|	|	0.28
2.000	0.44	0.05	0.050	O I	|	|	|	|	0.29
2.083	0.45	0.05	0.052	O I	|	|	|	|	0.31
2.167	0.45	0.06	0.055	O I	|	|	|	|	0.33
2.250	0.45	0.06	0.058	O I	|	|	|	|	0.34
2.333	0.45	0.06	0.060	O I	|	|	|	|	0.36
2.417	0.45	0.06	0.063	O I	|	|	|	|	0.38
2.500	0.45	0.07	0.066	O I	|	|	|	|	0.39
2.583	0.48	0.07	0.068	O I	|	|	|	|	0.41
2.667	0.54	0.07	0.071	O I	|	|	|	|	0.43
2.750	0.55	0.08	0.075	O I	|	|	|	|	0.44
2.833	0.56	0.08	0.078	|O I	|	|	|	|	0.46
2.917	0.56	0.08	0.081	|O I	|	|	|	|	0.48

3.000	0.56	0.09	0.085	O	I				0.50
3.083	0.57	0.09	0.088	O	I				0.52
3.167	0.57	0.09	0.091	O	I				0.54
3.250	0.57	0.10	0.094	O	I				0.56
3.333	0.57	0.10	0.098	O	I				0.58
3.417	0.57	0.10	0.101	O	I				0.60
3.500	0.57	0.11	0.104	O	I				0.62
3.583	0.57	0.11	0.107	O	I				0.64
3.667	0.57	0.11	0.110	O	I				0.66
3.750	0.57	0.11	0.113	O	I				0.68
3.833	0.60	0.12	0.117	O	I				0.69
3.917	0.65	0.12	0.120	O	I				0.71
4.000	0.67	0.13	0.124	O	I				0.74
4.083	0.67	0.13	0.128	O	I				0.76
4.167	0.68	0.13	0.131	O	I				0.78
4.250	0.68	0.14	0.135	O	I				0.80
4.333	0.71	0.14	0.139	O	I				0.83
4.417	0.76	0.14	0.143	O	I				0.85
4.500	0.78	0.15	0.147	O	I				0.88
4.583	0.78	0.15	0.152	O	I				0.90
4.667	0.79	0.16	0.156	O	I				0.93
4.750	0.79	0.16	0.160	O	I				0.95
4.833	0.82	0.17	0.165	O	I				0.98
4.917	0.88	0.17	0.169	O	I				1.00
5.000	0.89	0.17	0.174	O	I				1.02
5.083	0.84	0.17	0.179	O	I				1.03
5.167	0.73	0.18	0.183	O	I				1.05
5.250	0.70	0.18	0.187	O	I				1.06
5.333	0.72	0.18	0.191	O	I				1.07
5.417	0.77	0.18	0.194	O	I				1.08
5.500	0.78	0.18	0.199	O	I				1.09
5.583	0.82	0.18	0.203	O	I				1.10
5.667	0.87	0.18	0.207	O	I				1.12
5.750	0.89	0.19	0.212	O	I				1.13
5.833	0.90	0.19	0.217	O	I				1.15
5.917	0.90	0.19	0.222	O	I				1.16
6.000	0.90	0.19	0.227	O	I				1.18
6.083	0.94	0.19	0.232	O	I				1.19
6.167	0.99	0.19	0.237	O	I				1.21
6.250	1.00	0.20	0.243	O	I				1.22
6.333	1.01	0.20	0.248	O	I				1.24
6.417	1.01	0.20	0.254	O	I				1.26
6.500	1.02	0.20	0.259	O	I				1.27
6.583	1.05	0.20	0.265	O	I				1.29
6.667	1.10	0.21	0.271	O	I				1.31
6.750	1.12	0.21	0.277	O	I				1.33
6.833	1.12	0.21	0.284	O	I				1.35
6.917	1.13	0.21	0.290	O	I				1.36
7.000	1.13	0.22	0.296	O	I				1.38
7.083	1.13	0.22	0.303	O	I				1.40
7.167	1.13	0.22	0.309	O	I				1.42
7.250	1.13	0.22	0.315	O	I				1.44
7.333	1.16	0.22	0.321	O	I				1.46
7.417	1.22	0.23	0.328	O	I				1.48

7.500	1.23	0.23	0.335	O		I		1.50
7.583	1.27	0.23	0.342	O		I		1.52
7.667	1.33	0.23	0.349	O		I		1.54
7.750	1.34	0.24	0.357	O		I		1.56
7.833	1.38	0.24	0.365	O		I		1.59
7.917	1.44	0.24	0.373	O		I		1.61
8.000	1.46	0.25	0.381	O		I		1.64
8.083	1.52	0.25	0.389	O		I		1.66
8.167	1.64	0.25	0.399	O		I		1.69
8.250	1.67	0.26	0.408	O		I		1.72
8.333	1.68	0.26	0.418	O		I		1.75
8.417	1.69	0.26	0.428	O		I		1.78
8.500	1.69	0.27	0.438	O		I		1.80
8.583	1.73	0.27	0.448	O		I		1.83
8.667	1.78	0.27	0.458	O		I		1.86
8.750	1.80	0.28	0.468	O		I		1.90
8.833	1.83	0.28	0.479	O		I		1.93
8.917	1.89	0.29	0.490	O		I		1.96
9.000	1.91	0.29	0.501	O		I		1.99
9.083	1.98	0.29	0.512	O		I		2.04
9.167	2.09	0.30	0.524	O		I		2.08
9.250	2.12	0.30	0.536	O		I		2.13
9.333	2.17	0.30	0.549	O		I		2.18
9.417	2.23	0.31	0.562	O		I		2.23
9.500	2.25	0.31	0.575	O		I		2.29
9.583	2.29	0.32	0.589	O		I		2.34
9.667	2.34	0.32	0.603	O		I		2.40
9.750	2.36	0.33	0.617	O		I		2.45
9.833	2.40	0.33	0.631	O		I		2.51
9.917	2.46	0.34	0.645	O		I		2.56
10.000	2.47	0.34	0.660	O		I		2.62
10.083	2.27	0.34	0.674	O		I		2.68
10.167	1.89	0.35	0.686	O		I		2.72
10.250	1.79	0.35	0.696	O		I		2.77
10.333	1.74	0.35	0.706	O		I		2.80
10.417	1.72	0.36	0.715	O		I		2.84
10.500	1.70	0.36	0.724	O		I		2.88
10.583	1.85	0.36	0.734	O		I		2.92
10.667	2.12	0.37	0.745	O		I		2.96
10.750	2.20	0.37	0.758	O		I		3.01
10.833	2.23	0.37	0.770	O		I		3.06
10.917	2.25	0.38	0.783	O		I		3.11
11.000	2.26	0.38	0.796	O		I		3.16
11.083	2.23	0.39	0.809	O		I		3.21
11.167	2.18	0.39	0.821	O		I		3.26
11.250	2.16	0.39	0.834	O		I		3.31
11.333	2.15	0.40	0.846	O		I		3.36
11.417	2.15	0.40	0.858	O		I		3.41
11.500	2.15	0.40	0.870	O		I		3.46
11.583	2.09	0.41	0.882	O		I		3.50
11.667	1.98	0.41	0.893	O		I		3.55
11.750	1.95	0.41	0.904	O		I		3.59
11.833	1.97	0.41	0.914	O		I		3.63
11.917	2.01	0.42	0.925	O		I		3.68

12.000	2.02	0.42	0.936	O			I	3.72
12.083	1.60	0.42	0.946	O		I		3.76
12.167	0.84	0.42	0.951	O	I			3.78
12.250	0.66	0.43	0.953	O	I			3.79
12.333	0.62	0.43	0.955	O	I			3.80
12.417	0.65	0.43	0.956	O	I			3.80
12.500	0.65	0.43	0.958	O	I			3.81
12.583	0.74	0.43	0.960	O	I			3.82
12.667	0.89	0.43	0.962	O	I			3.83
12.750	0.94	0.43	0.966	O	I			3.84
12.833	1.01	0.43	0.969	O	I			3.85
12.917	1.10	0.43	0.974	O	I			3.87
13.000	1.14	0.43	0.978	O	I			3.89
13.083	1.35	0.43	0.984	O		I		3.91
13.167	1.70	0.44	0.992	O		I		3.94
13.250	1.81	0.44	1.001	O		I		3.98
13.333	1.86	0.44	1.010	O		I		4.02
13.417	1.90	0.44	1.020	O		I		4.06
13.500	1.92	0.45	1.030	O		I		4.10
13.583	1.53	0.45	1.039	O		I		4.13
13.667	0.81	0.45	1.044	O	I			4.15
13.750	0.63	0.45	1.046	O	I			4.16
13.833	0.56	0.45	1.047	O	I			4.16
13.917	0.52	0.45	1.047	OI				4.16
14.000	0.51	0.45	1.048	OI				4.17
14.083	0.66	0.45	1.049	O	I			4.17
14.167	0.94	0.45	1.051	O	I			4.18
14.250	1.03	0.45	1.055	O	I			4.19
14.333	1.03	0.45	1.059	O	I			4.21
14.417	1.00	0.45	1.063	O	I			4.23
14.500	1.00	0.45	1.067	O	I			4.24
14.583	1.01	0.46	1.070	O	I			4.26
14.667	1.02	0.46	1.074	O	I			4.27
14.750	1.03	0.46	1.078	O	I			4.29
14.833	1.01	0.46	1.082	O	I			4.30
14.917	0.95	0.46	1.086	O	I			4.32
15.000	0.95	0.46	1.089	O	I			4.33
15.083	0.92	0.46	1.092	O	I			4.34
15.167	0.86	0.46	1.095	O	I			4.35
15.250	0.85	0.46	1.098	O	I			4.36
15.333	0.82	0.46	1.100	O	I			4.37
15.417	0.76	0.46	1.103	O	I			4.38
15.500	0.75	0.46	1.105	O	I			4.39
15.583	0.60	0.46	1.106	OI				4.40
15.667	0.34	0.46	1.106	I O				4.40
15.750	0.28	0.46	1.105	I O				4.39
15.833	0.26	0.46	1.104	I O				4.39
15.917	0.26	0.46	1.103	I O				4.38
16.000	0.26	0.46	1.101	I O				4.38
16.083	0.31	0.46	1.100	IO				4.37
16.167	0.41	0.46	1.099	O				4.37
16.250	0.43	0.46	1.099	O				4.37
16.333	0.44	0.46	1.099	O				4.37
16.417	0.45	0.46	1.099	O				4.37

16.500	0.45	0.46	1.098	O				4.37
16.583	0.42	0.46	1.098	O				4.37
16.667	0.37	0.46	1.098	IO				4.36
16.750	0.35	0.46	1.097	IO				4.36
16.833	0.35	0.46	1.096	IO				4.36
16.917	0.34	0.46	1.096	IO				4.36
17.000	0.34	0.46	1.095	IO				4.35
17.083	0.40	0.46	1.094	O				4.35
17.167	0.51	0.46	1.094	OI				4.35
17.250	0.54	0.46	1.095	OI				4.35
17.333	0.55	0.46	1.095	O I				4.35
17.417	0.56	0.46	1.096	O I				4.36
17.500	0.56	0.46	1.096	O I				4.36
17.583	0.57	0.46	1.097	O I				4.36
17.667	0.57	0.46	1.098	O I				4.36
17.750	0.57	0.46	1.099	O I				4.37
17.833	0.53	0.46	1.099	OI				4.37
17.917	0.48	0.46	1.099	OI				4.37
18.000	0.47	0.46	1.100	OI				4.37
18.083	0.46	0.46	1.100	O				4.37
18.167	0.46	0.46	1.100	O				4.37
18.250	0.45	0.46	1.099	O				4.37
18.333	0.45	0.46	1.099	O				4.37
18.417	0.45	0.46	1.099	O				4.37
18.500	0.45	0.46	1.099	O				4.37
18.583	0.42	0.46	1.099	O				4.37
18.667	0.37	0.46	1.099	IO				4.37
18.750	0.35	0.46	1.098	IO				4.36
18.833	0.32	0.46	1.097	IO				4.36
18.917	0.26	0.46	1.096	I O				4.36
19.000	0.24	0.46	1.094	I O				4.35
19.083	0.26	0.46	1.093	I O				4.34
19.167	0.31	0.46	1.092	IO				4.34
19.250	0.33	0.46	1.091	IO				4.34
19.333	0.36	0.46	1.090	IO				4.33
19.417	0.42	0.46	1.090	O				4.33
19.500	0.44	0.46	1.089	O				4.33
19.583	0.41	0.46	1.089	O				4.33
19.667	0.36	0.46	1.089	IO				4.33
19.750	0.35	0.46	1.088	IO				4.32
19.833	0.32	0.46	1.087	IO				4.32
19.917	0.26	0.46	1.086	I O				4.32
20.000	0.24	0.46	1.084	I O				4.31
20.083	0.26	0.46	1.083	I O				4.31
20.167	0.31	0.46	1.082	IO				4.30
20.250	0.33	0.46	1.081	IO				4.30
20.333	0.33	0.46	1.080	IO				4.29
20.417	0.34	0.46	1.079	IO				4.29
20.500	0.34	0.46	1.078	IO				4.29
20.583	0.34	0.46	1.077	IO				4.28
20.667	0.34	0.46	1.077	IO				4.28
20.750	0.34	0.46	1.076	IO				4.28
20.833	0.31	0.46	1.075	I O				4.27
20.917	0.25	0.46	1.074	I O				4.27

21.000	0.24	0.46	1.072	I O				4.26
21.083	0.26	0.46	1.071	I O				4.26
21.167	0.31	0.46	1.070	IO				4.25
21.250	0.33	0.45	1.069	IO				4.25
21.333	0.30	0.45	1.068	I O				4.25
21.417	0.25	0.45	1.067	I O				4.24
21.500	0.24	0.45	1.065	I O				4.23
21.583	0.26	0.45	1.064	I O				4.23
21.667	0.31	0.45	1.063	IO				4.22
21.750	0.33	0.45	1.062	IO				4.22
21.833	0.30	0.45	1.061	I O				4.22
21.917	0.25	0.45	1.060	I O				4.21
22.000	0.24	0.45	1.058	I O				4.21
22.083	0.26	0.45	1.057	I O				4.20
22.167	0.31	0.45	1.056	IO				4.20
22.250	0.33	0.45	1.055	IO				4.19
22.333	0.30	0.45	1.054	I O				4.19
22.417	0.25	0.45	1.053	I O				4.18
22.500	0.24	0.45	1.051	I O				4.18
22.583	0.23	0.45	1.050	I O				4.17
22.667	0.23	0.45	1.048	I O				4.17
22.750	0.23	0.45	1.047	I O				4.16
22.833	0.23	0.45	1.045	I O				4.16
22.917	0.23	0.45	1.044	I O				4.15
23.000	0.23	0.45	1.042	I O				4.14
23.083	0.23	0.45	1.040	I O				4.14
23.167	0.23	0.45	1.039	I O				4.13
23.250	0.23	0.45	1.037	I O				4.12
23.333	0.23	0.45	1.036	I O				4.12
23.417	0.23	0.45	1.034	I O				4.11
23.500	0.23	0.45	1.033	I O				4.11
23.583	0.23	0.45	1.031	I O				4.10
23.667	0.23	0.45	1.030	I O				4.09
23.750	0.23	0.45	1.028	I O				4.09
23.833	0.23	0.44	1.027	I O				4.08
23.917	0.23	0.44	1.025	I O				4.08
24.000	0.23	0.44	1.024	I O				4.07
24.083	0.16	0.44	1.022	I O				4.06
24.167	0.06	0.44	1.020	I O				4.05
24.250	0.03	0.44	1.017	I O				4.04
24.333	0.01	0.44	1.014	I O				4.03
24.417	0.01	0.44	1.011	I O				4.02
24.500	0.00	0.44	1.008	I O				4.01
24.583	0.00	0.44	1.005	I O				4.00
24.667	0.00	0.44	1.002	I O				3.98
24.750	0.00	0.44	0.999	I O				3.97
24.833	0.00	0.44	0.996	I O				3.96
24.917	0.00	0.44	0.993	I O				3.95
25.000	0.00	0.44	0.990	I O				3.94
25.083	0.00	0.43	0.987	I O				3.92
25.167	0.00	0.43	0.984	I O				3.91
25.250	0.00	0.43	0.981	I O				3.90
25.333	0.00	0.43	0.978	I O				3.89
25.417	0.00	0.43	0.975	I O				3.88

25.500	0.00	0.43	0.972	I	O	|	|	|	|	3.87
25.583	0.00	0.43	0.969	I	O	|	|	|	|	3.85
25.667	0.00	0.43	0.966	I	O	|	|	|	|	3.84
25.750	0.00	0.43	0.963	I	O	|	|	|	|	3.83
25.833	0.00	0.43	0.960	I	O	|	|	|	|	3.82
25.917	0.00	0.43	0.957	I	O	|	|	|	|	3.81
26.000	0.00	0.43	0.954	I	O	|	|	|	|	3.79
26.083	0.00	0.42	0.952	I	O	|	|	|	|	3.78
26.167	0.00	0.42	0.949	I	O	|	|	|	|	3.77
26.250	0.00	0.42	0.946	I	O	|	|	|	|	3.76
26.333	0.00	0.42	0.943	I	O	|	|	|	|	3.75
26.417	0.00	0.42	0.940	I	O	|	|	|	|	3.74
26.500	0.00	0.42	0.937	I	O	|	|	|	|	3.72
26.583	0.00	0.42	0.934	I	O	|	|	|	|	3.71
26.667	0.00	0.42	0.931	I	O	|	|	|	|	3.70
26.750	0.00	0.42	0.928	I	O	|	|	|	|	3.69
26.833	0.00	0.42	0.925	I	O	|	|	|	|	3.68
26.917	0.00	0.42	0.923	I	O	|	|	|	|	3.67
27.000	0.00	0.42	0.920	I	O	|	|	|	|	3.66
27.083	0.00	0.42	0.917	I	O	|	|	|	|	3.64
27.167	0.00	0.41	0.914	I	O	|	|	|	|	3.63
27.250	0.00	0.41	0.911	I	O	|	|	|	|	3.62
27.333	0.00	0.41	0.908	I	O	|	|	|	|	3.61
27.417	0.00	0.41	0.905	I	O	|	|	|	|	3.60
27.500	0.00	0.41	0.903	I	O	|	|	|	|	3.59
27.583	0.00	0.41	0.900	I	O	|	|	|	|	3.58
27.667	0.00	0.41	0.897	I	O	|	|	|	|	3.57
27.750	0.00	0.41	0.894	I	O	|	|	|	|	3.55
27.833	0.00	0.41	0.891	I	O	|	|	|	|	3.54
27.917	0.00	0.41	0.889	I	O	|	|	|	|	3.53
28.000	0.00	0.41	0.886	I	O	|	|	|	|	3.52
28.083	0.00	0.41	0.883	I	O	|	|	|	|	3.51
28.167	0.00	0.40	0.880	I	O	|	|	|	|	3.50
28.250	0.00	0.40	0.877	I	O	|	|	|	|	3.49
28.333	0.00	0.40	0.875	I	O	|	|	|	|	3.48
28.417	0.00	0.40	0.872	I	O	|	|	|	|	3.47
28.500	0.00	0.40	0.869	I	O	|	|	|	|	3.45
28.583	0.00	0.40	0.866	I	O	|	|	|	|	3.44
28.667	0.00	0.40	0.863	I	O	|	|	|	|	3.43
28.750	0.00	0.40	0.861	I	O	|	|	|	|	3.42
28.833	0.00	0.40	0.858	I	O	|	|	|	|	3.41
28.917	0.00	0.40	0.855	I	O	|	|	|	|	3.40
29.000	0.00	0.40	0.852	I	O	|	|	|	|	3.39
29.083	0.00	0.40	0.850	I	O	|	|	|	|	3.38
29.167	0.00	0.40	0.847	I	O	|	|	|	|	3.37
29.250	0.00	0.39	0.844	I	O	|	|	|	|	3.36
29.333	0.00	0.39	0.842	I	O	|	|	|	|	3.35
29.417	0.00	0.39	0.839	I	O	|	|	|	|	3.33
29.500	0.00	0.39	0.836	I	O	|	|	|	|	3.32
29.583	0.00	0.39	0.833	I	O	|	|	|	|	3.31
29.667	0.00	0.39	0.831	I	O	|	|	|	|	3.30
29.750	0.00	0.39	0.828	I	O	|	|	|	|	3.29
29.833	0.00	0.39	0.825	I	O	|	|	|	|	3.28
29.917	0.00	0.39	0.823	I	O	|	|	|	|	3.27

30.000	0.00	0.39	0.820	I	O	|	|	|	3.26
30.083	0.00	0.39	0.817	I	O	|	|	|	3.25
30.167	0.00	0.39	0.815	I	O	|	|	|	3.24
30.250	0.00	0.39	0.812	I	O	|	|	|	3.23
30.333	0.00	0.39	0.809	I	O	|	|	|	3.22
30.417	0.00	0.38	0.807	I	O	|	|	|	3.21
30.500	0.00	0.38	0.804	I	O	|	|	|	3.20
30.583	0.00	0.38	0.801	I	O	|	|	|	3.19
30.667	0.00	0.38	0.799	I	O	|	|	|	3.17
30.750	0.00	0.38	0.796	I	O	|	|	|	3.16
30.833	0.00	0.38	0.794	I	O	|	|	|	3.15
30.917	0.00	0.38	0.791	I	O	|	|	|	3.14
31.000	0.00	0.38	0.788	I	O	|	|	|	3.13
31.083	0.00	0.38	0.786	I	O	|	|	|	3.12
31.167	0.00	0.38	0.783	I	O	|	|	|	3.11
31.250	0.00	0.38	0.781	I	O	|	|	|	3.10
31.333	0.00	0.38	0.778	I	O	|	|	|	3.09
31.417	0.00	0.38	0.775	I	O	|	|	|	3.08
31.500	0.00	0.37	0.773	I	O	|	|	|	3.07
31.583	0.00	0.37	0.770	I	O	|	|	|	3.06
31.667	0.00	0.37	0.768	I	O	|	|	|	3.05
31.750	0.00	0.37	0.765	I	O	|	|	|	3.04
31.833	0.00	0.37	0.762	I	O	|	|	|	3.03
31.917	0.00	0.37	0.760	I	O	|	|	|	3.02
32.000	0.00	0.37	0.757	I	O	|	|	|	3.01
32.083	0.00	0.37	0.755	I	O	|	|	|	3.00
32.167	0.00	0.37	0.752	I	O	|	|	|	2.99
32.250	0.00	0.37	0.750	I	O	|	|	|	2.98
32.333	0.00	0.37	0.747	I	O	|	|	|	2.97
32.417	0.00	0.37	0.745	I	O	|	|	|	2.96
32.500	0.00	0.37	0.742	I	O	|	|	|	2.95
32.583	0.00	0.37	0.740	I	O	|	|	|	2.94
32.667	0.00	0.36	0.737	I	O	|	|	|	2.93
32.750	0.00	0.36	0.735	I	O	|	|	|	2.92
32.833	0.00	0.36	0.732	I	O	|	|	|	2.91
32.917	0.00	0.36	0.730	I	O	|	|	|	2.90
33.000	0.00	0.36	0.727	I	O	|	|	|	2.89
33.083	0.00	0.36	0.725	I	O	|	|	|	2.88
33.167	0.00	0.36	0.722	I	O	|	|	|	2.87
33.250	0.00	0.36	0.720	I	O	|	|	|	2.86
33.333	0.00	0.36	0.717	I	O	|	|	|	2.85
33.417	0.00	0.36	0.715	I	O	|	|	|	2.84
33.500	0.00	0.36	0.712	I	O	|	|	|	2.83
33.583	0.00	0.36	0.710	I	O	|	|	|	2.82
33.667	0.00	0.35	0.707	I	O	|	|	|	2.81
33.750	0.00	0.35	0.705	I	O	|	|	|	2.80
33.833	0.00	0.35	0.703	I	O	|	|	|	2.79
33.917	0.00	0.35	0.700	I	O	|	|	|	2.78
34.000	0.00	0.35	0.698	I	O	|	|	|	2.77
34.083	0.00	0.35	0.695	I	O	|	|	|	2.76
34.167	0.00	0.35	0.693	I	O	|	|	|	2.75
34.250	0.00	0.35	0.690	I	O	|	|	|	2.74
34.333	0.00	0.35	0.688	I	O	|	|	|	2.73
34.417	0.00	0.35	0.686	I	O	|	|	|	2.72

34.500	0.00	0.35	0.683	I	O	|	|	|	|	2.72
34.583	0.00	0.35	0.681	I	O	|	|	|	|	2.71
34.667	0.00	0.35	0.678	I	O	|	|	|	|	2.70
34.750	0.00	0.34	0.676	I	O	|	|	|	|	2.69
34.833	0.00	0.34	0.674	I	O	|	|	|	|	2.68
34.917	0.00	0.34	0.671	I	O	|	|	|	|	2.67
35.000	0.00	0.34	0.669	I	O	|	|	|	|	2.66
35.083	0.00	0.34	0.667	I	O	|	|	|	|	2.65
35.167	0.00	0.34	0.664	I	O	|	|	|	|	2.64
35.250	0.00	0.34	0.662	I	O	|	|	|	|	2.63
35.333	0.00	0.34	0.660	I	O	|	|	|	|	2.62
35.417	0.00	0.34	0.657	I	O	|	|	|	|	2.61
35.500	0.00	0.34	0.655	I	O	|	|	|	|	2.60
35.583	0.00	0.34	0.653	I	O	|	|	|	|	2.59
35.667	0.00	0.34	0.650	I	O	|	|	|	|	2.58
35.750	0.00	0.34	0.648	I	O	|	|	|	|	2.58
35.833	0.00	0.34	0.646	I	O	|	|	|	|	2.57
35.917	0.00	0.33	0.643	I	O	|	|	|	|	2.56
36.000	0.00	0.33	0.641	I	O	|	|	|	|	2.55
36.083	0.00	0.33	0.639	I	O	|	|	|	|	2.54
36.167	0.00	0.33	0.636	I	O	|	|	|	|	2.53
36.250	0.00	0.33	0.634	I	O	|	|	|	|	2.52
36.333	0.00	0.33	0.632	I	O	|	|	|	|	2.51
36.417	0.00	0.33	0.630	I	O	|	|	|	|	2.50
36.500	0.00	0.33	0.627	I	O	|	|	|	|	2.49
36.583	0.00	0.33	0.625	I	O	|	|	|	|	2.48
36.667	0.00	0.33	0.623	I	O	|	|	|	|	2.48
36.750	0.00	0.33	0.621	I	O	|	|	|	|	2.47
36.833	0.00	0.33	0.618	I	O	|	|	|	|	2.46
36.917	0.00	0.33	0.616	I	O	|	|	|	|	2.45
37.000	0.00	0.33	0.614	I	O	|	|	|	|	2.44
37.083	0.00	0.32	0.612	I	O	|	|	|	|	2.43
37.167	0.00	0.32	0.609	I	O	|	|	|	|	2.42
37.250	0.00	0.32	0.607	I	O	|	|	|	|	2.41
37.333	0.00	0.32	0.605	I	O	|	|	|	|	2.40
37.417	0.00	0.32	0.603	I	O	|	|	|	|	2.40
37.500	0.00	0.32	0.600	I	O	|	|	|	|	2.39
37.583	0.00	0.32	0.598	I	O	|	|	|	|	2.38
37.667	0.00	0.32	0.596	I	O	|	|	|	|	2.37
37.750	0.00	0.32	0.594	I	O	|	|	|	|	2.36
37.833	0.00	0.32	0.592	I	O	|	|	|	|	2.35
37.917	0.00	0.32	0.589	I	O	|	|	|	|	2.34
38.000	0.00	0.32	0.587	I	O	|	|	|	|	2.33
38.083	0.00	0.32	0.585	I	O	|	|	|	|	2.33
38.167	0.00	0.32	0.583	I	O	|	|	|	|	2.32
38.250	0.00	0.31	0.581	I	O	|	|	|	|	2.31
38.333	0.00	0.31	0.579	I	O	|	|	|	|	2.30
38.417	0.00	0.31	0.576	I	O	|	|	|	|	2.29
38.500	0.00	0.31	0.574	I	O	|	|	|	|	2.28
38.583	0.00	0.31	0.572	I	O	|	|	|	|	2.27
38.667	0.00	0.31	0.570	I	O	|	|	|	|	2.27
38.750	0.00	0.31	0.568	I	O	|	|	|	|	2.26
38.833	0.00	0.31	0.566	I	O	|	|	|	|	2.25
38.917	0.00	0.31	0.564	I	O	|	|	|	|	2.24

39.000	0.00	0.31	0.561	I	O	|	|	|	|	2.23
39.083	0.00	0.31	0.559	I	O	|	|	|	|	2.22
39.167	0.00	0.31	0.557	I	O	|	|	|	|	2.21
39.250	0.00	0.31	0.555	I	O	|	|	|	|	2.21
39.333	0.00	0.31	0.553	I	O	|	|	|	|	2.20
39.417	0.00	0.31	0.551	I	O	|	|	|	|	2.19
39.500	0.00	0.30	0.549	I	O	|	|	|	|	2.18
39.583	0.00	0.30	0.547	I	O	|	|	|	|	2.17
39.667	0.00	0.30	0.545	I	O	|	|	|	|	2.16
39.750	0.00	0.30	0.542	I	O	|	|	|	|	2.16
39.833	0.00	0.30	0.540	I	O	|	|	|	|	2.15
39.917	0.00	0.30	0.538	I	O	|	|	|	|	2.14
40.000	0.00	0.30	0.536	I	O	|	|	|	|	2.13
40.083	0.00	0.30	0.534	I	O	|	|	|	|	2.12
40.167	0.00	0.30	0.532	I	O	|	|	|	|	2.12
40.250	0.00	0.30	0.530	I	O	|	|	|	|	2.11
40.333	0.00	0.30	0.528	I	O	|	|	|	|	2.10
40.417	0.00	0.30	0.526	I	O	|	|	|	|	2.09
40.500	0.00	0.30	0.524	I	O	|	|	|	|	2.08
40.583	0.00	0.30	0.522	I	O	|	|	|	|	2.07
40.667	0.00	0.30	0.520	I	O	|	|	|	|	2.07
40.750	0.00	0.29	0.518	I	O	|	|	|	|	2.06
40.833	0.00	0.29	0.516	I	O	|	|	|	|	2.05
40.917	0.00	0.29	0.514	I	O	|	|	|	|	2.04
41.000	0.00	0.29	0.512	I	O	|	|	|	|	2.03
41.083	0.00	0.29	0.510	I	O	|	|	|	|	2.03
41.167	0.00	0.29	0.508	I	O	|	|	|	|	2.02
41.250	0.00	0.29	0.506	I	O	|	|	|	|	2.01
41.333	0.00	0.29	0.504	I	O	|	|	|	|	2.00
41.417	0.00	0.29	0.502	I	O	|	|	|	|	2.00
41.500	0.00	0.29	0.500	I	O	|	|	|	|	1.99
41.583	0.00	0.29	0.498	I	O	|	|	|	|	1.98
41.667	0.00	0.29	0.496	I	O	|	|	|	|	1.98
41.750	0.00	0.29	0.494	I	O	|	|	|	|	1.97
41.833	0.00	0.29	0.492	I	O	|	|	|	|	1.97
41.917	0.00	0.29	0.490	I	O	|	|	|	|	1.96
42.000	0.00	0.28	0.488	I	O	|	|	|	|	1.95
42.083	0.00	0.28	0.486	I	O	|	|	|	|	1.95
42.167	0.00	0.28	0.484	I	O	|	|	|	|	1.94
42.250	0.00	0.28	0.482	I	O	|	|	|	|	1.94
42.333	0.00	0.28	0.480	I	O	|	|	|	|	1.93
42.417	0.00	0.28	0.478	I	O	|	|	|	|	1.93
42.500	0.00	0.28	0.476	I	O	|	|	|	|	1.92
42.583	0.00	0.28	0.474	I	O	|	|	|	|	1.91
42.667	0.00	0.28	0.472	I	O	|	|	|	|	1.91
42.750	0.00	0.28	0.470	I	O	|	|	|	|	1.90
42.833	0.00	0.28	0.469	I	O	|	|	|	|	1.90
42.917	0.00	0.28	0.467	I	O	|	|	|	|	1.89
43.000	0.00	0.28	0.465	I	O	|	|	|	|	1.89
43.083	0.00	0.28	0.463	I	O	|	|	|	|	1.88
43.167	0.00	0.27	0.461	I	O	|	|	|	|	1.87
43.250	0.00	0.27	0.459	I	O	|	|	|	|	1.87
43.333	0.00	0.27	0.457	I	O	|	|	|	|	1.86
43.417	0.00	0.27	0.455	I	O	|	|	|	|	1.86

43.500	0.00	0.27	0.453	I	O	|	|	|	|	1.85
43.583	0.00	0.27	0.451	I	O	|	|	|	|	1.85
43.667	0.00	0.27	0.450	I	O	|	|	|	|	1.84
43.750	0.00	0.27	0.448	I	O	|	|	|	|	1.84
43.833	0.00	0.27	0.446	I	O	|	|	|	|	1.83
43.917	0.00	0.27	0.444	I	O	|	|	|	|	1.82
44.000	0.00	0.27	0.442	I	O	|	|	|	|	1.82
44.083	0.00	0.27	0.440	I	O	|	|	|	|	1.81
44.167	0.00	0.27	0.439	I	O	|	|	|	|	1.81
44.250	0.00	0.27	0.437	I	O	|	|	|	|	1.80
44.333	0.00	0.27	0.435	I	O	|	|	|	|	1.80
44.417	0.00	0.26	0.433	I	O	|	|	|	|	1.79
44.500	0.00	0.26	0.431	I	O	|	|	|	|	1.79
44.583	0.00	0.26	0.429	I	O	|	|	|	|	1.78
44.667	0.00	0.26	0.428	I	O	|	|	|	|	1.77
44.750	0.00	0.26	0.426	I	O	|	|	|	|	1.77
44.833	0.00	0.26	0.424	I	O	|	|	|	|	1.76
44.917	0.00	0.26	0.422	I	O	|	|	|	|	1.76
45.000	0.00	0.26	0.420	I	O	|	|	|	|	1.75
45.083	0.00	0.26	0.419	I	O	|	|	|	|	1.75
45.167	0.00	0.26	0.417	I	O	|	|	|	|	1.74
45.250	0.00	0.26	0.415	I	O	|	|	|	|	1.74
45.333	0.00	0.26	0.413	I	O	|	|	|	|	1.73
45.417	0.00	0.26	0.411	I	O	|	|	|	|	1.73
45.500	0.00	0.26	0.410	I	O	|	|	|	|	1.72
45.583	0.00	0.26	0.408	I	O	|	|	|	|	1.72
45.667	0.00	0.26	0.406	I	O	|	|	|	|	1.71
45.750	0.00	0.25	0.404	I	O	|	|	|	|	1.71
45.833	0.00	0.25	0.403	I	O	|	|	|	|	1.70
45.917	0.00	0.25	0.401	I	O	|	|	|	|	1.70
46.000	0.00	0.25	0.399	I	O	|	|	|	|	1.69
46.083	0.00	0.25	0.397	I	O	|	|	|	|	1.68
46.167	0.00	0.25	0.396	I	O	|	|	|	|	1.68
46.250	0.00	0.25	0.394	I	O	|	|	|	|	1.67
46.333	0.00	0.25	0.392	I	O	|	|	|	|	1.67
46.417	0.00	0.25	0.390	I	O	|	|	|	|	1.66
46.500	0.00	0.25	0.389	I	O	|	|	|	|	1.66
46.583	0.00	0.25	0.387	I	O	|	|	|	|	1.65
46.667	0.00	0.25	0.385	I	O	|	|	|	|	1.65
46.750	0.00	0.25	0.384	I	O	|	|	|	|	1.64
46.833	0.00	0.25	0.382	I	O	|	|	|	|	1.64
46.917	0.00	0.25	0.380	I	O	|	|	|	|	1.63
47.000	0.00	0.25	0.379	I	O	|	|	|	|	1.63
47.083	0.00	0.24	0.377	I	O	|	|	|	|	1.62
47.167	0.00	0.24	0.375	I	O	|	|	|	|	1.62
47.250	0.00	0.24	0.374	I	O	|	|	|	|	1.61
47.333	0.00	0.24	0.372	I	O	|	|	|	|	1.61
47.417	0.00	0.24	0.370	I	O	|	|	|	|	1.60
47.500	0.00	0.24	0.368	I	O	|	|	|	|	1.60
47.583	0.00	0.24	0.367	I	O	|	|	|	|	1.59
47.667	0.00	0.24	0.365	I	O	|	|	|	|	1.59
47.750	0.00	0.24	0.364	I	O	|	|	|	|	1.58
47.833	0.00	0.24	0.362	I	O	|	|	|	|	1.58
47.917	0.00	0.24	0.360	I	O	|	|	|	|	1.57

48.000 0.00 0.24 0.359 I O | | | | 1.57

**********HYDROGRAPH DATA**********

Number of intervals = 1450
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.464 (CFS)
Total volume = 1.667 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/13/19

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2 YEAR FLOOD ROUTING
BASIN 2
MJPA 304163
4163FR2.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP2242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 294
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.618 (CFS)
Total volume = 2.051 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 294
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.168	0.170	0.167	0.169
2.000	0.503	0.290	0.502	0.504
3.000	0.755	0.370	0.754	0.756
4.000	1.006	0.440	1.004	1.008
5.000	1.258	0.500	1.256	1.260
5.500	1.691	0.530	1.689	1.693
6.000	2.151	1.150	2.147	2.155
7.000	3.158	1.810	3.152	3.164
8.000	4.279	17.360	4.219	4.339
8.500	4.884	20.950	4.812	4.956

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	0.9	1.81	2.71	3.62	Depth (Ft.)
0.083	0.08	0.00	0.000	O	|	|	|	|	0.00
0.167	0.23	0.00	0.001	O I	|	|	|	|	0.01
0.250	0.27	0.00	0.003	O I	|	|	|	|	0.02
0.333	0.33	0.01	0.005	O I	|	|	|	|	0.03
0.417	0.42	0.01	0.008	O I	|	|	|	|	0.05
0.500	0.44	0.01	0.011	O I	|	|	|	|	0.06
0.583	0.45	0.01	0.014	O I	|	|	|	|	0.08
0.667	0.46	0.02	0.017	O I	|	|	|	|	0.10
0.750	0.46	0.02	0.020	O I	|	|	|	|	0.12
0.833	0.50	0.02	0.023	O I	|	|	|	|	0.14
0.917	0.58	0.03	0.026	O I	|	|	|	|	0.16
1.000	0.60	0.03	0.030	O I	|	|	|	|	0.18
1.083	0.56	0.03	0.034	O I	|	|	|	|	0.20
1.167	0.50	0.04	0.037	O I	|	|	|	|	0.22
1.250	0.48	0.04	0.040	O I	|	|	|	|	0.24
1.333	0.47	0.04	0.043	O I	|	|	|	|	0.26
1.417	0.47	0.05	0.046	O I	|	|	|	|	0.28
1.500	0.46	0.05	0.049	O I	|	|	|	|	0.29
1.583	0.46	0.05	0.052	O I	|	|	|	|	0.31
1.667	0.46	0.06	0.055	O I	|	|	|	|	0.33
1.750	0.46	0.06	0.058	O I	|	|	|	|	0.34
1.833	0.50	0.06	0.061	O I	|	|	|	|	0.36
1.917	0.58	0.06	0.064	O I	|	|	|	|	0.38
2.000	0.60	0.07	0.067	O I	|	|	|	|	0.40
2.083	0.61	0.07	0.071	O I	|	|	|	|	0.42
2.167	0.61	0.08	0.075	O I	|	|	|	|	0.45
2.250	0.61	0.08	0.079	O I	|	|	|	|	0.47
2.333	0.62	0.08	0.082	O I	|	|	|	|	0.49
2.417	0.62	0.09	0.086	O I	|	|	|	|	0.51
2.500	0.62	0.09	0.089	O I	|	|	|	|	0.53
2.583	0.66	0.09	0.093	O I	|	|	|	|	0.55
2.667	0.73	0.10	0.097	O I	|	|	|	|	0.58
2.750	0.75	0.10	0.102	O I	|	|	|	|	0.61
2.833	0.76	0.11	0.106	O I	|	|	|	|	0.63
2.917	0.77	0.11	0.111	O I	|	|	|	|	0.66

3.000	0.77	0.12	0.115	O	I			0.69
3.083	0.77	0.12	0.120	O	I			0.71
3.167	0.77	0.13	0.124	O	I			0.74
3.250	0.77	0.13	0.129	O	I			0.77
3.333	0.77	0.13	0.133	O	I			0.79
3.417	0.77	0.14	0.137	O	I			0.82
3.500	0.77	0.14	0.142	O	I			0.84
3.583	0.77	0.15	0.146	O	I			0.87
3.667	0.77	0.15	0.150	O	I			0.89
3.750	0.77	0.16	0.154	O	I			0.92
3.833	0.81	0.16	0.159	O	I			0.95
3.917	0.89	0.17	0.164	O	I			0.97
4.000	0.91	0.17	0.169	O	I			1.00
4.083	0.91	0.17	0.174	O	I			1.02
4.167	0.92	0.17	0.179	O	I			1.03
4.250	0.92	0.18	0.184	O	I			1.05
4.333	0.97	0.18	0.189	O	I			1.06
4.417	1.04	0.18	0.195	O	I			1.08
4.500	1.06	0.18	0.201	O	I			1.10
4.583	1.07	0.18	0.207	O	I			1.12
4.667	1.07	0.19	0.213	O	I			1.13
4.750	1.08	0.19	0.219	O	I			1.15
4.833	1.12	0.19	0.225	O	I			1.17
4.917	1.19	0.19	0.232	O	I			1.19
5.000	1.21	0.20	0.239	O	I			1.21
5.083	1.14	0.20	0.246	O	I			1.23
5.167	0.99	0.20	0.252	O	I			1.25
5.250	0.96	0.20	0.257	O	I			1.27
5.333	0.98	0.20	0.262	O	I			1.28
5.417	1.05	0.21	0.268	O	I			1.30
5.500	1.06	0.21	0.274	O	I			1.32
5.583	1.11	0.21	0.280	O	I			1.33
5.667	1.19	0.21	0.286	O	I			1.35
5.750	1.21	0.21	0.293	O	I			1.37
5.833	1.22	0.22	0.300	O	I			1.39
5.917	1.23	0.22	0.307	O	I			1.41
6.000	1.23	0.22	0.314	O	I			1.44
6.083	1.27	0.22	0.321	O	I			1.46
6.167	1.35	0.23	0.328	O	I			1.48
6.250	1.37	0.23	0.336	O	I			1.50
6.333	1.38	0.23	0.344	O	I			1.53
6.417	1.38	0.24	0.352	O	I			1.55
6.500	1.38	0.24	0.360	O	I			1.57
6.583	1.43	0.24	0.368	O	I			1.60
6.667	1.50	0.24	0.376	O	I			1.62
6.750	1.52	0.25	0.385	O	I			1.65
6.833	1.53	0.25	0.394	O	I			1.67
6.917	1.54	0.25	0.403	O	I			1.70
7.000	1.54	0.26	0.411	O	I			1.73
7.083	1.54	0.26	0.420	O	I			1.75
7.167	1.54	0.26	0.429	O	I			1.78
7.250	1.54	0.27	0.438	O	I			1.81
7.333	1.58	0.27	0.447	O	I			1.83
7.417	1.66	0.27	0.456	O	I			1.86

7.500	1.68	0.28	0.466	O		I		1.89
7.583	1.73	0.28	0.475	O		I		1.92
7.667	1.81	0.28	0.486	O		I		1.95
7.750	1.83	0.29	0.496	O		I		1.98
7.833	1.88	0.29	0.507	O		I		2.02
7.917	1.96	0.29	0.518	O		I		2.06
8.000	1.98	0.30	0.530	O		I		2.11
8.083	2.08	0.30	0.542	O		I		2.15
8.167	2.23	0.31	0.554	O		I		2.20
8.250	2.27	0.31	0.568	O		I		2.26
8.333	2.29	0.31	0.581	O		I		2.31
8.417	2.30	0.32	0.595	O		I		2.36
8.500	2.31	0.32	0.609	O		I		2.42
8.583	2.35	0.33	0.622	O		I		2.47
8.667	2.43	0.33	0.637	O		I		2.53
8.750	2.45	0.34	0.651	O		I		2.59
8.833	2.50	0.34	0.666	O		I		2.65
8.917	2.58	0.35	0.681	O		I		2.71
9.000	2.60	0.35	0.696	O		I		2.77
9.083	1.90	0.36	0.709	O		I		2.82
9.167	0.64	0.36	0.716	O I				2.84
9.250	0.32	0.36	0.716	IO				2.85
9.333	0.24	0.36	0.716	IO				2.84
9.417	0.27	0.36	0.715	IO				2.84
9.500	0.26	0.36	0.715	IO				2.84
9.583	0.31	0.36	0.714	IO				2.84
9.667	0.43	0.36	0.714	O				2.84
9.750	0.47	0.36	0.715	OI				2.84
9.833	0.55	0.36	0.716	OI				2.84
9.917	0.67	0.36	0.718	O I				2.85
10.000	0.71	0.36	0.720	O I				2.86
10.083	1.16	0.36	0.724	O	I			2.88
10.167	1.92	0.36	0.732	O		I		2.91
10.250	2.13	0.37	0.743	O		I		2.95
10.333	2.22	0.37	0.756	O		I		3.00
10.417	2.27	0.37	0.769	O		I		3.05
10.500	2.29	0.38	0.782	O		I		3.11
10.583	1.81	0.38	0.793	O		I		3.15
10.667	0.94	0.38	0.800	O	I			3.18
10.750	0.72	0.38	0.803	O I				3.19
10.833	0.63	0.38	0.805	O I				3.20
10.917	0.59	0.38	0.807	O I				3.21
11.000	0.57	0.38	0.808	O I				3.21
11.083	0.52	0.39	0.809	OI				3.22
11.167	0.44	0.39	0.810	O				3.22
11.250	0.43	0.39	0.810	O				3.22
11.333	0.44	0.39	0.811	O				3.22
11.417	0.45	0.39	0.811	O				3.22
11.500	0.46	0.39	0.811	OI				3.22
11.583	0.37	0.39	0.812	O				3.23
11.667	0.20	0.39	0.811	I O				3.22
11.750	0.17	0.39	0.809	I O				3.22
11.833	0.22	0.38	0.808	I O				3.21
11.917	0.31	0.38	0.807	IO				3.21

12.000	0.34	0.38	0.807	O					3.21
12.083	0.72	0.38	0.808	O	I				3.21
12.167	1.38	0.39	0.813	O		I			3.23
12.250	1.57	0.39	0.820	O		I			3.26
12.333	1.71	0.39	0.829	O		I			3.29
12.417	1.86	0.39	0.838	O		I			3.33
12.500	1.92	0.40	0.848	O		I			3.37
12.583	2.06	0.40	0.859	O		I			3.42
12.667	2.26	0.40	0.871	O		I			3.46
12.750	2.33	0.41	0.884	O		I			3.52
12.833	2.42	0.41	0.898	O		I			3.57
12.917	2.53	0.41	0.912	O		I			3.63
13.000	2.58	0.42	0.927	O		I			3.69
13.083	2.86	0.42	0.943	O		I			3.75
13.167	3.34	0.43	0.961	O		I			3.82
13.250	3.47	0.43	0.982	O		I			3.90
13.333	3.54	0.44	1.003	O		I			3.99
13.417	3.59	0.44	1.024	O		I			4.07
13.500	3.62	0.45	1.046	O		I			4.16
13.583	3.08	0.45	1.066	O		I			4.24
13.667	2.09	0.46	1.081	O		I			4.30
13.750	1.84	0.46	1.091	O		I			4.34
13.833	1.74	0.46	1.100	O		I			4.37
13.917	1.69	0.46	1.109	O		I			4.41
14.000	1.67	0.47	1.117	O		I			4.44
14.083	1.86	0.47	1.126	O		I			4.48
14.167	2.24	0.47	1.137	O		I			4.52
14.250	2.35	0.47	1.150	O		I			4.57
14.333	2.35	0.48	1.162	O		I			4.62
14.417	2.30	0.48	1.175	O		I			4.67
14.500	2.30	0.48	1.188	O		I			4.72
14.583	2.31	0.49	1.200	O		I			4.77
14.667	2.32	0.49	1.213	O		I			4.82
14.750	2.33	0.49	1.226	O		I			4.87
14.833	2.29	0.50	1.238	O		I			4.92
14.917	2.21	0.50	1.250	O		I			4.97
15.000	2.20	0.50	1.262	O		I			5.00
15.083	2.15	0.50	1.273	O		I			5.02
15.167	2.07	0.50	1.285	O		I			5.03
15.250	2.05	0.50	1.295	O		I			5.04
15.333	2.00	0.50	1.306	O		I			5.06
15.417	1.92	0.50	1.316	O		I			5.07
15.500	1.90	0.50	1.326	O		I			5.08
15.583	1.70	0.51	1.334	O		I			5.09
15.667	1.34	0.51	1.341	O	I				5.10
15.750	1.26	0.51	1.347	O	I				5.10
15.833	1.22	0.51	1.352	O	I				5.11
15.917	1.21	0.51	1.357	O	I				5.11
16.000	1.21	0.51	1.362	O	I				5.12
16.083	1.05	0.51	1.366	O	I				5.12
16.167	0.76	0.51	1.369	O	I				5.13
16.250	0.68	0.51	1.370	O	I				5.13
16.333	0.65	0.51	1.371	OI					5.13
16.417	0.63	0.51	1.372	OI					5.13

16.500	0.62	0.51	1.373	OI				5.13
16.583	0.57	0.51	1.374	OI				5.13
16.667	0.50	0.51	1.374	O				5.13
16.750	0.48	0.51	1.374	O				5.13
16.833	0.47	0.51	1.374	O				5.13
16.917	0.47	0.51	1.373	O				5.13
17.000	0.46	0.51	1.373	O				5.13
17.083	0.55	0.51	1.373	O				5.13
17.167	0.69	0.51	1.374	O I				5.13
17.250	0.73	0.51	1.375	O I				5.14
17.333	0.75	0.51	1.377	O I				5.14
17.417	0.76	0.51	1.378	O I				5.14
17.500	0.77	0.51	1.380	O I				5.14
17.583	0.77	0.51	1.382	O I				5.14
17.667	0.77	0.51	1.384	O I				5.15
17.750	0.77	0.51	1.386	O I				5.15
17.833	0.73	0.51	1.387	O I				5.15
17.917	0.65	0.51	1.389	OI				5.15
18.000	0.63	0.51	1.389	OI				5.15
18.083	0.63	0.51	1.390	OI				5.15
18.167	0.62	0.51	1.391	OI				5.15
18.250	0.62	0.51	1.392	OI				5.15
18.333	0.62	0.51	1.393	OI				5.16
18.417	0.62	0.51	1.393	OI				5.16
18.500	0.62	0.51	1.394	OI				5.16
18.583	0.57	0.51	1.395	OI				5.16
18.667	0.50	0.51	1.395	O				5.16
18.750	0.48	0.51	1.395	O				5.16
18.833	0.43	0.51	1.394	IO				5.16
18.917	0.35	0.51	1.393	IO				5.16
19.000	0.33	0.51	1.392	I O				5.16
19.083	0.36	0.51	1.391	IO				5.15
19.167	0.43	0.51	1.390	IO				5.15
19.250	0.45	0.51	1.390	IO				5.15
19.333	0.49	0.51	1.390	O				5.15
19.417	0.57	0.51	1.390	OI				5.15
19.500	0.60	0.51	1.390	OI				5.15
19.583	0.56	0.51	1.391	O				5.15
19.667	0.50	0.51	1.391	O				5.15
19.750	0.48	0.51	1.391	O				5.15
19.833	0.43	0.51	1.390	IO				5.15
19.917	0.35	0.51	1.390	IO				5.15
20.000	0.33	0.51	1.388	I O				5.15
20.083	0.36	0.51	1.387	IO				5.15
20.167	0.43	0.51	1.386	IO				5.15
20.250	0.45	0.51	1.386	IO				5.15
20.333	0.45	0.51	1.386	O				5.15
20.417	0.46	0.51	1.385	O				5.15
20.500	0.46	0.51	1.385	O				5.15
20.583	0.46	0.51	1.385	O				5.15
20.667	0.46	0.51	1.384	O				5.15
20.750	0.46	0.51	1.384	O				5.15
20.833	0.42	0.51	1.383	IO				5.14
20.917	0.35	0.51	1.383	IO				5.14

21.000	0.33	0.51	1.381	I O				5.14
21.083	0.36	0.51	1.380	IO				5.14
21.167	0.43	0.51	1.379	IO				5.14
21.250	0.45	0.51	1.379	IO				5.14
21.333	0.41	0.51	1.378	IO				5.14
21.417	0.34	0.51	1.377	IO				5.14
21.500	0.32	0.51	1.376	I O				5.14
21.583	0.36	0.51	1.375	IO				5.14
21.667	0.43	0.51	1.374	IO				5.13
21.750	0.45	0.51	1.374	IO				5.13
21.833	0.41	0.51	1.373	IO				5.13
21.917	0.34	0.51	1.372	IO				5.13
22.000	0.32	0.51	1.371	I O				5.13
22.083	0.36	0.51	1.370	IO				5.13
22.167	0.43	0.51	1.369	IO				5.13
22.250	0.45	0.51	1.369	IO				5.13
22.333	0.41	0.51	1.368	IO				5.13
22.417	0.34	0.51	1.367	IO				5.13
22.500	0.32	0.51	1.366	I O				5.12
22.583	0.32	0.51	1.365	I O				5.12
22.667	0.31	0.51	1.363	I O				5.12
22.750	0.31	0.51	1.362	I O				5.12
22.833	0.31	0.51	1.361	I O				5.12
22.917	0.31	0.51	1.359	I O				5.12
23.000	0.31	0.51	1.358	I O				5.12
23.083	0.31	0.51	1.357	I O				5.11
23.167	0.31	0.51	1.355	I O				5.11
23.250	0.31	0.51	1.354	I O				5.11
23.333	0.31	0.51	1.353	I O				5.11
23.417	0.31	0.51	1.351	I O				5.11
23.500	0.31	0.51	1.350	I O				5.11
23.583	0.31	0.51	1.348	I O				5.10
23.667	0.31	0.51	1.347	I O				5.10
23.750	0.31	0.51	1.346	I O				5.10
23.833	0.31	0.51	1.344	I O				5.10
23.917	0.31	0.51	1.343	I O				5.10
24.000	0.31	0.51	1.342	I O				5.10
24.083	0.22	0.51	1.340	I O				5.09
24.167	0.07	0.51	1.338	I O				5.09
24.250	0.04	0.51	1.334	I O				5.09
24.333	0.02	0.51	1.331	I O				5.08
24.417	0.01	0.50	1.328	I O				5.08
24.500	0.00	0.50	1.324	I O				5.08
24.583	0.00	0.50	1.321	I O				5.07
24.667	0.00	0.50	1.317	I O				5.07
24.750	0.00	0.50	1.314	I O				5.06
24.833	0.00	0.50	1.310	I O				5.06
24.917	0.00	0.50	1.307	I O				5.06
25.000	0.00	0.50	1.303	I O				5.05
25.083	0.00	0.50	1.300	I O				5.05
25.167	0.00	0.50	1.297	I O				5.04
25.250	0.00	0.50	1.293	I O				5.04
25.333	0.00	0.50	1.290	I O				5.04
25.417	0.00	0.50	1.286	I O				5.03

25.500	0.00	0.50	1.283	I	O	|	|	|	|	5.03
25.583	0.00	0.50	1.279	I	O	|	|	|	|	5.02
25.667	0.00	0.50	1.276	I	O	|	|	|	|	5.02
25.750	0.00	0.50	1.272	I	O	|	|	|	|	5.02
25.833	0.00	0.50	1.269	I	O	|	|	|	|	5.01
25.917	0.00	0.50	1.265	I	O	|	|	|	|	5.01
26.000	0.00	0.50	1.262	I	O	|	|	|	|	5.00
26.083	0.00	0.50	1.259	I	O	|	|	|	|	5.00
26.167	0.00	0.50	1.255	I	O	|	|	|	|	4.99
26.250	0.00	0.50	1.252	I	O	|	|	|	|	4.98
26.333	0.00	0.50	1.248	I	O	|	|	|	|	4.96
26.417	0.00	0.50	1.245	I	O	|	|	|	|	4.95
26.500	0.00	0.50	1.241	I	O	|	|	|	|	4.93
26.583	0.00	0.50	1.238	I	O	|	|	|	|	4.92
26.667	0.00	0.49	1.235	I	O	|	|	|	|	4.91
26.750	0.00	0.49	1.231	I	O	|	|	|	|	4.89
26.833	0.00	0.49	1.228	I	O	|	|	|	|	4.88
26.917	0.00	0.49	1.224	I	O	|	|	|	|	4.87
27.000	0.00	0.49	1.221	I	O	|	|	|	|	4.85
27.083	0.00	0.49	1.218	I	O	|	|	|	|	4.84
27.167	0.00	0.49	1.214	I	O	|	|	|	|	4.83
27.250	0.00	0.49	1.211	I	O	|	|	|	|	4.81
27.333	0.00	0.49	1.208	I	O	|	|	|	|	4.80
27.417	0.00	0.49	1.204	I	O	|	|	|	|	4.79
27.500	0.00	0.49	1.201	I	O	|	|	|	|	4.77
27.583	0.00	0.49	1.197	I	O	|	|	|	|	4.76
27.667	0.00	0.48	1.194	I	O	|	|	|	|	4.75
27.750	0.00	0.48	1.191	I	O	|	|	|	|	4.73
27.833	0.00	0.48	1.187	I	O	|	|	|	|	4.72
27.917	0.00	0.48	1.184	I	O	|	|	|	|	4.71
28.000	0.00	0.48	1.181	I	O	|	|	|	|	4.69
28.083	0.00	0.48	1.178	I	O	|	|	|	|	4.68
28.167	0.00	0.48	1.174	I	O	|	|	|	|	4.67
28.250	0.00	0.48	1.171	I	O	|	|	|	|	4.65
28.333	0.00	0.48	1.168	I	O	|	|	|	|	4.64
28.417	0.00	0.48	1.164	I	O	|	|	|	|	4.63
28.500	0.00	0.48	1.161	I	O	|	|	|	|	4.62
28.583	0.00	0.48	1.158	I	O	|	|	|	|	4.60
28.667	0.00	0.48	1.154	I	O	|	|	|	|	4.59
28.750	0.00	0.47	1.151	I	O	|	|	|	|	4.58
28.833	0.00	0.47	1.148	I	O	|	|	|	|	4.56
28.917	0.00	0.47	1.145	I	O	|	|	|	|	4.55
29.000	0.00	0.47	1.141	I	O	|	|	|	|	4.54
29.083	0.00	0.47	1.138	I	O	|	|	|	|	4.52
29.167	0.00	0.47	1.135	I	O	|	|	|	|	4.51
29.250	0.00	0.47	1.132	I	O	|	|	|	|	4.50
29.333	0.00	0.47	1.128	I	O	|	|	|	|	4.49
29.417	0.00	0.47	1.125	I	O	|	|	|	|	4.47
29.500	0.00	0.47	1.122	I	O	|	|	|	|	4.46
29.583	0.00	0.47	1.119	I	O	|	|	|	|	4.45
29.667	0.00	0.47	1.116	I	O	|	|	|	|	4.43
29.750	0.00	0.47	1.112	I	O	|	|	|	|	4.42
29.833	0.00	0.46	1.109	I	O	|	|	|	|	4.41
29.917	0.00	0.46	1.106	I	O	|	|	|	|	4.40

30.000	0.00	0.46	1.103	I	O	|	|	|	4.38
30.083	0.00	0.46	1.100	I	O	|	|	|	4.37
30.167	0.00	0.46	1.096	I	O	|	|	|	4.36
30.250	0.00	0.46	1.093	I	O	|	|	|	4.35
30.333	0.00	0.46	1.090	I	O	|	|	|	4.33
30.417	0.00	0.46	1.087	I	O	|	|	|	4.32
30.500	0.00	0.46	1.084	I	O	|	|	|	4.31
30.583	0.00	0.46	1.081	I	O	|	|	|	4.30
30.667	0.00	0.46	1.077	I	O	|	|	|	4.28
30.750	0.00	0.46	1.074	I	O	|	|	|	4.27
30.833	0.00	0.46	1.071	I	O	|	|	|	4.26
30.917	0.00	0.45	1.068	I	O	|	|	|	4.25
31.000	0.00	0.45	1.065	I	O	|	|	|	4.23
31.083	0.00	0.45	1.062	I	O	|	|	|	4.22
31.167	0.00	0.45	1.059	I	O	|	|	|	4.21
31.250	0.00	0.45	1.056	I	O	|	|	|	4.20
31.333	0.00	0.45	1.052	I	O	|	|	|	4.18
31.417	0.00	0.45	1.049	I	O	|	|	|	4.17
31.500	0.00	0.45	1.046	I	O	|	|	|	4.16
31.583	0.00	0.45	1.043	I	O	|	|	|	4.15
31.667	0.00	0.45	1.040	I	O	|	|	|	4.14
31.750	0.00	0.45	1.037	I	O	|	|	|	4.12
31.833	0.00	0.45	1.034	I	O	|	|	|	4.11
31.917	0.00	0.45	1.031	I	O	|	|	|	4.10
32.000	0.00	0.45	1.028	I	O	|	|	|	4.09
32.083	0.00	0.44	1.025	I	O	|	|	|	4.07
32.167	0.00	0.44	1.022	I	O	|	|	|	4.06
32.250	0.00	0.44	1.019	I	O	|	|	|	4.05
32.333	0.00	0.44	1.015	I	O	|	|	|	4.04
32.417	0.00	0.44	1.012	I	O	|	|	|	4.03
32.500	0.00	0.44	1.009	I	O	|	|	|	4.01
32.583	0.00	0.44	1.006	I	O	|	|	|	4.00
32.667	0.00	0.44	1.003	I	O	|	|	|	3.99
32.750	0.00	0.44	1.000	I	O	|	|	|	3.98
32.833	0.00	0.44	0.997	I	O	|	|	|	3.97
32.917	0.00	0.44	0.994	I	O	|	|	|	3.95
33.000	0.00	0.44	0.991	I	O	|	|	|	3.94
33.083	0.00	0.44	0.988	I	O	|	|	|	3.93
33.167	0.00	0.43	0.985	I	O	|	|	|	3.92
33.250	0.00	0.43	0.982	I	O	|	|	|	3.91
33.333	0.00	0.43	0.979	I	O	|	|	|	3.89
33.417	0.00	0.43	0.976	I	O	|	|	|	3.88
33.500	0.00	0.43	0.973	I	O	|	|	|	3.87
33.583	0.00	0.43	0.970	I	O	|	|	|	3.86
33.667	0.00	0.43	0.967	I	O	|	|	|	3.85
33.750	0.00	0.43	0.965	I	O	|	|	|	3.83
33.833	0.00	0.43	0.962	I	O	|	|	|	3.82
33.917	0.00	0.43	0.959	I	O	|	|	|	3.81
34.000	0.00	0.43	0.956	I	O	|	|	|	3.80
34.083	0.00	0.43	0.953	I	O	|	|	|	3.79
34.167	0.00	0.42	0.950	I	O	|	|	|	3.78
34.250	0.00	0.42	0.947	I	O	|	|	|	3.76
34.333	0.00	0.42	0.944	I	O	|	|	|	3.75
34.417	0.00	0.42	0.941	I	O	|	|	|	3.74

34.500	0.00	0.42	0.938	I	O	|	|	|	|	3.73
34.583	0.00	0.42	0.935	I	O	|	|	|	|	3.72
34.667	0.00	0.42	0.932	I	O	|	|	|	|	3.71
34.750	0.00	0.42	0.930	I	O	|	|	|	|	3.70
34.833	0.00	0.42	0.927	I	O	|	|	|	|	3.68
34.917	0.00	0.42	0.924	I	O	|	|	|	|	3.67
35.000	0.00	0.42	0.921	I	O	|	|	|	|	3.66
35.083	0.00	0.42	0.918	I	O	|	|	|	|	3.65
35.167	0.00	0.41	0.915	I	O	|	|	|	|	3.64
35.250	0.00	0.41	0.912	I	O	|	|	|	|	3.63
35.333	0.00	0.41	0.909	I	O	|	|	|	|	3.62
35.417	0.00	0.41	0.907	I	O	|	|	|	|	3.60
35.500	0.00	0.41	0.904	I	O	|	|	|	|	3.59
35.583	0.00	0.41	0.901	I	O	|	|	|	|	3.58
35.667	0.00	0.41	0.898	I	O	|	|	|	|	3.57
35.750	0.00	0.41	0.895	I	O	|	|	|	|	3.56
35.833	0.00	0.41	0.892	I	O	|	|	|	|	3.55
35.917	0.00	0.41	0.890	I	O	|	|	|	|	3.54
36.000	0.00	0.41	0.887	I	O	|	|	|	|	3.53
36.083	0.00	0.41	0.884	I	O	|	|	|	|	3.51
36.167	0.00	0.41	0.881	I	O	|	|	|	|	3.50
36.250	0.00	0.40	0.878	I	O	|	|	|	|	3.49
36.333	0.00	0.40	0.876	I	O	|	|	|	|	3.48
36.417	0.00	0.40	0.873	I	O	|	|	|	|	3.47
36.500	0.00	0.40	0.870	I	O	|	|	|	|	3.46
36.583	0.00	0.40	0.867	I	O	|	|	|	|	3.45
36.667	0.00	0.40	0.865	I	O	|	|	|	|	3.44
36.750	0.00	0.40	0.862	I	O	|	|	|	|	3.43
36.833	0.00	0.40	0.859	I	O	|	|	|	|	3.41
36.917	0.00	0.40	0.856	I	O	|	|	|	|	3.40
37.000	0.00	0.40	0.854	I	O	|	|	|	|	3.39
37.083	0.00	0.40	0.851	I	O	|	|	|	|	3.38
37.167	0.00	0.40	0.848	I	O	|	|	|	|	3.37
37.250	0.00	0.40	0.845	I	O	|	|	|	|	3.36
37.333	0.00	0.39	0.843	I	O	|	|	|	|	3.35
37.417	0.00	0.39	0.840	I	O	|	|	|	|	3.34
37.500	0.00	0.39	0.837	I	O	|	|	|	|	3.33
37.583	0.00	0.39	0.835	I	O	|	|	|	|	3.32
37.667	0.00	0.39	0.832	I	O	|	|	|	|	3.31
37.750	0.00	0.39	0.829	I	O	|	|	|	|	3.30
37.833	0.00	0.39	0.827	I	O	|	|	|	|	3.28
37.917	0.00	0.39	0.824	I	O	|	|	|	|	3.27
38.000	0.00	0.39	0.821	I	O	|	|	|	|	3.26
38.083	0.00	0.39	0.818	I	O	|	|	|	|	3.25
38.167	0.00	0.39	0.816	I	O	|	|	|	|	3.24
38.250	0.00	0.39	0.813	I	O	|	|	|	|	3.23
38.333	0.00	0.39	0.811	I	O	|	|	|	|	3.22
38.417	0.00	0.38	0.808	I	O	|	|	|	|	3.21
38.500	0.00	0.38	0.805	I	O	|	|	|	|	3.20
38.583	0.00	0.38	0.803	I	O	|	|	|	|	3.19
38.667	0.00	0.38	0.800	I	O	|	|	|	|	3.18
38.750	0.00	0.38	0.797	I	O	|	|	|	|	3.17
38.833	0.00	0.38	0.795	I	O	|	|	|	|	3.16
38.917	0.00	0.38	0.792	I	O	|	|	|	|	3.15

39.000	0.00	0.38	0.789	I	O	|	|	|	|	3.14
39.083	0.00	0.38	0.787	I	O	|	|	|	|	3.13
39.167	0.00	0.38	0.784	I	O	|	|	|	|	3.12
39.250	0.00	0.38	0.782	I	O	|	|	|	|	3.11
39.333	0.00	0.38	0.779	I	O	|	|	|	|	3.10
39.417	0.00	0.38	0.776	I	O	|	|	|	|	3.09
39.500	0.00	0.38	0.774	I	O	|	|	|	|	3.08
39.583	0.00	0.37	0.771	I	O	|	|	|	|	3.06
39.667	0.00	0.37	0.769	I	O	|	|	|	|	3.05
39.750	0.00	0.37	0.766	I	O	|	|	|	|	3.04
39.833	0.00	0.37	0.764	I	O	|	|	|	|	3.03
39.917	0.00	0.37	0.761	I	O	|	|	|	|	3.02
40.000	0.00	0.37	0.758	I	O	|	|	|	|	3.01
40.083	0.00	0.37	0.756	I	O	|	|	|	|	3.00
40.167	0.00	0.37	0.753	I	O	|	|	|	|	2.99
40.250	0.00	0.37	0.751	I	O	|	|	|	|	2.98
40.333	0.00	0.37	0.748	I	O	|	|	|	|	2.97
40.417	0.00	0.37	0.746	I	O	|	|	|	|	2.96
40.500	0.00	0.37	0.743	I	O	|	|	|	|	2.95
40.583	0.00	0.37	0.741	I	O	|	|	|	|	2.94
40.667	0.00	0.36	0.738	I	O	|	|	|	|	2.93
40.750	0.00	0.36	0.736	I	O	|	|	|	|	2.92
40.833	0.00	0.36	0.733	I	O	|	|	|	|	2.91
40.917	0.00	0.36	0.731	I	O	|	|	|	|	2.90
41.000	0.00	0.36	0.728	I	O	|	|	|	|	2.89
41.083	0.00	0.36	0.726	I	O	|	|	|	|	2.88
41.167	0.00	0.36	0.723	I	O	|	|	|	|	2.87
41.250	0.00	0.36	0.721	I	O	|	|	|	|	2.86
41.333	0.00	0.36	0.718	I	O	|	|	|	|	2.85
41.417	0.00	0.36	0.716	I	O	|	|	|	|	2.84
41.500	0.00	0.36	0.713	I	O	|	|	|	|	2.83
41.583	0.00	0.36	0.711	I	O	|	|	|	|	2.82
41.667	0.00	0.36	0.708	I	O	|	|	|	|	2.82
41.750	0.00	0.35	0.706	I	O	|	|	|	|	2.81
41.833	0.00	0.35	0.704	I	O	|	|	|	|	2.80
41.917	0.00	0.35	0.701	I	O	|	|	|	|	2.79
42.000	0.00	0.35	0.699	I	O	|	|	|	|	2.78
42.083	0.00	0.35	0.696	I	O	|	|	|	|	2.77
42.167	0.00	0.35	0.694	I	O	|	|	|	|	2.76
42.250	0.00	0.35	0.691	I	O	|	|	|	|	2.75
42.333	0.00	0.35	0.689	I	O	|	|	|	|	2.74
42.417	0.00	0.35	0.687	I	O	|	|	|	|	2.73
42.500	0.00	0.35	0.684	I	O	|	|	|	|	2.72
42.583	0.00	0.35	0.682	I	O	|	|	|	|	2.71
42.667	0.00	0.35	0.679	I	O	|	|	|	|	2.70
42.750	0.00	0.35	0.677	I	O	|	|	|	|	2.69
42.833	0.00	0.34	0.675	I	O	|	|	|	|	2.68
42.917	0.00	0.34	0.672	I	O	|	|	|	|	2.67
43.000	0.00	0.34	0.670	I	O	|	|	|	|	2.66
43.083	0.00	0.34	0.668	I	O	|	|	|	|	2.65
43.167	0.00	0.34	0.665	I	O	|	|	|	|	2.64
43.250	0.00	0.34	0.663	I	O	|	|	|	|	2.63
43.333	0.00	0.34	0.661	I	O	|	|	|	|	2.63
43.417	0.00	0.34	0.658	I	O	|	|	|	|	2.62

43.500	0.00	0.34	0.656	I	O	|	|	|	2.61
43.583	0.00	0.34	0.654	I	O	|	|	|	2.60
43.667	0.00	0.34	0.651	I	O	|	|	|	2.59
43.750	0.00	0.34	0.649	I	O	|	|	|	2.58
43.833	0.00	0.34	0.647	I	O	|	|	|	2.57
43.917	0.00	0.33	0.644	I	O	|	|	|	2.56
44.000	0.00	0.33	0.642	I	O	|	|	|	2.55
44.083	0.00	0.33	0.640	I	O	|	|	|	2.54
44.167	0.00	0.33	0.637	I	O	|	|	|	2.53
44.250	0.00	0.33	0.635	I	O	|	|	|	2.52
44.333	0.00	0.33	0.633	I	O	|	|	|	2.52
44.417	0.00	0.33	0.631	I	O	|	|	|	2.51
44.500	0.00	0.33	0.628	I	O	|	|	|	2.50
44.583	0.00	0.33	0.626	I	O	|	|	|	2.49
44.667	0.00	0.33	0.624	I	O	|	|	|	2.48
44.750	0.00	0.33	0.621	I	O	|	|	|	2.47
44.833	0.00	0.33	0.619	I	O	|	|	|	2.46
44.917	0.00	0.33	0.617	I	O	|	|	|	2.45
45.000	0.00	0.33	0.615	I	O	|	|	|	2.44
45.083	0.00	0.32	0.612	I	O	|	|	|	2.43
45.167	0.00	0.32	0.610	I	O	|	|	|	2.43
45.250	0.00	0.32	0.608	I	O	|	|	|	2.42
45.333	0.00	0.32	0.606	I	O	|	|	|	2.41
45.417	0.00	0.32	0.604	I	O	|	|	|	2.40
45.500	0.00	0.32	0.601	I	O	|	|	|	2.39
45.583	0.00	0.32	0.599	I	O	|	|	|	2.38
45.667	0.00	0.32	0.597	I	O	|	|	|	2.37
45.750	0.00	0.32	0.595	I	O	|	|	|	2.36
45.833	0.00	0.32	0.593	I	O	|	|	|	2.36
45.917	0.00	0.32	0.590	I	O	|	|	|	2.35
46.000	0.00	0.32	0.588	I	O	|	|	|	2.34
46.083	0.00	0.32	0.586	I	O	|	|	|	2.33
46.167	0.00	0.32	0.584	I	O	|	|	|	2.32
46.250	0.00	0.31	0.582	I	O	|	|	|	2.31
46.333	0.00	0.31	0.579	I	O	|	|	|	2.30
46.417	0.00	0.31	0.577	I	O	|	|	|	2.29
46.500	0.00	0.31	0.575	I	O	|	|	|	2.29
46.583	0.00	0.31	0.573	I	O	|	|	|	2.28
46.667	0.00	0.31	0.571	I	O	|	|	|	2.27
46.750	0.00	0.31	0.569	I	O	|	|	|	2.26
46.833	0.00	0.31	0.567	I	O	|	|	|	2.25
46.917	0.00	0.31	0.564	I	O	|	|	|	2.24
47.000	0.00	0.31	0.562	I	O	|	|	|	2.24
47.083	0.00	0.31	0.560	I	O	|	|	|	2.23
47.167	0.00	0.31	0.558	I	O	|	|	|	2.22
47.250	0.00	0.31	0.556	I	O	|	|	|	2.21
47.333	0.00	0.31	0.554	I	O	|	|	|	2.20
47.417	0.00	0.31	0.552	I	O	|	|	|	2.19
47.500	0.00	0.30	0.550	I	O	|	|	|	2.19
47.583	0.00	0.30	0.548	I	O	|	|	|	2.18
47.667	0.00	0.30	0.545	I	O	|	|	|	2.17
47.750	0.00	0.30	0.543	I	O	|	|	|	2.16
47.833	0.00	0.30	0.541	I	O	|	|	|	2.15
47.917	0.00	0.30	0.539	I	O	|	|	|	2.14

48.000 0.00 0.30 0.537 I O | | | | 2.14

**********HYDROGRAPH DATA**********

Number of intervals = 1547
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.509 (CFS)
Total volume = 2.050 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

0.51 CFS IS LESS THAN ALLOWABLE 0.62 CFS

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                    FLOOD HYDROGRAPH ROUTING PROGRAM
                Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
                            Study date: 11/13/19


------------------------------------------------------------------------
5 YEAR FLOOD ROUTING
BASIN 2
MJPA 304163
4163FR5.HYD
------------------------------------------------------------------------


Program License Serial Number 6145

------------------------------------------------------------------------
********************* HYDROGRAPH INFORMATION **********************

            From study/file name: 4163UHP5245.rte
****************************HYDROGRAPH DATA*****************************
            Number of intervals =   294
            Time interval =    5.0 (Min.)
            Maximum/Peak flow rate =        5.857 (CFS)
            Total volume =       2.964 (Ac.Ft)
      Status of hydrographs being held in storage
                  Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
      Peak (CFS)      0.000     0.000     0.000     0.000     0.000
      Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
************************************************************************



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** RETARDING BASIN ROUTING ****
________________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------------
Total number of inflow hydrograph intervals = 294
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------------
------------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
------------------------------------------------------------------------
------------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
------------------------------------------------------------------------
```

0.000	0.000	0.000	0.000	0.000
1.000	0.168	0.170	0.167	0.169
2.000	0.503	0.290	0.502	0.504
3.000	0.755	0.370	0.754	0.756
4.000	1.006	0.440	1.004	1.008
5.000	1.258	0.500	1.256	1.260
5.500	1.691	0.530	1.689	1.693
6.000	2.151	0.850	2.148	2.154
7.000	3.158	1.200	3.154	3.162
8.000	4.279	16.560	4.222	4.336
8.500	4.884	20.060	4.815	4.953

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 1.5 2.93 4.39 5.86	Depth (Ft.)
0.083	0.11	0.00	0.000	O | | | |	0.00
0.167	0.31	0.00	0.002	OI | | | |	0.01
0.250	0.37	0.00	0.004	O I | | | |	0.02
0.333	0.45	0.01	0.007	O I | | | |	0.04
0.417	0.56	0.01	0.010	O I | | | |	0.06
0.500	0.60	0.01	0.014	O I | | | |	0.08
0.583	0.61	0.02	0.018	O I | | | |	0.11
0.667	0.62	0.02	0.022	O I | | | |	0.13
0.750	0.62	0.03	0.027	O I | | | |	0.16
0.833	0.68	0.03	0.031	O I | | | |	0.18
0.917	0.78	0.04	0.036	O I | | | |	0.21
1.000	0.81	0.04	0.041	O I | | | |	0.24
1.083	0.76	0.05	0.046	O I | | | |	0.27
1.167	0.67	0.05	0.051	O I | | | |	0.30
1.250	0.65	0.06	0.055	O I | | | |	0.33
1.333	0.64	0.06	0.059	O I | | | |	0.35
1.417	0.63	0.06	0.063	O I | | | |	0.37
1.500	0.63	0.07	0.067	O I | | | |	0.40
1.583	0.62	0.07	0.070	O I | | | |	0.42
1.667	0.62	0.08	0.074	O I | | | |	0.44
1.750	0.62	0.08	0.078	O I | | | |	0.46
1.833	0.68	0.08	0.082	O I | | | |	0.49
1.917	0.78	0.09	0.086	O I | | | |	0.51
2.000	0.81	0.09	0.091	O I | | | |	0.54
2.083	0.82	0.10	0.096	O I | | | |	0.57
2.167	0.83	0.10	0.101	O I | | | |	0.60
2.250	0.83	0.11	0.106	O I | | | |	0.63
2.333	0.83	0.11	0.111	O I | | | |	0.66
2.417	0.83	0.12	0.116	O I | | | |	0.69
2.500	0.83	0.12	0.121	O I | | | |	0.72
2.583	0.89	0.13	0.126	O I | | | |	0.75
2.667	0.99	0.13	0.132	O I | | | |	0.78
2.750	1.02	0.14	0.138	O I | | | |	0.82
2.833	1.03	0.15	0.144	O I | | | |	0.85
2.917	1.03	0.15	0.150	O I | | | |	0.89

3.000	1.04	0.16	0.156	O	I	|	|	|	0.93
3.083	1.04	0.16	0.162	O	I	|	|	|	0.96
3.167	1.04	0.17	0.168	O	I	|	|	|	1.00
3.250	1.04	0.17	0.174	O	I	|	|	|	1.02
3.333	1.04	0.17	0.180	O	I	|	|	|	1.04
3.417	1.04	0.18	0.186	O	I	|	|	|	1.05
3.500	1.04	0.18	0.192	O	I	|	|	|	1.07
3.583	1.04	0.18	0.198	O	I	|	|	|	1.09
3.667	1.04	0.18	0.203	O	I	|	|	|	1.11
3.750	1.04	0.18	0.209	|O	I	|	|	|	1.12
3.833	1.10	0.19	0.215	|O	I	|	|	|	1.14
3.917	1.20	0.19	0.222	|O	I	|	|	|	1.16
4.000	1.22	0.19	0.229	|O	I	|	|	|	1.18
4.083	1.24	0.19	0.236	|O	I	|	|	|	1.20
4.167	1.24	0.20	0.243	|O	I	|	|	|	1.23
4.250	1.25	0.20	0.251	|O	I	|	|	|	1.25
4.333	1.31	0.20	0.258	|O	I	|	|	|	1.27
4.417	1.41	0.21	0.266	|O	I	|	|	|	1.29
4.500	1.43	0.21	0.274	|O	I	|	|	|	1.32
4.583	1.44	0.21	0.283	|O	I	|	|	|	1.34
4.667	1.45	0.21	0.291	|O	I	|	|	|	1.37
4.750	1.45	0.22	0.300	|O	I	|	|	|	1.39
4.833	1.51	0.22	0.309	|O	I	|	|	|	1.42
4.917	1.61	0.22	0.318	|O	I	|	|	|	1.45
5.000	1.64	0.23	0.327	|O	I	|	|	|	1.48
5.083	1.54	0.23	0.337	|O	I	|	|	|	1.50
5.167	1.34	0.23	0.345	|O	I	|	|	|	1.53
5.250	1.29	0.24	0.353	|O	I	|	|	|	1.55
5.333	1.33	0.24	0.360	|O	I	|	|	|	1.57
5.417	1.42	0.24	0.368	|O	I	|	|	|	1.60
5.500	1.44	0.24	0.376	|O	I	|	|	|	1.62
5.583	1.50	0.25	0.384	|O	I	|	|	|	1.65
5.667	1.61	0.25	0.393	|O	I	|	|	|	1.67
5.750	1.64	0.25	0.403	|O	I	|	|	|	1.70
5.833	1.65	0.26	0.412	|O	|I	|	|	|	1.73
5.917	1.66	0.26	0.422	|O	|I	|	|	|	1.76
6.000	1.66	0.26	0.432	|O	|I	|	|	|	1.79
6.083	1.72	0.27	0.441	|O	|I	|	|	|	1.82
6.167	1.82	0.27	0.452	|O	|I	|	|	|	1.85
6.250	1.85	0.28	0.463	|O	| I	|	|	|	1.88
6.333	1.86	0.28	0.473	|O	| I	|	|	|	1.91
6.417	1.87	0.28	0.484	|O	| I	|	|	|	1.94
6.500	1.87	0.29	0.495	|O	| I	|	|	|	1.98
6.583	1.93	0.29	0.506	|O	| I	|	|	|	2.01
6.667	2.03	0.29	0.518	|O	| I	|	|	|	2.06
6.750	2.06	0.30	0.530	|O	| I	|	|	|	2.11
6.833	2.07	0.30	0.542	|O	| I	|	|	|	2.16
6.917	2.08	0.31	0.554	|O	| I	|	|	|	2.20
7.000	2.08	0.31	0.566	|O	| I	|	|	|	2.25
7.083	2.08	0.31	0.579	|O	| I	|	|	|	2.30
7.167	2.08	0.32	0.591	|O	| I	|	|	|	2.35
7.250	2.08	0.32	0.603	|O	| I	|	|	|	2.40
7.333	2.14	0.33	0.615	|O	| I	|	|	|	2.45
7.417	2.24	0.33	0.628	|O	| I	|	|	|	2.50

7.500	2.26	0.33	0.641	O	I			2.55
7.583	2.33	0.34	0.655	O	I			2.60
7.667	2.44	0.34	0.669	O	I			2.66
7.750	2.47	0.35	0.683	O	I			2.72
7.833	2.54	0.35	0.698	O	I			2.77
7.917	2.65	0.36	0.714	O	I			2.84
8.000	2.68	0.36	0.730	O	I			2.90
8.083	1.97	0.37	0.743	O	I			2.95
8.167	0.69	0.37	0.750	OI				2.98
8.250	0.36	0.37	0.751	IO				2.98
8.333	0.23	0.37	0.750	IO				2.98
8.417	0.16	0.37	0.749	I O				2.98
8.500	0.13	0.37	0.747	I O				2.97
8.583	0.19	0.37	0.746	IO				2.96
8.667	0.33	0.37	0.745	IO				2.96
8.750	0.38	0.37	0.745	O				2.96
8.833	0.48	0.37	0.746	O				2.96
8.917	0.63	0.37	0.747	OI				2.97
9.000	0.68	0.37	0.749	OI				2.98
9.083	0.85	0.37	0.752	O I				2.99
9.167	1.13	0.37	0.756	O	I			3.00
9.250	1.21	0.37	0.761	O	I			3.03
9.333	1.33	0.37	0.768	O	I			3.05
9.417	1.48	0.38	0.775	O	I			3.08
9.500	1.54	0.38	0.783	O	I			3.11
9.583	1.65	0.38	0.791	O	I			3.14
9.667	1.80	0.38	0.800	O	I			3.18
9.750	1.85	0.39	0.810	O	I			3.22
9.833	1.95	0.39	0.820	O	I			3.26
9.917	2.10	0.39	0.832	O	I			3.31
10.000	2.15	0.39	0.844	O	I			3.35
10.083	1.70	0.40	0.854	O	I			3.40
10.167	0.87	0.40	0.860	O I				3.42
10.250	0.66	0.40	0.863	OI				3.43
10.333	0.58	0.40	0.864	OI				3.44
10.417	0.54	0.40	0.865	O				3.44
10.500	0.52	0.40	0.866	O				3.44
10.583	0.87	0.40	0.868	O I				3.45
10.667	1.50	0.40	0.874	O	I			3.47
10.750	1.67	0.41	0.882	O	I			3.51
10.833	1.76	0.41	0.891	O	I			3.54
10.917	1.82	0.41	0.900	O	I			3.58
11.000	1.86	0.41	0.910	O	I			3.62
11.083	1.82	0.42	0.920	O	I			3.66
11.167	1.71	0.42	0.929	O	I			3.69
11.250	1.69	0.42	0.938	O	I			3.73
11.333	1.69	0.42	0.947	O	I			3.76
11.417	1.70	0.43	0.956	O	I			3.80
11.500	1.71	0.43	0.964	O	I			3.83
11.583	1.59	0.43	0.973	O	I			3.87
11.667	1.36	0.43	0.980	O	I			3.90
11.750	1.31	0.43	0.986	O	I			3.92
11.833	1.36	0.44	0.992	O	I			3.95
11.917	1.48	0.44	0.999	O	I			3.97

12.000	1.52	0.44	1.007	O	I				4.00
12.083	2.03	0.44	1.016	O	I				4.04
12.167	2.91	0.45	1.030	O	I				4.09
12.250	3.16	0.45	1.048	O	I				4.16
12.333	3.35	0.45	1.067	O	I				4.24
12.417	3.54	0.46	1.087	O	I				4.32
12.500	3.62	0.46	1.109	O	I				4.41
12.583	3.81	0.47	1.131	O	I				4.50
12.667	4.07	0.48	1.155	O	I				4.59
12.750	4.16	0.48	1.180	O	I				4.69
12.833	4.27	0.49	1.206	O	I				4.79
12.917	4.43	0.49	1.232	O	I				4.90
13.000	4.48	0.50	1.260	O	I				5.00
13.083	4.86	0.50	1.288	O	I				5.04
13.167	5.50	0.50	1.321	O	I				5.07
13.250	5.68	0.51	1.356	O	I				5.11
13.333	5.77	0.51	1.392	O	I				5.15
13.417	5.82	0.51	1.428	O	I				5.20
13.500	5.86	0.51	1.465	O	I				5.24
13.583	5.12	0.52	1.499	O	I				5.28
13.667	3.79	0.52	1.526	O	I				5.31
13.750	3.45	0.52	1.547	O	I				5.33
13.833	3.30	0.52	1.567	O	I				5.36
13.917	3.23	0.52	1.586	O	I				5.38
14.000	3.19	0.52	1.604	O	I				5.40
14.083	3.45	0.53	1.624	O	I				5.42
14.167	3.96	0.53	1.645	O	I				5.45
14.250	4.10	0.53	1.670	O	I				5.48
14.333	4.10	0.53	1.694	O	I				5.50
14.417	4.02	0.55	1.718	O	I				5.53
14.500	4.02	0.57	1.742	O	I				5.56
14.583	4.03	0.58	1.766	O	I				5.58
14.667	4.04	0.60	1.790	O	I				5.61
14.750	4.05	0.62	1.813	O	I				5.63
14.833	3.99	0.63	1.837	O	I				5.66
14.917	3.88	0.65	1.860	O	I				5.68
15.000	3.86	0.66	1.882	O	I				5.71
15.083	3.79	0.68	1.903	O	I				5.73
15.167	3.67	0.69	1.924	O	I				5.75
15.250	3.65	0.71	1.945	O	I				5.78
15.333	3.57	0.72	1.965	O	I				5.80
15.417	3.45	0.73	1.984	O	I				5.82
15.500	3.43	0.75	2.002	O	I				5.84
15.583	3.15	0.76	2.020	O	I				5.86
15.667	2.66	0.77	2.035	O	I				5.87
15.750	2.54	0.78	2.047	O	I				5.89
15.833	2.49	0.79	2.059	O	I				5.90
15.917	2.47	0.79	2.071	O	I				5.91
16.000	2.47	0.80	2.082	O	I				5.93
16.083	2.02	0.81	2.092	O	I				5.94
16.167	1.23	0.81	2.098	O I					5.94
16.250	1.02	0.81	2.100	OI					5.94
16.333	0.93	0.82	2.101	OI					5.95
16.417	0.88	0.82	2.102	O					5.95

16.500	0.85	0.82	2.102	O				5.95
16.583	0.78	0.82	2.102	O				5.95
16.667	0.67	0.82	2.101	IO				5.95
16.750	0.65	0.81	2.100	IO				5.94
16.833	0.64	0.81	2.099	IO				5.94
16.917	0.63	0.81	2.098	IO				5.94
17.000	0.63	0.81	2.097	IO				5.94
17.083	0.74	0.81	2.096	O				5.94
17.167	0.94	0.81	2.096	OI				5.94
17.250	0.99	0.81	2.097	OI				5.94
17.333	1.02	0.81	2.098	OI				5.94
17.417	1.03	0.81	2.100	OI				5.94
17.500	1.04	0.82	2.101	OI				5.95
17.583	1.04	0.82	2.103	OI				5.95
17.667	1.04	0.82	2.104	OI				5.95
17.750	1.04	0.82	2.106	OI				5.95
17.833	0.98	0.82	2.107	OI				5.95
17.917	0.88	0.82	2.108	O				5.95
18.000	0.86	0.82	2.108	O				5.95
18.083	0.84	0.82	2.109	O				5.95
18.167	0.84	0.82	2.109	O				5.95
18.250	0.83	0.82	2.109	O				5.95
18.333	0.83	0.82	2.109	O				5.95
18.417	0.83	0.82	2.109	O				5.95
18.500	0.83	0.82	2.109	O				5.95
18.583	0.78	0.82	2.109	O				5.95
18.667	0.67	0.82	2.108	IO				5.95
18.750	0.65	0.82	2.107	IO				5.95
18.833	0.58	0.82	2.106	IO				5.95
18.917	0.47	0.82	2.104	I O				5.95
19.000	0.44	0.82	2.101	I O				5.95
19.083	0.49	0.81	2.099	I O				5.94
19.167	0.58	0.81	2.097	IO				5.94
19.250	0.60	0.81	2.095	IO				5.94
19.333	0.67	0.81	2.094	IO				5.94
19.417	0.78	0.81	2.094	O				5.94
19.500	0.81	0.81	2.093	O				5.94
19.583	0.76	0.81	2.093	O				5.94
19.667	0.67	0.81	2.093	IO				5.94
19.750	0.65	0.81	2.092	IO				5.94
19.833	0.58	0.81	2.090	IO				5.93
19.917	0.47	0.81	2.088	I O				5.93
20.000	0.44	0.80	2.086	I O				5.93
20.083	0.49	0.80	2.084	I O				5.93
20.167	0.58	0.80	2.082	IO				5.92
20.250	0.60	0.80	2.080	IO				5.92
20.333	0.61	0.80	2.079	IO				5.92
20.417	0.62	0.80	2.078	IO				5.92
20.500	0.62	0.80	2.076	IO				5.92
20.583	0.62	0.80	2.075	IO				5.92
20.667	0.62	0.80	2.074	IO				5.92
20.750	0.62	0.80	2.073	IO				5.92
20.833	0.57	0.79	2.072	IO				5.91
20.917	0.47	0.79	2.070	I O				5.91

21.000	0.44	0.79	2.067	I O				5.91
21.083	0.49	0.79	2.065	I O				5.91
21.167	0.58	0.79	2.063	IO				5.90
21.250	0.60	0.79	2.062	IO				5.90
21.333	0.56	0.79	2.060	IO				5.90
21.417	0.46	0.79	2.059	I O				5.90
21.500	0.44	0.78	2.056	I O				5.90
21.583	0.49	0.78	2.054	I O				5.89
21.667	0.58	0.78	2.052	IO				5.89
21.750	0.60	0.78	2.051	IO				5.89
21.833	0.56	0.78	2.050	IO				5.89
21.917	0.46	0.78	2.048	I O				5.89
22.000	0.44	0.78	2.045	I O				5.89
22.083	0.49	0.78	2.043	I O				5.88
22.167	0.58	0.77	2.042	IO				5.88
22.250	0.60	0.77	2.040	IO				5.88
22.333	0.56	0.77	2.039	IO				5.88
22.417	0.46	0.77	2.037	I O				5.88
22.500	0.44	0.77	2.035	I O				5.87
22.583	0.43	0.77	2.033	I O				5.87
22.667	0.42	0.77	2.030	I O				5.87
22.750	0.42	0.76	2.028	I O				5.87
22.833	0.42	0.76	2.026	I O				5.86
22.917	0.42	0.76	2.023	I O				5.86
23.000	0.42	0.76	2.021	I O				5.86
23.083	0.42	0.76	2.018	I O				5.86
23.167	0.42	0.76	2.016	I O				5.85
23.250	0.42	0.75	2.014	I O				5.85
23.333	0.42	0.75	2.011	I O				5.85
23.417	0.42	0.75	2.009	I O				5.85
23.500	0.42	0.75	2.007	I O				5.84
23.583	0.42	0.75	2.005	I O				5.84
23.667	0.42	0.75	2.002	I O				5.84
23.750	0.42	0.74	2.000	I O				5.84
23.833	0.42	0.74	1.998	I O				5.83
23.917	0.42	0.74	1.996	I O				5.83
24.000	0.42	0.74	1.993	I O				5.83
24.083	0.30	0.74	1.991	I O				5.83
24.167	0.10	0.74	1.987	I O				5.82
24.250	0.05	0.73	1.982	I O				5.82
24.333	0.02	0.73	1.978	I O				5.81
24.417	0.01	0.73	1.973	I O				5.81
24.500	0.00	0.72	1.968	I O				5.80
24.583	0.00	0.72	1.963	I O				5.80
24.667	0.00	0.72	1.958	I O				5.79
24.750	0.00	0.71	1.953	I O				5.78
24.833	0.00	0.71	1.948	I O				5.78
24.917	0.00	0.71	1.943	I O				5.77
25.000	0.00	0.70	1.938	I O				5.77
25.083	0.00	0.70	1.934	I O				5.76
25.167	0.00	0.70	1.929	I O				5.76
25.250	0.00	0.69	1.924	I O				5.75
25.333	0.00	0.69	1.919	I O				5.75
25.417	0.00	0.69	1.915	I O				5.74

25.500	0.00	0.68	1.910	I	O	|	|	|	5.74
25.583	0.00	0.68	1.905	I	O	|	|	|	5.73
25.667	0.00	0.68	1.900	I	O	|	|	|	5.73
25.750	0.00	0.67	1.896	I	O	|	|	|	5.72
25.833	0.00	0.67	1.891	I	O	|	|	|	5.72
25.917	0.00	0.67	1.887	I	O	|	|	|	5.71
26.000	0.00	0.66	1.882	I	O	|	|	|	5.71
26.083	0.00	0.66	1.877	I	O	|	|	|	5.70
26.167	0.00	0.66	1.873	I	O	|	|	|	5.70
26.250	0.00	0.65	1.868	I	O	|	|	|	5.69
26.333	0.00	0.65	1.864	I	O	|	|	|	5.69
26.417	0.00	0.65	1.859	I	O	|	|	|	5.68
26.500	0.00	0.64	1.855	I	O	|	|	|	5.68
26.583	0.00	0.64	1.851	I	O	|	|	|	5.67
26.667	0.00	0.64	1.846	I	O	|	|	|	5.67
26.750	0.00	0.63	1.842	I	O	|	|	|	5.66
26.833	0.00	0.63	1.837	I	O	|	|	|	5.66
26.917	0.00	0.63	1.833	I	O	|	|	|	5.65
27.000	0.00	0.63	1.829	I	O	|	|	|	5.65
27.083	0.00	0.62	1.824	I	O	|	|	|	5.65
27.167	0.00	0.62	1.820	I	O	|	|	|	5.64
27.250	0.00	0.62	1.816	I	O	|	|	|	5.64
27.333	0.00	0.61	1.812	I	O	|	|	|	5.63
27.417	0.00	0.61	1.807	I	O	|	|	|	5.63
27.500	0.00	0.61	1.803	I	O	|	|	|	5.62
27.583	0.00	0.61	1.799	I	O	|	|	|	5.62
27.667	0.00	0.60	1.795	I	O	|	|	|	5.61
27.750	0.00	0.60	1.791	I	O	|	|	|	5.61
27.833	0.00	0.60	1.787	I	O	|	|	|	5.60
27.917	0.00	0.59	1.783	I	O	|	|	|	5.60
28.000	0.00	0.59	1.779	I	O	|	|	|	5.60
28.083	0.00	0.59	1.774	I	O	|	|	|	5.59
28.167	0.00	0.59	1.770	I	O	|	|	|	5.59
28.250	0.00	0.58	1.766	I	O	|	|	|	5.58
28.333	0.00	0.58	1.762	I	O	|	|	|	5.58
28.417	0.00	0.58	1.758	I	O	|	|	|	5.57
28.500	0.00	0.57	1.754	I	O	|	|	|	5.57
28.583	0.00	0.57	1.750	I	O	|	|	|	5.56
28.667	0.00	0.57	1.747	I	O	|	|	|	5.56
28.750	0.00	0.57	1.743	I	O	|	|	|	5.56
28.833	0.00	0.56	1.739	I	O	|	|	|	5.55
28.917	0.00	0.56	1.735	I	O	|	|	|	5.55
29.000	0.00	0.56	1.731	I	O	|	|	|	5.54
29.083	0.00	0.56	1.727	I	O	|	|	|	5.54
29.167	0.00	0.55	1.723	I	O	|	|	|	5.54
29.250	0.00	0.55	1.720	I	O	|	|	|	5.53
29.333	0.00	0.55	1.716	I	O	|	|	|	5.53
29.417	0.00	0.54	1.712	I	O	|	|	|	5.52
29.500	0.00	0.54	1.708	I	O	|	|	|	5.52
29.583	0.00	0.54	1.705	I	O	|	|	|	5.51
29.667	0.00	0.54	1.701	I	O	|	|	|	5.51
29.750	0.00	0.53	1.697	I	O	|	|	|	5.51
29.833	0.00	0.53	1.694	I	O	|	|	|	5.50
29.917	0.00	0.53	1.690	I	O	|	|	|	5.50

30.000	0.00	0.53	1.686	I O					5.49
30.083	0.00	0.53	1.683	I O					5.49
30.167	0.00	0.53	1.679	I O					5.49
30.250	0.00	0.53	1.675	I O					5.48
30.333	0.00	0.53	1.672	I O					5.48
30.417	0.00	0.53	1.668	I O					5.47
30.500	0.00	0.53	1.664	I O					5.47
30.583	0.00	0.53	1.661	I O					5.47
30.667	0.00	0.53	1.657	I O					5.46
30.750	0.00	0.53	1.653	I O					5.46
30.833	0.00	0.53	1.650	I O					5.45
30.917	0.00	0.53	1.646	I O					5.45
31.000	0.00	0.53	1.643	I O					5.44
31.083	0.00	0.53	1.639	I O					5.44
31.167	0.00	0.53	1.635	I O					5.44
31.250	0.00	0.53	1.632	I O					5.43
31.333	0.00	0.53	1.628	I O					5.43
31.417	0.00	0.53	1.624	I O					5.42
31.500	0.00	0.53	1.621	I O					5.42
31.583	0.00	0.52	1.617	I O					5.41
31.667	0.00	0.52	1.614	I O					5.41
31.750	0.00	0.52	1.610	I O					5.41
31.833	0.00	0.52	1.606	I O					5.40
31.917	0.00	0.52	1.603	I O					5.40
32.000	0.00	0.52	1.599	I O					5.39
32.083	0.00	0.52	1.596	I O					5.39
32.167	0.00	0.52	1.592	I O					5.39
32.250	0.00	0.52	1.588	I O					5.38
32.333	0.00	0.52	1.585	I O					5.38
32.417	0.00	0.52	1.581	I O					5.37
32.500	0.00	0.52	1.578	I O					5.37
32.583	0.00	0.52	1.574	I O					5.36
32.667	0.00	0.52	1.570	I O					5.36
32.750	0.00	0.52	1.567	I O					5.36
32.833	0.00	0.52	1.563	I O					5.35
32.917	0.00	0.52	1.560	I O					5.35
33.000	0.00	0.52	1.556	I O					5.34
33.083	0.00	0.52	1.552	I O					5.34
33.167	0.00	0.52	1.549	I O					5.34
33.250	0.00	0.52	1.545	I O					5.33
33.333	0.00	0.52	1.542	I O					5.33
33.417	0.00	0.52	1.538	I O					5.32
33.500	0.00	0.52	1.535	I O					5.32
33.583	0.00	0.52	1.531	I O					5.32
33.667	0.00	0.52	1.527	I O					5.31
33.750	0.00	0.52	1.524	I O					5.31
33.833	0.00	0.52	1.520	I O					5.30
33.917	0.00	0.52	1.517	I O					5.30
34.000	0.00	0.52	1.513	I O					5.29
34.083	0.00	0.52	1.510	I O					5.29
34.167	0.00	0.52	1.506	I O					5.29
34.250	0.00	0.52	1.502	I O					5.28
34.333	0.00	0.52	1.499	I O					5.28
34.417	0.00	0.52	1.495	I O					5.27

34.500	0.00	0.52	1.492	I O	|	|	|	5.27
34.583	0.00	0.52	1.488	I O	|	|	|	5.27
34.667	0.00	0.52	1.485	I O	|	|	|	5.26
34.750	0.00	0.52	1.481	I O	|	|	|	5.26
34.833	0.00	0.52	1.478	I O	|	|	|	5.25
34.917	0.00	0.51	1.474	I O	|	|	|	5.25
35.000	0.00	0.51	1.470	I O	|	|	|	5.25
35.083	0.00	0.51	1.467	I O	|	|	|	5.24
35.167	0.00	0.51	1.463	I O	|	|	|	5.24
35.250	0.00	0.51	1.460	I O	|	|	|	5.23
35.333	0.00	0.51	1.456	I O	|	|	|	5.23
35.417	0.00	0.51	1.453	I O	|	|	|	5.22
35.500	0.00	0.51	1.449	I O	|	|	|	5.22
35.583	0.00	0.51	1.446	I O	|	|	|	5.22
35.667	0.00	0.51	1.442	I O	|	|	|	5.21
35.750	0.00	0.51	1.439	I O	|	|	|	5.21
35.833	0.00	0.51	1.435	I O	|	|	|	5.20
35.917	0.00	0.51	1.432	I O	|	|	|	5.20
36.000	0.00	0.51	1.428	I O	|	|	|	5.20
36.083	0.00	0.51	1.425	I O	|	|	|	5.19
36.167	0.00	0.51	1.421	I O	|	|	|	5.19
36.250	0.00	0.51	1.417	I O	|	|	|	5.18
36.333	0.00	0.51	1.414	I O	|	|	|	5.18
36.417	0.00	0.51	1.410	I O	|	|	|	5.18
36.500	0.00	0.51	1.407	I O	|	|	|	5.17
36.583	0.00	0.51	1.403	I O	|	|	|	5.17
36.667	0.00	0.51	1.400	I O	|	|	|	5.16
36.750	0.00	0.51	1.396	I O	|	|	|	5.16
36.833	0.00	0.51	1.393	I O	|	|	|	5.16
36.917	0.00	0.51	1.389	I O	|	|	|	5.15
37.000	0.00	0.51	1.386	I O	|	|	|	5.15
37.083	0.00	0.51	1.382	I O	|	|	|	5.14
37.167	0.00	0.51	1.379	I O	|	|	|	5.14
37.250	0.00	0.51	1.375	I O	|	|	|	5.14
37.333	0.00	0.51	1.372	I O	|	|	|	5.13
37.417	0.00	0.51	1.368	I O	|	|	|	5.13
37.500	0.00	0.51	1.365	I O	|	|	|	5.12
37.583	0.00	0.51	1.361	I O	|	|	|	5.12
37.667	0.00	0.51	1.358	I O	|	|	|	5.12
37.750	0.00	0.51	1.354	I O	|	|	|	5.11
37.833	0.00	0.51	1.351	I O	|	|	|	5.11
37.917	0.00	0.51	1.347	I O	|	|	|	5.10
38.000	0.00	0.51	1.344	I O	|	|	|	5.10
38.083	0.00	0.51	1.340	I O	|	|	|	5.10
38.167	0.00	0.51	1.337	I O	|	|	|	5.09
38.250	0.00	0.51	1.333	I O	|	|	|	5.09
38.333	0.00	0.50	1.330	I O	|	|	|	5.08
38.417	0.00	0.50	1.327	I O	|	|	|	5.08
38.500	0.00	0.50	1.323	I O	|	|	|	5.08
38.583	0.00	0.50	1.320	I O	|	|	|	5.07
38.667	0.00	0.50	1.316	I O	|	|	|	5.07
38.750	0.00	0.50	1.313	I O	|	|	|	5.06
38.833	0.00	0.50	1.309	I O	|	|	|	5.06
38.917	0.00	0.50	1.306	I O	|	|	|	5.06

39.000	0.00	0.50	1.302	I O	|	|	|	5.05
39.083	0.00	0.50	1.299	I O	|	|	|	5.05
39.167	0.00	0.50	1.295	I O	|	|	|	5.04
39.250	0.00	0.50	1.292	I O	|	|	|	5.04
39.333	0.00	0.50	1.288	I O	|	|	|	5.04
39.417	0.00	0.50	1.285	I O	|	|	|	5.03
39.500	0.00	0.50	1.281	I O	|	|	|	5.03
39.583	0.00	0.50	1.278	I O	|	|	|	5.02
39.667	0.00	0.50	1.275	I O	|	|	|	5.02
39.750	0.00	0.50	1.271	I O	|	|	|	5.02
39.833	0.00	0.50	1.268	I O	|	|	|	5.01
39.917	0.00	0.50	1.264	I O	|	|	|	5.01
40.000	0.00	0.50	1.261	I O	|	|	|	5.00
40.083	0.00	0.50	1.257	I O	|	|	|	5.00
40.167	0.00	0.50	1.254	I O	|	|	|	4.98
40.250	0.00	0.50	1.250	I O	|	|	|	4.97
40.333	0.00	0.50	1.247	I O	|	|	|	4.96
40.417	0.00	0.50	1.244	I O	|	|	|	4.94
40.500	0.00	0.50	1.240	I O	|	|	|	4.93
40.583	0.00	0.49	1.237	I O	|	|	|	4.92
40.667	0.00	0.49	1.233	I O	|	|	|	4.90
40.750	0.00	0.49	1.230	I O	|	|	|	4.89
40.833	0.00	0.49	1.227	I O	|	|	|	4.88
40.917	0.00	0.49	1.223	I O	|	|	|	4.86
41.000	0.00	0.49	1.220	I O	|	|	|	4.85
41.083	0.00	0.49	1.216	I O	|	|	|	4.84
41.167	0.00	0.49	1.213	I O	|	|	|	4.82
41.250	0.00	0.49	1.210	I O	|	|	|	4.81
41.333	0.00	0.49	1.206	I O	|	|	|	4.79
41.417	0.00	0.49	1.203	I O	|	|	|	4.78
41.500	0.00	0.49	1.200	I O	|	|	|	4.77
41.583	0.00	0.49	1.196	I O	|	|	|	4.76
41.667	0.00	0.48	1.193	I O	|	|	|	4.74
41.750	0.00	0.48	1.190	I O	|	|	|	4.73
41.833	0.00	0.48	1.186	I O	|	|	|	4.72
41.917	0.00	0.48	1.183	I O	|	|	|	4.70
42.000	0.00	0.48	1.180	I O	|	|	|	4.69
42.083	0.00	0.48	1.176	I O	|	|	|	4.68
42.167	0.00	0.48	1.173	I O	|	|	|	4.66
42.250	0.00	0.48	1.170	I O	|	|	|	4.65
42.333	0.00	0.48	1.166	I O	|	|	|	4.64
42.417	0.00	0.48	1.163	I O	|	|	|	4.62
42.500	0.00	0.48	1.160	I O	|	|	|	4.61
42.583	0.00	0.48	1.157	I O	|	|	|	4.60
42.667	0.00	0.48	1.153	I O	|	|	|	4.58
42.750	0.00	0.47	1.150	I O	|	|	|	4.57
42.833	0.00	0.47	1.147	I O	|	|	|	4.56
42.917	0.00	0.47	1.144	I O	|	|	|	4.55
43.000	0.00	0.47	1.140	I O	|	|	|	4.53
43.083	0.00	0.47	1.137	I O	|	|	|	4.52
43.167	0.00	0.47	1.134	I O	|	|	|	4.51
43.250	0.00	0.47	1.131	I O	|	|	|	4.49
43.333	0.00	0.47	1.127	I O	|	|	|	4.48
43.417	0.00	0.47	1.124	I O	|	|	|	4.47

43.500	0.00	0.47	1.121	I O	|	|	|	4.46
43.583	0.00	0.47	1.118	I O	|	|	|	4.44
43.667	0.00	0.47	1.114	I O	|	|	|	4.43
43.750	0.00	0.47	1.111	I O	|	|	|	4.42
43.833	0.00	0.46	1.108	I O	|	|	|	4.40
43.917	0.00	0.46	1.105	I O	|	|	|	4.39
44.000	0.00	0.46	1.102	I O	|	|	|	4.38
44.083	0.00	0.46	1.098	I O	|	|	|	4.37
44.167	0.00	0.46	1.095	I O	|	|	|	4.35
44.250	0.00	0.46	1.092	I O	|	|	|	4.34
44.333	0.00	0.46	1.089	I O	|	|	|	4.33
44.417	0.00	0.46	1.086	I O	|	|	|	4.32
44.500	0.00	0.46	1.083	I O	|	|	|	4.30
44.583	0.00	0.46	1.079	I O	|	|	|	4.29
44.667	0.00	0.46	1.076	I O	|	|	|	4.28
44.750	0.00	0.46	1.073	I O	|	|	|	4.27
44.833	0.00	0.46	1.070	I O	|	|	|	4.25
44.917	0.00	0.45	1.067	I O	|	|	|	4.24
45.000	0.00	0.45	1.064	I O	|	|	|	4.23
45.083	0.00	0.45	1.061	I O	|	|	|	4.22
45.167	0.00	0.45	1.058	I O	|	|	|	4.20
45.250	0.00	0.45	1.054	I O	|	|	|	4.19
45.333	0.00	0.45	1.051	I O	|	|	|	4.18
45.417	0.00	0.45	1.048	I O	|	|	|	4.17
45.500	0.00	0.45	1.045	I O	|	|	|	4.16
45.583	0.00	0.45	1.042	I O	|	|	|	4.14
45.667	0.00	0.45	1.039	I O	|	|	|	4.13
45.750	0.00	0.45	1.036	I O	|	|	|	4.12
45.833	0.00	0.45	1.033	I O	|	|	|	4.11
45.917	0.00	0.45	1.030	I O	|	|	|	4.09
46.000	0.00	0.44	1.027	I O	|	|	|	4.08
46.083	0.00	0.44	1.024	I O	|	|	|	4.07
46.167	0.00	0.44	1.021	I O	|	|	|	4.06
46.250	0.00	0.44	1.017	I O	|	|	|	4.05
46.333	0.00	0.44	1.014	I O	|	|	|	4.03
46.417	0.00	0.44	1.011	I O	|	|	|	4.02
46.500	0.00	0.44	1.008	I O	|	|	|	4.01
46.583	0.00	0.44	1.005	I O	|	|	|	4.00
46.667	0.00	0.44	1.002	I O	|	|	|	3.99
46.750	0.00	0.44	0.999	I O	|	|	|	3.97
46.833	0.00	0.44	0.996	I O	|	|	|	3.96
46.917	0.00	0.44	0.993	I O	|	|	|	3.95
47.000	0.00	0.44	0.990	I O	|	|	|	3.94
47.083	0.00	0.43	0.987	I O	|	|	|	3.93
47.167	0.00	0.43	0.984	I O	|	|	|	3.91
47.250	0.00	0.43	0.981	I O	|	|	|	3.90
47.333	0.00	0.43	0.978	I O	|	|	|	3.89
47.417	0.00	0.43	0.975	I O	|	|	|	3.88
47.500	0.00	0.43	0.972	I O	|	|	|	3.87
47.583	0.00	0.43	0.969	I O	|	|	|	3.85
47.667	0.00	0.43	0.966	I O	|	|	|	3.84
47.750	0.00	0.43	0.963	I O	|	|	|	3.83
47.833	0.00	0.43	0.961	I O	|	|	|	3.82
47.917	0.00	0.43	0.958	I O	|	|	|	3.81

48.000 0.00 0.43 0.955 I O | | | | 3.80

**********HYDROGRAPH DATA**********

Number of intervals = 1714
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.821 (CFS)
Total volume = 2.963 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/13/19

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10 YEAR FLOOD ROUTING
BASIN 2
MJPA 304163
4163FR10.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP102410.rte

**********HYDROGRAPH DATA**********

Number of intervals = 294
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 8.518 (CFS)
Total volume = 4.235 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 294
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.168	0.170	0.167	0.169
2.000	0.503	0.290	0.502	0.504
3.000	0.755	0.370	0.754	0.756
4.000	1.006	0.440	1.004	1.008
5.000	1.258	0.500	1.256	1.260
5.500	1.691	0.530	1.689	1.693
6.000	2.151	0.850	2.148	2.154
7.000	3.158	1.200	3.154	3.162
8.000	4.279	16.560	4.222	4.336
8.500	4.884	20.060	4.815	4.953

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 2.1 4.26 6.39 8.52	Depth (Ft.)
0.083	0.14	0.00	0.000	O | | | |	0.00
0.167	0.38	0.00	0.002	OI | | | |	0.01
0.250	0.44	0.01	0.005	OI | | | |	0.03
0.333	0.54	0.01	0.008	O I | | | |	0.05
0.417	0.67	0.01	0.012	O I | | | |	0.07
0.500	0.71	0.02	0.017	O I | | | |	0.10
0.583	0.73	0.02	0.022	O I | | | |	0.13
0.667	0.74	0.03	0.027	O I | | | |	0.16
0.750	0.74	0.03	0.032	O I | | | |	0.19
0.833	0.81	0.04	0.037	O I | | | |	0.22
0.917	0.94	0.04	0.043	O I | | | |	0.25
1.000	0.97	0.05	0.049	O I | | | |	0.29
1.083	0.91	0.06	0.055	O I | | | |	0.33
1.167	0.80	0.06	0.060	O I | | | |	0.36
1.250	0.77	0.07	0.065	O I | | | |	0.39
1.333	0.76	0.07	0.070	O I | | | |	0.42
1.417	0.75	0.08	0.075	O I | | | |	0.45
1.500	0.75	0.08	0.080	O I | | | |	0.47
1.583	0.75	0.09	0.084	O I | | | |	0.50
1.667	0.75	0.09	0.089	O I | | | |	0.53
1.750	0.75	0.09	0.093	O I | | | |	0.56
1.833	0.81	0.10	0.098	O I | | | |	0.58
1.917	0.94	0.10	0.103	O I | | | |	0.61
2.000	0.97	0.11	0.109	O I | | | |	0.65
2.083	0.98	0.12	0.115	O I | | | |	0.68
2.167	0.99	0.12	0.121	O I | | | |	0.72
2.250	0.99	0.13	0.127	O I | | | |	0.76
2.333	1.00	0.13	0.133	O I | | | |	0.79
2.417	1.00	0.14	0.139	O I | | | |	0.83
2.500	1.00	0.15	0.145	O I | | | |	0.86
2.583	1.06	0.15	0.151	O I | | | |	0.90
2.667	1.18	0.16	0.157	O I | | | |	0.94
2.750	1.22	0.17	0.165	O I | | | |	0.98
2.833	1.23	0.17	0.172	O I | | | |	1.01
2.917	1.24	0.17	0.179	O I | | | |	1.03

3.000	1.24	0.18	0.186	O	I	|	|	|	1.06
3.083	1.25	0.18	0.194	O	I	|	|	|	1.08
3.167	1.25	0.18	0.201	O	I	|	|	|	1.10
3.250	1.25	0.18	0.208	O	I	|	|	|	1.12
3.333	1.25	0.19	0.216	O	I	|	|	|	1.14
3.417	1.25	0.19	0.223	O	I	|	|	|	1.16
3.500	1.25	0.19	0.230	O	I	|	|	|	1.19
3.583	1.25	0.19	0.238	O	I	|	|	|	1.21
3.667	1.25	0.20	0.245	O	I	|	|	|	1.23
3.750	1.25	0.20	0.252	O	I	|	|	|	1.25
3.833	1.31	0.20	0.259	O	I	|	|	|	1.27
3.917	1.43	0.21	0.267	O	I	|	|	|	1.30
4.000	1.47	0.21	0.276	O	I	|	|	|	1.32
4.083	1.48	0.21	0.285	O	I	|	|	|	1.35
4.167	1.49	0.21	0.293	O	I	|	|	|	1.37
4.250	1.49	0.22	0.302	O	I	|	|	|	1.40
4.333	1.56	0.22	0.311	O	I	|	|	|	1.43
4.417	1.68	0.22	0.321	O	I	|	|	|	1.46
4.500	1.71	0.23	0.331	O	I	|	|	|	1.49
4.583	1.73	0.23	0.341	O	I	|	|	|	1.52
4.667	1.74	0.24	0.352	O	I	|	|	|	1.55
4.750	1.74	0.24	0.362	O	I	|	|	|	1.58
4.833	1.81	0.24	0.372	O	I	|	|	|	1.61
4.917	1.93	0.25	0.384	O	I	|	|	|	1.64
5.000	1.96	0.25	0.395	O	I	|	|	|	1.68
5.083	1.84	0.26	0.407	O	I	|	|	|	1.71
5.167	1.61	0.26	0.417	O	I	|	|	|	1.74
5.250	1.55	0.26	0.426	O	I	|	|	|	1.77
5.333	1.59	0.27	0.435	O	I	|	|	|	1.80
5.417	1.70	0.27	0.444	|O	I	|	|	|	1.82
5.500	1.72	0.27	0.454	|O	I	|	|	|	1.85
5.583	1.80	0.28	0.464	|O	I	|	|	|	1.88
5.667	1.92	0.28	0.475	|O	I	|	|	|	1.92
5.750	1.96	0.28	0.487	|O	I	|	|	|	1.95
5.833	1.98	0.29	0.498	|O	I	|	|	|	1.99
5.917	1.99	0.29	0.510	|O	I	|	|	|	2.03
6.000	1.99	0.30	0.522	|O	I	|	|	|	2.07
6.083	1.45	0.30	0.531	|O	I	|	|	|	2.11
6.167	0.49	0.30	0.536	|O	|	|	|	|	2.13
6.250	0.25	0.30	0.537	IO	|	|	|	|	2.13
6.333	0.14	0.30	0.536	IO	|	|	|	|	2.13
6.417	0.09	0.30	0.535	IO	|	|	|	|	2.13
6.500	0.07	0.30	0.533	IO	|	|	|	|	2.12
6.583	0.14	0.30	0.532	IO	|	|	|	|	2.11
6.667	0.30	0.30	0.531	|O	|	|	|	|	2.11
6.750	0.35	0.30	0.531	|O	|	|	|	|	2.11
6.833	0.38	0.30	0.532	|O	|	|	|	|	2.11
6.917	0.40	0.30	0.532	|O	|	|	|	|	2.12
7.000	0.42	0.30	0.533	|O	|	|	|	|	2.12
7.083	0.44	0.30	0.534	|O	|	|	|	|	2.12
7.167	0.45	0.30	0.535	|O	|	|	|	|	2.13
7.250	0.46	0.30	0.536	|O	|	|	|	|	2.13
7.333	0.55	0.30	0.538	|OI	|	|	|	|	2.14
7.417	0.71	0.30	0.540	|OI	|	|	|	|	2.15

7.500	0.76	0.30	0.543	OI				2.16
7.583	0.87	0.30	0.546	O I				2.17
7.667	1.04	0.31	0.551	O I				2.19
7.750	1.10	0.31	0.556	O I				2.21
7.833	1.21	0.31	0.562	O I				2.23
7.917	1.38	0.31	0.569	O I				2.26
8.000	1.44	0.31	0.576	O I				2.29
8.083	1.63	0.32	0.585	O I				2.32
8.167	1.95	0.32	0.595	O I				2.36
8.250	2.04	0.32	0.606	O I				2.41
8.333	2.09	0.33	0.618	O I				2.46
8.417	2.12	0.33	0.631	O I				2.51
8.500	2.14	0.33	0.643	O I				2.56
8.583	2.24	0.34	0.656	O I				2.61
8.667	2.40	0.34	0.670	O I				2.66
8.750	2.45	0.35	0.684	O I				2.72
8.833	2.56	0.35	0.699	O I				2.78
8.917	2.73	0.36	0.714	O I				2.84
9.000	2.79	0.36	0.731	O I				2.90
9.083	2.98	0.37	0.748	O I				2.97
9.167	3.30	0.37	0.767	O I				3.05
9.250	3.39	0.38	0.788	O I				3.13
9.333	3.52	0.39	0.809	O I				3.22
9.417	3.70	0.39	0.831	O I				3.30
9.500	3.76	0.40	0.854	O I				3.40
9.583	3.88	0.40	0.878	O I				3.49
9.667	4.04	0.41	0.902	O I				3.59
9.750	4.10	0.42	0.927	O I				3.69
9.833	4.21	0.43	0.953	O I				3.79
9.917	4.38	0.43	0.980	O I				3.90
10.000	4.43	0.44	1.007	O I				4.00
10.083	3.89	0.45	1.033	O I				4.11
10.167	2.88	0.45	1.053	O I				4.19
10.250	2.62	0.45	1.069	O I				4.25
10.333	2.52	0.46	1.083	O I				4.31
10.417	2.46	0.46	1.097	O I				4.36
10.500	2.43	0.46	1.111	O I				4.42
10.583	2.83	0.47	1.126	O I				4.48
10.667	3.58	0.47	1.145	O I				4.55
10.750	3.78	0.48	1.167	O I				4.64
10.833	3.88	0.48	1.190	O I				4.73
10.917	3.94	0.49	1.213	O I				4.82
11.000	3.98	0.50	1.237	O I				4.92
11.083	3.92	0.50	1.261	O I				5.00
11.167	3.78	0.50	1.284	O I				5.03
11.250	3.75	0.50	1.307	O I				5.06
11.333	3.75	0.50	1.329	O I				5.08
11.417	3.75	0.51	1.351	O I				5.11
11.500	3.75	0.51	1.374	O I				5.13
11.583	3.59	0.51	1.395	O I				5.16
11.667	3.31	0.51	1.416	O I				5.18
11.750	3.24	0.51	1.435	O I				5.20
11.833	3.30	0.51	1.454	O I				5.23
11.917	3.44	0.51	1.473	O I				5.25

12.000	3.48	0.52	1.494	O	I			5.27
12.083	4.07	0.52	1.516	O	I			5.30
12.167	5.12	0.52	1.544	O	I			5.33
12.250	5.41	0.52	1.577	O	I			5.37
12.333	5.63	0.52	1.611	O	I			5.41
12.417	5.85	0.53	1.647	O	I			5.45
12.500	5.94	0.53	1.684	O	I			5.49
12.583	6.15	0.55	1.722	O	I			5.53
12.667	6.46	0.58	1.761	O	I			5.58
12.750	6.55	0.61	1.802	O	I			5.62
12.833	6.68	0.64	1.844	O	I			5.67
12.917	6.86	0.67	1.886	O	I			5.71
13.000	6.92	0.70	1.928	O	I			5.76
13.083	7.36	0.73	1.973	O	I			5.81
13.167	8.12	0.76	2.021	O	I			5.86
13.250	8.33	0.80	2.072	O	I			5.91
13.333	8.43	0.83	2.124	O	I			5.97
13.417	8.48	0.86	2.177	O	I			6.03
13.500	8.52	0.88	2.229	O	I			6.08
13.583	7.63	0.89	2.279	O	I			6.13
13.667	6.02	0.91	2.320	O	I			6.17
13.750	5.61	0.92	2.353	O	I			6.20
13.833	5.43	0.93	2.385	O	I			6.23
13.917	5.33	0.94	2.416	O	I			6.26
14.000	5.28	0.95	2.446	O	I			6.29
14.083	5.59	0.96	2.476	O	I			6.32
14.167	6.18	0.97	2.510	O	I			6.36
14.250	6.35	0.99	2.547	O	I			6.39
14.333	6.34	1.00	2.584	O	I			6.43
14.417	6.24	1.01	2.620	O	I			6.47
14.500	6.23	1.03	2.656	O	I			6.50
14.583	6.24	1.04	2.692	O	I			6.54
14.667	6.24	1.05	2.727	O	I			6.57
14.750	6.24	1.06	2.763	O	I			6.61
14.833	6.16	1.08	2.799	O	I			6.64
14.917	6.02	1.09	2.833	O	I			6.68
15.000	5.99	1.10	2.867	O	I			6.71
15.083	5.90	1.11	2.900	O	I			6.74
15.167	5.75	1.12	2.933	O	I			6.78
15.250	5.72	1.13	2.964	O	I			6.81
15.333	5.62	1.14	2.996	O	I			6.84
15.417	5.47	1.15	3.026	O	I			6.87
15.500	5.44	1.16	3.056	O	I			6.90
15.583	5.10	1.17	3.084	O	I			6.93
15.667	4.51	1.18	3.109	O	I			6.95
15.750	4.35	1.19	3.131	O	I			6.97
15.833	4.29	1.20	3.153	O	I			6.99
15.917	4.26	1.41	3.173	O	I			7.01
16.000	4.25	1.66	3.192	O	I			7.03
16.083	3.36	1.86	3.206	O	I			7.04
16.167	1.78	1.92	3.211	IO				7.05
16.250	1.37	1.89	3.208	I O				7.04
16.333	1.19	1.83	3.204	I O				7.04
16.417	1.09	1.77	3.200	I O				7.04

16.500	1.03	1.71	3.195	| I O |	|	|	|	7.03
16.583	0.93	1.64	3.190	| I O |	|	|	|	7.03
16.667	0.81	1.57	3.185	| I O |	|	|	|	7.02
16.750	0.78	1.50	3.180	| I O |	|	|	|	7.02
16.833	0.76	1.44	3.175	| I O |	|	|	|	7.02
16.917	0.75	1.37	3.171	| I O |	|	|	|	7.01
17.000	0.75	1.32	3.167	| I O |	|	|	|	7.01
17.083	0.57	1.26	3.162	| I O |	|	|	|	7.00
17.167	0.25	1.20	3.157	| I O |	|	|	|	7.00
17.250	0.17	1.20	3.150	| I O |	|	|	|	6.99
17.333	0.14	1.19	3.143	| I O |	|	|	|	6.98
17.417	0.13	1.19	3.135	| I O |	|	|	|	6.98
17.500	0.12	1.19	3.128	| I O |	|	|	|	6.97
17.583	0.12	1.19	3.121	| I O |	|	|	|	6.96
17.667	0.13	1.18	3.113	| I O |	|	|	|	6.96
17.750	0.14	1.18	3.106	| I O |	|	|	|	6.95
17.833	0.37	1.18	3.100	| I O |	|	|	|	6.94
17.917	0.79	1.18	3.096	| I O |	|	|	|	6.94
18.000	0.90	1.18	3.093	| I O |	|	|	|	6.94
18.083	0.95	1.18	3.092	| I O |	|	|	|	6.93
18.167	0.97	1.18	3.090	| I O |	|	|	|	6.93
18.250	0.99	1.18	3.089	| I O |	|	|	|	6.93
18.333	1.00	1.18	3.088	| I O |	|	|	|	6.93
18.417	1.00	1.18	3.086	| I O |	|	|	|	6.93
18.500	1.00	1.17	3.085	| I O |	|	|	|	6.93
18.583	0.93	1.17	3.084	| I O |	|	|	|	6.93
18.667	0.81	1.17	3.082	| I O |	|	|	|	6.92
18.750	0.78	1.17	3.079	| I O |	|	|	|	6.92
18.833	0.69	1.17	3.076	| I O |	|	|	|	6.92
18.917	0.57	1.17	3.072	| I O |	|	|	|	6.91
19.000	0.53	1.17	3.068	| I O |	|	|	|	6.91
19.083	0.58	1.17	3.064	| I O |	|	|	|	6.91
19.167	0.69	1.17	3.060	| I O |	|	|	|	6.90
19.250	0.72	1.16	3.057	| I O |	|	|	|	6.90
19.333	0.80	1.16	3.054	| I O |	|	|	|	6.90
19.417	0.93	1.16	3.052	| I O |	|	|	|	6.89
19.500	0.96	1.16	3.051	| I O |	|	|	|	6.89
19.583	0.91	1.16	3.049	| I O |	|	|	|	6.89
19.667	0.80	1.16	3.047	| I O |	|	|	|	6.89
19.750	0.77	1.16	3.044	| I O |	|	|	|	6.89
19.833	0.69	1.16	3.041	| I O |	|	|	|	6.88
19.917	0.57	1.16	3.038	| I O |	|	|	|	6.88
20.000	0.53	1.16	3.034	| I O |	|	|	|	6.88
20.083	0.58	1.16	3.029	| I O |	|	|	|	6.87
20.167	0.69	1.15	3.026	| I O |	|	|	|	6.87
20.250	0.72	1.15	3.023	| I O |	|	|	|	6.87
20.333	0.73	1.15	3.020	| I O |	|	|	|	6.86
20.417	0.74	1.15	3.017	| I O |	|	|	|	6.86
20.500	0.74	1.15	3.014	| I O |	|	|	|	6.86
20.583	0.75	1.15	3.011	| I O |	|	|	|	6.85
20.667	0.75	1.15	3.009	| I O |	|	|	|	6.85
20.750	0.75	1.15	3.006	| I O |	|	|	|	6.85
20.833	0.68	1.15	3.003	| I O |	|	|	|	6.85
20.917	0.56	1.14	2.999	| I O |	|	|	|	6.84

21.000	0.53	1.14	2.995	I O				6.84
21.083	0.58	1.14	2.991	I O				6.83
21.167	0.69	1.14	2.988	I O				6.83
21.250	0.72	1.14	2.985	I O				6.83
21.333	0.66	1.14	2.982	I O				6.82
21.417	0.55	1.14	2.978	I O				6.82
21.500	0.52	1.14	2.974	I O				6.82
21.583	0.58	1.13	2.970	I O				6.81
21.667	0.69	1.13	2.966	I O				6.81
21.750	0.72	1.13	2.963	I O				6.81
21.833	0.66	1.13	2.960	I O				6.80
21.917	0.55	1.13	2.957	I O				6.80
22.000	0.52	1.13	2.953	I O				6.80
22.083	0.58	1.13	2.949	I O				6.79
22.167	0.69	1.13	2.945	I O				6.79
22.250	0.72	1.13	2.942	I O				6.79
22.333	0.66	1.12	2.939	I O				6.78
22.417	0.55	1.12	2.936	I O				6.78
22.500	0.52	1.12	2.932	I O				6.78
22.583	0.51	1.12	2.928	I O				6.77
22.667	0.50	1.12	2.924	I O				6.77
22.750	0.50	1.12	2.919	I O				6.76
22.833	0.50	1.12	2.915	I O				6.76
22.917	0.50	1.11	2.911	I O				6.75
23.000	0.50	1.11	2.907	I O				6.75
23.083	0.50	1.11	2.902	I O				6.75
23.167	0.50	1.11	2.898	I O				6.74
23.250	0.50	1.11	2.894	I O				6.74
23.333	0.50	1.11	2.890	I O				6.73
23.417	0.50	1.11	2.886	I O				6.73
23.500	0.50	1.10	2.881	I O				6.73
23.583	0.50	1.10	2.877	I O				6.72
23.667	0.50	1.10	2.873	I O				6.72
23.750	0.50	1.10	2.869	I O				6.71
23.833	0.50	1.10	2.865	I O				6.71
23.917	0.50	1.10	2.861	I O				6.70
24.000	0.50	1.10	2.857	I O				6.70
24.083	0.36	1.09	2.852	I O				6.70
24.167	0.12	1.09	2.846	I O				6.69
24.250	0.06	1.09	2.839	I O				6.68
24.333	0.03	1.09	2.832	I O				6.68
24.417	0.01	1.08	2.825	I O				6.67
24.500	0.01	1.08	2.817	I O				6.66
24.583	0.00	1.08	2.810	I O				6.65
24.667	0.00	1.08	2.802	I O				6.65
24.750	0.00	1.07	2.795	I O				6.64
24.833	0.00	1.07	2.788	I O				6.63
24.917	0.00	1.07	2.780	I O				6.62
25.000	0.00	1.07	2.773	I O				6.62
25.083	0.00	1.06	2.766	I O				6.61
25.167	0.00	1.06	2.758	I O				6.60
25.250	0.00	1.06	2.751	I O				6.60
25.333	0.00	1.06	2.744	I O				6.59
25.417	0.00	1.05	2.736	I O				6.58

25.500	0.00	1.05	2.729	I	O	|	|	|	|	6.57
25.583	0.00	1.05	2.722	I	O	|	|	|	|	6.57
25.667	0.00	1.05	2.715	I	O	|	|	|	|	6.56
25.750	0.00	1.04	2.708	I	O	|	|	|	|	6.55
25.833	0.00	1.04	2.700	I	O	|	|	|	|	6.55
25.917	0.00	1.04	2.693	I	O	|	|	|	|	6.54
26.000	0.00	1.04	2.686	I	O	|	|	|	|	6.53
26.083	0.00	1.03	2.679	I	O	|	|	|	|	6.52
26.167	0.00	1.03	2.672	I	O	|	|	|	|	6.52
26.250	0.00	1.03	2.665	I	O	|	|	|	|	6.51
26.333	0.00	1.03	2.658	I	O	|	|	|	|	6.50
26.417	0.00	1.02	2.651	I	O	|	|	|	|	6.50
26.500	0.00	1.02	2.644	I	O	|	|	|	|	6.49
26.583	0.00	1.02	2.637	I	O	|	|	|	|	6.48
26.667	0.00	1.02	2.630	I	O	|	|	|	|	6.48
26.750	0.00	1.01	2.623	I	O	|	|	|	|	6.47
26.833	0.00	1.01	2.616	I	O	|	|	|	|	6.46
26.917	0.00	1.01	2.609	I	O	|	|	|	|	6.45
27.000	0.00	1.01	2.602	I	O	|	|	|	|	6.45
27.083	0.00	1.00	2.595	I	O	|	|	|	|	6.44
27.167	0.00	1.00	2.588	I	O	|	|	|	|	6.43
27.250	0.00	1.00	2.581	I	O	|	|	|	|	6.43
27.333	0.00	1.00	2.574	I	O	|	|	|	|	6.42
27.417	0.00	0.99	2.567	I	O	|	|	|	|	6.41
27.500	0.00	0.99	2.560	I	O	|	|	|	|	6.41
27.583	0.00	0.99	2.554	I	O	|	|	|	|	6.40
27.667	0.00	0.99	2.547	I	O	|	|	|	|	6.39
27.750	0.00	0.99	2.540	I	O	|	|	|	|	6.39
27.833	0.00	0.98	2.533	I	O	|	|	|	|	6.38
27.917	0.00	0.98	2.526	I	O	|	|	|	|	6.37
28.000	0.00	0.98	2.520	I	O	|	|	|	|	6.37
28.083	0.00	0.98	2.513	I	O	|	|	|	|	6.36
28.167	0.00	0.97	2.506	I	O	|	|	|	|	6.35
28.250	0.00	0.97	2.500	I	O	|	|	|	|	6.35
28.333	0.00	0.97	2.493	I	O	|	|	|	|	6.34
28.417	0.00	0.97	2.486	I	O	|	|	|	|	6.33
28.500	0.00	0.96	2.480	I	O	|	|	|	|	6.33
28.583	0.00	0.96	2.473	I	O	|	|	|	|	6.32
28.667	0.00	0.96	2.466	I	O	|	|	|	|	6.31
28.750	0.00	0.96	2.460	I	O	|	|	|	|	6.31
28.833	0.00	0.95	2.453	I	O	|	|	|	|	6.30
28.917	0.00	0.95	2.447	I	O	|	|	|	|	6.29
29.000	0.00	0.95	2.440	I	O	|	|	|	|	6.29
29.083	0.00	0.95	2.433	I	O	|	|	|	|	6.28
29.167	0.00	0.95	2.427	I	O	|	|	|	|	6.27
29.250	0.00	0.94	2.420	I	O	|	|	|	|	6.27
29.333	0.00	0.94	2.414	I	O	|	|	|	|	6.26
29.417	0.00	0.94	2.407	I	O	|	|	|	|	6.25
29.500	0.00	0.94	2.401	I	O	|	|	|	|	6.25
29.583	0.00	0.93	2.395	I	O	|	|	|	|	6.24
29.667	0.00	0.93	2.388	I	O	|	|	|	|	6.24
29.750	0.00	0.93	2.382	I	O	|	|	|	|	6.23
29.833	0.00	0.93	2.375	I	O	|	|	|	|	6.22
29.917	0.00	0.93	2.369	I	O	|	|	|	|	6.22

30.000	0.00	0.92	2.363	I	O	|	|	|	6.21
30.083	0.00	0.92	2.356	I	O	|	|	|	6.20
30.167	0.00	0.92	2.350	I	O	|	|	|	6.20
30.250	0.00	0.92	2.344	I	O	|	|	|	6.19
30.333	0.00	0.91	2.337	I	O	|	|	|	6.18
30.417	0.00	0.91	2.331	I	O	|	|	|	6.18
30.500	0.00	0.91	2.325	I	O	|	|	|	6.17
30.583	0.00	0.91	2.318	I	O	|	|	|	6.17
30.667	0.00	0.91	2.312	I	O	|	|	|	6.16
30.750	0.00	0.90	2.306	I	O	|	|	|	6.15
30.833	0.00	0.90	2.300	I	O	|	|	|	6.15
30.917	0.00	0.90	2.293	I	O	|	|	|	6.14
31.000	0.00	0.90	2.287	I	O	|	|	|	6.14
31.083	0.00	0.90	2.281	I	O	|	|	|	6.13
31.167	0.00	0.89	2.275	I	O	|	|	|	6.12
31.250	0.00	0.89	2.269	I	O	|	|	|	6.12
31.333	0.00	0.89	2.263	I	O	|	|	|	6.11
31.417	0.00	0.89	2.257	I	O	|	|	|	6.10
31.500	0.00	0.88	2.250	I	O	|	|	|	6.10
31.583	0.00	0.88	2.244	I	O	|	|	|	6.09
31.667	0.00	0.88	2.238	I	O	|	|	|	6.09
31.750	0.00	0.88	2.232	I	O	|	|	|	6.08
31.833	0.00	0.88	2.226	I	O	|	|	|	6.07
31.917	0.00	0.87	2.220	I	O	|	|	|	6.07
32.000	0.00	0.87	2.214	I	O	|	|	|	6.06
32.083	0.00	0.87	2.208	I	O	|	|	|	6.06
32.167	0.00	0.87	2.202	I	O	|	|	|	6.05
32.250	0.00	0.87	2.196	I	O	|	|	|	6.04
32.333	0.00	0.86	2.190	I	O	|	|	|	6.04
32.417	0.00	0.86	2.184	I	O	|	|	|	6.03
32.500	0.00	0.86	2.178	I	O	|	|	|	6.03
32.583	0.00	0.86	2.172	I	O	|	|	|	6.02
32.667	0.00	0.86	2.167	I	O	|	|	|	6.02
32.750	0.00	0.85	2.161	I	O	|	|	|	6.01
32.833	0.00	0.85	2.155	I	O	|	|	|	6.00
32.917	0.00	0.85	2.149	I	O	|	|	|	6.00
33.000	0.00	0.84	2.143	I	O	|	|	|	5.99
33.083	0.00	0.84	2.137	I	O	|	|	|	5.99
33.167	0.00	0.84	2.132	I	O	|	|	|	5.98
33.250	0.00	0.83	2.126	I	O	|	|	|	5.97
33.333	0.00	0.83	2.120	I	O	|	|	|	5.97
33.417	0.00	0.82	2.114	I	O	|	|	|	5.96
33.500	0.00	0.82	2.109	I	O	|	|	|	5.95
33.583	0.00	0.82	2.103	I	O	|	|	|	5.95
33.667	0.00	0.81	2.098	I	O	|	|	|	5.94
33.750	0.00	0.81	2.092	I	O	|	|	|	5.94
33.833	0.00	0.81	2.086	I	O	|	|	|	5.93
33.917	0.00	0.80	2.081	I	O	|	|	|	5.92
34.000	0.00	0.80	2.075	I	O	|	|	|	5.92
34.083	0.00	0.79	2.070	I	O	|	|	|	5.91
34.167	0.00	0.79	2.064	I	O	|	|	|	5.91
34.250	0.00	0.79	2.059	I	O	|	|	|	5.90
34.333	0.00	0.78	2.054	I	O	|	|	|	5.89
34.417	0.00	0.78	2.048	I	O	|	|	|	5.89

34.500	0.00	0.77	2.043	I O	|	|	|	|	5.88
34.583	0.00	0.77	2.038	I O	|	|	|	|	5.88
34.667	0.00	0.77	2.032	I O	|	|	|	|	5.87
34.750	0.00	0.76	2.027	I O	|	|	|	|	5.87
34.833	0.00	0.76	2.022	I O	|	|	|	|	5.86
34.917	0.00	0.76	2.016	I O	|	|	|	|	5.85
35.000	0.00	0.75	2.011	I O	|	|	|	|	5.85
35.083	0.00	0.75	2.006	I O	|	|	|	|	5.84
35.167	0.00	0.75	2.001	I O	|	|	|	|	5.84
35.250	0.00	0.74	1.996	I O	|	|	|	|	5.83
35.333	0.00	0.74	1.991	I O	|	|	|	|	5.83
35.417	0.00	0.73	1.986	I O	|	|	|	|	5.82
35.500	0.00	0.73	1.981	I O	|	|	|	|	5.81
35.583	0.00	0.73	1.976	I O	|	|	|	|	5.81
35.667	0.00	0.72	1.971	I O	|	|	|	|	5.80
35.750	0.00	0.72	1.966	I O	|	|	|	|	5.80
35.833	0.00	0.72	1.961	I O	|	|	|	|	5.79
35.917	0.00	0.71	1.956	I O	|	|	|	|	5.79
36.000	0.00	0.71	1.951	I O	|	|	|	|	5.78
36.083	0.00	0.71	1.946	I O	|	|	|	|	5.78
36.167	0.00	0.70	1.941	I O	|	|	|	|	5.77
36.250	0.00	0.70	1.936	I O	|	|	|	|	5.77
36.333	0.00	0.70	1.931	I O	|	|	|	|	5.76
36.417	0.00	0.69	1.927	I O	|	|	|	|	5.76
36.500	0.00	0.69	1.922	I O	|	|	|	|	5.75
36.583	0.00	0.69	1.917	I O	|	|	|	|	5.75
36.667	0.00	0.68	1.912	I O	|	|	|	|	5.74
36.750	0.00	0.68	1.908	I O	|	|	|	|	5.74
36.833	0.00	0.68	1.903	I O	|	|	|	|	5.73
36.917	0.00	0.67	1.898	I O	|	|	|	|	5.73
37.000	0.00	0.67	1.894	I O	|	|	|	|	5.72
37.083	0.00	0.67	1.889	I O	|	|	|	|	5.72
37.167	0.00	0.66	1.885	I O	|	|	|	|	5.71
37.250	0.00	0.66	1.880	I O	|	|	|	|	5.71
37.333	0.00	0.66	1.875	I O	|	|	|	|	5.70
37.417	0.00	0.66	1.871	I O	|	|	|	|	5.70
37.500	0.00	0.65	1.866	I O	|	|	|	|	5.69
37.583	0.00	0.65	1.862	I O	|	|	|	|	5.69
37.667	0.00	0.65	1.857	I O	|	|	|	|	5.68
37.750	0.00	0.64	1.853	I O	|	|	|	|	5.68
37.833	0.00	0.64	1.849	I O	|	|	|	|	5.67
37.917	0.00	0.64	1.844	I O	|	|	|	|	5.67
38.000	0.00	0.63	1.840	I O	|	|	|	|	5.66
38.083	0.00	0.63	1.835	I O	|	|	|	|	5.66
38.167	0.00	0.63	1.831	I O	|	|	|	|	5.65
38.250	0.00	0.62	1.827	I O	|	|	|	|	5.65
38.333	0.00	0.62	1.823	I O	|	|	|	|	5.64
38.417	0.00	0.62	1.818	I O	|	|	|	|	5.64
38.500	0.00	0.62	1.814	I O	|	|	|	|	5.63
38.583	0.00	0.61	1.810	I O	|	|	|	|	5.63
38.667	0.00	0.61	1.806	I O	|	|	|	|	5.62
38.750	0.00	0.61	1.801	I O	|	|	|	|	5.62
38.833	0.00	0.60	1.797	I O	|	|	|	|	5.62
38.917	0.00	0.60	1.793	I O	|	|	|	|	5.61

39.000	0.00	0.60	1.789	I O	|	|	|	5.61
39.083	0.00	0.60	1.785	I O	|	|	|	5.60
39.167	0.00	0.59	1.781	I O	|	|	|	5.60
39.250	0.00	0.59	1.777	I O	|	|	|	5.59
39.333	0.00	0.59	1.773	I O	|	|	|	5.59
39.417	0.00	0.58	1.769	I O	|	|	|	5.58
39.500	0.00	0.58	1.765	I O	|	|	|	5.58
39.583	0.00	0.58	1.761	I O	|	|	|	5.58
39.667	0.00	0.58	1.757	I O	|	|	|	5.57
39.750	0.00	0.57	1.753	I O	|	|	|	5.57
39.833	0.00	0.57	1.749	I O	|	|	|	5.56
39.917	0.00	0.57	1.745	I O	|	|	|	5.56
40.000	0.00	0.56	1.741	I O	|	|	|	5.55
40.083	0.00	0.56	1.737	I O	|	|	|	5.55
40.167	0.00	0.56	1.733	I O	|	|	|	5.55
40.250	0.00	0.56	1.729	I O	|	|	|	5.54
40.333	0.00	0.55	1.726	I O	|	|	|	5.54
40.417	0.00	0.55	1.722	I O	|	|	|	5.53
40.500	0.00	0.55	1.718	I O	|	|	|	5.53
40.583	0.00	0.55	1.714	I O	|	|	|	5.53
40.667	0.00	0.54	1.710	I O	|	|	|	5.52
40.750	0.00	0.54	1.707	I O	|	|	|	5.52
40.833	0.00	0.54	1.703	I O	|	|	|	5.51
40.917	0.00	0.54	1.699	I O	|	|	|	5.51
41.000	0.00	0.53	1.696	I O	|	|	|	5.50
41.083	0.00	0.53	1.692	IO	|	|	|	5.50
41.167	0.00	0.53	1.688	IO	|	|	|	5.50
41.250	0.00	0.53	1.685	IO	|	|	|	5.49
41.333	0.00	0.53	1.681	IO	|	|	|	5.49
41.417	0.00	0.53	1.677	IO	|	|	|	5.48
41.500	0.00	0.53	1.674	IO	|	|	|	5.48
41.583	0.00	0.53	1.670	IO	|	|	|	5.48
41.667	0.00	0.53	1.666	IO	|	|	|	5.47
41.750	0.00	0.53	1.663	IO	|	|	|	5.47
41.833	0.00	0.53	1.659	IO	|	|	|	5.46
41.917	0.00	0.53	1.655	IO	|	|	|	5.46
42.000	0.00	0.53	1.652	IO	|	|	|	5.45
42.083	0.00	0.53	1.648	IO	|	|	|	5.45
42.167	0.00	0.53	1.645	IO	|	|	|	5.45
42.250	0.00	0.53	1.641	IO	|	|	|	5.44
42.333	0.00	0.53	1.637	IO	|	|	|	5.44
42.417	0.00	0.53	1.634	IO	|	|	|	5.43
42.500	0.00	0.53	1.630	IO	|	|	|	5.43
42.583	0.00	0.53	1.626	IO	|	|	|	5.43
42.667	0.00	0.53	1.623	IO	|	|	|	5.42
42.750	0.00	0.53	1.619	IO	|	|	|	5.42
42.833	0.00	0.52	1.616	IO	|	|	|	5.41
42.917	0.00	0.52	1.612	IO	|	|	|	5.41
43.000	0.00	0.52	1.608	IO	|	|	|	5.40
43.083	0.00	0.52	1.605	IO	|	|	|	5.40
43.167	0.00	0.52	1.601	IO	|	|	|	5.40
43.250	0.00	0.52	1.598	IO	|	|	|	5.39
43.333	0.00	0.52	1.594	IO	|	|	|	5.39
43.417	0.00	0.52	1.590	IO	|	|	|	5.38

43.500	0.00	0.52	1.587	IO				5.38
43.583	0.00	0.52	1.583	IO				5.38
43.667	0.00	0.52	1.580	IO				5.37
43.750	0.00	0.52	1.576	IO				5.37
43.833	0.00	0.52	1.572	IO				5.36
43.917	0.00	0.52	1.569	IO				5.36
44.000	0.00	0.52	1.565	IO				5.35
44.083	0.00	0.52	1.562	IO				5.35
44.167	0.00	0.52	1.558	IO				5.35
44.250	0.00	0.52	1.554	IO				5.34
44.333	0.00	0.52	1.551	IO				5.34
44.417	0.00	0.52	1.547	IO				5.33
44.500	0.00	0.52	1.544	IO				5.33
44.583	0.00	0.52	1.540	IO				5.33
44.667	0.00	0.52	1.537	IO				5.32
44.750	0.00	0.52	1.533	IO				5.32
44.833	0.00	0.52	1.529	IO				5.31
44.917	0.00	0.52	1.526	IO				5.31
45.000	0.00	0.52	1.522	IO				5.31
45.083	0.00	0.52	1.519	IO				5.30
45.167	0.00	0.52	1.515	IO				5.30
45.250	0.00	0.52	1.512	IO				5.29
45.333	0.00	0.52	1.508	IO				5.29
45.417	0.00	0.52	1.504	IO				5.28
45.500	0.00	0.52	1.501	IO				5.28
45.583	0.00	0.52	1.497	IO				5.28
45.667	0.00	0.52	1.494	IO				5.27
45.750	0.00	0.52	1.490	IO				5.27
45.833	0.00	0.52	1.487	IO				5.26
45.917	0.00	0.52	1.483	IO				5.26
46.000	0.00	0.52	1.480	IO				5.26
46.083	0.00	0.52	1.476	IO				5.25
46.167	0.00	0.51	1.472	IO				5.25
46.250	0.00	0.51	1.469	IO				5.24
46.333	0.00	0.51	1.465	IO				5.24
46.417	0.00	0.51	1.462	IO				5.24
46.500	0.00	0.51	1.458	IO				5.23
46.583	0.00	0.51	1.455	IO				5.23
46.667	0.00	0.51	1.451	IO				5.22
46.750	0.00	0.51	1.448	IO				5.22
46.833	0.00	0.51	1.444	IO				5.21
46.917	0.00	0.51	1.441	IO				5.21
47.000	0.00	0.51	1.437	IO				5.21
47.083	0.00	0.51	1.434	IO				5.20
47.167	0.00	0.51	1.430	IO				5.20
47.250	0.00	0.51	1.426	IO				5.19
47.333	0.00	0.51	1.423	IO				5.19
47.417	0.00	0.51	1.419	IO				5.19
47.500	0.00	0.51	1.416	IO				5.18
47.583	0.00	0.51	1.412	IO				5.18
47.667	0.00	0.51	1.409	IO				5.17
47.750	0.00	0.51	1.405	IO				5.17
47.833	0.00	0.51	1.402	IO				5.17
47.917	0.00	0.51	1.398	IO				5.16

48.000 0.00 0.51 1.395 IO | | | | 5.16

**********HYDROGRAPH DATA**********

Number of intervals = 1849
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 1.920 (CFS)
Total volume = 4.234 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/13/19

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25 YEAR FLOOD ROUTING
BASIN 2
MJPA 304163
4163FR25.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP252425.rte
**********HYDROGRAPH DATA**********
Number of intervals = 294
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 10.758 (CFS)
Total volume = 5.295 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 294
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.168	0.170	0.167	0.169
2.000	0.503	0.290	0.502	0.504
3.000	0.755	0.370	0.754	0.756
4.000	1.006	0.440	1.004	1.008
5.000	1.258	0.500	1.256	1.260
5.500	1.691	0.530	1.689	1.693
6.000	2.151	0.850	2.148	2.154
7.000	3.158	1.200	3.154	3.162
8.000	4.279	16.560	4.222	4.336
8.500	4.884	20.060	4.815	4.953

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 2.7 5.38 8.07 10.76	Depth (Ft.)
0.083	0.17	0.00	0.001	O | | | |	0.00
0.167	0.46	0.00	0.003	OI | | | |	0.02
0.250	0.54	0.01	0.006	OI | | | |	0.04
0.333	0.65	0.01	0.010	OI | | | |	0.06
0.417	0.82	0.02	0.015	O I | | | |	0.09
0.500	0.87	0.02	0.021	O I | | | |	0.12
0.583	0.89	0.03	0.027	O I | | | |	0.16
0.667	0.90	0.03	0.033	O I | | | |	0.19
0.750	0.91	0.04	0.039	O I | | | |	0.23
0.833	0.99	0.05	0.045	O I | | | |	0.27
0.917	1.14	0.05	0.052	O I | | | |	0.31
1.000	1.18	0.06	0.059	O I | | | |	0.35
1.083	1.11	0.07	0.067	O I | | | |	0.40
1.167	0.97	0.07	0.074	O I | | | |	0.44
1.250	0.94	0.08	0.080	O I | | | |	0.47
1.333	0.93	0.09	0.086	O I | | | |	0.51
1.417	0.92	0.09	0.091	O I | | | |	0.54
1.500	0.91	0.10	0.097	O I | | | |	0.58
1.583	0.91	0.10	0.102	O I | | | |	0.61
1.667	0.91	0.11	0.108	O I | | | |	0.64
1.750	0.91	0.11	0.114	O I | | | |	0.68
1.833	0.99	0.12	0.119	O I | | | |	0.71
1.917	1.14	0.13	0.126	O I | | | |	0.75
2.000	1.18	0.13	0.133	O I | | | |	0.79
2.083	1.19	0.14	0.140	O I | | | |	0.83
2.167	1.20	0.15	0.147	O I | | | |	0.88
2.250	1.21	0.16	0.155	O I | | | |	0.92
2.333	1.21	0.16	0.162	O I | | | |	0.96
2.417	1.21	0.17	0.169	O I | | | |	1.00
2.500	1.21	0.17	0.176	O I | | | |	1.02
2.583	1.29	0.18	0.184	O I | | | |	1.05
2.667	1.44	0.18	0.192	O I | | | |	1.07
2.750	1.48	0.18	0.201	O I | | | |	1.10
2.833	1.50	0.18	0.210	O I | | | |	1.12
2.917	1.51	0.19	0.219	O I | | | |	1.15

3.000	1.51	0.19	0.228	O	I	|	|	|	1.18
3.083	1.52	0.19	0.237	O	I	|	|	|	1.21
3.167	1.52	0.20	0.246	O	I	|	|	|	1.23
3.250	1.52	0.20	0.255	O	I	|	|	|	1.26
3.333	1.52	0.20	0.264	O	I	|	|	|	1.29
3.417	1.52	0.21	0.273	O	I	|	|	|	1.31
3.500	1.52	0.21	0.282	O	I	|	|	|	1.34
3.583	1.52	0.21	0.291	O	I	|	|	|	1.37
3.667	1.52	0.22	0.300	O	I	|	|	|	1.39
3.750	1.52	0.22	0.309	O	I	|	|	|	1.42
3.833	1.60	0.22	0.318	O	I	|	|	|	1.45
3.917	1.74	0.23	0.328	O	I	|	|	|	1.48
4.000	1.78	0.23	0.339	O	I	|	|	|	1.51
4.083	1.80	0.23	0.349	O	I	|	|	|	1.54
4.167	1.81	0.24	0.360	O	I	|	|	|	1.57
4.250	1.82	0.24	0.371	O	I	|	|	|	1.61
4.333	1.90	0.25	0.382	O	I	|	|	|	1.64
4.417	2.05	0.25	0.394	O	I	|	|	|	1.67
4.500	2.09	0.26	0.406	O	I	|	|	|	1.71
4.583	2.10	0.26	0.419	O	I	|	|	|	1.75
4.667	2.11	0.26	0.432	O	I	|	|	|	1.79
4.750	2.12	0.27	0.445	O	I	|	|	|	1.83
4.833	1.55	0.27	0.455	O	I	|	|	|	1.86
4.917	0.55	0.27	0.461	OI		|	|	|	1.87
5.000	0.29	0.28	0.462	O		|	|	|	1.88
5.083	0.66	0.28	0.463	OI		|	|	|	1.88
5.167	1.45	0.28	0.468	O	I	|	|	|	1.90
5.250	1.63	0.28	0.477	O	I	|	|	|	1.92
5.333	1.80	0.28	0.487	O	I	|	|	|	1.95
5.417	2.00	0.29	0.498	O	I	|	|	|	1.99
5.500	2.07	0.29	0.510	O	I	|	|	|	2.03
5.583	1.57	0.30	0.521	O	I	|	|	|	2.07
5.667	0.63	0.30	0.526	OI		|	|	|	2.09
5.750	0.39	0.30	0.528	OI		|	|	|	2.10
5.833	0.29	0.30	0.528	O		|	|	|	2.10
5.917	0.24	0.30	0.528	O		|	|	|	2.10
6.000	0.22	0.30	0.527	O		|	|	|	2.10
6.083	0.31	0.30	0.527	O		|	|	|	2.10
6.167	0.50	0.30	0.528	OI		|	|	|	2.10
6.250	0.56	0.30	0.529	OI		|	|	|	2.10
6.333	0.60	0.30	0.531	OI		|	|	|	2.11
6.417	0.62	0.30	0.533	OI		|	|	|	2.12
6.500	0.64	0.30	0.536	OI		|	|	|	2.13
6.583	0.75	0.30	0.538	O	I	|	|	|	2.14
6.667	0.95	0.30	0.542	O	I	|	|	|	2.16
6.750	1.00	0.30	0.547	O	I	|	|	|	2.17
6.833	1.04	0.31	0.552	O	I	|	|	|	2.19
6.917	1.06	0.31	0.557	O	I	|	|	|	2.21
7.000	1.08	0.31	0.562	O	I	|	|	|	2.23
7.083	1.09	0.31	0.568	O	I	|	|	|	2.26
7.167	1.11	0.31	0.573	O	I	|	|	|	2.28
7.250	1.12	0.31	0.578	O	I	|	|	|	2.30
7.333	1.23	0.32	0.584	O	I	|	|	|	2.32
7.417	1.42	0.32	0.591	O	I	|	|	|	2.35

7.500	1.48	0.32	0.599	O	I	|	|	|	2.38
7.583	1.61	0.32	0.608	O	I	|	|	|	2.41
7.667	1.82	0.33	0.617	O	I	|	|	|	2.45
7.750	1.88	0.33	0.628	O	I	|	|	|	2.49
7.833	2.02	0.33	0.639	O	I	|	|	|	2.54
7.917	2.22	0.34	0.651	O	I	|	|	|	2.59
8.000	2.29	0.34	0.664	O	I	|	|	|	2.64
8.083	2.52	0.35	0.678	O	I	|	|	|	2.70
8.167	2.90	0.35	0.695	O	I	|	|	|	2.76
8.250	3.02	0.36	0.713	O	I	|	|	|	2.83
8.333	3.07	0.36	0.731	O	I	|	|	|	2.91
8.417	3.11	0.37	0.750	O	I	|	|	|	2.98
8.500	3.13	0.37	0.769	O	I	|	|	|	3.06
8.583	3.25	0.38	0.788	O	I	|	|	|	3.13
8.667	3.44	0.38	0.809	O	I	|	|	|	3.21
8.750	3.50	0.39	0.830	O	I	|	|	|	3.30
8.833	3.63	0.40	0.852	O	I	|	|	|	3.39
8.917	3.83	0.40	0.875	O	I	|	|	|	3.48
9.000	3.90	0.41	0.899	O	I	|	|	|	3.57
9.083	4.14	0.42	0.923	O	I	|	|	|	3.67
9.167	4.52	0.42	0.950	O	I	|	|	|	3.78
9.250	4.63	0.43	0.979	O	I	|	|	|	3.89
9.333	4.79	0.44	1.008	O	I	|	|	|	4.01
9.417	5.00	0.45	1.039	O	I	|	|	|	4.13
9.500	5.07	0.46	1.070	O	I	|	|	|	4.26
9.583	5.21	0.46	1.103	O	I	|	|	|	4.38
9.667	5.41	0.47	1.136	O	I	|	|	|	4.52
9.750	5.48	0.48	1.170	O	I	|	|	|	4.65
9.833	5.61	0.49	1.205	O	I	|	|	|	4.79
9.917	5.81	0.50	1.241	O	I	|	|	|	4.93
10.000	5.88	0.50	1.278	O	I	|	|	|	5.02
10.083	5.21	0.50	1.313	O	I	|	|	|	5.06
10.167	3.98	0.51	1.341	O	I	|	|	|	5.10
10.250	3.67	0.51	1.364	O	I	|	|	|	5.12
10.333	3.53	0.51	1.385	O	I	|	|	|	5.15
10.417	3.46	0.51	1.405	O	I	|	|	|	5.17
10.500	3.43	0.51	1.426	O	I	|	|	|	5.19
10.583	3.91	0.51	1.447	O	I	|	|	|	5.22
10.667	4.82	0.51	1.474	O	I	|	|	|	5.25
10.750	5.07	0.52	1.504	O	I	|	|	|	5.28
10.833	5.18	0.52	1.536	O	I	|	|	|	5.32
10.917	5.25	0.52	1.568	O	I	|	|	|	5.36
11.000	5.29	0.52	1.601	O	I	|	|	|	5.40
11.083	5.22	0.53	1.634	O	I	|	|	|	5.43
11.167	5.05	0.53	1.665	O	I	|	|	|	5.47
11.250	5.01	0.53	1.696	O	I	|	|	|	5.51
11.333	5.00	0.56	1.727	O	I	|	|	|	5.54
11.417	5.00	0.58	1.758	O	I	|	|	|	5.57
11.500	5.01	0.60	1.788	O	I	|	|	|	5.61
11.583	4.81	0.62	1.818	O	I	|	|	|	5.64
11.667	4.46	0.64	1.845	O	I	|	|	|	5.67
11.750	4.38	0.66	1.871	O	I	|	|	|	5.70
11.833	4.45	0.67	1.897	O	I	|	|	|	5.72
11.917	4.61	0.69	1.924	O	I	|	|	|	5.75

12.000	4.66	0.71	1.951	O		I		5.78
12.083	5.38	0.73	1.980	O		I		5.81
12.167	6.66	0.76	2.017	O		I		5.85
12.250	7.00	0.79	2.059	O		I		5.90
12.333	7.27	0.82	2.102	O		I		5.95
12.417	7.54	0.85	2.147	O		I		6.00
12.500	7.64	0.86	2.194	O		I		6.04
12.583	7.90	0.88	2.241	O		I		6.09
12.667	8.28	0.90	2.291	O		I		6.14
12.750	8.39	0.92	2.342	O		I		6.19
12.833	8.54	0.93	2.394	O		I		6.24
12.917	8.75	0.95	2.447	O		I		6.29
13.000	8.82	0.97	2.501	O		I		6.35
13.083	9.36	0.99	2.557	O		I		6.40
13.167	10.28	1.01	2.617	O		I		6.46
13.250	10.53	1.03	2.682	O		I		6.53
13.333	10.65	1.06	2.748	O		I		6.59
13.417	10.72	1.08	2.814	O		I		6.66
13.500	10.76	1.10	2.880	O		I		6.72
13.583	9.68	1.13	2.943	O		I		6.79
13.667	7.72	1.14	2.995	O		I		6.84
13.750	7.21	1.16	3.039	O		I		6.88
13.833	6.99	1.17	3.080	O		I		6.92
13.917	6.87	1.19	3.119	O		I		6.96
14.000	6.81	1.20	3.158	O		I		7.00
14.083	7.18	1.72	3.196	O		I		7.03
14.167	7.90	2.25	3.234	O		I		7.07
14.250	8.10	2.76	3.272	O		I		7.10
14.333	8.09	3.24	3.307	O		I		7.13
14.417	7.97	3.68	3.339	O		I		7.16
14.500	7.95	4.06	3.367	O		I		7.19
14.583	7.96	4.41	3.392	O		I		7.21
14.667	7.95	4.73	3.416	O		I		7.23
14.750	7.96	5.02	3.437	O		I		7.25
14.833	7.86	5.28	3.456	O		I		7.27
14.917	7.69	5.51	3.472	O		I		7.28
15.000	7.65	5.70	3.487	O		I		7.29
15.083	7.54	5.87	3.499	O		I		7.30
15.167	7.35	6.01	3.509	O		I		7.31
15.250	7.31	6.13	3.518	O		I		7.32
15.333	7.19	6.23	3.525	O		I		7.33
15.417	7.01	6.31	3.531	O		I		7.33
15.500	6.96	6.37	3.536	O		I		7.34
15.583	6.55	6.41	3.538	O		I		7.34
15.667	5.83	6.39	3.537	O		I		7.34
15.750	5.64	6.33	3.532	O		I		7.33
15.833	5.56	6.26	3.527	O		I		7.33
15.917	5.52	6.20	3.523	O		I		7.33
16.000	5.50	6.14	3.518	O		I		7.32
16.083	4.33	6.03	3.510	O		I		7.31
16.167	2.25	5.78	3.492	O		I		7.30
16.250	1.71	5.44	3.467	O		I		7.28
16.333	1.47	5.09	3.442	O		I		7.25
16.417	1.33	4.76	3.418	O		I		7.23

16.500	1.26	4.45	3.395	| I | O |				7.21
16.583	1.13	4.15	3.373	| I | O |				7.19
16.667	0.98	3.87	3.353	| I | O |				7.17
16.750	0.94	3.61	3.334	| I | O |				7.16
16.833	0.93	3.37	3.316	| I | O |				7.14
16.917	0.92	3.15	3.300	| I | O |				7.13
17.000	0.91	2.95	3.286	| I | O |				7.11
17.083	0.78	2.76	3.272	| I | O |				7.10
17.167	0.54	2.57	3.258	|I | O|				7.09
17.250	0.48	2.38	3.244	|I | O|				7.08
17.333	0.46	2.21	3.232	|I | O |				7.07
17.417	0.45	2.05	3.220	|I | O |				7.06
17.500	0.45	1.91	3.210	|I | O |				7.05
17.583	0.45	1.78	3.200	|I | O |				7.04
17.667	0.46	1.66	3.192	|I | O |				7.03
17.750	0.47	1.55	3.184	|I | O |				7.02
17.833	0.37	1.45	3.176	|I | O |				7.02
17.917	0.20	1.34	3.169	| I | O |				7.01
18.000	0.16	1.24	3.161	| I | O |				7.00
18.083	0.15	1.20	3.154	| I | O |				7.00
18.167	0.14	1.20	3.146	| I | O |				6.99
18.250	0.14	1.19	3.139	| I | O |				6.98
18.333	0.15	1.19	3.132	| I | O |				6.97
18.417	0.15	1.19	3.125	| I | O |				6.97
18.500	0.16	1.19	3.118	| I | O |				6.96
18.583	0.37	1.18	3.111	|I O |				6.95
18.667	0.73	1.18	3.107	| IO |				6.95
18.750	0.82	1.18	3.104	| IO |				6.95
18.833	0.78	1.18	3.101	| IO |				6.94
18.917	0.66	1.18	3.098	|I O |				6.94
19.000	0.63	1.18	3.095	|I O |				6.94
19.083	0.71	1.18	3.091	| IO |				6.93
19.167	0.84	1.18	3.088	| IO |				6.93
19.250	0.88	1.18	3.086	| IO |				6.93
19.333	0.71	1.17	3.084	| IO |				6.93
19.417	0.39	1.17	3.079	|I O |				6.92
19.500	0.31	1.17	3.074	| I | O |				6.92
19.583	0.46	1.17	3.068	|I O |				6.91
19.667	0.76	1.17	3.064	| IO |				6.91
19.750	0.84	1.17	3.062	| IO |				6.90
19.833	0.79	1.17	3.059	| IO |				6.90
19.917	0.66	1.16	3.056	|I O |				6.90
20.000	0.63	1.16	3.053	|I O |				6.90
20.083	0.71	1.16	3.049	| IO |				6.89
20.167	0.84	1.16	3.047	| IO |				6.89
20.250	0.88	1.16	3.045	| IO |				6.89
20.333	0.89	1.16	3.043	| IO |				6.89
20.417	0.90	1.16	3.041	| IO |				6.88
20.500	0.91	1.16	3.039	| IO |				6.88
20.583	0.91	1.16	3.037	| IO |				6.88
20.667	0.91	1.16	3.036	| IO |				6.88
20.750	0.91	1.16	3.034	| IO |				6.88
20.833	0.83	1.16	3.032	| IO |				6.87
20.917	0.68	1.16	3.029	| IO |				6.87

21.000	0.64	1.15	3.026	I O				6.87
21.083	0.71	1.15	3.023	IO				6.87
21.167	0.84	1.15	3.020	IO				6.86
21.250	0.88	1.15	3.018	IO				6.86
21.333	0.81	1.15	3.016	IO				6.86
21.417	0.67	1.15	3.013	I O				6.86
21.500	0.64	1.15	3.010	I O				6.85
21.583	0.71	1.15	3.006	IO				6.85
21.667	0.84	1.15	3.004	IO				6.85
21.750	0.63	1.15	3.001	I O				6.84
21.833	0.37	1.14	2.997	I O				6.84
21.917	0.56	1.14	2.992	I O				6.83
22.000	0.59	1.14	2.988	I O				6.83
22.083	0.43	1.14	2.984	I O				6.83
22.167	0.15	1.14	2.978	I O				6.82
22.250	0.08	1.13	2.971	I O				6.81
22.333	0.21	1.13	2.964	I O				6.81
22.417	0.48	1.13	2.959	I O				6.80
22.500	0.54	1.13	2.954	I O				6.80
22.583	0.57	1.13	2.950	I O				6.79
22.667	0.59	1.13	2.947	I O				6.79
22.750	0.60	1.13	2.943	I O				6.79
22.833	0.61	1.12	2.939	I O				6.78
22.917	0.61	1.12	2.936	I O				6.78
23.000	0.61	1.12	2.932	I O				6.78
23.083	0.61	1.12	2.929	I O				6.77
23.167	0.61	1.12	2.925	I O				6.77
23.250	0.61	1.12	2.922	I O				6.77
23.333	0.61	1.12	2.918	I O				6.76
23.417	0.61	1.12	2.915	I O				6.76
23.500	0.61	1.11	2.911	I O				6.75
23.583	0.61	1.11	2.908	I O				6.75
23.667	0.61	1.11	2.904	I O				6.75
23.750	0.61	1.11	2.901	I O				6.74
23.833	0.61	1.11	2.897	I O				6.74
23.917	0.61	1.11	2.894	I O				6.74
24.000	0.61	1.11	2.890	I O				6.73
24.083	0.44	1.11	2.886	I O				6.73
24.167	0.15	1.10	2.881	I O				6.72
24.250	0.07	1.10	2.874	I O				6.72
24.333	0.04	1.10	2.867	I O				6.71
24.417	0.02	1.10	2.859	I O				6.70
24.500	0.01	1.09	2.852	I O				6.70
24.583	0.00	1.09	2.844	I O				6.69
24.667	0.00	1.09	2.837	I O				6.68
24.750	0.00	1.09	2.829	I O				6.67
24.833	0.00	1.08	2.822	I O				6.67
24.917	0.00	1.08	2.814	I O				6.66
25.000	0.00	1.08	2.807	I O				6.65
25.083	0.00	1.08	2.800	I O				6.64
25.167	0.00	1.07	2.792	I O				6.64
25.250	0.00	1.07	2.785	I O				6.63
25.333	0.00	1.07	2.777	I O				6.62
25.417	0.00	1.07	2.770	I O				6.61

25.500	0.00	1.06	2.763	I	O	|	|	|	6.61
25.583	0.00	1.06	2.755	I	O	|	|	|	6.60
25.667	0.00	1.06	2.748	I	O	|	|	|	6.59
25.750	0.00	1.06	2.741	I	O	|	|	|	6.59
25.833	0.00	1.05	2.734	I	O	|	|	|	6.58
25.917	0.00	1.05	2.726	I	O	|	|	|	6.57
26.000	0.00	1.05	2.719	I	O	|	|	|	6.56
26.083	0.00	1.04	2.712	I	O	|	|	|	6.56
26.167	0.00	1.04	2.705	I	O	|	|	|	6.55
26.250	0.00	1.04	2.698	I	O	|	|	|	6.54
26.333	0.00	1.04	2.690	I	O	|	|	|	6.54
26.417	0.00	1.03	2.683	I	O	|	|	|	6.53
26.500	0.00	1.03	2.676	I	O	|	|	|	6.52
26.583	0.00	1.03	2.669	I	O	|	|	|	6.51
26.667	0.00	1.03	2.662	I	O	|	|	|	6.51
26.750	0.00	1.03	2.655	I	O	|	|	|	6.50
26.833	0.00	1.02	2.648	I	O	|	|	|	6.49
26.917	0.00	1.02	2.641	I	O	|	|	|	6.49
27.000	0.00	1.02	2.634	I	O	|	|	|	6.48
27.083	0.00	1.02	2.627	I	O	|	|	|	6.47
27.167	0.00	1.01	2.620	I	O	|	|	|	6.47
27.250	0.00	1.01	2.613	I	O	|	|	|	6.46
27.333	0.00	1.01	2.606	I	O	|	|	|	6.45
27.417	0.00	1.01	2.599	I	O	|	|	|	6.44
27.500	0.00	1.00	2.592	I	O	|	|	|	6.44
27.583	0.00	1.00	2.585	I	O	|	|	|	6.43
27.667	0.00	1.00	2.578	I	O	|	|	|	6.42
27.750	0.00	1.00	2.571	I	O	|	|	|	6.42
27.833	0.00	0.99	2.565	I	O	|	|	|	6.41
27.917	0.00	0.99	2.558	I	O	|	|	|	6.40
28.000	0.00	0.99	2.551	I	O	|	|	|	6.40
28.083	0.00	0.99	2.544	I	O	|	|	|	6.39
28.167	0.00	0.98	2.537	I	O	|	|	|	6.38
28.250	0.00	0.98	2.530	I	O	|	|	|	6.38
28.333	0.00	0.98	2.524	I	O	|	|	|	6.37
28.417	0.00	0.98	2.517	I	O	|	|	|	6.36
28.500	0.00	0.97	2.510	I	O	|	|	|	6.36
28.583	0.00	0.97	2.504	I	O	|	|	|	6.35
28.667	0.00	0.97	2.497	I	O	|	|	|	6.34
28.750	0.00	0.97	2.490	I	O	|	|	|	6.34
28.833	0.00	0.97	2.484	I	O	|	|	|	6.33
28.917	0.00	0.96	2.477	I	O	|	|	|	6.32
29.000	0.00	0.96	2.470	I	O	|	|	|	6.32
29.083	0.00	0.96	2.464	I	O	|	|	|	6.31
29.167	0.00	0.96	2.457	I	O	|	|	|	6.30
29.250	0.00	0.95	2.450	I	O	|	|	|	6.30
29.333	0.00	0.95	2.444	I	O	|	|	|	6.29
29.417	0.00	0.95	2.437	I	O	|	|	|	6.28
29.500	0.00	0.95	2.431	I	O	|	|	|	6.28
29.583	0.00	0.95	2.424	I	O	|	|	|	6.27
29.667	0.00	0.94	2.418	I	O	|	|	|	6.26
29.750	0.00	0.94	2.411	I	O	|	|	|	6.26
29.833	0.00	0.94	2.405	I	O	|	|	|	6.25
29.917	0.00	0.94	2.398	I	O	|	|	|	6.25

30.000	0.00	0.93	2.392	I O	|	|	|	|	6.24
30.083	0.00	0.93	2.386	I O	|	|	|	|	6.23
30.167	0.00	0.93	2.379	I O	|	|	|	|	6.23
30.250	0.00	0.93	2.373	I O	|	|	|	|	6.22
30.333	0.00	0.92	2.366	I O	|	|	|	|	6.21
30.417	0.00	0.92	2.360	I O	|	|	|	|	6.21
30.500	0.00	0.92	2.354	I O	|	|	|	|	6.20
30.583	0.00	0.92	2.347	I O	|	|	|	|	6.19
30.667	0.00	0.92	2.341	I O	|	|	|	|	6.19
30.750	0.00	0.91	2.335	I O	|	|	|	|	6.18
30.833	0.00	0.91	2.328	I O	|	|	|	|	6.18
30.917	0.00	0.91	2.322	I O	|	|	|	|	6.17
31.000	0.00	0.91	2.316	I O	|	|	|	|	6.16
31.083	0.00	0.91	2.310	I O	|	|	|	|	6.16
31.167	0.00	0.90	2.303	I O	|	|	|	|	6.15
31.250	0.00	0.90	2.297	I O	|	|	|	|	6.15
31.333	0.00	0.90	2.291	I O	|	|	|	|	6.14
31.417	0.00	0.90	2.285	I O	|	|	|	|	6.13
31.500	0.00	0.89	2.279	I O	|	|	|	|	6.13
31.583	0.00	0.89	2.273	I O	|	|	|	|	6.12
31.667	0.00	0.89	2.266	I O	|	|	|	|	6.11
31.750	0.00	0.89	2.260	I O	|	|	|	|	6.11
31.833	0.00	0.89	2.254	I O	|	|	|	|	6.10
31.917	0.00	0.88	2.248	I O	|	|	|	|	6.10
32.000	0.00	0.88	2.242	I O	|	|	|	|	6.09
32.083	0.00	0.88	2.236	I O	|	|	|	|	6.08
32.167	0.00	0.88	2.230	I O	|	|	|	|	6.08
32.250	0.00	0.88	2.224	I O	|	|	|	|	6.07
32.333	0.00	0.87	2.218	I O	|	|	|	|	6.07
32.417	0.00	0.87	2.212	I O	|	|	|	|	6.06
32.500	0.00	0.87	2.206	I O	|	|	|	|	6.05
32.583	0.00	0.87	2.200	I O	|	|	|	|	6.05
32.667	0.00	0.86	2.194	I O	|	|	|	|	6.04
32.750	0.00	0.86	2.188	I O	|	|	|	|	6.04
32.833	0.00	0.86	2.182	I O	|	|	|	|	6.03
32.917	0.00	0.86	2.176	I O	|	|	|	|	6.02
33.000	0.00	0.86	2.170	I O	|	|	|	|	6.02
33.083	0.00	0.85	2.164	I O	|	|	|	|	6.01
33.167	0.00	0.85	2.158	I O	|	|	|	|	6.01
33.250	0.00	0.85	2.153	I O	|	|	|	|	6.00
33.333	0.00	0.85	2.147	I O	|	|	|	|	6.00
33.417	0.00	0.84	2.141	I O	|	|	|	|	5.99
33.500	0.00	0.84	2.135	I O	|	|	|	|	5.98
33.583	0.00	0.83	2.129	I O	|	|	|	|	5.98
33.667	0.00	0.83	2.124	I O	|	|	|	|	5.97
33.750	0.00	0.83	2.118	I O	|	|	|	|	5.96
33.833	0.00	0.82	2.112	I O	|	|	|	|	5.96
33.917	0.00	0.82	2.107	I O	|	|	|	|	5.95
34.000	0.00	0.82	2.101	I O	|	|	|	|	5.95
34.083	0.00	0.81	2.095	I O	|	|	|	|	5.94
34.167	0.00	0.81	2.090	I O	|	|	|	|	5.93
34.250	0.00	0.80	2.084	I O	|	|	|	|	5.93
34.333	0.00	0.80	2.079	I O	|	|	|	|	5.92
34.417	0.00	0.80	2.073	I O	|	|	|	|	5.92

34.500	0.00	0.79	2.068	I O	|	|	|	5.91
34.583	0.00	0.79	2.062	I O	|	|	|	5.90
34.667	0.00	0.78	2.057	I O	|	|	|	5.90
34.750	0.00	0.78	2.051	I O	|	|	|	5.89
34.833	0.00	0.78	2.046	I O	|	|	|	5.89
34.917	0.00	0.77	2.041	I O	|	|	|	5.88
35.000	0.00	0.77	2.035	I O	|	|	|	5.87
35.083	0.00	0.77	2.030	I O	|	|	|	5.87
35.167	0.00	0.76	2.025	I O	|	|	|	5.86
35.250	0.00	0.76	2.020	I O	|	|	|	5.86
35.333	0.00	0.75	2.014	I O	|	|	|	5.85
35.417	0.00	0.75	2.009	I O	|	|	|	5.85
35.500	0.00	0.75	2.004	I O	|	|	|	5.84
35.583	0.00	0.74	1.999	I O	|	|	|	5.83
35.667	0.00	0.74	1.994	I O	|	|	|	5.83
35.750	0.00	0.74	1.989	I O	|	|	|	5.82
35.833	0.00	0.73	1.984	I O	|	|	|	5.82
35.917	0.00	0.73	1.979	I O	|	|	|	5.81
36.000	0.00	0.73	1.974	I O	|	|	|	5.81
36.083	0.00	0.72	1.969	I O	|	|	|	5.80
36.167	0.00	0.72	1.964	I O	|	|	|	5.80
36.250	0.00	0.72	1.959	I O	|	|	|	5.79
36.333	0.00	0.71	1.954	I O	|	|	|	5.79
36.417	0.00	0.71	1.949	I O	|	|	|	5.78
36.500	0.00	0.71	1.944	I O	|	|	|	5.78
36.583	0.00	0.70	1.939	I O	|	|	|	5.77
36.667	0.00	0.70	1.934	I O	|	|	|	5.76
36.750	0.00	0.70	1.930	I O	|	|	|	5.76
36.833	0.00	0.69	1.925	I O	|	|	|	5.75
36.917	0.00	0.69	1.920	I O	|	|	|	5.75
37.000	0.00	0.69	1.915	I O	|	|	|	5.74
37.083	0.00	0.68	1.911	I O	|	|	|	5.74
37.167	0.00	0.68	1.906	I O	|	|	|	5.73
37.250	0.00	0.68	1.901	I O	|	|	|	5.73
37.333	0.00	0.67	1.897	I O	|	|	|	5.72
37.417	0.00	0.67	1.892	IO	|	|	|	5.72
37.500	0.00	0.67	1.887	IO	|	|	|	5.71
37.583	0.00	0.66	1.883	IO	|	|	|	5.71
37.667	0.00	0.66	1.878	IO	|	|	|	5.70
37.750	0.00	0.66	1.874	IO	|	|	|	5.70
37.833	0.00	0.65	1.869	IO	|	|	|	5.69
37.917	0.00	0.65	1.865	IO	|	|	|	5.69
38.000	0.00	0.65	1.860	IO	|	|	|	5.68
38.083	0.00	0.64	1.856	IO	|	|	|	5.68
38.167	0.00	0.64	1.851	IO	|	|	|	5.67
38.250	0.00	0.64	1.847	IO	|	|	|	5.67
38.333	0.00	0.64	1.843	IO	|	|	|	5.66
38.417	0.00	0.63	1.838	IO	|	|	|	5.66
38.500	0.00	0.63	1.834	IO	|	|	|	5.66
38.583	0.00	0.63	1.829	IO	|	|	|	5.65
38.667	0.00	0.62	1.825	IO	|	|	|	5.65
38.750	0.00	0.62	1.821	IO	|	|	|	5.64
38.833	0.00	0.62	1.817	IO	|	|	|	5.64
38.917	0.00	0.61	1.812	IO	|	|	|	5.63

39.000	0.00	0.61	1.808	IO				5.63
39.083	0.00	0.61	1.804	IO				5.62
39.167	0.00	0.61	1.800	IO				5.62
39.250	0.00	0.60	1.796	IO				5.61
39.333	0.00	0.60	1.791	IO				5.61
39.417	0.00	0.60	1.787	IO				5.60
39.500	0.00	0.59	1.783	IO				5.60
39.583	0.00	0.59	1.779	IO				5.60
39.667	0.00	0.59	1.775	IO				5.59
39.750	0.00	0.59	1.771	IO				5.59
39.833	0.00	0.58	1.767	IO				5.58
39.917	0.00	0.58	1.763	IO				5.58
40.000	0.00	0.58	1.759	IO				5.57
40.083	0.00	0.57	1.755	IO				5.57
40.167	0.00	0.57	1.751	IO				5.57
40.250	0.00	0.57	1.747	IO				5.56
40.333	0.00	0.57	1.743	IO				5.56
40.417	0.00	0.56	1.739	IO				5.55
40.500	0.00	0.56	1.736	IO				5.55
40.583	0.00	0.56	1.732	IO				5.54
40.667	0.00	0.56	1.728	IO				5.54
40.750	0.00	0.55	1.724	IO				5.54
40.833	0.00	0.55	1.720	IO				5.53
40.917	0.00	0.55	1.716	IO				5.53
41.000	0.00	0.55	1.713	IO				5.52
41.083	0.00	0.54	1.709	IO				5.52
41.167	0.00	0.54	1.705	IO				5.52
41.250	0.00	0.54	1.701	IO				5.51
41.333	0.00	0.53	1.698	IO				5.51
41.417	0.00	0.53	1.694	IO				5.50
41.500	0.00	0.53	1.690	IO				5.50
41.583	0.00	0.53	1.687	IO				5.50
41.667	0.00	0.53	1.683	IO				5.49
41.750	0.00	0.53	1.680	IO				5.49
41.833	0.00	0.53	1.676	IO				5.48
41.917	0.00	0.53	1.672	IO				5.48
42.000	0.00	0.53	1.669	IO				5.47
42.083	0.00	0.53	1.665	IO				5.47
42.167	0.00	0.53	1.661	IO				5.47
42.250	0.00	0.53	1.658	IO				5.46
42.333	0.00	0.53	1.654	IO				5.46
42.417	0.00	0.53	1.650	IO				5.45
42.500	0.00	0.53	1.647	IO				5.45
42.583	0.00	0.53	1.643	IO				5.44
42.667	0.00	0.53	1.640	IO				5.44
42.750	0.00	0.53	1.636	IO				5.44
42.833	0.00	0.53	1.632	IO				5.43
42.917	0.00	0.53	1.629	IO				5.43
43.000	0.00	0.53	1.625	IO				5.42
43.083	0.00	0.53	1.621	IO				5.42
43.167	0.00	0.52	1.618	IO				5.42
43.250	0.00	0.52	1.614	IO				5.41
43.333	0.00	0.52	1.611	IO				5.41
43.417	0.00	0.52	1.607	IO				5.40

43.500	0.00	0.52	1.603	IO				5.40
43.583	0.00	0.52	1.600	IO				5.39
43.667	0.00	0.52	1.596	IO				5.39
43.750	0.00	0.52	1.593	IO				5.39
43.833	0.00	0.52	1.589	IO				5.38
43.917	0.00	0.52	1.585	IO				5.38
44.000	0.00	0.52	1.582	IO				5.37
44.083	0.00	0.52	1.578	IO				5.37
44.167	0.00	0.52	1.575	IO				5.37
44.250	0.00	0.52	1.571	IO				5.36
44.333	0.00	0.52	1.567	IO				5.36
44.417	0.00	0.52	1.564	IO				5.35
44.500	0.00	0.52	1.560	IO				5.35
44.583	0.00	0.52	1.557	IO				5.34
44.667	0.00	0.52	1.553	IO				5.34
44.750	0.00	0.52	1.549	IO				5.34
44.833	0.00	0.52	1.546	IO				5.33
44.917	0.00	0.52	1.542	IO				5.33
45.000	0.00	0.52	1.539	IO				5.32
45.083	0.00	0.52	1.535	IO				5.32
45.167	0.00	0.52	1.532	IO				5.32
45.250	0.00	0.52	1.528	IO				5.31
45.333	0.00	0.52	1.524	IO				5.31
45.417	0.00	0.52	1.521	IO				5.30
45.500	0.00	0.52	1.517	IO				5.30
45.583	0.00	0.52	1.514	IO				5.30
45.667	0.00	0.52	1.510	IO				5.29
45.750	0.00	0.52	1.507	IO				5.29
45.833	0.00	0.52	1.503	IO				5.28
45.917	0.00	0.52	1.499	IO				5.28
46.000	0.00	0.52	1.496	IO				5.27
46.083	0.00	0.52	1.492	IO				5.27
46.167	0.00	0.52	1.489	IO				5.27
46.250	0.00	0.52	1.485	IO				5.26
46.333	0.00	0.52	1.482	IO				5.26
46.417	0.00	0.52	1.478	IO				5.25
46.500	0.00	0.52	1.475	IO				5.25
46.583	0.00	0.51	1.471	IO				5.25
46.667	0.00	0.51	1.467	IO				5.24
46.750	0.00	0.51	1.464	IO				5.24
46.833	0.00	0.51	1.460	IO				5.23
46.917	0.00	0.51	1.457	IO				5.23
47.000	0.00	0.51	1.453	IO				5.23
47.083	0.00	0.51	1.450	IO				5.22
47.167	0.00	0.51	1.446	IO				5.22
47.250	0.00	0.51	1.443	IO				5.21
47.333	0.00	0.51	1.439	IO				5.21
47.417	0.00	0.51	1.436	IO				5.21
47.500	0.00	0.51	1.432	IO				5.20
47.583	0.00	0.51	1.429	IO				5.20
47.667	0.00	0.51	1.425	IO				5.19
47.750	0.00	0.51	1.422	IO				5.19
47.833	0.00	0.51	1.418	IO				5.18
47.917	0.00	0.51	1.415	IO				5.18

48.000 0.00 0.51 1.411 IO | | | | 5.18

**********HYDROGRAPH DATA**********

Number of intervals = 1854
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 6.407 (CFS)
Total volume = 5.294 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/13/19

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100 YEAR FLOOD ROUTING
BASIN 2
MJPA 304163
4163FR100.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP10024100.rte

**********HYDROGRAPH DATA**********

Number of intervals = 294
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 15.006 (CFS)
Total volume = 7.754 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 294
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.168	0.170	0.167	0.169
2.000	0.503	0.290	0.502	0.504
3.000	0.755	0.370	0.754	0.756
4.000	1.006	0.440	1.004	1.008
5.000	1.258	0.500	1.256	1.260
5.500	1.691	0.530	1.689	1.693
6.000	2.151	0.850	2.148	2.154
7.000	3.158	1.200	3.154	3.162
8.000	4.279	16.560	4.222	4.336
8.500	4.884	20.060	4.815	4.953

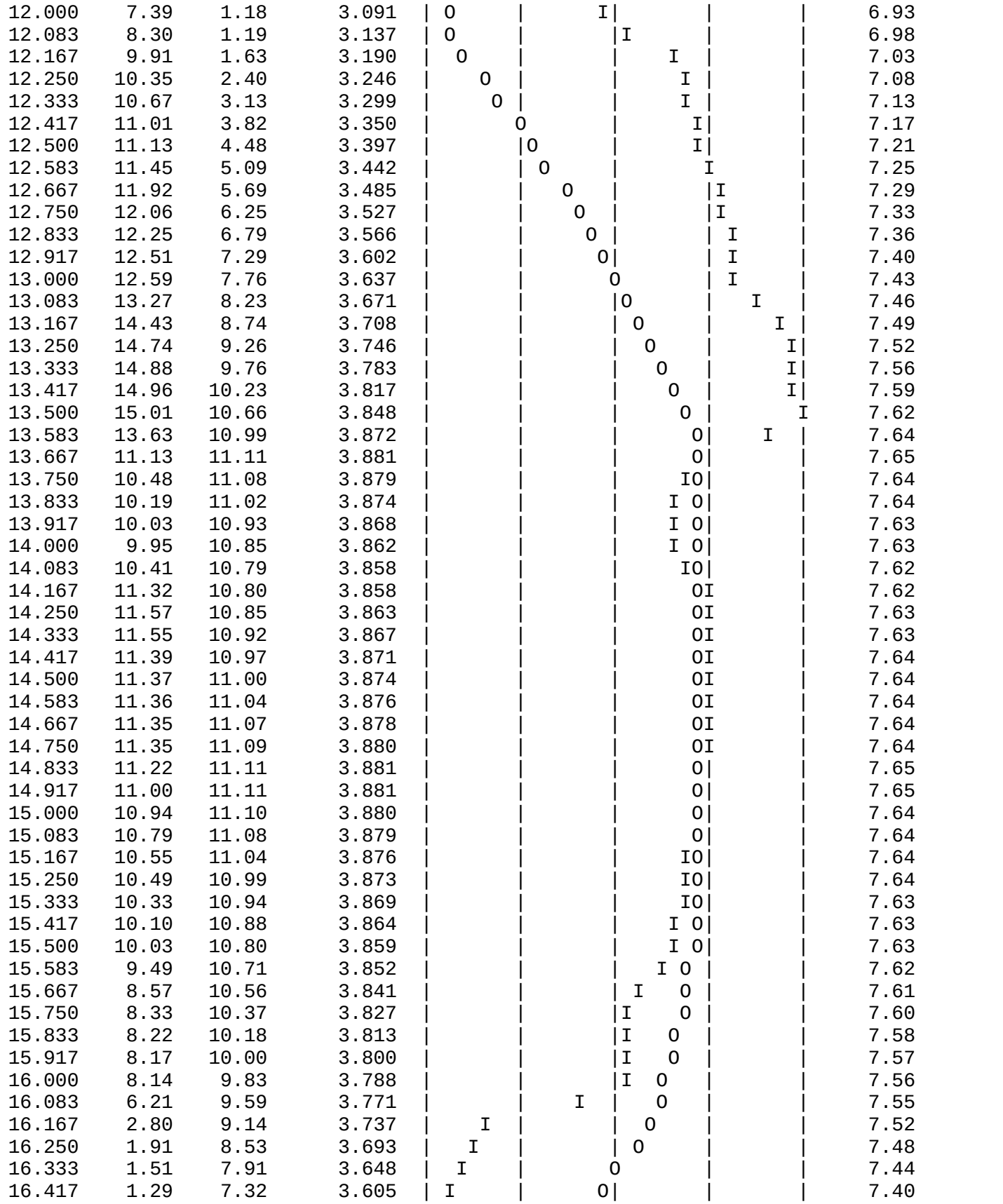
Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	3.8	7.50	11.25	15.01	Depth (Ft.)
0.083	0.21	0.00	0.001	O	|	|	|	|	0.00
0.167	0.58	0.00	0.003	OI	|	|	|	|	0.02
0.250	0.68	0.01	0.008	OI	|	|	|	|	0.05
0.333	0.83	0.01	0.013	OI	|	|	|	|	0.08
0.417	1.04	0.02	0.019	O I	|	|	|	|	0.11
0.500	1.10	0.03	0.026	O I	|	|	|	|	0.16
0.583	1.13	0.03	0.034	O I	|	|	|	|	0.20
0.667	1.14	0.04	0.041	O I	|	|	|	|	0.25
0.750	1.15	0.05	0.049	O I	|	|	|	|	0.29
0.833	0.85	0.06	0.056	OI	|	|	|	|	0.33
0.917	0.30	0.06	0.059	O	|	|	|	|	0.35
1.000	0.17	0.06	0.060	O	|	|	|	|	0.36
1.083	0.41	0.06	0.062	O	|	|	|	|	0.37
1.167	0.91	0.07	0.066	OI	|	|	|	|	0.39
1.250	1.04	0.07	0.072	O I	|	|	|	|	0.43
1.333	1.09	0.08	0.079	O I	|	|	|	|	0.47
1.417	1.12	0.09	0.086	O I	|	|	|	|	0.51
1.500	1.14	0.09	0.093	O I	|	|	|	|	0.56
1.583	1.15	0.10	0.101	O I	|	|	|	|	0.60
1.667	1.15	0.11	0.108	O I	|	|	|	|	0.64
1.750	1.15	0.12	0.115	O I	|	|	|	|	0.68
1.833	0.87	0.12	0.121	OI	|	|	|	|	0.72
1.917	0.37	0.13	0.124	O	|	|	|	|	0.74
2.000	0.24	0.13	0.126	O	|	|	|	|	0.75
2.083	0.19	0.13	0.126	O	|	|	|	|	0.75
2.167	0.16	0.13	0.127	O	|	|	|	|	0.75
2.250	0.15	0.13	0.127	O	|	|	|	|	0.76
2.333	0.15	0.13	0.127	O	|	|	|	|	0.76
2.417	0.16	0.13	0.127	O	|	|	|	|	0.76
2.500	0.16	0.13	0.127	O	|	|	|	|	0.76
2.583	0.30	0.13	0.128	O	|	|	|	|	0.76
2.667	0.53	0.13	0.130	OI	|	|	|	|	0.77
2.750	0.60	0.13	0.133	OI	|	|	|	|	0.79
2.833	0.63	0.14	0.136	OI	|	|	|	|	0.81
2.917	0.65	0.14	0.140	OI	|	|	|	|	0.83

3.000	0.67	0.15	0.143	OI	|	|	|	0.85
3.083	0.68	0.15	0.147	OI	|	|	|	0.88
3.167	0.69	0.15	0.151	OI	|	|	|	0.90
3.250	0.69	0.16	0.154	OI	|	|	|	0.92
3.333	0.70	0.16	0.158	OI	|	|	|	0.94
3.417	0.71	0.16	0.162	OI	|	|	|	0.96
3.500	0.72	0.17	0.166	OI	|	|	|	0.99
3.583	0.72	0.17	0.169	OI	|	|	|	1.00
3.667	0.73	0.17	0.173	OI	|	|	|	1.02
3.750	0.74	0.17	0.177	OI	|	|	|	1.03
3.833	0.87	0.17	0.181	OI	|	|	|	1.04
3.917	1.10	0.18	0.187	O I	|	|	|	1.06
4.000	1.17	0.18	0.194	O I	|	|	|	1.08
4.083	1.20	0.18	0.201	O I	|	|	|	1.10
4.167	1.23	0.18	0.208	O I	|	|	|	1.12
4.250	1.24	0.19	0.215	O I	|	|	|	1.14
4.333	1.38	0.19	0.223	O I	|	|	|	1.16
4.417	1.61	0.19	0.232	O I	|	|	|	1.19
4.500	1.68	0.20	0.242	O I	|	|	|	1.22
4.583	1.71	0.20	0.252	O I	|	|	|	1.25
4.667	1.74	0.20	0.262	O I	|	|	|	1.28
4.750	1.75	0.21	0.273	O I	|	|	|	1.31
4.833	1.89	0.21	0.284	O I	|	|	|	1.35
4.917	2.12	0.22	0.296	O I	|	|	|	1.38
5.000	2.19	0.22	0.310	O I	|	|	|	1.42
5.083	1.97	0.23	0.323	O I	|	|	|	1.46
5.167	1.53	0.23	0.333	O I	|	|	|	1.49
5.250	1.43	0.23	0.342	O I	|	|	|	1.52
5.333	1.51	0.24	0.350	O I	|	|	|	1.54
5.417	1.72	0.24	0.360	O I	|	|	|	1.57
5.500	1.77	0.24	0.370	O I	|	|	|	1.60
5.583	1.92	0.25	0.381	O I	|	|	|	1.64
5.667	2.17	0.25	0.393	O I	|	|	|	1.67
5.750	2.24	0.26	0.407	O I	|	|	|	1.71
5.833	2.28	0.26	0.421	O I	|	|	|	1.75
5.917	2.30	0.27	0.435	O I	|	|	|	1.80
6.000	2.32	0.27	0.449	O I	|	|	|	1.84
6.083	2.46	0.28	0.463	O I	|	|	|	1.88
6.167	2.69	0.28	0.479	O I	|	|	|	1.93
6.250	2.76	0.29	0.496	O I	|	|	|	1.98
6.333	2.79	0.29	0.513	O I	|	|	|	2.04
6.417	2.81	0.30	0.530	O I	|	|	|	2.11
6.500	2.82	0.30	0.548	O I	|	|	|	2.18
6.583	2.96	0.31	0.565	O I	|	|	|	2.25
6.667	3.20	0.32	0.584	O I	|	|	|	2.32
6.750	3.26	0.32	0.604	O I	|	|	|	2.40
6.833	3.30	0.33	0.625	O I	|	|	|	2.48
6.917	3.32	0.34	0.645	O I	|	|	|	2.56
7.000	3.33	0.34	0.666	O I	|	|	|	2.65
7.083	3.34	0.35	0.686	O I	|	|	|	2.73
7.167	3.35	0.35	0.707	O I	|	|	|	2.81
7.250	3.35	0.36	0.728	O I	|	|	|	2.89
7.333	3.49	0.37	0.749	O I	|	|	|	2.97
7.417	3.72	0.37	0.771	O I	|	|	|	3.06

7.500	3.79	0.38	0.794	O	I	|	|	|	3.16
7.583	3.95	0.39	0.818	O	I	|	|	|	3.25
7.667	4.20	0.39	0.844	O	I	|	|	|	3.35
7.750	4.27	0.40	0.870	O	|I	|	|	|	3.46
7.833	4.44	0.41	0.897	O	|I	|	|	|	3.57
7.917	4.68	0.42	0.926	O	|I	|	|	|	3.68
8.000	4.76	0.43	0.955	O	| I	|	|	|	3.80
8.083	5.05	0.43	0.986	O	| I	|	|	|	3.92
8.167	5.53	0.44	1.020	O	| I	|	|	|	4.05
8.250	5.66	0.45	1.055	O	| I	|	|	|	4.19
8.333	5.72	0.46	1.091	O	| I	|	|	|	4.34
8.417	5.76	0.47	1.127	O	| I	|	|	|	4.48
8.500	5.78	0.48	1.164	|O	| I	|	|	|	4.63
8.583	5.92	0.49	1.201	|O	| I	|	|	|	4.77
8.667	6.16	0.50	1.239	|O	| I	|	|	|	4.92
8.750	6.22	0.50	1.278	|O	| I	|	|	|	5.02
8.833	6.38	0.50	1.318	|O	| I	|	|	|	5.07
8.917	6.63	0.51	1.360	|O	| I	|	|	|	5.12
9.000	6.71	0.51	1.402	|O	| I	|	|	|	5.17
9.083	7.00	0.51	1.446	|O	| I	|	|	|	5.22
9.167	7.47	0.52	1.492	|O	| I	|	|	|	5.27
9.250	7.61	0.52	1.540	|O	| I	|	|	|	5.33
9.333	7.80	0.52	1.590	|O	| I	|	|	|	5.38
9.417	8.06	0.53	1.641	|O	| |I	|	|	|	5.44
9.500	8.14	0.53	1.693	|O	| |I	|	|	|	5.50
9.583	8.31	0.57	1.746	|O	| |I	|	|	|	5.56
9.667	8.56	0.61	1.800	|O	| | I	|	|	|	5.62
9.750	8.63	0.64	1.855	|O	| | I	|	|	|	5.68
9.833	8.80	0.68	1.910	|O	| | I	|	|	|	5.74
9.917	9.05	0.72	1.967	|O	| | I	|	|	|	5.80
10.000	9.12	0.76	2.024	|O	| | I	|	|	|	5.86
10.083	8.26	0.80	2.079	|O	| |I	|	|	|	5.92
10.167	6.69	0.83	2.125	|O	| I	|	|	|	5.97
10.250	6.29	0.85	2.164	|O	| I	|	|	|	6.01
10.333	6.11	0.87	2.200	|O	| I	|	|	|	6.05
10.417	6.01	0.88	2.236	|O	| I	|	|	|	6.08
10.500	5.96	0.89	2.271	|O	| I	|	|	|	6.12
10.583	6.57	0.90	2.308	|O	| I	|	|	|	6.16
10.667	7.71	0.92	2.351	|O	| I	|	|	|	6.20
10.750	8.02	0.94	2.399	|O	| |I	|	|	|	6.25
10.833	8.16	0.95	2.448	| O	| |I	|	|	|	6.30
10.917	8.24	0.97	2.498	| O	| |I	|	|	|	6.34
11.000	8.28	0.99	2.548	| O	| |I	|	|	|	6.39
11.083	8.18	1.01	2.598	| O	| |I	|	|	|	6.44
11.167	7.96	1.02	2.647	| O	| I	|	|	|	6.49
11.250	7.91	1.04	2.694	| O	| I	|	|	|	6.54
11.333	7.89	1.06	2.741	| O	| I	|	|	|	6.59
11.417	7.88	1.07	2.788	| O	| I	|	|	|	6.63
11.500	7.87	1.09	2.835	| O	| I	|	|	|	6.68
11.583	7.62	1.10	2.881	| O	| I	|	|	|	6.72
11.667	7.17	1.12	2.924	| O	| I	|	|	|	6.77
11.750	7.05	1.13	2.965	| O	| I	|	|	|	6.81
11.833	7.13	1.15	3.006	| O	| I	|	|	|	6.85
11.917	7.34	1.16	3.048	| O	| I	|	|	|	6.89



16.500	1.17	6.78	3.565	| I | O | | |				7.36
16.583	0.98	6.26	3.527	| I | O | | |				7.33
16.667	0.76	5.78	3.492	|I | O | | |				7.30
16.750	0.70	5.32	3.459	|I | O | | |				7.27
16.833	0.68	4.90	3.428	|I | O | | |				7.24
16.917	0.67	4.52	3.400	|I |O | | |				7.22
17.000	0.66	4.17	3.375	|I | O | | |				7.19
17.083	0.92	3.87	3.353	|I | O | | |				7.17
17.167	1.38	3.62	3.335	| I | O| | |				7.16
17.250	1.50	3.43	3.321	| I | O| | |				7.14
17.333	1.56	3.26	3.308	| I | O | | |				7.13
17.417	1.59	3.10	3.297	| I | O | | |				7.12
17.500	1.61	2.97	3.287	| I | O | | |				7.12
17.583	1.62	2.85	3.278	| I | O | | |				7.11
17.667	1.63	2.74	3.270	| I O | | |				7.10
17.750	1.63	2.64	3.263	| I O | | |				7.09
17.833	1.51	2.54	3.256	| I O | | |				7.09
17.917	1.28	2.44	3.248	| I | O | | |				7.08
18.000	1.23	2.33	3.240	| I O | | |				7.07
18.083	1.20	2.23	3.233	| I O | | |				7.07
18.167	1.19	2.14	3.226	| I O | | |				7.06
18.250	1.19	2.05	3.220	| I O | | |				7.06
18.333	1.18	1.97	3.214	| I O | | |				7.05
18.417	1.19	1.90	3.209	| I O | | |				7.05
18.500	1.19	1.84	3.205	| IO | | |				7.04
18.583	1.07	1.77	3.200	| IO | | |				7.04
18.667	0.84	1.70	3.195	|I O | | |				7.03
18.750	0.79	1.62	3.189	|I O | | |				7.03
18.833	0.63	1.54	3.183	|I O | | |				7.02
18.917	0.40	1.45	3.176	I | O | | |				7.02
19.000	0.33	1.35	3.169	I O | | |				7.01
19.083	0.43	1.26	3.162	I O | | |				7.00
19.167	0.65	1.20	3.158	|IO | | |				7.00
19.250	0.70	1.20	3.154	|IO | | |				7.00
19.333	0.85	1.20	3.151	|IO | | |				6.99
19.417	1.10	1.20	3.150	| O | | |				6.99
19.500	1.17	1.20	3.149	| O | | |				6.99
19.583	1.08	1.20	3.149	| O | | |				6.99
19.667	0.87	1.20	3.147	|IO | | |				6.99
19.750	0.82	1.20	3.145	|IO | | |				6.99
19.833	0.67	1.19	3.142	|IO | | |				6.98
19.917	0.43	1.19	3.137	I O | | |				6.98
20.000	0.37	1.19	3.132	I O | | |				6.97
20.083	0.47	1.19	3.126	I O | | |				6.97
20.167	0.68	1.19	3.122	|IO | | |				6.96
20.250	0.74	1.19	3.119	|IO | | |				6.96
20.333	0.76	1.19	3.116	|IO | | |				6.96
20.417	0.78	1.18	3.113	|IO | | |				6.96
20.500	0.79	1.18	3.110	|IO | | |				6.95
20.583	0.80	1.18	3.108	|IO | | |				6.95
20.667	0.80	1.18	3.105	|IO | | |				6.95
20.750	0.80	1.18	3.102	|IO | | |				6.94
20.833	0.68	1.18	3.099	|IO | | |				6.94
20.917	0.45	1.18	3.095	I O | | |				6.94

21.000	0.39	1.18	3.090	I O	|	|	|	6.93
21.083	0.50	1.17	3.085	|IO	|	|	|	6.93
21.167	0.71	1.17	3.081	|IO	|	|	|	6.92
21.250	0.77	1.17	3.078	|IO	|	|	|	6.92
21.333	0.66	1.17	3.075	|IO	|	|	|	6.92
21.417	0.45	1.17	3.071	I O	|	|	|	6.91
21.500	0.40	1.17	3.066	I O	|	|	|	6.91
21.583	0.51	1.17	3.061	|IO	|	|	|	6.90
21.667	0.73	1.16	3.057	|IO	|	|	|	6.90
21.750	0.78	1.16	3.054	|IO	|	|	|	6.90
21.833	0.68	1.16	3.051	|IO	|	|	|	6.89
21.917	0.47	1.16	3.047	I O	|	|	|	6.89
22.000	0.42	1.16	3.042	I O	|	|	|	6.88
22.083	0.52	1.16	3.037	|IO	|	|	|	6.88
22.167	0.74	1.16	3.034	|IO	|	|	|	6.88
22.250	0.79	1.16	3.031	|IO	|	|	|	6.87
22.333	0.69	1.15	3.028	|IO	|	|	|	6.87
22.417	0.48	1.15	3.024	|IO	|	|	|	6.87
22.500	0.43	1.15	3.019	I O	|	|	|	6.86
22.583	0.41	1.15	3.014	I O	|	|	|	6.86
22.667	0.39	1.15	3.009	I O	|	|	|	6.85
22.750	0.39	1.15	3.004	I O	|	|	|	6.85
22.833	0.38	1.14	2.999	I O	|	|	|	6.84
22.917	0.38	1.14	2.993	I O	|	|	|	6.84
23.000	0.39	1.14	2.988	I O	|	|	|	6.83
23.083	0.39	1.14	2.983	I O	|	|	|	6.83
23.167	0.39	1.14	2.978	I O	|	|	|	6.82
23.250	0.39	1.14	2.973	I O	|	|	|	6.82
23.333	0.39	1.13	2.968	I O	|	|	|	6.81
23.417	0.39	1.13	2.962	I O	|	|	|	6.81
23.500	0.39	1.13	2.957	I O	|	|	|	6.80
23.583	0.39	1.13	2.952	I O	|	|	|	6.80
23.667	0.40	1.13	2.947	I O	|	|	|	6.79
23.750	0.40	1.13	2.942	I O	|	|	|	6.79
23.833	0.40	1.12	2.937	I O	|	|	|	6.78
23.917	0.40	1.12	2.932	I O	|	|	|	6.78
24.000	0.40	1.12	2.927	I O	|	|	|	6.77
24.083	0.29	1.12	2.922	I O	|	|	|	6.77
24.167	0.10	1.12	2.916	I O	|	|	|	6.76
24.250	0.05	1.11	2.908	I O	|	|	|	6.75
24.333	0.02	1.11	2.901	I O	|	|	|	6.74
24.417	0.01	1.11	2.893	I O	|	|	|	6.74
24.500	0.00	1.11	2.886	I O	|	|	|	6.73
24.583	0.00	1.10	2.878	I O	|	|	|	6.72
24.667	0.00	1.10	2.871	I O	|	|	|	6.71
24.750	0.00	1.10	2.863	I O	|	|	|	6.71
24.833	0.00	1.09	2.856	I O	|	|	|	6.70
24.917	0.00	1.09	2.848	I O	|	|	|	6.69
25.000	0.00	1.09	2.841	I O	|	|	|	6.68
25.083	0.00	1.09	2.833	I O	|	|	|	6.68
25.167	0.00	1.08	2.826	I O	|	|	|	6.67
25.250	0.00	1.08	2.818	I O	|	|	|	6.66
25.333	0.00	1.08	2.811	I O	|	|	|	6.66
25.417	0.00	1.08	2.803	I O	|	|	|	6.65

25.500	0.00	1.07	2.796	I O	|	|	|	|	6.64
25.583	0.00	1.07	2.788	I O	|	|	|	|	6.63
25.667	0.00	1.07	2.781	I O	|	|	|	|	6.63
25.750	0.00	1.07	2.774	I O	|	|	|	|	6.62
25.833	0.00	1.06	2.766	I O	|	|	|	|	6.61
25.917	0.00	1.06	2.759	I O	|	|	|	|	6.60
26.000	0.00	1.06	2.752	I O	|	|	|	|	6.60
26.083	0.00	1.06	2.744	I O	|	|	|	|	6.59
26.167	0.00	1.05	2.737	I O	|	|	|	|	6.58
26.250	0.00	1.05	2.730	I O	|	|	|	|	6.57
26.333	0.00	1.05	2.723	I O	|	|	|	|	6.57
26.417	0.00	1.05	2.715	I O	|	|	|	|	6.56
26.500	0.00	1.04	2.708	I O	|	|	|	|	6.55
26.583	0.00	1.04	2.701	I O	|	|	|	|	6.55
26.667	0.00	1.04	2.694	I O	|	|	|	|	6.54
26.750	0.00	1.04	2.687	I O	|	|	|	|	6.53
26.833	0.00	1.03	2.680	I O	|	|	|	|	6.53
26.917	0.00	1.03	2.673	I O	|	|	|	|	6.52
27.000	0.00	1.03	2.665	I O	|	|	|	|	6.51
27.083	0.00	1.03	2.658	I O	|	|	|	|	6.50
27.167	0.00	1.02	2.651	I O	|	|	|	|	6.50
27.250	0.00	1.02	2.644	I O	|	|	|	|	6.49
27.333	0.00	1.02	2.637	I O	|	|	|	|	6.48
27.417	0.00	1.02	2.630	I O	|	|	|	|	6.48
27.500	0.00	1.01	2.623	I O	|	|	|	|	6.47
27.583	0.00	1.01	2.616	I O	|	|	|	|	6.46
27.667	0.00	1.01	2.609	I O	|	|	|	|	6.46
27.750	0.00	1.01	2.602	I O	|	|	|	|	6.45
27.833	0.00	1.00	2.595	I O	|	|	|	|	6.44
27.917	0.00	1.00	2.589	I O	|	|	|	|	6.43
28.000	0.00	1.00	2.582	I O	|	|	|	|	6.43
28.083	0.00	1.00	2.575	I O	|	|	|	|	6.42
28.167	0.00	0.99	2.568	I O	|	|	|	|	6.41
28.250	0.00	0.99	2.561	I O	|	|	|	|	6.41
28.333	0.00	0.99	2.554	I O	|	|	|	|	6.40
28.417	0.00	0.99	2.547	I O	|	|	|	|	6.39
28.500	0.00	0.99	2.541	I O	|	|	|	|	6.39
28.583	0.00	0.98	2.534	I O	|	|	|	|	6.38
28.667	0.00	0.98	2.527	I O	|	|	|	|	6.37
28.750	0.00	0.98	2.520	I O	|	|	|	|	6.37
28.833	0.00	0.98	2.514	I O	|	|	|	|	6.36
28.917	0.00	0.97	2.507	I O	|	|	|	|	6.35
29.000	0.00	0.97	2.500	I O	|	|	|	|	6.35
29.083	0.00	0.97	2.494	I O	|	|	|	|	6.34
29.167	0.00	0.97	2.487	I O	|	|	|	|	6.33
29.250	0.00	0.96	2.480	I O	|	|	|	|	6.33
29.333	0.00	0.96	2.474	I O	|	|	|	|	6.32
29.417	0.00	0.96	2.467	I O	|	|	|	|	6.31
29.500	0.00	0.96	2.460	I O	|	|	|	|	6.31
29.583	0.00	0.96	2.454	I O	|	|	|	|	6.30
29.667	0.00	0.95	2.447	I O	|	|	|	|	6.29
29.750	0.00	0.95	2.441	I O	|	|	|	|	6.29
29.833	0.00	0.95	2.434	I O	|	|	|	|	6.28
29.917	0.00	0.95	2.428	I O	|	|	|	|	6.27

30.000	0.00	0.94	2.421	I O	|	|	|	6.27
30.083	0.00	0.94	2.415	I O	|	|	|	6.26
30.167	0.00	0.94	2.408	I O	|	|	|	6.26
30.250	0.00	0.94	2.402	IO	|	|	|	6.25
30.333	0.00	0.93	2.395	IO	|	|	|	6.24
30.417	0.00	0.93	2.389	IO	|	|	|	6.24
30.500	0.00	0.93	2.382	IO	|	|	|	6.23
30.583	0.00	0.93	2.376	IO	|	|	|	6.22
30.667	0.00	0.93	2.370	IO	|	|	|	6.22
30.750	0.00	0.92	2.363	IO	|	|	|	6.21
30.833	0.00	0.92	2.357	IO	|	|	|	6.20
30.917	0.00	0.92	2.351	IO	|	|	|	6.20
31.000	0.00	0.92	2.344	IO	|	|	|	6.19
31.083	0.00	0.91	2.338	IO	|	|	|	6.19
31.167	0.00	0.91	2.332	IO	|	|	|	6.18
31.250	0.00	0.91	2.325	IO	|	|	|	6.17
31.333	0.00	0.91	2.319	IO	|	|	|	6.17
31.417	0.00	0.91	2.313	IO	|	|	|	6.16
31.500	0.00	0.90	2.307	IO	|	|	|	6.15
31.583	0.00	0.90	2.300	IO	|	|	|	6.15
31.667	0.00	0.90	2.294	IO	|	|	|	6.14
31.750	0.00	0.90	2.288	IO	|	|	|	6.14
31.833	0.00	0.90	2.282	IO	|	|	|	6.13
31.917	0.00	0.89	2.276	IO	|	|	|	6.12
32.000	0.00	0.89	2.269	IO	|	|	|	6.12
32.083	0.00	0.89	2.263	IO	|	|	|	6.11
32.167	0.00	0.89	2.257	IO	|	|	|	6.11
32.250	0.00	0.88	2.251	IO	|	|	|	6.10
32.333	0.00	0.88	2.245	IO	|	|	|	6.09
32.417	0.00	0.88	2.239	IO	|	|	|	6.09
32.500	0.00	0.88	2.233	IO	|	|	|	6.08
32.583	0.00	0.88	2.227	IO	|	|	|	6.08
32.667	0.00	0.87	2.221	IO	|	|	|	6.07
32.750	0.00	0.87	2.215	IO	|	|	|	6.06
32.833	0.00	0.87	2.209	IO	|	|	|	6.06
32.917	0.00	0.87	2.203	IO	|	|	|	6.05
33.000	0.00	0.87	2.197	IO	|	|	|	6.05
33.083	0.00	0.86	2.191	IO	|	|	|	6.04
33.167	0.00	0.86	2.185	IO	|	|	|	6.03
33.250	0.00	0.86	2.179	IO	|	|	|	6.03
33.333	0.00	0.86	2.173	IO	|	|	|	6.02
33.417	0.00	0.86	2.167	IO	|	|	|	6.02
33.500	0.00	0.85	2.161	IO	|	|	|	6.01
33.583	0.00	0.85	2.155	IO	|	|	|	6.00
33.667	0.00	0.85	2.150	IO	|	|	|	6.00
33.750	0.00	0.84	2.144	IO	|	|	|	5.99
33.833	0.00	0.84	2.138	IO	|	|	|	5.99
33.917	0.00	0.84	2.132	IO	|	|	|	5.98
34.000	0.00	0.83	2.126	IO	|	|	|	5.97
34.083	0.00	0.83	2.121	IO	|	|	|	5.97
34.167	0.00	0.82	2.115	IO	|	|	|	5.96
34.250	0.00	0.82	2.109	IO	|	|	|	5.95
34.333	0.00	0.82	2.104	IO	|	|	|	5.95
34.417	0.00	0.81	2.098	IO	|	|	|	5.94

34.500	0.00	0.81	2.093	IO				5.94
34.583	0.00	0.81	2.087	IO				5.93
34.667	0.00	0.80	2.081	IO				5.92
34.750	0.00	0.80	2.076	IO				5.92
34.833	0.00	0.79	2.070	IO				5.91
34.917	0.00	0.79	2.065	IO				5.91
35.000	0.00	0.79	2.060	IO				5.90
35.083	0.00	0.78	2.054	IO				5.89
35.167	0.00	0.78	2.049	IO				5.89
35.250	0.00	0.78	2.043	IO				5.88
35.333	0.00	0.77	2.038	IO				5.88
35.417	0.00	0.77	2.033	IO				5.87
35.500	0.00	0.76	2.028	IO				5.87
35.583	0.00	0.76	2.022	IO				5.86
35.667	0.00	0.76	2.017	IO				5.85
35.750	0.00	0.75	2.012	IO				5.85
35.833	0.00	0.75	2.007	IO				5.84
35.917	0.00	0.75	2.002	IO				5.84
36.000	0.00	0.74	1.996	IO				5.83
36.083	0.00	0.74	1.991	IO				5.83
36.167	0.00	0.74	1.986	IO				5.82
36.250	0.00	0.73	1.981	IO				5.82
36.333	0.00	0.73	1.976	IO				5.81
36.417	0.00	0.72	1.971	IO				5.80
36.500	0.00	0.72	1.966	IO				5.80
36.583	0.00	0.72	1.961	IO				5.79
36.667	0.00	0.71	1.956	IO				5.79
36.750	0.00	0.71	1.951	IO				5.78
36.833	0.00	0.71	1.946	IO				5.78
36.917	0.00	0.70	1.942	IO				5.77
37.000	0.00	0.70	1.937	IO				5.77
37.083	0.00	0.70	1.932	IO				5.76
37.167	0.00	0.69	1.927	IO				5.76
37.250	0.00	0.69	1.922	IO				5.75
37.333	0.00	0.69	1.918	IO				5.75
37.417	0.00	0.68	1.913	IO				5.74
37.500	0.00	0.68	1.908	IO				5.74
37.583	0.00	0.68	1.904	IO				5.73
37.667	0.00	0.67	1.899	IO				5.73
37.750	0.00	0.67	1.894	IO				5.72
37.833	0.00	0.67	1.890	IO				5.72
37.917	0.00	0.66	1.885	IO				5.71
38.000	0.00	0.66	1.880	IO				5.71
38.083	0.00	0.66	1.876	IO				5.70
38.167	0.00	0.66	1.871	IO				5.70
38.250	0.00	0.65	1.867	IO				5.69
38.333	0.00	0.65	1.862	IO				5.69
38.417	0.00	0.65	1.858	IO				5.68
38.500	0.00	0.64	1.854	IO				5.68
38.583	0.00	0.64	1.849	IO				5.67
38.667	0.00	0.64	1.845	IO				5.67
38.750	0.00	0.63	1.840	IO				5.66
38.833	0.00	0.63	1.836	IO				5.66
38.917	0.00	0.63	1.832	IO				5.65

39.000	0.00	0.62	1.827	IO				5.65
39.083	0.00	0.62	1.823	IO				5.64
39.167	0.00	0.62	1.819	IO				5.64
39.250	0.00	0.62	1.814	IO				5.63
39.333	0.00	0.61	1.810	IO				5.63
39.417	0.00	0.61	1.806	IO				5.63
39.500	0.00	0.61	1.802	IO				5.62
39.583	0.00	0.60	1.798	IO				5.62
39.667	0.00	0.60	1.794	IO				5.61
39.750	0.00	0.60	1.789	IO				5.61
39.833	0.00	0.60	1.785	IO				5.60
39.917	0.00	0.59	1.781	IO				5.60
40.000	0.00	0.59	1.777	IO				5.59
40.083	0.00	0.59	1.773	IO				5.59
40.167	0.00	0.58	1.769	IO				5.58
40.250	0.00	0.58	1.765	IO				5.58
40.333	0.00	0.58	1.761	IO				5.58
40.417	0.00	0.58	1.757	IO				5.57
40.500	0.00	0.57	1.753	IO				5.57
40.583	0.00	0.57	1.749	IO				5.56
40.667	0.00	0.57	1.745	IO				5.56
40.750	0.00	0.57	1.741	IO				5.55
40.833	0.00	0.56	1.737	IO				5.55
40.917	0.00	0.56	1.734	IO				5.55
41.000	0.00	0.56	1.730	IO				5.54
41.083	0.00	0.55	1.726	IO				5.54
41.167	0.00	0.55	1.722	IO				5.53
41.250	0.00	0.55	1.718	IO				5.53
41.333	0.00	0.55	1.715	IO				5.53
41.417	0.00	0.54	1.711	IO				5.52
41.500	0.00	0.54	1.707	IO				5.52
41.583	0.00	0.54	1.703	IO				5.51
41.667	0.00	0.54	1.700	IO				5.51
41.750	0.00	0.53	1.696	IO				5.51
41.833	0.00	0.53	1.692	IO				5.50
41.917	0.00	0.53	1.689	IO				5.50
42.000	0.00	0.53	1.685	IO				5.49
42.083	0.00	0.53	1.681	IO				5.49
42.167	0.00	0.53	1.678	IO				5.48
42.250	0.00	0.53	1.674	IO				5.48
42.333	0.00	0.53	1.670	IO				5.48
42.417	0.00	0.53	1.667	IO				5.47
42.500	0.00	0.53	1.663	IO				5.47
42.583	0.00	0.53	1.660	IO				5.46
42.667	0.00	0.53	1.656	IO				5.46
42.750	0.00	0.53	1.652	IO				5.46
42.833	0.00	0.53	1.649	IO				5.45
42.917	0.00	0.53	1.645	IO				5.45
43.000	0.00	0.53	1.641	IO				5.44
43.083	0.00	0.53	1.638	IO				5.44
43.167	0.00	0.53	1.634	IO				5.43
43.250	0.00	0.53	1.630	IO				5.43
43.333	0.00	0.53	1.627	IO				5.43
43.417	0.00	0.53	1.623	IO				5.42

43.500	0.00	0.53	1.620	IO				5.42
43.583	0.00	0.52	1.616	IO				5.41
43.667	0.00	0.52	1.612	IO				5.41
43.750	0.00	0.52	1.609	IO				5.41
43.833	0.00	0.52	1.605	IO				5.40
43.917	0.00	0.52	1.602	IO				5.40
44.000	0.00	0.52	1.598	IO				5.39
44.083	0.00	0.52	1.594	IO				5.39
44.167	0.00	0.52	1.591	IO				5.38
44.250	0.00	0.52	1.587	IO				5.38
44.333	0.00	0.52	1.584	IO				5.38
44.417	0.00	0.52	1.580	IO				5.37
44.500	0.00	0.52	1.576	IO				5.37
44.583	0.00	0.52	1.573	IO				5.36
44.667	0.00	0.52	1.569	IO				5.36
44.750	0.00	0.52	1.566	IO				5.36
44.833	0.00	0.52	1.562	IO				5.35
44.917	0.00	0.52	1.558	IO				5.35
45.000	0.00	0.52	1.555	IO				5.34
45.083	0.00	0.52	1.551	IO				5.34
45.167	0.00	0.52	1.548	IO				5.33
45.250	0.00	0.52	1.544	IO				5.33
45.333	0.00	0.52	1.540	IO				5.33
45.417	0.00	0.52	1.537	IO				5.32
45.500	0.00	0.52	1.533	IO				5.32
45.583	0.00	0.52	1.530	IO				5.31
45.667	0.00	0.52	1.526	IO				5.31
45.750	0.00	0.52	1.523	IO				5.31
45.833	0.00	0.52	1.519	IO				5.30
45.917	0.00	0.52	1.515	IO				5.30
46.000	0.00	0.52	1.512	IO				5.29
46.083	0.00	0.52	1.508	IO				5.29
46.167	0.00	0.52	1.505	IO				5.28
46.250	0.00	0.52	1.501	IO				5.28
46.333	0.00	0.52	1.498	IO				5.28
46.417	0.00	0.52	1.494	IO				5.27
46.500	0.00	0.52	1.491	IO				5.27
46.583	0.00	0.52	1.487	IO				5.26
46.667	0.00	0.52	1.483	IO				5.26
46.750	0.00	0.52	1.480	IO				5.26
46.833	0.00	0.52	1.476	IO				5.25
46.917	0.00	0.51	1.473	IO				5.25
47.000	0.00	0.51	1.469	IO				5.24
47.083	0.00	0.51	1.466	IO				5.24
47.167	0.00	0.51	1.462	IO				5.24
47.250	0.00	0.51	1.459	IO				5.23
47.333	0.00	0.51	1.455	IO				5.23
47.417	0.00	0.51	1.452	IO				5.22
47.500	0.00	0.51	1.448	IO				5.22
47.583	0.00	0.51	1.444	IO				5.22
47.667	0.00	0.51	1.441	IO				5.21
47.750	0.00	0.51	1.437	IO				5.21
47.833	0.00	0.51	1.434	IO				5.20
47.917	0.00	0.51	1.430	IO				5.20

48.000 0.00 0.51 1.427 IO | | | | 5.19

**********HYDROGRAPH DATA**********

Number of intervals = 1858
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 11.111 (CFS)
Total volume = 7.753 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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DETENTION BASIN #3

				open basin storage				
elevation	depth	outflow	storage	area	media factor	volume	cumulative volume	ac-ft volume
1491.0	0.0	0	0.000	0				
1492.0	1.0	0.17	0.169	36,908	0.4	7,382	7,382	0.169
1493.0	2.0	0.29	0.508	36,908	0.4	14,763	22,145	0.508
1494.0	3.0	0.37	0.763	36,908	0.3	11,072	33,217	0.763
1495.0	4.0	0.44	1.017	36,908	0.3	11,072	44,290	1.017
1496.0	5.0	0.50	1.271	36,908	0.3	11,072	55,362	1.271
1496.5	5.5	0.53	1.708	39,307	1.0	19,054	74,416	1.708
1497.0	6.0	0.85	2.173	41,706	1.0	20,253	94,669	2.173
1498.0	7.0	1.20	3.187	46,600	1.0	44,153	138,822	3.187
1499.0	8.0	16.56	4.314	51,596	1.0	49,098	187,920	4.314
1500.0	9.0	23.02	5.557	56,692	1.0	54,144	242,064	5.557

invert of 6" perf pipe = 1491.25
top of overflow grate = 1498.00
top of media = 1496.00
24" pipe invert = 1489.00
3' media

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 11/18/19

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1 YEAR FLOOD ROUTING
BASIN 3
MJPA 304163
4163FR1.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163uhp1241.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.160 (CFS)
Total volume = 2.144 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.169	0.170	0.168	0.170
2.000	0.508	0.290	0.507	0.509
3.000	0.763	0.370	0.762	0.764
4.000	1.017	0.440	1.015	1.019
5.000	1.271	0.500	1.269	1.273
5.500	1.708	0.530	1.706	1.710
6.000	2.173	0.850	2.170	2.176
7.000	3.187	1.200	3.183	3.191
8.000	4.314	16.560	4.257	4.371
9.000	5.557	23.020	5.478	5.636

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 0.8 1.58 2.37 3.16	Depth (Ft.)
0.083	0.05	0.00	0.000	O | | | |	0.00
0.167	0.18	0.00	0.001	OI | | | |	0.01
0.250	0.23	0.00	0.002	O I | | | |	0.01
0.333	0.28	0.00	0.004	O I | | | |	0.02
0.417	0.36	0.01	0.006	O I | | | |	0.04
0.500	0.39	0.01	0.009	O I | | | |	0.05
0.583	0.41	0.01	0.011	O I | | | |	0.07
0.667	0.42	0.01	0.014	O I | | | |	0.08
0.750	0.43	0.02	0.017	O I | | | |	0.10
0.833	0.45	0.02	0.020	O I | | | |	0.12
0.917	0.52	0.02	0.023	O I | | | |	0.14
1.000	0.55	0.03	0.027	O I | | | |	0.16
1.083	0.54	0.03	0.030	O I | | | |	0.18
1.167	0.48	0.03	0.034	O I | | | |	0.20
1.250	0.46	0.04	0.037	O I | | | |	0.22
1.333	0.45	0.04	0.039	O I | | | |	0.23
1.417	0.44	0.04	0.042	O I | | | |	0.25
1.500	0.44	0.05	0.045	O I | | | |	0.27
1.583	0.44	0.05	0.048	O I | | | |	0.28
1.667	0.44	0.05	0.050	O I | | | |	0.30
1.750	0.44	0.05	0.053	O I | | | |	0.31
1.833	0.46	0.06	0.056	O I | | | |	0.33
1.917	0.53	0.06	0.059	O I | | | |	0.35
2.000	0.55	0.06	0.062	O I | | | |	0.37
2.083	0.56	0.07	0.065	O I | | | |	0.39
2.167	0.57	0.07	0.069	O I | | | |	0.41
2.250	0.57	0.07	0.072	O I | | | |	0.43
2.333	0.58	0.08	0.076	O I | | | |	0.45
2.417	0.58	0.08	0.079	O I | | | |	0.47
2.500	0.58	0.08	0.083	O I | | | |	0.49
2.583	0.60	0.09	0.086	O I | | | |	0.51
2.667	0.67	0.09	0.090	O I | | | |	0.53
2.750	0.70	0.09	0.094	O I | | | |	0.56
2.833	0.71	0.10	0.098	O I | | | |	0.58
2.917	0.72	0.10	0.102	|O I | | |	0.61

3.000	0.72	0.11	0.107	O	I				0.63
3.083	0.72	0.11	0.111	O	I				0.66
3.167	0.72	0.12	0.115	O	I				0.68
3.250	0.73	0.12	0.119	O	I				0.71
3.333	0.73	0.12	0.123	O	I				0.73
3.417	0.73	0.13	0.127	O	I				0.75
3.500	0.73	0.13	0.132	O	I				0.78
3.583	0.73	0.14	0.136	O	I				0.80
3.667	0.73	0.14	0.140	O	I				0.83
3.750	0.73	0.14	0.144	O	I				0.85
3.833	0.75	0.15	0.148	O	I				0.87
3.917	0.82	0.15	0.152	O	I				0.90
4.000	0.84	0.16	0.157	O	I				0.93
4.083	0.85	0.16	0.162	O	I				0.96
4.167	0.86	0.17	0.166	O	I				0.98
4.250	0.86	0.17	0.171	O	I				1.01
4.333	0.89	0.17	0.176	O	I				1.02
4.417	0.96	0.17	0.181	O	I				1.04
4.500	0.99	0.18	0.187	O	I				1.05
4.583	1.00	0.18	0.192	O	I				1.07
4.667	1.01	0.18	0.198	O	I				1.09
4.750	1.01	0.18	0.204	O	I				1.10
4.833	1.04	0.18	0.209	O	I				1.12
4.917	1.11	0.19	0.215	O	I				1.14
5.000	1.13	0.19	0.222	O	I				1.16
5.083	1.10	0.19	0.228	O	I				1.17
5.167	0.97	0.19	0.234	O	I				1.19
5.250	0.92	0.19	0.239	O	I				1.21
5.333	0.93	0.20	0.244	O	I				1.22
5.417	0.98	0.20	0.249	O	I				1.24
5.500	1.00	0.20	0.255	O	I				1.25
5.583	1.03	0.20	0.261	O	I				1.27
5.667	1.10	0.20	0.266	O	I				1.29
5.750	1.13	0.21	0.273	O	I				1.31
5.833	1.14	0.21	0.279	O	I				1.32
5.917	1.15	0.21	0.286	O	I				1.34
6.000	1.15	0.21	0.292	O	I				1.36
6.083	1.18	0.22	0.299	O	I				1.38
6.167	1.25	0.22	0.305	O	I				1.40
6.250	1.28	0.22	0.313	O	I				1.42
6.333	1.29	0.22	0.320	O	I				1.45
6.417	1.30	0.23	0.327	O	I				1.47
6.500	1.30	0.23	0.335	O	I				1.49
6.583	1.33	0.23	0.342	O	I				1.51
6.667	1.40	0.23	0.350	O	I				1.53
6.750	1.42	0.24	0.358	O	I				1.56
6.833	1.44	0.24	0.366	O	I				1.58
6.917	1.44	0.24	0.374	O	I				1.61
7.000	1.45	0.25	0.383	O	I				1.63
7.083	1.45	0.25	0.391	O	I				1.65
7.167	1.45	0.25	0.399	O	I				1.68
7.250	1.45	0.25	0.408	O	I				1.70
7.333	1.48	0.26	0.416	O	I				1.73
7.417	1.54	0.26	0.424	O	I				1.75

7.500	1.57	0.26	0.433	O		I		1.78
7.583	1.60	0.27	0.442	O		I		1.81
7.667	1.68	0.27	0.452	O		I		1.83
7.750	1.71	0.27	0.462	O		I		1.86
7.833	1.74	0.28	0.472	O		I		1.89
7.917	1.82	0.28	0.482	O		I		1.92
8.000	1.85	0.28	0.493	O		I		1.96
8.083	1.91	0.29	0.504	O		I		1.99
8.167	2.06	0.29	0.515	O		I		2.03
8.250	2.11	0.30	0.528	O		I		2.08
8.333	2.14	0.30	0.540	O		I		2.13
8.417	2.16	0.30	0.553	O		I		2.18
8.500	2.16	0.31	0.566	O		I		2.23
8.583	2.19	0.31	0.579	O		I		2.28
8.667	2.27	0.32	0.592	O		I		2.33
8.750	2.29	0.32	0.605	O		I		2.38
8.833	2.33	0.32	0.619	O		I		2.44
8.917	2.40	0.33	0.633	O		I		2.49
9.000	2.43	0.33	0.648	O		I		2.55
9.083	2.49	0.34	0.662	O		I		2.60
9.167	2.64	0.34	0.677	O		I		2.66
9.250	2.69	0.35	0.693	O		I		2.73
9.333	2.74	0.35	0.710	O		I		2.79
9.417	2.83	0.36	0.727	O		I		2.86
9.500	2.86	0.36	0.744	O		I		2.92
9.583	2.90	0.37	0.761	O		I		2.99
9.667	2.98	0.37	0.779	O		I		3.06
9.750	3.01	0.38	0.797	O		I		3.13
9.833	3.05	0.38	0.815	O		I		3.20
9.917	3.13	0.39	0.834	O		I		3.28
10.000	3.16	0.39	0.853	O		I		3.35
10.083	3.02	0.40	0.871	O		I		3.43
10.167	2.55	0.40	0.887	O		I		3.49
10.250	2.37	0.41	0.902	O		I		3.55
10.333	2.30	0.41	0.915	O		I		3.60
10.417	2.26	0.42	0.928	O		I		3.65
10.500	2.23	0.42	0.940	O		I		3.70
10.583	2.32	0.42	0.953	O		I		3.75
10.667	2.65	0.43	0.967	O		I		3.80
10.750	2.77	0.43	0.983	O		I		3.87
10.833	2.82	0.44	0.999	O		I		3.93
10.917	2.85	0.44	1.016	O		I		3.99
11.000	2.87	0.44	1.032	O		I		4.06
11.083	2.86	0.45	1.049	O		I		4.13
11.167	2.81	0.45	1.065	O		I		4.19
11.250	2.79	0.46	1.082	O		I		4.25
11.333	2.78	0.46	1.098	O		I		4.32
11.417	2.77	0.46	1.114	O		I		4.38
11.500	2.77	0.47	1.129	O		I		4.44
11.583	2.72	0.47	1.145	O		I		4.50
11.667	2.58	0.47	1.160	O		I		4.56
11.750	2.53	0.48	1.174	O		I		4.62
11.833	2.53	0.48	1.189	O		I		4.68
11.917	2.58	0.48	1.203	O		I		4.73

12.000	2.60	0.49	1.217	O			I	4.79
12.083	2.29	0.49	1.231	O		I		4.84
12.167	1.35	0.49	1.240	O	I			4.88
12.250	1.00	0.49	1.245	O	I			4.90
12.333	0.89	0.49	1.248	O	I			4.91
12.417	0.90	0.50	1.251	O	I			4.92
12.500	0.89	0.50	1.253	O	I			4.93
12.583	0.94	0.50	1.256	O	I			4.94
12.667	1.11	0.50	1.260	O	I			4.96
12.750	1.17	0.50	1.264	O	I			4.97
12.833	1.24	0.50	1.269	O	I			4.99
12.917	1.36	0.50	1.275	O	I			5.00
13.000	1.42	0.50	1.281	O	I			5.01
13.083	1.60	0.50	1.288	O	I			5.02
13.167	2.04	0.50	1.297	O	I			5.03
13.250	2.23	0.50	1.308	O	I			5.04
13.333	2.32	0.50	1.320	O	I			5.06
13.417	2.38	0.50	1.333	O	I			5.07
13.500	2.43	0.51	1.346	O	I			5.09
13.583	2.16	0.51	1.358	O	I			5.10
13.667	1.28	0.51	1.367	O	I			5.11
13.750	0.96	0.51	1.371	O	I			5.11
13.833	0.83	0.51	1.374	O	I			5.12
13.917	0.76	0.51	1.376	O	I			5.12
14.000	0.72	0.51	1.377	O	I			5.12
14.083	0.81	0.51	1.379	O	I			5.12
14.167	1.13	0.51	1.382	O	I			5.13
14.250	1.26	0.51	1.387	O	I			5.13
14.333	1.29	0.51	1.392	O	I			5.14
14.417	1.26	0.51	1.398	O	I			5.14
14.500	1.27	0.51	1.403	O	I			5.15
14.583	1.28	0.51	1.408	O	I			5.16
14.667	1.30	0.51	1.414	O	I			5.16
14.750	1.32	0.51	1.419	O	I			5.17
14.833	1.31	0.51	1.425	O	I			5.18
14.917	1.24	0.51	1.430	O	I			5.18
15.000	1.23	0.51	1.435	O	I			5.19
15.083	1.20	0.51	1.440	O	I			5.19
15.167	1.13	0.51	1.444	O	I			5.20
15.250	1.11	0.51	1.448	O	I			5.20
15.333	1.08	0.51	1.452	O	I			5.21
15.417	1.00	0.51	1.456	O	I			5.21
15.500	0.98	0.51	1.459	O	I			5.22
15.583	0.87	0.51	1.462	O	I			5.22
15.667	0.54	0.51	1.463	O				5.22
15.750	0.42	0.51	1.463	IO				5.22
15.833	0.38	0.51	1.462	I O				5.22
15.917	0.36	0.51	1.461	I O				5.22
16.000	0.35	0.51	1.460	I O				5.22
16.083	0.39	0.51	1.459	I O				5.22
16.167	0.49	0.51	1.459	O				5.21
16.250	0.53	0.51	1.459	O				5.21
16.333	0.55	0.51	1.459	O				5.22
16.417	0.56	0.51	1.459	O				5.22

16.500	0.57	0.51	1.460	O				5.22
16.583	0.55	0.51	1.460	O				5.22
16.667	0.49	0.51	1.460	IO				5.22
16.750	0.46	0.51	1.460	IO				5.22
16.833	0.45	0.51	1.459	IO				5.22
16.917	0.45	0.51	1.459	IO				5.22
17.000	0.44	0.51	1.459	IO				5.21
17.083	0.48	0.51	1.458	IO				5.21
17.167	0.62	0.51	1.458	OI				5.21
17.250	0.67	0.51	1.459	OI				5.22
17.333	0.69	0.51	1.461	OI				5.22
17.417	0.70	0.51	1.462	O I				5.22
17.500	0.71	0.51	1.463	O I				5.22
17.583	0.72	0.51	1.465	O I				5.22
17.667	0.72	0.51	1.466	O I				5.22
17.750	0.72	0.51	1.467	O I				5.22
17.833	0.70	0.51	1.469	O I				5.23
17.917	0.64	0.51	1.470	OI				5.23
18.000	0.61	0.51	1.471	OI				5.23
18.083	0.60	0.51	1.471	OI				5.23
18.167	0.59	0.51	1.472	O				5.23
18.250	0.59	0.51	1.472	O				5.23
18.333	0.59	0.51	1.473	O				5.23
18.417	0.58	0.51	1.473	O				5.23
18.500	0.58	0.51	1.474	O				5.23
18.583	0.56	0.51	1.474	O				5.23
18.667	0.49	0.51	1.474	IO				5.23
18.750	0.46	0.51	1.474	IO				5.23
18.833	0.43	0.51	1.474	IO				5.23
18.917	0.36	0.51	1.473	I O				5.23
19.000	0.33	0.51	1.472	I O				5.23
19.083	0.33	0.51	1.470	I O				5.23
19.167	0.39	0.51	1.469	I O				5.23
19.250	0.41	0.51	1.469	IO				5.23
19.333	0.44	0.51	1.468	IO				5.23
19.417	0.52	0.51	1.468	O				5.23
19.500	0.55	0.51	1.468	O				5.23
19.583	0.54	0.51	1.468	O				5.23
19.667	0.48	0.51	1.468	IO				5.23
19.750	0.46	0.51	1.468	IO				5.23
19.833	0.43	0.51	1.467	IO				5.22
19.917	0.35	0.51	1.466	I O				5.22
20.000	0.33	0.51	1.465	I O				5.22
20.083	0.33	0.51	1.464	I O				5.22
20.167	0.39	0.51	1.463	I O				5.22
20.250	0.41	0.51	1.462	IO				5.22
20.333	0.42	0.51	1.461	IO				5.22
20.417	0.43	0.51	1.461	IO				5.22
20.500	0.43	0.51	1.460	IO				5.22
20.583	0.43	0.51	1.460	IO				5.22
20.667	0.43	0.51	1.459	IO				5.22
20.750	0.44	0.51	1.459	IO				5.21
20.833	0.41	0.51	1.458	IO				5.21
20.917	0.35	0.51	1.457	I O				5.21

21.000	0.32	0.51	1.456	I O				5.21
21.083	0.33	0.51	1.455	I O				5.21
21.167	0.39	0.51	1.454	I O				5.21
21.250	0.41	0.51	1.453	IO				5.21
21.333	0.40	0.51	1.452	IO				5.21
21.417	0.34	0.51	1.451	I O				5.21
21.500	0.31	0.51	1.450	I O				5.20
21.583	0.33	0.51	1.448	I O				5.20
21.667	0.39	0.51	1.447	I O				5.20
21.750	0.41	0.51	1.447	IO				5.20
21.833	0.40	0.51	1.446	IO				5.20
21.917	0.34	0.51	1.445	I O				5.20
22.000	0.31	0.51	1.444	I O				5.20
22.083	0.33	0.51	1.442	I O				5.20
22.167	0.39	0.51	1.441	I O				5.19
22.250	0.41	0.51	1.440	IO				5.19
22.333	0.40	0.51	1.440	IO				5.19
22.417	0.34	0.51	1.439	I O				5.19
22.500	0.31	0.51	1.437	I O				5.19
22.583	0.30	0.51	1.436	I O				5.19
22.667	0.30	0.51	1.435	I O				5.19
22.750	0.30	0.51	1.433	I O				5.19
22.833	0.29	0.51	1.432	I O				5.18
22.917	0.29	0.51	1.430	I O				5.18
23.000	0.29	0.51	1.429	I O				5.18
23.083	0.29	0.51	1.427	I O				5.18
23.167	0.29	0.51	1.426	I O				5.18
23.250	0.29	0.51	1.424	I O				5.18
23.333	0.29	0.51	1.423	I O				5.17
23.417	0.29	0.51	1.421	I O				5.17
23.500	0.29	0.51	1.420	I O				5.17
23.583	0.29	0.51	1.418	I O				5.17
23.667	0.29	0.51	1.417	I O				5.17
23.750	0.29	0.51	1.415	I O				5.16
23.833	0.29	0.51	1.414	I O				5.16
23.917	0.29	0.51	1.412	I O				5.16
24.000	0.29	0.51	1.411	I O				5.16
24.083	0.25	0.51	1.409	I O				5.16
24.167	0.11	0.51	1.407	I O				5.16
24.250	0.06	0.51	1.404	I O				5.15
24.333	0.04	0.51	1.400	I O				5.15
24.417	0.02	0.51	1.397	I O				5.14
24.500	0.01	0.51	1.394	I O				5.14
24.583	0.01	0.51	1.390	I O				5.14
24.667	0.00	0.51	1.387	I O				5.13
24.750	0.00	0.51	1.383	I O				5.13
24.833	0.00	0.51	1.380	I O				5.12
24.917	0.00	0.51	1.376	I O				5.12
25.000	0.00	0.51	1.373	I O				5.12
25.083	0.00	0.51	1.369	I O				5.11
25.167	0.00	0.51	1.366	I O				5.11
25.250	0.00	0.51	1.362	I O				5.10
25.333	0.00	0.51	1.359	I O				5.10
25.417	0.00	0.51	1.356	I O				5.10

25.500	0.00	0.51	1.352	I	O	|	|	|	|	5.09
25.583	0.00	0.51	1.349	I	O	|	|	|	|	5.09
25.667	0.00	0.51	1.345	I	O	|	|	|	|	5.08
25.750	0.00	0.50	1.342	I	O	|	|	|	|	5.08
25.833	0.00	0.50	1.338	I	O	|	|	|	|	5.08
25.917	0.00	0.50	1.335	I	O	|	|	|	|	5.07
26.000	0.00	0.50	1.331	I	O	|	|	|	|	5.07
26.083	0.00	0.50	1.328	I	O	|	|	|	|	5.06
26.167	0.00	0.50	1.324	I	O	|	|	|	|	5.06
26.250	0.00	0.50	1.321	I	O	|	|	|	|	5.06
26.333	0.00	0.50	1.317	I	O	|	|	|	|	5.05
26.417	0.00	0.50	1.314	I	O	|	|	|	|	5.05
26.500	0.00	0.50	1.310	I	O	|	|	|	|	5.05
26.583	0.00	0.50	1.307	I	O	|	|	|	|	5.04
26.667	0.00	0.50	1.303	I	O	|	|	|	|	5.04
26.750	0.00	0.50	1.300	I	O	|	|	|	|	5.03
26.833	0.00	0.50	1.297	I	O	|	|	|	|	5.03
26.917	0.00	0.50	1.293	I	O	|	|	|	|	5.03
27.000	0.00	0.50	1.290	I	O	|	|	|	|	5.02
27.083	0.00	0.50	1.286	I	O	|	|	|	|	5.02
27.167	0.00	0.50	1.283	I	O	|	|	|	|	5.01
27.250	0.00	0.50	1.279	I	O	|	|	|	|	5.01
27.333	0.00	0.50	1.276	I	O	|	|	|	|	5.01
27.417	0.00	0.50	1.272	I	O	|	|	|	|	5.00
27.500	0.00	0.50	1.269	I	O	|	|	|	|	4.99
27.583	0.00	0.50	1.265	I	O	|	|	|	|	4.98
27.667	0.00	0.50	1.262	I	O	|	|	|	|	4.96
27.750	0.00	0.50	1.259	I	O	|	|	|	|	4.95
27.833	0.00	0.50	1.255	I	O	|	|	|	|	4.94
27.917	0.00	0.50	1.252	I	O	|	|	|	|	4.92
28.000	0.00	0.49	1.248	I	O	|	|	|	|	4.91
28.083	0.00	0.49	1.245	I	O	|	|	|	|	4.90
28.167	0.00	0.49	1.242	I	O	|	|	|	|	4.88
28.250	0.00	0.49	1.238	I	O	|	|	|	|	4.87
28.333	0.00	0.49	1.235	I	O	|	|	|	|	4.86
28.417	0.00	0.49	1.231	I	O	|	|	|	|	4.84
28.500	0.00	0.49	1.228	I	O	|	|	|	|	4.83
28.583	0.00	0.49	1.225	I	O	|	|	|	|	4.82
28.667	0.00	0.49	1.221	I	O	|	|	|	|	4.80
28.750	0.00	0.49	1.218	I	O	|	|	|	|	4.79
28.833	0.00	0.49	1.215	I	O	|	|	|	|	4.78
28.917	0.00	0.49	1.211	I	O	|	|	|	|	4.76
29.000	0.00	0.49	1.208	I	O	|	|	|	|	4.75
29.083	0.00	0.48	1.205	I	O	|	|	|	|	4.74
29.167	0.00	0.48	1.201	I	O	|	|	|	|	4.73
29.250	0.00	0.48	1.198	I	O	|	|	|	|	4.71
29.333	0.00	0.48	1.195	I	O	|	|	|	|	4.70
29.417	0.00	0.48	1.191	I	O	|	|	|	|	4.69
29.500	0.00	0.48	1.188	I	O	|	|	|	|	4.67
29.583	0.00	0.48	1.185	I	O	|	|	|	|	4.66
29.667	0.00	0.48	1.181	I	O	|	|	|	|	4.65
29.750	0.00	0.48	1.178	I	O	|	|	|	|	4.63
29.833	0.00	0.48	1.175	I	O	|	|	|	|	4.62
29.917	0.00	0.48	1.171	I	O	|	|	|	|	4.61

30.000	0.00	0.48	1.168	I	O	|	|	|	|	4.60
30.083	0.00	0.47	1.165	I	O	|	|	|	|	4.58
30.167	0.00	0.47	1.162	I	O	|	|	|	|	4.57
30.250	0.00	0.47	1.158	I	O	|	|	|	|	4.56
30.333	0.00	0.47	1.155	I	O	|	|	|	|	4.54
30.417	0.00	0.47	1.152	I	O	|	|	|	|	4.53
30.500	0.00	0.47	1.149	I	O	|	|	|	|	4.52
30.583	0.00	0.47	1.145	I	O	|	|	|	|	4.51
30.667	0.00	0.47	1.142	I	O	|	|	|	|	4.49
30.750	0.00	0.47	1.139	I	O	|	|	|	|	4.48
30.833	0.00	0.47	1.136	I	O	|	|	|	|	4.47
30.917	0.00	0.47	1.132	I	O	|	|	|	|	4.45
31.000	0.00	0.47	1.129	I	O	|	|	|	|	4.44
31.083	0.00	0.47	1.126	I	O	|	|	|	|	4.43
31.167	0.00	0.47	1.123	I	O	|	|	|	|	4.42
31.250	0.00	0.46	1.120	I	O	|	|	|	|	4.40
31.333	0.00	0.46	1.116	I	O	|	|	|	|	4.39
31.417	0.00	0.46	1.113	I	O	|	|	|	|	4.38
31.500	0.00	0.46	1.110	I	O	|	|	|	|	4.37
31.583	0.00	0.46	1.107	I	O	|	|	|	|	4.35
31.667	0.00	0.46	1.104	I	O	|	|	|	|	4.34
31.750	0.00	0.46	1.101	I	O	|	|	|	|	4.33
31.833	0.00	0.46	1.097	I	O	|	|	|	|	4.32
31.917	0.00	0.46	1.094	I	O	|	|	|	|	4.30
32.000	0.00	0.46	1.091	I	O	|	|	|	|	4.29
32.083	0.00	0.46	1.088	I	O	|	|	|	|	4.28
32.167	0.00	0.46	1.085	I	O	|	|	|	|	4.27
32.250	0.00	0.46	1.082	I	O	|	|	|	|	4.25
32.333	0.00	0.45	1.079	I	O	|	|	|	|	4.24
32.417	0.00	0.45	1.075	I	O	|	|	|	|	4.23
32.500	0.00	0.45	1.072	I	O	|	|	|	|	4.22
32.583	0.00	0.45	1.069	I	O	|	|	|	|	4.21
32.667	0.00	0.45	1.066	I	O	|	|	|	|	4.19
32.750	0.00	0.45	1.063	I	O	|	|	|	|	4.18
32.833	0.00	0.45	1.060	I	O	|	|	|	|	4.17
32.917	0.00	0.45	1.057	I	O	|	|	|	|	4.16
33.000	0.00	0.45	1.054	I	O	|	|	|	|	4.14
33.083	0.00	0.45	1.051	I	O	|	|	|	|	4.13
33.167	0.00	0.45	1.047	I	O	|	|	|	|	4.12
33.250	0.00	0.45	1.044	I	O	|	|	|	|	4.11
33.333	0.00	0.45	1.041	I	O	|	|	|	|	4.10
33.417	0.00	0.45	1.038	I	O	|	|	|	|	4.08
33.500	0.00	0.44	1.035	I	O	|	|	|	|	4.07
33.583	0.00	0.44	1.032	I	O	|	|	|	|	4.06
33.667	0.00	0.44	1.029	I	O	|	|	|	|	4.05
33.750	0.00	0.44	1.026	I	O	|	|	|	|	4.04
33.833	0.00	0.44	1.023	I	O	|	|	|	|	4.02
33.917	0.00	0.44	1.020	I	O	|	|	|	|	4.01
34.000	0.00	0.44	1.017	I	O	|	|	|	|	4.00
34.083	0.00	0.44	1.014	I	O	|	|	|	|	3.99
34.167	0.00	0.44	1.011	I	O	|	|	|	|	3.98
34.250	0.00	0.44	1.008	I	O	|	|	|	|	3.96
34.333	0.00	0.44	1.005	I	O	|	|	|	|	3.95
34.417	0.00	0.44	1.002	I	O	|	|	|	|	3.94

34.500	0.00	0.43	0.999	I	O	|	|	|	|	3.93
34.583	0.00	0.43	0.996	I	O	|	|	|	|	3.92
34.667	0.00	0.43	0.993	I	O	|	|	|	|	3.90
34.750	0.00	0.43	0.990	I	O	|	|	|	|	3.89
34.833	0.00	0.43	0.987	I	O	|	|	|	|	3.88
34.917	0.00	0.43	0.984	I	O	|	|	|	|	3.87
35.000	0.00	0.43	0.981	I	O	|	|	|	|	3.86
35.083	0.00	0.43	0.978	I	O	|	|	|	|	3.85
35.167	0.00	0.43	0.975	I	O	|	|	|	|	3.83
35.250	0.00	0.43	0.972	I	O	|	|	|	|	3.82
35.333	0.00	0.43	0.969	I	O	|	|	|	|	3.81
35.417	0.00	0.43	0.966	I	O	|	|	|	|	3.80
35.500	0.00	0.43	0.963	I	O	|	|	|	|	3.79
35.583	0.00	0.42	0.960	I	O	|	|	|	|	3.78
35.667	0.00	0.42	0.957	I	O	|	|	|	|	3.77
35.750	0.00	0.42	0.955	I	O	|	|	|	|	3.75
35.833	0.00	0.42	0.952	I	O	|	|	|	|	3.74
35.917	0.00	0.42	0.949	I	O	|	|	|	|	3.73
36.000	0.00	0.42	0.946	I	O	|	|	|	|	3.72
36.083	0.00	0.42	0.943	I	O	|	|	|	|	3.71
36.167	0.00	0.42	0.940	I	O	|	|	|	|	3.70
36.250	0.00	0.42	0.937	I	O	|	|	|	|	3.69
36.333	0.00	0.42	0.934	I	O	|	|	|	|	3.67
36.417	0.00	0.42	0.931	I	O	|	|	|	|	3.66
36.500	0.00	0.42	0.929	I	O	|	|	|	|	3.65
36.583	0.00	0.41	0.926	I	O	|	|	|	|	3.64
36.667	0.00	0.41	0.923	I	O	|	|	|	|	3.63
36.750	0.00	0.41	0.920	I	O	|	|	|	|	3.62
36.833	0.00	0.41	0.917	I	O	|	|	|	|	3.61
36.917	0.00	0.41	0.914	I	O	|	|	|	|	3.60
37.000	0.00	0.41	0.911	I	O	|	|	|	|	3.58
37.083	0.00	0.41	0.909	I	O	|	|	|	|	3.57
37.167	0.00	0.41	0.906	I	O	|	|	|	|	3.56
37.250	0.00	0.41	0.903	I	O	|	|	|	|	3.55
37.333	0.00	0.41	0.900	I	O	|	|	|	|	3.54
37.417	0.00	0.41	0.897	I	O	|	|	|	|	3.53
37.500	0.00	0.41	0.895	I	O	|	|	|	|	3.52
37.583	0.00	0.41	0.892	I	O	|	|	|	|	3.51
37.667	0.00	0.40	0.889	I	O	|	|	|	|	3.50
37.750	0.00	0.40	0.886	I	O	|	|	|	|	3.49
37.833	0.00	0.40	0.883	I	O	|	|	|	|	3.47
37.917	0.00	0.40	0.881	I	O	|	|	|	|	3.46
38.000	0.00	0.40	0.878	I	O	|	|	|	|	3.45
38.083	0.00	0.40	0.875	I	O	|	|	|	|	3.44
38.167	0.00	0.40	0.872	I	O	|	|	|	|	3.43
38.250	0.00	0.40	0.870	I	O	|	|	|	|	3.42
38.333	0.00	0.40	0.867	I	O	|	|	|	|	3.41
38.417	0.00	0.40	0.864	I	O	|	|	|	|	3.40
38.500	0.00	0.40	0.861	I	O	|	|	|	|	3.39
38.583	0.00	0.40	0.859	I	O	|	|	|	|	3.38
38.667	0.00	0.40	0.856	I	O	|	|	|	|	3.37
38.750	0.00	0.39	0.853	I	O	|	|	|	|	3.36
38.833	0.00	0.39	0.851	I	O	|	|	|	|	3.34
38.917	0.00	0.39	0.848	I	O	|	|	|	|	3.33

39.000	0.00	0.39	0.845	I	O	|	|	|	|	3.32
39.083	0.00	0.39	0.842	I	O	|	|	|	|	3.31
39.167	0.00	0.39	0.840	I	O	|	|	|	|	3.30
39.250	0.00	0.39	0.837	I	O	|	|	|	|	3.29
39.333	0.00	0.39	0.834	I	O	|	|	|	|	3.28
39.417	0.00	0.39	0.832	I	O	|	|	|	|	3.27
39.500	0.00	0.39	0.829	I	O	|	|	|	|	3.26
39.583	0.00	0.39	0.826	I	O	|	|	|	|	3.25
39.667	0.00	0.39	0.824	I	O	|	|	|	|	3.24
39.750	0.00	0.39	0.821	I	O	|	|	|	|	3.23
39.833	0.00	0.39	0.818	I	O	|	|	|	|	3.22
39.917	0.00	0.38	0.816	I	O	|	|	|	|	3.21
40.000	0.00	0.38	0.813	I	O	|	|	|	|	3.20
40.083	0.00	0.38	0.810	I	O	|	|	|	|	3.19
40.167	0.00	0.38	0.808	I	O	|	|	|	|	3.18
40.250	0.00	0.38	0.805	I	O	|	|	|	|	3.17
40.333	0.00	0.38	0.802	I	O	|	|	|	|	3.16
40.417	0.00	0.38	0.800	I	O	|	|	|	|	3.15
40.500	0.00	0.38	0.797	I	O	|	|	|	|	3.13
40.583	0.00	0.38	0.795	I	O	|	|	|	|	3.12
40.667	0.00	0.38	0.792	I	O	|	|	|	|	3.11
40.750	0.00	0.38	0.789	I	O	|	|	|	|	3.10
40.833	0.00	0.38	0.787	I	O	|	|	|	|	3.09
40.917	0.00	0.38	0.784	I	O	|	|	|	|	3.08
41.000	0.00	0.38	0.782	I	O	|	|	|	|	3.07
41.083	0.00	0.37	0.779	I	O	|	|	|	|	3.06
41.167	0.00	0.37	0.776	I	O	|	|	|	|	3.05
41.250	0.00	0.37	0.774	I	O	|	|	|	|	3.04
41.333	0.00	0.37	0.771	I	O	|	|	|	|	3.03
41.417	0.00	0.37	0.769	I	O	|	|	|	|	3.02
41.500	0.00	0.37	0.766	I	O	|	|	|	|	3.01
41.583	0.00	0.37	0.764	I	O	|	|	|	|	3.00
41.667	0.00	0.37	0.761	I	O	|	|	|	|	2.99
41.750	0.00	0.37	0.759	I	O	|	|	|	|	2.98
41.833	0.00	0.37	0.756	I	O	|	|	|	|	2.97
41.917	0.00	0.37	0.754	I	O	|	|	|	|	2.96
42.000	0.00	0.37	0.751	I	O	|	|	|	|	2.95
42.083	0.00	0.37	0.748	I	O	|	|	|	|	2.94
42.167	0.00	0.36	0.746	I	O	|	|	|	|	2.93
42.250	0.00	0.36	0.743	I	O	|	|	|	|	2.92
42.333	0.00	0.36	0.741	I	O	|	|	|	|	2.91
42.417	0.00	0.36	0.738	I	O	|	|	|	|	2.90
42.500	0.00	0.36	0.736	I	O	|	|	|	|	2.89
42.583	0.00	0.36	0.733	I	O	|	|	|	|	2.88
42.667	0.00	0.36	0.731	I	O	|	|	|	|	2.87
42.750	0.00	0.36	0.729	I	O	|	|	|	|	2.86
42.833	0.00	0.36	0.726	I	O	|	|	|	|	2.86
42.917	0.00	0.36	0.724	I	O	|	|	|	|	2.85
43.000	0.00	0.36	0.721	I	O	|	|	|	|	2.84
43.083	0.00	0.36	0.719	I	O	|	|	|	|	2.83
43.167	0.00	0.36	0.716	I	O	|	|	|	|	2.82
43.250	0.00	0.35	0.714	I	O	|	|	|	|	2.81
43.333	0.00	0.35	0.711	I	O	|	|	|	|	2.80
43.417	0.00	0.35	0.709	I	O	|	|	|	|	2.79

43.500	0.00	0.35	0.706	I	O	|	|	|	|	2.78
43.583	0.00	0.35	0.704	I	O	|	|	|	|	2.77
43.667	0.00	0.35	0.702	I	O	|	|	|	|	2.76
43.750	0.00	0.35	0.699	I	O	|	|	|	|	2.75
43.833	0.00	0.35	0.697	I	O	|	|	|	|	2.74
43.917	0.00	0.35	0.694	I	O	|	|	|	|	2.73
44.000	0.00	0.35	0.692	I	O	|	|	|	|	2.72
44.083	0.00	0.35	0.690	I	O	|	|	|	|	2.71
44.167	0.00	0.35	0.687	I	O	|	|	|	|	2.70
44.250	0.00	0.35	0.685	I	O	|	|	|	|	2.69
44.333	0.00	0.34	0.682	I	O	|	|	|	|	2.68
44.417	0.00	0.34	0.680	I	O	|	|	|	|	2.67
44.500	0.00	0.34	0.678	I	O	|	|	|	|	2.67
44.583	0.00	0.34	0.675	I	O	|	|	|	|	2.66
44.667	0.00	0.34	0.673	I	O	|	|	|	|	2.65
44.750	0.00	0.34	0.671	I	O	|	|	|	|	2.64
44.833	0.00	0.34	0.668	I	O	|	|	|	|	2.63
44.917	0.00	0.34	0.666	I	O	|	|	|	|	2.62
45.000	0.00	0.34	0.664	I	O	|	|	|	|	2.61
45.083	0.00	0.34	0.661	I	O	|	|	|	|	2.60
45.167	0.00	0.34	0.659	I	O	|	|	|	|	2.59
45.250	0.00	0.34	0.657	I	O	|	|	|	|	2.58
45.333	0.00	0.34	0.654	I	O	|	|	|	|	2.57
45.417	0.00	0.34	0.652	I	O	|	|	|	|	2.56
45.500	0.00	0.33	0.650	I	O	|	|	|	|	2.56
45.583	0.00	0.33	0.647	I	O	|	|	|	|	2.55
45.667	0.00	0.33	0.645	I	O	|	|	|	|	2.54
45.750	0.00	0.33	0.643	I	O	|	|	|	|	2.53
45.833	0.00	0.33	0.641	I	O	|	|	|	|	2.52
45.917	0.00	0.33	0.638	I	O	|	|	|	|	2.51
46.000	0.00	0.33	0.636	I	O	|	|	|	|	2.50
46.083	0.00	0.33	0.634	I	O	|	|	|	|	2.49
46.167	0.00	0.33	0.631	I	O	|	|	|	|	2.48
46.250	0.00	0.33	0.629	I	O	|	|	|	|	2.48
46.333	0.00	0.33	0.627	I	O	|	|	|	|	2.47
46.417	0.00	0.33	0.625	I	O	|	|	|	|	2.46
46.500	0.00	0.33	0.622	I	O	|	|	|	|	2.45
46.583	0.00	0.33	0.620	I	O	|	|	|	|	2.44
46.667	0.00	0.32	0.618	I	O	|	|	|	|	2.43
46.750	0.00	0.32	0.616	I	O	|	|	|	|	2.42
46.833	0.00	0.32	0.614	I	O	|	|	|	|	2.41
46.917	0.00	0.32	0.611	I	O	|	|	|	|	2.41
47.000	0.00	0.32	0.609	I	O	|	|	|	|	2.40
47.083	0.00	0.32	0.607	I	O	|	|	|	|	2.39
47.167	0.00	0.32	0.605	I	O	|	|	|	|	2.38
47.250	0.00	0.32	0.602	I	O	|	|	|	|	2.37
47.333	0.00	0.32	0.600	I	O	|	|	|	|	2.36
47.417	0.00	0.32	0.598	I	O	|	|	|	|	2.35
47.500	0.00	0.32	0.596	I	O	|	|	|	|	2.34
47.583	0.00	0.32	0.594	I	O	|	|	|	|	2.34
47.667	0.00	0.32	0.591	I	O	|	|	|	|	2.33
47.750	0.00	0.32	0.589	I	O	|	|	|	|	2.32
47.833	0.00	0.31	0.587	I	O	|	|	|	|	2.31
47.917	0.00	0.31	0.585	I	O	|	|	|	|	2.30

48.000 0.00 0.31 0.583 I O | | | | 2.29

**********HYDROGRAPH DATA**********

Number of intervals = 1573
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.514 (CFS)
Total volume = 2.143 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/18/19

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2 YEAR FLOOD ROUTING
BASIN 3
MJPA 304163
4163FR2.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP2242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 4.593 (CFS)
Total volume = 2.636 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.169	0.170	0.168	0.170
2.000	0.508	0.290	0.507	0.509
3.000	0.763	0.370	0.762	0.764
4.000	1.017	0.440	1.015	1.019
5.000	1.271	0.500	1.269	1.273
5.500	1.708	0.530	1.706	1.710
6.000	2.173	0.850	2.170	2.176
7.000	3.187	1.200	3.183	3.191
8.000	4.314	16.560	4.257	4.371
9.000	5.557	23.020	5.478	5.636

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.1	2.30	3.44	4.59	Depth (Ft.)
0.083	0.06	0.00	0.000	O	|	|	|	|	0.00
0.167	0.25	0.00	0.001	OI	|	|	|	|	0.01
0.250	0.32	0.00	0.003	O I	|	|	|	|	0.02
0.333	0.38	0.01	0.006	O I	|	|	|	|	0.03
0.417	0.49	0.01	0.008	O I	|	|	|	|	0.05
0.500	0.54	0.01	0.012	O I	|	|	|	|	0.07
0.583	0.56	0.02	0.016	O I	|	|	|	|	0.09
0.667	0.57	0.02	0.019	O I	|	|	|	|	0.11
0.750	0.58	0.02	0.023	O I	|	|	|	|	0.14
0.833	0.62	0.03	0.027	O I	|	|	|	|	0.16
0.917	0.71	0.03	0.032	O I	|	|	|	|	0.19
1.000	0.75	0.04	0.036	O I	|	|	|	|	0.22
1.083	0.74	0.04	0.041	O I	|	|	|	|	0.24
1.167	0.65	0.05	0.046	O I	|	|	|	|	0.27
1.250	0.62	0.05	0.050	O I	|	|	|	|	0.29
1.333	0.61	0.05	0.054	O I	|	|	|	|	0.32
1.417	0.61	0.06	0.057	O I	|	|	|	|	0.34
1.500	0.60	0.06	0.061	O I	|	|	|	|	0.36
1.583	0.60	0.07	0.065	O I	|	|	|	|	0.38
1.667	0.60	0.07	0.069	O I	|	|	|	|	0.41
1.750	0.59	0.07	0.072	O I	|	|	|	|	0.43
1.833	0.62	0.08	0.076	O I	|	|	|	|	0.45
1.917	0.72	0.08	0.080	O I	|	|	|	|	0.47
2.000	0.75	0.08	0.084	O I	|	|	|	|	0.50
2.083	0.77	0.09	0.089	O I	|	|	|	|	0.53
2.167	0.78	0.09	0.094	O I	|	|	|	|	0.55
2.250	0.78	0.10	0.098	O I	|	|	|	|	0.58
2.333	0.79	0.10	0.103	O I	|	|	|	|	0.61
2.417	0.79	0.11	0.108	O I	|	|	|	|	0.64
2.500	0.79	0.11	0.113	O I	|	|	|	|	0.67
2.583	0.82	0.12	0.117	O I	|	|	|	|	0.69
2.667	0.91	0.12	0.122	O I	|	|	|	|	0.72
2.750	0.95	0.13	0.128	O I	|	|	|	|	0.76
2.833	0.97	0.13	0.134	O I	|	|	|	|	0.79
2.917	0.97	0.14	0.139	O I	|	|	|	|	0.82

3.000	0.98	0.15	0.145	O	I			0.86
3.083	0.98	0.15	0.151	O	I			0.89
3.167	0.99	0.16	0.157	O	I			0.93
3.250	0.99	0.16	0.162	O	I			0.96
3.333	0.99	0.17	0.168	O	I			0.99
3.417	0.99	0.17	0.174	O	I			1.01
3.500	0.99	0.17	0.179	O	I			1.03
3.583	0.99	0.18	0.185	O	I			1.05
3.667	0.99	0.18	0.190	O	I			1.06
3.750	0.99	0.18	0.196	O	I			1.08
3.833	1.02	0.18	0.202	O	I			1.10
3.917	1.11	0.18	0.208	O	I			1.11
4.000	1.15	0.19	0.214	O	I			1.13
4.083	1.16	0.19	0.221	O	I			1.15
4.167	1.17	0.19	0.228	O	I			1.17
4.250	1.18	0.19	0.234	O	I			1.19
4.333	1.21	0.20	0.241	O	I			1.21
4.417	1.31	0.20	0.249	O	I			1.24
4.500	1.34	0.20	0.256	O	I			1.26
4.583	1.36	0.20	0.264	O	I			1.28
4.667	1.37	0.21	0.272	O	I			1.30
4.750	1.38	0.21	0.280	O	I			1.33
4.833	1.41	0.21	0.289	O	I			1.35
4.917	1.51	0.22	0.297	O	I			1.38
5.000	1.54	0.22	0.306	O	I			1.40
5.083	1.50	0.22	0.315	O	I			1.43
5.167	1.32	0.22	0.323	O	I			1.45
5.250	1.26	0.23	0.331	O	I			1.48
5.333	1.26	0.23	0.338	O	I			1.50
5.417	1.34	0.23	0.345	O	I			1.52
5.500	1.36	0.24	0.353	O	I			1.54
5.583	1.40	0.24	0.361	O	I			1.57
5.667	1.50	0.24	0.369	O	I			1.59
5.750	1.54	0.24	0.378	O	I			1.62
5.833	1.55	0.25	0.387	O	I			1.64
5.917	1.57	0.25	0.396	O	I			1.67
6.000	1.57	0.25	0.405	O	I			1.70
6.083	1.61	0.26	0.414	O	I			1.72
6.167	1.70	0.26	0.424	O	I			1.75
6.250	1.74	0.26	0.434	O	I			1.78
6.333	1.76	0.27	0.444	O	I			1.81
6.417	1.77	0.27	0.454	O	I			1.84
6.500	1.77	0.27	0.464	O	I			1.87
6.583	1.81	0.28	0.475	O	I			1.90
6.667	1.90	0.28	0.486	O	I			1.93
6.750	1.94	0.29	0.497	O	I			1.97
6.833	1.95	0.29	0.508	O	I			2.00
6.917	1.96	0.29	0.520	O	I			2.05
7.000	1.97	0.30	0.531	O	I			2.09
7.083	1.97	0.30	0.543	O	I			2.14
7.167	1.98	0.30	0.554	O	I			2.18
7.250	1.98	0.31	0.566	O	I			2.23
7.333	2.01	0.31	0.578	O	I			2.27
7.417	2.10	0.32	0.590	O	I			2.32

7.500	2.14	0.32	0.602	O	I			2.37
7.583	2.18	0.32	0.615	O	I			2.42
7.667	2.28	0.33	0.628	O	I			2.47
7.750	2.33	0.33	0.641	O	I			2.52
7.833	2.38	0.34	0.655	O	I			2.58
7.917	2.48	0.34	0.670	O	I			2.63
8.000	2.52	0.35	0.684	O	I			2.69
8.083	2.60	0.35	0.700	O	I			2.75
8.167	2.80	0.36	0.716	O	I			2.82
8.250	2.88	0.36	0.733	O	I			2.88
8.333	2.91	0.37	0.750	O	I			2.95
8.417	2.94	0.37	0.768	O	I			3.02
8.500	2.95	0.38	0.786	O	I			3.09
8.583	2.99	0.38	0.804	O	I			3.16
8.667	3.09	0.39	0.822	O	I			3.23
8.750	3.12	0.39	0.841	O	I			3.31
8.833	3.17	0.40	0.860	O	I			3.38
8.917	3.27	0.40	0.879	O	I			3.46
9.000	3.32	0.41	0.899	O	I			3.54
9.083	2.81	0.41	0.917	O	I			3.61
9.167	1.27	0.42	0.928	O	I			3.65
9.250	0.68	0.42	0.932	O I				3.67
9.333	0.48	0.42	0.933	OI				3.67
9.417	0.46	0.42	0.934	OI				3.67
9.500	0.43	0.42	0.934	OI				3.67
9.583	0.44	0.42	0.934	OI				3.67
9.667	0.54	0.42	0.935	OI				3.68
9.750	0.58	0.42	0.936	O I				3.68
9.833	0.65	0.42	0.937	O I				3.69
9.917	0.80	0.42	0.939	O I				3.69
10.000	0.87	0.42	0.942	O I				3.70
10.083	1.22	0.42	0.946	O	I			3.72
10.167	2.18	0.42	0.955	O	I			3.76
10.250	2.55	0.43	0.968	O	I			3.81
10.333	2.71	0.43	0.984	O	I			3.87
10.417	2.81	0.44	1.000	O	I			3.93
10.500	2.87	0.44	1.016	O	I			4.00
10.583	2.55	0.44	1.032	O	I			4.06
10.667	1.49	0.45	1.043	O	I			4.10
10.750	1.10	0.45	1.048	O	I			4.12
10.833	0.95	0.45	1.052	O	I			4.14
10.917	0.86	0.45	1.056	O I				4.15
11.000	0.81	0.45	1.058	O I				4.16
11.083	0.74	0.45	1.060	O I				4.17
11.167	0.62	0.45	1.062	OI				4.18
11.250	0.58	0.45	1.063	OI				4.18
11.333	0.57	0.45	1.064	O				4.18
11.417	0.57	0.45	1.065	OI				4.19
11.500	0.59	0.45	1.066	OI				4.19
11.583	0.53	0.45	1.066	O				4.19
11.667	0.32	0.45	1.066	IO				4.19
11.750	0.25	0.45	1.065	I O				4.19
11.833	0.27	0.45	1.064	I O				4.18
11.917	0.38	0.45	1.063	IO				4.18

12.000	0.43	0.45	1.063	IO				4.18
12.083	0.72	0.45	1.063	OI				4.18
12.167	1.53	0.45	1.068	O	I			4.20
12.250	1.85	0.45	1.076	O	I			4.23
12.333	2.04	0.46	1.087	O	I			4.27
12.417	2.26	0.46	1.098	O	I			4.32
12.500	2.37	0.46	1.111	O	I			4.37
12.583	2.52	0.47	1.125	O	I			4.42
12.667	2.79	0.47	1.140	O	I			4.48
12.750	2.92	0.47	1.156	O	I			4.55
12.833	3.03	0.48	1.174	O	I			4.62
12.917	3.18	0.48	1.192	O	I			4.69
13.000	3.26	0.49	1.210	O	I			4.76
13.083	3.50	0.49	1.230	O	I			4.84
13.167	4.10	0.50	1.253	O	I			4.93
13.250	4.34	0.50	1.279	O	I			5.01
13.333	4.46	0.50	1.306	O	I			5.04
13.417	4.54	0.50	1.333	O	I			5.07
13.500	4.59	0.51	1.361	O	I			5.10
13.583	4.23	0.51	1.388	O	I			5.13
13.667	3.02	0.51	1.409	O	I			5.16
13.750	2.57	0.51	1.425	O	I			5.18
13.833	2.39	0.51	1.439	O	I			5.19
13.917	2.29	0.51	1.451	O	I			5.21
14.000	2.23	0.51	1.463	O	I			5.22
14.083	2.34	0.51	1.476	O	I			5.23
14.167	2.78	0.52	1.490	O	I			5.25
14.250	2.94	0.52	1.506	O	I			5.27
14.333	2.98	0.52	1.523	O	I			5.29
14.417	2.93	0.52	1.540	O	I			5.31
14.500	2.93	0.52	1.556	O	I			5.33
14.583	2.95	0.52	1.573	O	I			5.35
14.667	2.97	0.52	1.590	O	I			5.36
14.750	2.99	0.52	1.607	O	I			5.38
14.833	2.97	0.52	1.624	O	I			5.40
14.917	2.87	0.53	1.640	O	I			5.42
15.000	2.84	0.53	1.656	O	I			5.44
15.083	2.80	0.53	1.672	O	I			5.46
15.167	2.69	0.53	1.687	O	I			5.48
15.250	2.66	0.53	1.702	O	I			5.49
15.333	2.62	0.54	1.716	O	I			5.51
15.417	2.51	0.55	1.730	O	I			5.52
15.500	2.47	0.55	1.744	O	I			5.54
15.583	2.31	0.56	1.756	O	I			5.55
15.667	1.86	0.57	1.767	O	I			5.56
15.750	1.70	0.58	1.775	O	I			5.57
15.833	1.63	0.58	1.783	O	I			5.58
15.917	1.60	0.59	1.790	O	I			5.59
16.000	1.59	0.59	1.797	O	I			5.60
16.083	1.46	0.60	1.803	O	I			5.60
16.167	1.09	0.60	1.808	O	I			5.61
16.250	0.95	0.60	1.811	O	I			5.61
16.333	0.88	0.60	1.813	O	I			5.61
16.417	0.85	0.60	1.815	OI				5.61

16.500	0.83	0.60	1.816	OI				5.62
16.583	0.78	0.61	1.818	OI				5.62
16.667	0.68	0.61	1.818	O				5.62
16.750	0.64	0.61	1.819	O				5.62
16.833	0.62	0.61	1.819	O				5.62
16.917	0.61	0.61	1.819	O				5.62
17.000	0.60	0.61	1.819	O				5.62
17.083	0.66	0.61	1.819	O				5.62
17.167	0.84	0.61	1.820	OI				5.62
17.250	0.91	0.61	1.822	O I				5.62
17.333	0.94	0.61	1.824	O I				5.62
17.417	0.96	0.61	1.827	O I				5.63
17.500	0.97	0.61	1.829	O I				5.63
17.583	0.98	0.61	1.831	O I				5.63
17.667	0.98	0.62	1.834	O I				5.64
17.750	0.99	0.62	1.836	O I				5.64
17.833	0.96	0.62	1.839	O I				5.64
17.917	0.87	0.62	1.841	O I				5.64
18.000	0.83	0.62	1.842	OI				5.64
18.083	0.82	0.62	1.844	OI				5.65
18.167	0.81	0.62	1.845	OI				5.65
18.250	0.80	0.63	1.846	OI				5.65
18.333	0.80	0.63	1.848	OI				5.65
18.417	0.79	0.63	1.849	OI				5.65
18.500	0.79	0.63	1.850	OI				5.65
18.583	0.76	0.63	1.851	OI				5.65
18.667	0.67	0.63	1.852	O				5.65
18.750	0.63	0.63	1.852	O				5.65
18.833	0.59	0.63	1.852	O				5.65
18.917	0.49	0.63	1.851	IO				5.65
19.000	0.44	0.63	1.850	IO				5.65
19.083	0.46	0.63	1.849	IO				5.65
19.167	0.54	0.63	1.848	IO				5.65
19.250	0.56	0.63	1.847	IO				5.65
19.333	0.61	0.63	1.847	O				5.65
19.417	0.70	0.63	1.847	O				5.65
19.500	0.74	0.63	1.848	OI				5.65
19.583	0.73	0.63	1.849	OI				5.65
19.667	0.65	0.63	1.849	O				5.65
19.750	0.62	0.63	1.849	O				5.65
19.833	0.58	0.63	1.849	O				5.65
19.917	0.48	0.63	1.848	IO				5.65
20.000	0.44	0.63	1.847	IO				5.65
20.083	0.46	0.62	1.846	IO				5.65
20.167	0.54	0.62	1.845	IO				5.65
20.250	0.56	0.62	1.844	IO				5.65
20.333	0.58	0.62	1.844	O				5.65
20.417	0.58	0.62	1.844	O				5.65
20.500	0.59	0.62	1.844	O				5.65
20.583	0.59	0.62	1.843	O				5.65
20.667	0.59	0.62	1.843	O				5.65
20.750	0.59	0.62	1.843	O				5.64
20.833	0.56	0.62	1.843	IO				5.64
20.917	0.47	0.62	1.842	IO				5.64

21.000	0.44	0.62	1.841	| IO	|	|	|	5.64
21.083	0.45	0.62	1.839	| IO	|	|	|	5.64
21.167	0.53	0.62	1.839	| IO	|	|	|	5.64
21.250	0.56	0.62	1.838	| IO	|	|	|	5.64
21.333	0.54	0.62	1.838	| IO	|	|	|	5.64
21.417	0.46	0.62	1.837	| IO	|	|	|	5.64
21.500	0.43	0.62	1.836	| I O	|	|	|	5.64
21.583	0.45	0.62	1.834	| IO	|	|	|	5.64
21.667	0.53	0.62	1.833	| IO	|	|	|	5.63
21.750	0.56	0.62	1.833	| IO	|	|	|	5.63
21.833	0.54	0.62	1.833	| IO	|	|	|	5.63
21.917	0.46	0.62	1.832	| IO	|	|	|	5.63
22.000	0.43	0.61	1.831	| I O	|	|	|	5.63
22.083	0.45	0.61	1.829	| IO	|	|	|	5.63
22.167	0.53	0.61	1.828	| IO	|	|	|	5.63
22.250	0.56	0.61	1.828	| IO	|	|	|	5.63
22.333	0.54	0.61	1.828	| IO	|	|	|	5.63
22.417	0.46	0.61	1.827	| IO	|	|	|	5.63
22.500	0.43	0.61	1.826	| I O	|	|	|	5.63
22.583	0.41	0.61	1.824	| I O	|	|	|	5.63
22.667	0.41	0.61	1.823	| I O	|	|	|	5.62
22.750	0.40	0.61	1.822	| I O	|	|	|	5.62
22.833	0.40	0.61	1.820	| I O	|	|	|	5.62
22.917	0.40	0.61	1.819	| I O	|	|	|	5.62
23.000	0.40	0.61	1.817	| I O	|	|	|	5.62
23.083	0.40	0.60	1.816	| I O	|	|	|	5.62
23.167	0.40	0.60	1.814	| I O	|	|	|	5.61
23.250	0.40	0.60	1.813	| I O	|	|	|	5.61
23.333	0.40	0.60	1.812	| I O	|	|	|	5.61
23.417	0.40	0.60	1.810	| I O	|	|	|	5.61
23.500	0.40	0.60	1.809	| I O	|	|	|	5.61
23.583	0.40	0.60	1.807	| I O	|	|	|	5.61
23.667	0.40	0.60	1.806	| I O	|	|	|	5.61
23.750	0.40	0.60	1.805	| I O	|	|	|	5.60
23.833	0.40	0.60	1.803	| I O	|	|	|	5.60
23.917	0.40	0.59	1.802	| I O	|	|	|	5.60
24.000	0.40	0.59	1.801	| I O	|	|	|	5.60
24.083	0.33	0.59	1.799	| I O	|	|	|	5.60
24.167	0.15	0.59	1.797	|I O	|	|	|	5.60
24.250	0.08	0.59	1.793	I O	|	|	|	5.59
24.333	0.05	0.59	1.790	I O	|	|	|	5.59
24.417	0.03	0.58	1.786	I O	|	|	|	5.58
24.500	0.02	0.58	1.782	I O	|	|	|	5.58
24.583	0.01	0.58	1.778	I O	|	|	|	5.58
24.667	0.01	0.58	1.774	I O	|	|	|	5.57
24.750	0.00	0.57	1.770	I O	|	|	|	5.57
24.833	0.00	0.57	1.766	I O	|	|	|	5.56
24.917	0.00	0.57	1.763	I O	|	|	|	5.56
25.000	0.00	0.56	1.759	I O	|	|	|	5.55
25.083	0.00	0.56	1.755	I O	|	|	|	5.55
25.167	0.00	0.56	1.751	I O	|	|	|	5.55
25.250	0.00	0.56	1.747	I O	|	|	|	5.54
25.333	0.00	0.55	1.743	I O	|	|	|	5.54
25.417	0.00	0.55	1.739	I O	|	|	|	5.53

25.500	0.00	0.55	1.736	I	O	|	|	|	|	5.53
25.583	0.00	0.55	1.732	I	O	|	|	|	|	5.53
25.667	0.00	0.54	1.728	I	O	|	|	|	|	5.52
25.750	0.00	0.54	1.724	I	O	|	|	|	|	5.52
25.833	0.00	0.54	1.721	I	O	|	|	|	|	5.51
25.917	0.00	0.54	1.717	I	O	|	|	|	|	5.51
26.000	0.00	0.53	1.713	I	O	|	|	|	|	5.51
26.083	0.00	0.53	1.710	I	O	|	|	|	|	5.50
26.167	0.00	0.53	1.706	I	O	|	|	|	|	5.50
26.250	0.00	0.53	1.702	I	O	|	|	|	|	5.49
26.333	0.00	0.53	1.699	I	O	|	|	|	|	5.49
26.417	0.00	0.53	1.695	I	O	|	|	|	|	5.49
26.500	0.00	0.53	1.691	I	O	|	|	|	|	5.48
26.583	0.00	0.53	1.688	I	O	|	|	|	|	5.48
26.667	0.00	0.53	1.684	I	O	|	|	|	|	5.47
26.750	0.00	0.53	1.680	I	O	|	|	|	|	5.47
26.833	0.00	0.53	1.677	I	O	|	|	|	|	5.46
26.917	0.00	0.53	1.673	I	O	|	|	|	|	5.46
27.000	0.00	0.53	1.670	I	O	|	|	|	|	5.46
27.083	0.00	0.53	1.666	I	O	|	|	|	|	5.45
27.167	0.00	0.53	1.662	I	O	|	|	|	|	5.45
27.250	0.00	0.53	1.659	I	O	|	|	|	|	5.44
27.333	0.00	0.53	1.655	I	O	|	|	|	|	5.44
27.417	0.00	0.53	1.651	I	O	|	|	|	|	5.44
27.500	0.00	0.53	1.648	I	O	|	|	|	|	5.43
27.583	0.00	0.53	1.644	I	O	|	|	|	|	5.43
27.667	0.00	0.53	1.641	I	O	|	|	|	|	5.42
27.750	0.00	0.53	1.637	I	O	|	|	|	|	5.42
27.833	0.00	0.52	1.633	I	O	|	|	|	|	5.41
27.917	0.00	0.52	1.630	I	O	|	|	|	|	5.41
28.000	0.00	0.52	1.626	I	O	|	|	|	|	5.41
28.083	0.00	0.52	1.622	I	O	|	|	|	|	5.40
28.167	0.00	0.52	1.619	I	O	|	|	|	|	5.40
28.250	0.00	0.52	1.615	I	O	|	|	|	|	5.39
28.333	0.00	0.52	1.612	I	O	|	|	|	|	5.39
28.417	0.00	0.52	1.608	I	O	|	|	|	|	5.39
28.500	0.00	0.52	1.604	I	O	|	|	|	|	5.38
28.583	0.00	0.52	1.601	I	O	|	|	|	|	5.38
28.667	0.00	0.52	1.597	I	O	|	|	|	|	5.37
28.750	0.00	0.52	1.594	I	O	|	|	|	|	5.37
28.833	0.00	0.52	1.590	I	O	|	|	|	|	5.37
28.917	0.00	0.52	1.586	I	O	|	|	|	|	5.36
29.000	0.00	0.52	1.583	I	O	|	|	|	|	5.36
29.083	0.00	0.52	1.579	I	O	|	|	|	|	5.35
29.167	0.00	0.52	1.576	I	O	|	|	|	|	5.35
29.250	0.00	0.52	1.572	I	O	|	|	|	|	5.34
29.333	0.00	0.52	1.568	I	O	|	|	|	|	5.34
29.417	0.00	0.52	1.565	I	O	|	|	|	|	5.34
29.500	0.00	0.52	1.561	I	O	|	|	|	|	5.33
29.583	0.00	0.52	1.558	I	O	|	|	|	|	5.33
29.667	0.00	0.52	1.554	I	O	|	|	|	|	5.32
29.750	0.00	0.52	1.551	I	O	|	|	|	|	5.32
29.833	0.00	0.52	1.547	I	O	|	|	|	|	5.32
29.917	0.00	0.52	1.543	I	O	|	|	|	|	5.31

30.000	0.00	0.52	1.540	I	O	|	|	|	|	5.31
30.083	0.00	0.52	1.536	I	O	|	|	|	|	5.30
30.167	0.00	0.52	1.533	I	O	|	|	|	|	5.30
30.250	0.00	0.52	1.529	I	O	|	|	|	|	5.30
30.333	0.00	0.52	1.526	I	O	|	|	|	|	5.29
30.417	0.00	0.52	1.522	I	O	|	|	|	|	5.29
30.500	0.00	0.52	1.518	I	O	|	|	|	|	5.28
30.583	0.00	0.52	1.515	I	O	|	|	|	|	5.28
30.667	0.00	0.52	1.511	I	O	|	|	|	|	5.27
30.750	0.00	0.52	1.508	I	O	|	|	|	|	5.27
30.833	0.00	0.52	1.504	I	O	|	|	|	|	5.27
30.917	0.00	0.52	1.501	I	O	|	|	|	|	5.26
31.000	0.00	0.52	1.497	I	O	|	|	|	|	5.26
31.083	0.00	0.52	1.494	I	O	|	|	|	|	5.25
31.167	0.00	0.52	1.490	I	O	|	|	|	|	5.25
31.250	0.00	0.51	1.486	I	O	|	|	|	|	5.25
31.333	0.00	0.51	1.483	I	O	|	|	|	|	5.24
31.417	0.00	0.51	1.479	I	O	|	|	|	|	5.24
31.500	0.00	0.51	1.476	I	O	|	|	|	|	5.23
31.583	0.00	0.51	1.472	I	O	|	|	|	|	5.23
31.667	0.00	0.51	1.469	I	O	|	|	|	|	5.23
31.750	0.00	0.51	1.465	I	O	|	|	|	|	5.22
31.833	0.00	0.51	1.462	I	O	|	|	|	|	5.22
31.917	0.00	0.51	1.458	I	O	|	|	|	|	5.21
32.000	0.00	0.51	1.455	I	O	|	|	|	|	5.21
32.083	0.00	0.51	1.451	I	O	|	|	|	|	5.21
32.167	0.00	0.51	1.448	I	O	|	|	|	|	5.20
32.250	0.00	0.51	1.444	I	O	|	|	|	|	5.20
32.333	0.00	0.51	1.441	I	O	|	|	|	|	5.19
32.417	0.00	0.51	1.437	I	O	|	|	|	|	5.19
32.500	0.00	0.51	1.433	I	O	|	|	|	|	5.19
32.583	0.00	0.51	1.430	I	O	|	|	|	|	5.18
32.667	0.00	0.51	1.426	I	O	|	|	|	|	5.18
32.750	0.00	0.51	1.423	I	O	|	|	|	|	5.17
32.833	0.00	0.51	1.419	I	O	|	|	|	|	5.17
32.917	0.00	0.51	1.416	I	O	|	|	|	|	5.17
33.000	0.00	0.51	1.412	I	O	|	|	|	|	5.16
33.083	0.00	0.51	1.409	I	O	|	|	|	|	5.16
33.167	0.00	0.51	1.405	I	O	|	|	|	|	5.15
33.250	0.00	0.51	1.402	I	O	|	|	|	|	5.15
33.333	0.00	0.51	1.398	I	O	|	|	|	|	5.15
33.417	0.00	0.51	1.395	I	O	|	|	|	|	5.14
33.500	0.00	0.51	1.391	I	O	|	|	|	|	5.14
33.583	0.00	0.51	1.388	I	O	|	|	|	|	5.13
33.667	0.00	0.51	1.384	I	O	|	|	|	|	5.13
33.750	0.00	0.51	1.381	I	O	|	|	|	|	5.13
33.833	0.00	0.51	1.377	I	O	|	|	|	|	5.12
33.917	0.00	0.51	1.374	I	O	|	|	|	|	5.12
34.000	0.00	0.51	1.370	I	O	|	|	|	|	5.11
34.083	0.00	0.51	1.367	I	O	|	|	|	|	5.11
34.167	0.00	0.51	1.363	I	O	|	|	|	|	5.11
34.250	0.00	0.51	1.360	I	O	|	|	|	|	5.10
34.333	0.00	0.51	1.356	I	O	|	|	|	|	5.10
34.417	0.00	0.51	1.353	I	O	|	|	|	|	5.09

34.500	0.00	0.51	1.349	I	O	|	|	|	|	5.09
34.583	0.00	0.51	1.346	I	O	|	|	|	|	5.09
34.667	0.00	0.50	1.343	I	O	|	|	|	|	5.08
34.750	0.00	0.50	1.339	I	O	|	|	|	|	5.08
34.833	0.00	0.50	1.336	I	O	|	|	|	|	5.07
34.917	0.00	0.50	1.332	I	O	|	|	|	|	5.07
35.000	0.00	0.50	1.329	I	O	|	|	|	|	5.07
35.083	0.00	0.50	1.325	I	O	|	|	|	|	5.06
35.167	0.00	0.50	1.322	I	O	|	|	|	|	5.06
35.250	0.00	0.50	1.318	I	O	|	|	|	|	5.05
35.333	0.00	0.50	1.315	I	O	|	|	|	|	5.05
35.417	0.00	0.50	1.311	I	O	|	|	|	|	5.05
35.500	0.00	0.50	1.308	I	O	|	|	|	|	5.04
35.583	0.00	0.50	1.304	I	O	|	|	|	|	5.04
35.667	0.00	0.50	1.301	I	O	|	|	|	|	5.03
35.750	0.00	0.50	1.297	I	O	|	|	|	|	5.03
35.833	0.00	0.50	1.294	I	O	|	|	|	|	5.03
35.917	0.00	0.50	1.291	I	O	|	|	|	|	5.02
36.000	0.00	0.50	1.287	I	O	|	|	|	|	5.02
36.083	0.00	0.50	1.284	I	O	|	|	|	|	5.01
36.167	0.00	0.50	1.280	I	O	|	|	|	|	5.01
36.250	0.00	0.50	1.277	I	O	|	|	|	|	5.01
36.333	0.00	0.50	1.273	I	O	|	|	|	|	5.00
36.417	0.00	0.50	1.270	I	O	|	|	|	|	5.00
36.500	0.00	0.50	1.266	I	O	|	|	|	|	4.98
36.583	0.00	0.50	1.263	I	O	|	|	|	|	4.97
36.667	0.00	0.50	1.260	I	O	|	|	|	|	4.95
36.750	0.00	0.50	1.256	I	O	|	|	|	|	4.94
36.833	0.00	0.50	1.253	I	O	|	|	|	|	4.93
36.917	0.00	0.49	1.249	I	O	|	|	|	|	4.91
37.000	0.00	0.49	1.246	I	O	|	|	|	|	4.90
37.083	0.00	0.49	1.243	I	O	|	|	|	|	4.89
37.167	0.00	0.49	1.239	I	O	|	|	|	|	4.87
37.250	0.00	0.49	1.236	I	O	|	|	|	|	4.86
37.333	0.00	0.49	1.232	I	O	|	|	|	|	4.85
37.417	0.00	0.49	1.229	I	O	|	|	|	|	4.83
37.500	0.00	0.49	1.226	I	O	|	|	|	|	4.82
37.583	0.00	0.49	1.222	I	O	|	|	|	|	4.81
37.667	0.00	0.49	1.219	I	O	|	|	|	|	4.79
37.750	0.00	0.49	1.216	I	O	|	|	|	|	4.78
37.833	0.00	0.49	1.212	I	O	|	|	|	|	4.77
37.917	0.00	0.49	1.209	I	O	|	|	|	|	4.76
38.000	0.00	0.48	1.205	I	O	|	|	|	|	4.74
38.083	0.00	0.48	1.202	I	O	|	|	|	|	4.73
38.167	0.00	0.48	1.199	I	O	|	|	|	|	4.72
38.250	0.00	0.48	1.195	I	O	|	|	|	|	4.70
38.333	0.00	0.48	1.192	I	O	|	|	|	|	4.69
38.417	0.00	0.48	1.189	I	O	|	|	|	|	4.68
38.500	0.00	0.48	1.186	I	O	|	|	|	|	4.66
38.583	0.00	0.48	1.182	I	O	|	|	|	|	4.65
38.667	0.00	0.48	1.179	I	O	|	|	|	|	4.64
38.750	0.00	0.48	1.176	I	O	|	|	|	|	4.62
38.833	0.00	0.48	1.172	I	O	|	|	|	|	4.61
38.917	0.00	0.48	1.169	I	O	|	|	|	|	4.60

39.000	0.00	0.48	1.166	I	O	|	|	|	|	4.59
39.083	0.00	0.47	1.163	I	O	|	|	|	|	4.57
39.167	0.00	0.47	1.159	I	O	|	|	|	|	4.56
39.250	0.00	0.47	1.156	I	O	|	|	|	|	4.55
39.333	0.00	0.47	1.153	I	O	|	|	|	|	4.53
39.417	0.00	0.47	1.150	I	O	|	|	|	|	4.52
39.500	0.00	0.47	1.146	I	O	|	|	|	|	4.51
39.583	0.00	0.47	1.143	I	O	|	|	|	|	4.50
39.667	0.00	0.47	1.140	I	O	|	|	|	|	4.48
39.750	0.00	0.47	1.137	I	O	|	|	|	|	4.47
39.833	0.00	0.47	1.133	I	O	|	|	|	|	4.46
39.917	0.00	0.47	1.130	I	O	|	|	|	|	4.45
40.000	0.00	0.47	1.127	I	O	|	|	|	|	4.43
40.083	0.00	0.47	1.124	I	O	|	|	|	|	4.42
40.167	0.00	0.46	1.121	I	O	|	|	|	|	4.41
40.250	0.00	0.46	1.117	I	O	|	|	|	|	4.39
40.333	0.00	0.46	1.114	I	O	|	|	|	|	4.38
40.417	0.00	0.46	1.111	I	O	|	|	|	|	4.37
40.500	0.00	0.46	1.108	I	O	|	|	|	|	4.36
40.583	0.00	0.46	1.105	I	O	|	|	|	|	4.34
40.667	0.00	0.46	1.101	I	O	|	|	|	|	4.33
40.750	0.00	0.46	1.098	I	O	|	|	|	|	4.32
40.833	0.00	0.46	1.095	I	O	|	|	|	|	4.31
40.917	0.00	0.46	1.092	I	O	|	|	|	|	4.30
41.000	0.00	0.46	1.089	I	O	|	|	|	|	4.28
41.083	0.00	0.46	1.086	I	O	|	|	|	|	4.27
41.167	0.00	0.46	1.083	I	O	|	|	|	|	4.26
41.250	0.00	0.45	1.079	I	O	|	|	|	|	4.25
41.333	0.00	0.45	1.076	I	O	|	|	|	|	4.23
41.417	0.00	0.45	1.073	I	O	|	|	|	|	4.22
41.500	0.00	0.45	1.070	I	O	|	|	|	|	4.21
41.583	0.00	0.45	1.067	I	O	|	|	|	|	4.20
41.667	0.00	0.45	1.064	I	O	|	|	|	|	4.18
41.750	0.00	0.45	1.061	I	O	|	|	|	|	4.17
41.833	0.00	0.45	1.058	I	O	|	|	|	|	4.16
41.917	0.00	0.45	1.054	I	O	|	|	|	|	4.15
42.000	0.00	0.45	1.051	I	O	|	|	|	|	4.14
42.083	0.00	0.45	1.048	I	O	|	|	|	|	4.12
42.167	0.00	0.45	1.045	I	O	|	|	|	|	4.11
42.250	0.00	0.45	1.042	I	O	|	|	|	|	4.10
42.333	0.00	0.45	1.039	I	O	|	|	|	|	4.09
42.417	0.00	0.44	1.036	I	O	|	|	|	|	4.07
42.500	0.00	0.44	1.033	I	O	|	|	|	|	4.06
42.583	0.00	0.44	1.030	I	O	|	|	|	|	4.05
42.667	0.00	0.44	1.027	I	O	|	|	|	|	4.04
42.750	0.00	0.44	1.024	I	O	|	|	|	|	4.03
42.833	0.00	0.44	1.021	I	O	|	|	|	|	4.01
42.917	0.00	0.44	1.018	I	O	|	|	|	|	4.00
43.000	0.00	0.44	1.015	I	O	|	|	|	|	3.99
43.083	0.00	0.44	1.012	I	O	|	|	|	|	3.98
43.167	0.00	0.44	1.009	I	O	|	|	|	|	3.97
43.250	0.00	0.44	1.006	I	O	|	|	|	|	3.96
43.333	0.00	0.44	1.003	I	O	|	|	|	|	3.94
43.417	0.00	0.44	1.000	I	O	|	|	|	|	3.93

43.500	0.00	0.43	0.997	I O	|	|	|	3.92
43.583	0.00	0.43	0.994	I O	|	|	|	3.91
43.667	0.00	0.43	0.991	I O	|	|	|	3.90
43.750	0.00	0.43	0.988	I O	|	|	|	3.88
43.833	0.00	0.43	0.985	I O	|	|	|	3.87
43.917	0.00	0.43	0.982	I O	|	|	|	3.86
44.000	0.00	0.43	0.979	I O	|	|	|	3.85
44.083	0.00	0.43	0.976	I O	|	|	|	3.84
44.167	0.00	0.43	0.973	I O	|	|	|	3.83
44.250	0.00	0.43	0.970	I O	|	|	|	3.81
44.333	0.00	0.43	0.967	I O	|	|	|	3.80
44.417	0.00	0.43	0.964	I O	|	|	|	3.79
44.500	0.00	0.42	0.961	I O	|	|	|	3.78
44.583	0.00	0.42	0.958	I O	|	|	|	3.77
44.667	0.00	0.42	0.955	I O	|	|	|	3.76
44.750	0.00	0.42	0.952	I O	|	|	|	3.75
44.833	0.00	0.42	0.950	I O	|	|	|	3.73
44.917	0.00	0.42	0.947	I O	|	|	|	3.72
45.000	0.00	0.42	0.944	I O	|	|	|	3.71
45.083	0.00	0.42	0.941	I O	|	|	|	3.70
45.167	0.00	0.42	0.938	I O	|	|	|	3.69
45.250	0.00	0.42	0.935	I O	|	|	|	3.68
45.333	0.00	0.42	0.932	I O	|	|	|	3.67
45.417	0.00	0.42	0.929	I O	|	|	|	3.65
45.500	0.00	0.42	0.926	I O	|	|	|	3.64
45.583	0.00	0.41	0.924	I O	|	|	|	3.63
45.667	0.00	0.41	0.921	I O	|	|	|	3.62
45.750	0.00	0.41	0.918	I O	|	|	|	3.61
45.833	0.00	0.41	0.915	I O	|	|	|	3.60
45.917	0.00	0.41	0.912	I O	|	|	|	3.59
46.000	0.00	0.41	0.909	I O	|	|	|	3.58
46.083	0.00	0.41	0.907	I O	|	|	|	3.57
46.167	0.00	0.41	0.904	I O	|	|	|	3.55
46.250	0.00	0.41	0.901	I O	|	|	|	3.54
46.333	0.00	0.41	0.898	I O	|	|	|	3.53
46.417	0.00	0.41	0.895	I O	|	|	|	3.52
46.500	0.00	0.41	0.893	I O	|	|	|	3.51
46.583	0.00	0.40	0.890	I O	|	|	|	3.50
46.667	0.00	0.40	0.887	I O	|	|	|	3.49
46.750	0.00	0.40	0.884	I O	|	|	|	3.48
46.833	0.00	0.40	0.881	I O	|	|	|	3.47
46.917	0.00	0.40	0.879	I O	|	|	|	3.46
47.000	0.00	0.40	0.876	I O	|	|	|	3.44
47.083	0.00	0.40	0.873	I O	|	|	|	3.43
47.167	0.00	0.40	0.870	I O	|	|	|	3.42
47.250	0.00	0.40	0.868	I O	|	|	|	3.41
47.333	0.00	0.40	0.865	I O	|	|	|	3.40
47.417	0.00	0.40	0.862	I O	|	|	|	3.39
47.500	0.00	0.40	0.859	I O	|	|	|	3.38
47.583	0.00	0.40	0.857	I O	|	|	|	3.37
47.667	0.00	0.40	0.854	I O	|	|	|	3.36
47.750	0.00	0.39	0.851	I O	|	|	|	3.35
47.833	0.00	0.39	0.849	I O	|	|	|	3.34
47.917	0.00	0.39	0.846	I O	|	|	|	3.33

```
48.000    0.00    0.39      0.843  I O     |       |       |       |     3.32

     ****************************HYDROGRAPH DATA****************************
                Number of intervals =  1680
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        0.629 (CFS)
                Total volume =       2.635 (Ac.Ft)
          Status of hydrographs being held in storage
                     Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
          Peak (CFS)      0.000     0.000     0.000     0.000     0.000
          Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
     ***********************************************************************

     -----------------------------------------------------------------------

          0.63 CFS IS LESS THAN ALLOWABLE 0.80 CFS
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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/18/19

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5 YEAR FLOOD ROUTING
BASIN 3
MJPA 304163
4163FR5.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163uhp5245.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 7.455 (CFS)
Total volume = 3.810 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.169	0.170	0.168	0.170
2.000	0.508	0.290	0.507	0.509
3.000	0.763	0.370	0.762	0.764
4.000	1.017	0.440	1.015	1.019
5.000	1.271	0.500	1.269	1.273
5.500	1.708	0.530	1.706	1.710
6.000	2.173	0.850	2.170	2.176
7.000	3.187	1.200	3.183	3.191
8.000	4.314	16.560	4.257	4.371
9.000	5.557	23.020	5.478	5.636

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.9	3.73	5.59	7.46	Depth (Ft.)
0.083	0.08	0.00	0.000	O	|	|	|	|	0.00
0.167	0.33	0.00	0.002	OI	|	|	|	|	0.01
0.250	0.43	0.00	0.004	OI	|	|	|	|	0.03
0.333	0.51	0.01	0.007	O I	|	|	|	|	0.04
0.417	0.66	0.01	0.011	O I	|	|	|	|	0.07
0.500	0.72	0.02	0.016	O I	|	|	|	|	0.10
0.583	0.75	0.02	0.021	O I	|	|	|	|	0.12
0.667	0.77	0.03	0.026	O I	|	|	|	|	0.15
0.750	0.79	0.03	0.031	O I	|	|	|	|	0.19
0.833	0.84	0.04	0.037	O I	|	|	|	|	0.22
0.917	0.96	0.04	0.043	O I	|	|	|	|	0.25
1.000	1.01	0.05	0.049	O I	|	|	|	|	0.29
1.083	1.00	0.06	0.056	O I	|	|	|	|	0.33
1.167	0.88	0.06	0.062	O I	|	|	|	|	0.37
1.250	0.84	0.07	0.067	O I	|	|	|	|	0.40
1.333	0.83	0.07	0.073	O I	|	|	|	|	0.43
1.417	0.82	0.08	0.078	O I	|	|	|	|	0.46
1.500	0.81	0.08	0.083	O I	|	|	|	|	0.49
1.583	0.81	0.09	0.088	O I	|	|	|	|	0.52
1.667	0.81	0.09	0.093	O I	|	|	|	|	0.55
1.750	0.80	0.10	0.098	O I	|	|	|	|	0.58
1.833	0.84	0.10	0.103	O I	|	|	|	|	0.61
1.917	0.97	0.11	0.108	O I	|	|	|	|	0.64
2.000	1.02	0.11	0.114	O I	|	|	|	|	0.68
2.083	1.04	0.12	0.120	O I	|	|	|	|	0.71
2.167	1.05	0.13	0.127	O I	|	|	|	|	0.75
2.250	1.06	0.13	0.133	O I	|	|	|	|	0.79
2.333	1.06	0.14	0.139	O I	|	|	|	|	0.82
2.417	1.07	0.15	0.146	O I	|	|	|	|	0.86
2.500	1.07	0.15	0.152	O I	|	|	|	|	0.90
2.583	1.11	0.16	0.159	O I	|	|	|	|	0.94
2.667	1.24	0.17	0.165	O I	|	|	|	|	0.98
2.750	1.28	0.17	0.173	O I	|	|	|	|	1.01
2.833	1.30	0.17	0.181	O I	|	|	|	|	1.03
2.917	1.32	0.18	0.189	O I	|	|	|	|	1.06

3.000	1.32	0.18	0.196	O	I	|	|	|	1.08
3.083	1.33	0.18	0.204	O	I	|	|	|	1.10
3.167	1.33	0.19	0.212	O	I	|	|	|	1.13
3.250	1.34	0.19	0.220	O	I	|	|	|	1.15
3.333	1.34	0.19	0.228	O	I	|	|	|	1.17
3.417	1.34	0.19	0.236	O	I	|	|	|	1.20
3.500	1.34	0.20	0.244	O	I	|	|	|	1.22
3.583	1.34	0.20	0.252	O	I	|	|	|	1.24
3.667	1.34	0.20	0.259	O	I	|	|	|	1.27
3.750	1.34	0.20	0.267	O	I	|	|	|	1.29
3.833	1.38	0.21	0.275	O	I	|	|	|	1.31
3.917	1.50	0.21	0.284	O	I	|	|	|	1.34
4.000	1.55	0.21	0.293	O	I	|	|	|	1.36
4.083	1.57	0.22	0.302	O	I	|	|	|	1.39
4.167	1.58	0.22	0.311	O	I	|	|	|	1.42
4.250	1.59	0.22	0.321	O	I	|	|	|	1.45
4.333	1.64	0.23	0.330	O	I	|	|	|	1.48
4.417	1.77	0.23	0.340	O	I	|	|	|	1.51
4.500	1.82	0.23	0.351	O	I	|	|	|	1.54
4.583	1.84	0.24	0.362	O	I	|	|	|	1.57
4.667	1.85	0.24	0.373	O	I	|	|	|	1.60
4.750	1.86	0.25	0.384	O	I	|	|	|	1.64
4.833	1.91	0.25	0.396	O	I	|	|	|	1.67
4.917	2.03	0.25	0.407	O	I	|	|	|	1.70
5.000	2.08	0.26	0.420	O	I	|	|	|	1.74
5.083	2.02	0.26	0.432	O	I	|	|	|	1.78
5.167	1.79	0.27	0.443	O	I	|	|	|	1.81
5.250	1.70	0.27	0.454	O	I	|	|	|	1.84
5.333	1.70	0.27	0.463	O	I	|	|	|	1.87
5.417	1.81	0.28	0.474	O	I	|	|	|	1.90
5.500	1.84	0.28	0.484	O	I	|	|	|	1.93
5.583	1.90	0.29	0.495	O	I	|	|	|	1.96
5.667	2.03	0.29	0.507	O	I	|	|	|	2.00
5.750	2.08	0.29	0.519	O	I	|	|	|	2.04
5.833	2.10	0.30	0.531	O	I	|	|	|	2.09
5.917	2.12	0.30	0.544	O	I	|	|	|	2.14
6.000	2.13	0.31	0.556	O	I	|	|	|	2.19
6.083	2.17	0.31	0.569	O	I	|	|	|	2.24
6.167	2.30	0.31	0.582	O	I	|	|	|	2.29
6.250	2.35	0.32	0.596	O	I	|	|	|	2.34
6.333	2.37	0.32	0.610	O	I	|	|	|	2.40
6.417	2.39	0.33	0.624	O	I	|	|	|	2.46
6.500	2.39	0.33	0.638	O	I	|	|	|	2.51
6.583	2.44	0.34	0.653	O	I	|	|	|	2.57
6.667	2.57	0.34	0.668	O	I	|	|	|	2.63
6.750	2.62	0.34	0.683	O	I	|	|	|	2.69
6.833	2.64	0.35	0.699	O	I	|	|	|	2.75
6.917	2.65	0.35	0.715	O	I	|	|	|	2.81
7.000	2.66	0.36	0.731	O	I	|	|	|	2.87
7.083	2.67	0.36	0.746	O	I	|	|	|	2.93
7.167	2.67	0.37	0.762	O	I	|	|	|	3.00
7.250	2.67	0.37	0.778	O	I	|	|	|	3.06
7.333	2.72	0.38	0.794	O	I	|	|	|	3.12
7.417	2.84	0.38	0.811	O	I	|	|	|	3.19

7.500	2.89	0.39	0.828	O	I			3.25
7.583	2.95	0.39	0.845	O	I			3.32
7.667	3.09	0.40	0.863	O	I			3.39
7.750	3.14	0.40	0.882	O	I			3.47
7.833	3.21	0.41	0.901	O	I			3.54
7.917	3.35	0.41	0.921	O	I			3.62
8.000	3.41	0.42	0.941	O	I			3.70
8.083	2.91	0.42	0.960	O	I			3.78
8.167	1.33	0.43	0.972	O I				3.82
8.250	0.74	0.43	0.976	O I				3.84
8.333	0.49	0.43	0.977	OI				3.84
8.417	0.36	0.43	0.977	O				3.84
8.500	0.29	0.43	0.976	O				3.84
8.583	0.29	0.43	0.975	O				3.84
8.667	0.42	0.43	0.975	O				3.83
8.750	0.47	0.43	0.975	OI				3.83
8.833	0.55	0.43	0.975	OI				3.84
8.917	0.74	0.43	0.977	O I				3.84
9.000	0.83	0.43	0.979	O I				3.85
9.083	0.98	0.43	0.983	O I				3.86
9.167	1.33	0.43	0.988	O I				3.88
9.250	1.48	0.43	0.994	O I				3.91
9.333	1.61	0.44	1.002	O I				3.94
9.417	1.82	0.44	1.011	O I				3.97
9.500	1.92	0.44	1.020	O I				4.01
9.583	2.03	0.44	1.031	O I				4.05
9.667	2.23	0.45	1.043	O	I			4.10
9.750	2.32	0.45	1.055	O	I			4.15
9.833	2.43	0.45	1.068	O	I			4.20
9.917	2.62	0.46	1.083	O	I			4.26
10.000	2.71	0.46	1.098	O	I			4.32
10.083	2.41	0.46	1.112	O	I			4.38
10.167	1.39	0.46	1.122	O I				4.41
10.250	1.01	0.47	1.127	O I				4.43
10.333	0.87	0.47	1.131	OI				4.45
10.417	0.79	0.47	1.133	OI				4.46
10.500	0.75	0.47	1.135	OI				4.47
10.583	0.97	0.47	1.138	O I				4.48
10.667	1.73	0.47	1.144	O	I			4.50
10.750	2.02	0.47	1.154	O	I			4.54
10.833	2.15	0.47	1.165	O	I			4.58
10.917	2.25	0.48	1.177	O	I			4.63
11.000	2.31	0.48	1.189	O	I			4.68
11.083	2.32	0.48	1.202	O	I			4.73
11.167	2.21	0.49	1.214	O	I			4.77
11.250	2.18	0.49	1.226	O	I			4.82
11.333	2.19	0.49	1.237	O	I			4.87
11.417	2.19	0.49	1.249	O	I			4.91
11.500	2.20	0.50	1.261	O	I			4.96
11.583	2.11	0.50	1.272	O	I			5.00
11.667	1.83	0.50	1.282	O	I			5.01
11.750	1.73	0.50	1.291	O	I			5.02
11.833	1.74	0.50	1.299	O	I			5.03
11.917	1.89	0.50	1.308	O	I			5.04

12.000	1.94	0.50	1.318	O	I				5.05
12.083	2.33	0.50	1.329	O	I				5.07
12.167	3.42	0.51	1.346	O	I				5.09
12.250	3.85	0.51	1.367	O	I				5.11
12.333	4.10	0.51	1.391	O	I				5.14
12.417	4.38	0.51	1.417	O	I				5.17
12.500	4.53	0.51	1.444	O	I				5.20
12.583	4.72	0.51	1.472	O	I				5.23
12.667	5.09	0.52	1.503	O	I				5.27
12.750	5.25	0.52	1.535	O	I				5.30
12.833	5.39	0.52	1.568	O	I				5.34
12.917	5.60	0.52	1.602	O	I				5.38
13.000	5.70	0.53	1.637	O	I				5.42
13.083	6.01	0.53	1.674	O	I				5.46
13.167	6.81	0.53	1.714	O	I				5.51
13.250	7.14	0.56	1.759	O	I				5.55
13.333	7.29	0.60	1.804	O	I				5.60
13.417	7.39	0.63	1.851	O	I				5.65
13.500	7.46	0.66	1.897	O	I				5.70
13.583	6.95	0.69	1.942	O	I				5.75
13.667	5.32	0.72	1.980	O	I				5.79
13.750	4.71	0.74	2.009	O	I				5.82
13.833	4.46	0.76	2.036	O	I				5.85
13.917	4.31	0.77	2.061	O	I				5.88
14.000	4.23	0.79	2.085	O	I				5.90
14.083	4.37	0.81	2.109	O	I				5.93
14.167	4.95	0.82	2.135	O	I				5.96
14.250	5.17	0.84	2.164	O	I				5.99
14.333	5.22	0.86	2.194	O	I				6.02
14.417	5.14	0.87	2.224	O	I				6.05
14.500	5.14	0.88	2.253	O	I				6.08
14.583	5.16	0.89	2.283	O	I				6.11
14.667	5.18	0.90	2.312	O	I				6.14
14.750	5.20	0.91	2.342	O	I				6.17
14.833	5.16	0.92	2.371	O	I				6.20
14.917	5.02	0.93	2.400	O	I				6.22
15.000	4.98	0.94	2.428	O	I				6.25
15.083	4.92	0.95	2.455	O	I				6.28
15.167	4.77	0.96	2.482	O	I				6.30
15.250	4.72	0.97	2.508	O	I				6.33
15.333	4.65	0.97	2.534	O	I				6.36
15.417	4.50	0.98	2.559	O	I				6.38
15.500	4.44	0.99	2.583	O	I				6.40
15.583	4.22	1.00	2.606	O	I				6.43
15.667	3.61	1.01	2.626	O	I				6.45
15.750	3.38	1.01	2.643	O	I				6.46
15.833	3.29	1.02	2.659	O	I				6.48
15.917	3.24	1.02	2.674	O	I				6.49
16.000	3.21	1.03	2.689	O	I				6.51
16.083	2.87	1.03	2.703	O	I				6.52
16.167	1.88	1.04	2.712	O	I				6.53
16.250	1.49	1.04	2.717	O	I				6.54
16.333	1.32	1.04	2.719	O	I				6.54
16.417	1.23	1.04	2.721	O	I				6.54

16.500	1.17	1.04	2.722	OI				6.54
16.583	1.09	1.04	2.723	O				6.54
16.667	0.93	1.04	2.723	O				6.54
16.750	0.87	1.04	2.722	IO				6.54
16.833	0.83	1.04	2.720	IO				6.54
16.917	0.82	1.04	2.719	IO				6.54
17.000	0.82	1.04	2.717	IO				6.54
17.083	0.89	1.04	2.716	IO				6.54
17.167	1.14	1.04	2.716	O				6.54
17.250	1.23	1.04	2.717	OI				6.54
17.333	1.27	1.04	2.718	OI				6.54
17.417	1.30	1.04	2.720	OI				6.54
17.500	1.31	1.04	2.722	OI				6.54
17.583	1.32	1.04	2.724	OI				6.54
17.667	1.33	1.04	2.726	OI				6.55
17.750	1.33	1.04	2.728	OI				6.55
17.833	1.30	1.04	2.730	OI				6.55
17.917	1.17	1.04	2.731	OI				6.55
18.000	1.12	1.04	2.732	O				6.55
18.083	1.10	1.04	2.732	O				6.55
18.167	1.09	1.04	2.733	O				6.55
18.250	1.08	1.04	2.733	O				6.55
18.333	1.08	1.04	2.733	O				6.55
18.417	1.07	1.04	2.733	O				6.55
18.500	1.07	1.04	2.734	O				6.55
18.583	1.03	1.04	2.734	O				6.55
18.667	0.90	1.04	2.733	IO				6.55
18.750	0.86	1.04	2.732	IO				6.55
18.833	0.79	1.04	2.730	IO				6.55
18.917	0.66	1.04	2.728	I O				6.55
19.000	0.60	1.04	2.725	I O				6.54
19.083	0.62	1.04	2.722	I O				6.54
19.167	0.73	1.04	2.720	IO				6.54
19.250	0.76	1.04	2.718	IO				6.54
19.333	0.82	1.04	2.716	IO				6.54
19.417	0.95	1.04	2.715	O				6.53
19.500	1.00	1.04	2.715	O				6.53
19.583	0.99	1.04	2.714	O				6.53
19.667	0.88	1.04	2.714	IO				6.53
19.750	0.84	1.04	2.713	IO				6.53
19.833	0.79	1.04	2.711	IO				6.53
19.917	0.65	1.03	2.709	I O				6.53
20.000	0.60	1.03	2.706	I O				6.53
20.083	0.62	1.03	2.703	I O				6.52
20.167	0.73	1.03	2.701	IO				6.52
20.250	0.76	1.03	2.699	IO				6.52
20.333	0.78	1.03	2.697	IO				6.52
20.417	0.79	1.03	2.695	IO				6.51
20.500	0.79	1.03	2.693	IO				6.51
20.583	0.79	1.03	2.692	IO				6.51
20.667	0.80	1.03	2.690	IO				6.51
20.750	0.80	1.03	2.689	IO				6.51
20.833	0.76	1.03	2.687	IO				6.51
20.917	0.64	1.03	2.685	I O				6.50

21.000	0.59	1.03	2.682	| I O	|	|	|	6.50
21.083	0.61	1.02	2.679	| I O	|	|	|	6.50
21.167	0.72	1.02	2.676	| IO	|	|	|	6.50
21.250	0.76	1.02	2.674	| IO	|	|	|	6.49
21.333	0.74	1.02	2.673	| IO	|	|	|	6.49
21.417	0.62	1.02	2.670	| I O	|	|	|	6.49
21.500	0.58	1.02	2.667	| I O	|	|	|	6.49
21.583	0.60	1.02	2.664	| I O	|	|	|	6.48
21.667	0.72	1.02	2.662	| IO	|	|	|	6.48
21.750	0.76	1.02	2.660	| IO	|	|	|	6.48
21.833	0.74	1.02	2.658	| IO	|	|	|	6.48
21.917	0.62	1.02	2.656	| I O	|	|	|	6.48
22.000	0.58	1.02	2.653	| I O	|	|	|	6.47
22.083	0.60	1.01	2.650	| I O	|	|	|	6.47
22.167	0.72	1.01	2.647	| IO	|	|	|	6.47
22.250	0.76	1.01	2.646	| IO	|	|	|	6.47
22.333	0.74	1.01	2.644	| IO	|	|	|	6.46
22.417	0.62	1.01	2.641	| I O	|	|	|	6.46
22.500	0.58	1.01	2.639	| I O	|	|	|	6.46
22.583	0.56	1.01	2.636	| I O	|	|	|	6.46
22.667	0.55	1.01	2.632	| I O	|	|	|	6.45
22.750	0.55	1.01	2.629	| I O	|	|	|	6.45
22.833	0.54	1.01	2.626	| I O	|	|	|	6.45
22.917	0.54	1.01	2.623	| I O	|	|	|	6.44
23.000	0.54	1.00	2.620	| I O	|	|	|	6.44
23.083	0.53	1.00	2.616	| I O	|	|	|	6.44
23.167	0.53	1.00	2.613	| I O	|	|	|	6.43
23.250	0.53	1.00	2.610	| I O	|	|	|	6.43
23.333	0.53	1.00	2.607	| I O	|	|	|	6.43
23.417	0.53	1.00	2.604	| I O	|	|	|	6.42
23.500	0.53	1.00	2.600	| I O	|	|	|	6.42
23.583	0.53	1.00	2.597	| I O	|	|	|	6.42
23.667	0.53	1.00	2.594	| I O	|	|	|	6.42
23.750	0.53	0.99	2.591	| I O	|	|	|	6.41
23.833	0.53	0.99	2.588	| I O	|	|	|	6.41
23.917	0.53	0.99	2.585	| I O	|	|	|	6.41
24.000	0.53	0.99	2.581	| I O	|	|	|	6.40
24.083	0.45	0.99	2.578	|I O	|	|	|	6.40
24.167	0.20	0.99	2.573	I O	|	|	|	6.39
24.250	0.11	0.99	2.568	I O	|	|	|	6.39
24.333	0.07	0.98	2.562	I O	|	|	|	6.38
24.417	0.04	0.98	2.555	I O	|	|	|	6.38
24.500	0.03	0.98	2.549	I O	|	|	|	6.37
24.583	0.01	0.98	2.542	I O	|	|	|	6.36
24.667	0.01	0.98	2.535	I O	|	|	|	6.36
24.750	0.00	0.97	2.529	I O	|	|	|	6.35
24.833	0.00	0.97	2.522	I O	|	|	|	6.34
24.917	0.00	0.97	2.515	I O	|	|	|	6.34
25.000	0.00	0.97	2.509	I O	|	|	|	6.33
25.083	0.00	0.96	2.502	I O	|	|	|	6.32
25.167	0.00	0.96	2.495	I O	|	|	|	6.32
25.250	0.00	0.96	2.489	I O	|	|	|	6.31
25.333	0.00	0.96	2.482	I O	|	|	|	6.30
25.417	0.00	0.95	2.476	I O	|	|	|	6.30

25.500	0.00	0.95	2.469	I	O	|	|	|	|	6.29
25.583	0.00	0.95	2.462	I	O	|	|	|	|	6.29
25.667	0.00	0.95	2.456	I	O	|	|	|	|	6.28
25.750	0.00	0.95	2.449	I	O	|	|	|	|	6.27
25.833	0.00	0.94	2.443	I	O	|	|	|	|	6.27
25.917	0.00	0.94	2.436	I	O	|	|	|	|	6.26
26.000	0.00	0.94	2.430	I	O	|	|	|	|	6.25
26.083	0.00	0.94	2.424	I	O	|	|	|	|	6.25
26.167	0.00	0.93	2.417	I	O	|	|	|	|	6.24
26.250	0.00	0.93	2.411	I	O	|	|	|	|	6.23
26.333	0.00	0.93	2.404	I	O	|	|	|	|	6.23
26.417	0.00	0.93	2.398	I	O	|	|	|	|	6.22
26.500	0.00	0.93	2.391	I	O	|	|	|	|	6.22
26.583	0.00	0.92	2.385	I	O	|	|	|	|	6.21
26.667	0.00	0.92	2.379	I	O	|	|	|	|	6.20
26.750	0.00	0.92	2.372	I	O	|	|	|	|	6.20
26.833	0.00	0.92	2.366	I	O	|	|	|	|	6.19
26.917	0.00	0.91	2.360	I	O	|	|	|	|	6.18
27.000	0.00	0.91	2.353	I	O	|	|	|	|	6.18
27.083	0.00	0.91	2.347	I	O	|	|	|	|	6.17
27.167	0.00	0.91	2.341	I	O	|	|	|	|	6.17
27.250	0.00	0.91	2.335	I	O	|	|	|	|	6.16
27.333	0.00	0.90	2.328	I	O	|	|	|	|	6.15
27.417	0.00	0.90	2.322	I	O	|	|	|	|	6.15
27.500	0.00	0.90	2.316	I	O	|	|	|	|	6.14
27.583	0.00	0.90	2.310	I	O	|	|	|	|	6.13
27.667	0.00	0.90	2.304	I	O	|	|	|	|	6.13
27.750	0.00	0.89	2.298	I	O	|	|	|	|	6.12
27.833	0.00	0.89	2.291	I	O	|	|	|	|	6.12
27.917	0.00	0.89	2.285	I	O	|	|	|	|	6.11
28.000	0.00	0.89	2.279	I	O	|	|	|	|	6.10
28.083	0.00	0.88	2.273	I	O	|	|	|	|	6.10
28.167	0.00	0.88	2.267	I	O	|	|	|	|	6.09
28.250	0.00	0.88	2.261	I	O	|	|	|	|	6.09
28.333	0.00	0.88	2.255	I	O	|	|	|	|	6.08
28.417	0.00	0.88	2.249	I	O	|	|	|	|	6.07
28.500	0.00	0.87	2.243	I	O	|	|	|	|	6.07
28.583	0.00	0.87	2.237	I	O	|	|	|	|	6.06
28.667	0.00	0.87	2.231	I	O	|	|	|	|	6.06
28.750	0.00	0.87	2.225	I	O	|	|	|	|	6.05
28.833	0.00	0.87	2.219	I	O	|	|	|	|	6.05
28.917	0.00	0.86	2.213	I	O	|	|	|	|	6.04
29.000	0.00	0.86	2.207	I	O	|	|	|	|	6.03
29.083	0.00	0.86	2.201	I	O	|	|	|	|	6.03
29.167	0.00	0.86	2.195	I	O	|	|	|	|	6.02
29.250	0.00	0.86	2.189	I	O	|	|	|	|	6.02
29.333	0.00	0.85	2.183	I	O	|	|	|	|	6.01
29.417	0.00	0.85	2.177	I	O	|	|	|	|	6.00
29.500	0.00	0.85	2.172	I	O	|	|	|	|	6.00
29.583	0.00	0.85	2.166	I	O	|	|	|	|	5.99
29.667	0.00	0.84	2.160	I	O	|	|	|	|	5.99
29.750	0.00	0.84	2.154	I	O	|	|	|	|	5.98
29.833	0.00	0.83	2.148	I	O	|	|	|	|	5.97
29.917	0.00	0.83	2.143	I	O	|	|	|	|	5.97

30.000	0.00	0.83	2.137	I	O	|	|	|	5.96
30.083	0.00	0.82	2.131	I	O	|	|	|	5.96
30.167	0.00	0.82	2.126	I	O	|	|	|	5.95
30.250	0.00	0.81	2.120	I	O	|	|	|	5.94
30.333	0.00	0.81	2.114	I	O	|	|	|	5.94
30.417	0.00	0.81	2.109	I	O	|	|	|	5.93
30.500	0.00	0.80	2.103	I	O	|	|	|	5.93
30.583	0.00	0.80	2.098	I	O	|	|	|	5.92
30.667	0.00	0.79	2.092	I	O	|	|	|	5.91
30.750	0.00	0.79	2.087	I	O	|	|	|	5.91
30.833	0.00	0.79	2.081	I	O	|	|	|	5.90
30.917	0.00	0.78	2.076	I	O	|	|	|	5.90
31.000	0.00	0.78	2.071	I	O	|	|	|	5.89
31.083	0.00	0.78	2.065	I	O	|	|	|	5.88
31.167	0.00	0.77	2.060	I	O	|	|	|	5.88
31.250	0.00	0.77	2.055	I	O	|	|	|	5.87
31.333	0.00	0.76	2.049	I	O	|	|	|	5.87
31.417	0.00	0.76	2.044	I	O	|	|	|	5.86
31.500	0.00	0.76	2.039	I	O	|	|	|	5.86
31.583	0.00	0.75	2.034	I	O	|	|	|	5.85
31.667	0.00	0.75	2.029	I	O	|	|	|	5.84
31.750	0.00	0.75	2.023	I	O	|	|	|	5.84
31.833	0.00	0.74	2.018	I	O	|	|	|	5.83
31.917	0.00	0.74	2.013	I	O	|	|	|	5.83
32.000	0.00	0.74	2.008	I	O	|	|	|	5.82
32.083	0.00	0.73	2.003	I	O	|	|	|	5.82
32.167	0.00	0.73	1.998	I	O	|	|	|	5.81
32.250	0.00	0.73	1.993	I	O	|	|	|	5.81
32.333	0.00	0.72	1.988	I	O	|	|	|	5.80
32.417	0.00	0.72	1.983	I	O	|	|	|	5.80
32.500	0.00	0.72	1.978	I	O	|	|	|	5.79
32.583	0.00	0.71	1.973	I	O	|	|	|	5.79
32.667	0.00	0.71	1.968	I	O	|	|	|	5.78
32.750	0.00	0.71	1.963	I	O	|	|	|	5.77
32.833	0.00	0.70	1.959	I	O	|	|	|	5.77
32.917	0.00	0.70	1.954	I	O	|	|	|	5.76
33.000	0.00	0.70	1.949	I	O	|	|	|	5.76
33.083	0.00	0.69	1.944	I	O	|	|	|	5.75
33.167	0.00	0.69	1.939	I	O	|	|	|	5.75
33.250	0.00	0.69	1.935	I	O	|	|	|	5.74
33.333	0.00	0.68	1.930	I	O	|	|	|	5.74
33.417	0.00	0.68	1.925	I	O	|	|	|	5.73
33.500	0.00	0.68	1.921	I	O	|	|	|	5.73
33.583	0.00	0.67	1.916	I	O	|	|	|	5.72
33.667	0.00	0.67	1.911	I	O	|	|	|	5.72
33.750	0.00	0.67	1.907	I	O	|	|	|	5.71
33.833	0.00	0.66	1.902	I	O	|	|	|	5.71
33.917	0.00	0.66	1.898	I	O	|	|	|	5.70
34.000	0.00	0.66	1.893	I	O	|	|	|	5.70
34.083	0.00	0.65	1.888	I	O	|	|	|	5.69
34.167	0.00	0.65	1.884	I	O	|	|	|	5.69
34.250	0.00	0.65	1.880	I	O	|	|	|	5.68
34.333	0.00	0.64	1.875	I	O	|	|	|	5.68
34.417	0.00	0.64	1.871	I	O	|	|	|	5.67

34.500	0.00	0.64	1.866	I O	|	|	|	|	5.67
34.583	0.00	0.64	1.862	I O	|	|	|	|	5.67
34.667	0.00	0.63	1.857	I O	|	|	|	|	5.66
34.750	0.00	0.63	1.853	I O	|	|	|	|	5.66
34.833	0.00	0.63	1.849	I O	|	|	|	|	5.65
34.917	0.00	0.62	1.844	I O	|	|	|	|	5.65
35.000	0.00	0.62	1.840	I O	|	|	|	|	5.64
35.083	0.00	0.62	1.836	I O	|	|	|	|	5.64
35.167	0.00	0.62	1.832	I O	|	|	|	|	5.63
35.250	0.00	0.61	1.827	I O	|	|	|	|	5.63
35.333	0.00	0.61	1.823	I O	|	|	|	|	5.62
35.417	0.00	0.61	1.819	I O	|	|	|	|	5.62
35.500	0.00	0.60	1.815	I O	|	|	|	|	5.61
35.583	0.00	0.60	1.811	I O	|	|	|	|	5.61
35.667	0.00	0.60	1.807	I O	|	|	|	|	5.61
35.750	0.00	0.60	1.803	I O	|	|	|	|	5.60
35.833	0.00	0.59	1.798	I O	|	|	|	|	5.60
35.917	0.00	0.59	1.794	I O	|	|	|	|	5.59
36.000	0.00	0.59	1.790	I O	|	|	|	|	5.59
36.083	0.00	0.58	1.786	I O	|	|	|	|	5.58
36.167	0.00	0.58	1.782	I O	|	|	|	|	5.58
36.250	0.00	0.58	1.778	I O	|	|	|	|	5.58
36.333	0.00	0.58	1.774	I O	|	|	|	|	5.57
36.417	0.00	0.57	1.770	I O	|	|	|	|	5.57
36.500	0.00	0.57	1.766	I O	|	|	|	|	5.56
36.583	0.00	0.57	1.762	I O	|	|	|	|	5.56
36.667	0.00	0.56	1.759	I O	|	|	|	|	5.55
36.750	0.00	0.56	1.755	I O	|	|	|	|	5.55
36.833	0.00	0.56	1.751	I O	|	|	|	|	5.55
36.917	0.00	0.56	1.747	I O	|	|	|	|	5.54
37.000	0.00	0.55	1.743	I O	|	|	|	|	5.54
37.083	0.00	0.55	1.739	I O	|	|	|	|	5.53
37.167	0.00	0.55	1.736	I O	|	|	|	|	5.53
37.250	0.00	0.55	1.732	I O	|	|	|	|	5.53
37.333	0.00	0.54	1.728	I O	|	|	|	|	5.52
37.417	0.00	0.54	1.724	I O	|	|	|	|	5.52
37.500	0.00	0.54	1.721	I O	|	|	|	|	5.51
37.583	0.00	0.54	1.717	I O	|	|	|	|	5.51
37.667	0.00	0.53	1.713	I O	|	|	|	|	5.51
37.750	0.00	0.53	1.710	I O	|	|	|	|	5.50
37.833	0.00	0.53	1.706	I O	|	|	|	|	5.50
37.917	0.00	0.53	1.702	I O	|	|	|	|	5.49
38.000	0.00	0.53	1.699	I O	|	|	|	|	5.49
38.083	0.00	0.53	1.695	I O	|	|	|	|	5.49
38.167	0.00	0.53	1.691	I O	|	|	|	|	5.48
38.250	0.00	0.53	1.688	I O	|	|	|	|	5.48
38.333	0.00	0.53	1.684	I O	|	|	|	|	5.47
38.417	0.00	0.53	1.680	I O	|	|	|	|	5.47
38.500	0.00	0.53	1.677	I O	|	|	|	|	5.46
38.583	0.00	0.53	1.673	I O	|	|	|	|	5.46
38.667	0.00	0.53	1.669	I O	|	|	|	|	5.46
38.750	0.00	0.53	1.666	I O	|	|	|	|	5.45
38.833	0.00	0.53	1.662	I O	|	|	|	|	5.45
38.917	0.00	0.53	1.659	I O	|	|	|	|	5.44

39.000	0.00	0.53	1.655	I O					5.44
39.083	0.00	0.53	1.651	I O					5.44
39.167	0.00	0.53	1.648	I O					5.43
39.250	0.00	0.53	1.644	I O					5.43
39.333	0.00	0.53	1.640	I O					5.42
39.417	0.00	0.53	1.637	I O					5.42
39.500	0.00	0.52	1.633	I O					5.41
39.583	0.00	0.52	1.630	I O					5.41
39.667	0.00	0.52	1.626	I O					5.41
39.750	0.00	0.52	1.622	I O					5.40
39.833	0.00	0.52	1.619	I O					5.40
39.917	0.00	0.52	1.615	I O					5.39
40.000	0.00	0.52	1.612	I O					5.39
40.083	0.00	0.52	1.608	I O					5.39
40.167	0.00	0.52	1.604	I O					5.38
40.250	0.00	0.52	1.601	I O					5.38
40.333	0.00	0.52	1.597	I O					5.37
40.417	0.00	0.52	1.594	I O					5.37
40.500	0.00	0.52	1.590	I O					5.36
40.583	0.00	0.52	1.586	I O					5.36
40.667	0.00	0.52	1.583	I O					5.36
40.750	0.00	0.52	1.579	I O					5.35
40.833	0.00	0.52	1.576	I O					5.35
40.917	0.00	0.52	1.572	I O					5.34
41.000	0.00	0.52	1.568	I O					5.34
41.083	0.00	0.52	1.565	I O					5.34
41.167	0.00	0.52	1.561	I O					5.33
41.250	0.00	0.52	1.558	I O					5.33
41.333	0.00	0.52	1.554	I O					5.32
41.417	0.00	0.52	1.551	I O					5.32
41.500	0.00	0.52	1.547	I O					5.32
41.583	0.00	0.52	1.543	I O					5.31
41.667	0.00	0.52	1.540	I O					5.31
41.750	0.00	0.52	1.536	I O					5.30
41.833	0.00	0.52	1.533	I O					5.30
41.917	0.00	0.52	1.529	I O					5.30
42.000	0.00	0.52	1.526	I O					5.29
42.083	0.00	0.52	1.522	I O					5.29
42.167	0.00	0.52	1.518	I O					5.28
42.250	0.00	0.52	1.515	I O					5.28
42.333	0.00	0.52	1.511	I O					5.27
42.417	0.00	0.52	1.508	I O					5.27
42.500	0.00	0.52	1.504	I O					5.27
42.583	0.00	0.52	1.501	I O					5.26
42.667	0.00	0.52	1.497	I O					5.26
42.750	0.00	0.52	1.494	I O					5.25
42.833	0.00	0.52	1.490	I O					5.25
42.917	0.00	0.51	1.486	I O					5.25
43.000	0.00	0.51	1.483	I O					5.24
43.083	0.00	0.51	1.479	I O					5.24
43.167	0.00	0.51	1.476	I O					5.23
43.250	0.00	0.51	1.472	I O					5.23
43.333	0.00	0.51	1.469	I O					5.23
43.417	0.00	0.51	1.465	I O					5.22

43.500	0.00	0.51	1.462	I O	|	|	|	|	5.22
43.583	0.00	0.51	1.458	I O	|	|	|	|	5.21
43.667	0.00	0.51	1.455	I O	|	|	|	|	5.21
43.750	0.00	0.51	1.451	I O	|	|	|	|	5.21
43.833	0.00	0.51	1.448	I O	|	|	|	|	5.20
43.917	0.00	0.51	1.444	I O	|	|	|	|	5.20
44.000	0.00	0.51	1.441	I O	|	|	|	|	5.19
44.083	0.00	0.51	1.437	I O	|	|	|	|	5.19
44.167	0.00	0.51	1.433	I O	|	|	|	|	5.19
44.250	0.00	0.51	1.430	I O	|	|	|	|	5.18
44.333	0.00	0.51	1.426	I O	|	|	|	|	5.18
44.417	0.00	0.51	1.423	I O	|	|	|	|	5.17
44.500	0.00	0.51	1.419	I O	|	|	|	|	5.17
44.583	0.00	0.51	1.416	I O	|	|	|	|	5.17
44.667	0.00	0.51	1.412	I O	|	|	|	|	5.16
44.750	0.00	0.51	1.409	I O	|	|	|	|	5.16
44.833	0.00	0.51	1.405	I O	|	|	|	|	5.15
44.917	0.00	0.51	1.402	I O	|	|	|	|	5.15
45.000	0.00	0.51	1.398	I O	|	|	|	|	5.15
45.083	0.00	0.51	1.395	I O	|	|	|	|	5.14
45.167	0.00	0.51	1.391	I O	|	|	|	|	5.14
45.250	0.00	0.51	1.388	I O	|	|	|	|	5.13
45.333	0.00	0.51	1.384	I O	|	|	|	|	5.13
45.417	0.00	0.51	1.381	I O	|	|	|	|	5.13
45.500	0.00	0.51	1.377	I O	|	|	|	|	5.12
45.583	0.00	0.51	1.374	I O	|	|	|	|	5.12
45.667	0.00	0.51	1.370	I O	|	|	|	|	5.11
45.750	0.00	0.51	1.367	I O	|	|	|	|	5.11
45.833	0.00	0.51	1.363	I O	|	|	|	|	5.11
45.917	0.00	0.51	1.360	I O	|	|	|	|	5.10
46.000	0.00	0.51	1.356	I O	|	|	|	|	5.10
46.083	0.00	0.51	1.353	I O	|	|	|	|	5.09
46.167	0.00	0.51	1.349	I O	|	|	|	|	5.09
46.250	0.00	0.51	1.346	I O	|	|	|	|	5.09
46.333	0.00	0.50	1.343	I O	|	|	|	|	5.08
46.417	0.00	0.50	1.339	I O	|	|	|	|	5.08
46.500	0.00	0.50	1.336	I O	|	|	|	|	5.07
46.583	0.00	0.50	1.332	I O	|	|	|	|	5.07
46.667	0.00	0.50	1.329	I O	|	|	|	|	5.07
46.750	0.00	0.50	1.325	I O	|	|	|	|	5.06
46.833	0.00	0.50	1.322	I O	|	|	|	|	5.06
46.917	0.00	0.50	1.318	I O	|	|	|	|	5.05
47.000	0.00	0.50	1.315	I O	|	|	|	|	5.05
47.083	0.00	0.50	1.311	I O	|	|	|	|	5.05
47.167	0.00	0.50	1.308	I O	|	|	|	|	5.04
47.250	0.00	0.50	1.304	I O	|	|	|	|	5.04
47.333	0.00	0.50	1.301	I O	|	|	|	|	5.03
47.417	0.00	0.50	1.297	I O	|	|	|	|	5.03
47.500	0.00	0.50	1.294	I O	|	|	|	|	5.03
47.583	0.00	0.50	1.291	I O	|	|	|	|	5.02
47.667	0.00	0.50	1.287	I O	|	|	|	|	5.02
47.750	0.00	0.50	1.284	I O	|	|	|	|	5.01
47.833	0.00	0.50	1.280	I O	|	|	|	|	5.01
47.917	0.00	0.50	1.277	I O	|	|	|	|	5.01

48.000 0.00 0.50 1.273 I O | | | | 5.00

**********HYDROGRAPH DATA**********

Number of intervals = 1820
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 1.044 (CFS)
Total volume = 3.809 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/18/19

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10 YEAR FLOOD ROUTING
BASIN 3
MJPA 304163
4163FR10.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163uhp102410.rte
**********HYDROGRAPH DATA**********
Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 10.866 (CFS)
Total volume = 5.443 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.169	0.170	0.168	0.170
2.000	0.508	0.290	0.507	0.509
3.000	0.763	0.370	0.762	0.764
4.000	1.017	0.440	1.015	1.019
5.000	1.271	0.500	1.269	1.273
5.500	1.708	0.530	1.706	1.710
6.000	2.173	0.850	2.170	2.176
7.000	3.187	1.200	3.183	3.191
8.000	4.314	16.560	4.257	4.371
9.000	5.557	23.020	5.478	5.636

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 2.7 5.43 8.15 10.87	Depth (Ft.)
0.083	0.10	0.00	0.000	O | | | |	0.00
0.167	0.40	0.00	0.002	OI | | | |	0.01
0.250	0.51	0.01	0.005	OI | | | |	0.03
0.333	0.61	0.01	0.009	OI | | | |	0.05
0.417	0.79	0.01	0.014	O I | | | |	0.08
0.500	0.87	0.02	0.019	O I | | | |	0.11
0.583	0.90	0.03	0.025	O I | | | |	0.15
0.667	0.93	0.03	0.031	O I | | | |	0.19
0.750	0.94	0.04	0.038	O I | | | |	0.22
0.833	1.00	0.04	0.044	O I | | | |	0.26
0.917	1.15	0.05	0.051	O I | | | |	0.30
1.000	1.21	0.06	0.059	O I | | | |	0.35
1.083	1.19	0.07	0.067	O I | | | |	0.39
1.167	1.06	0.07	0.074	O I | | | |	0.44
1.250	1.01	0.08	0.080	O I | | | |	0.48
1.333	0.99	0.09	0.087	O I | | | |	0.51
1.417	0.98	0.09	0.093	O I | | | |	0.55
1.500	0.97	0.10	0.099	O I | | | |	0.59
1.583	0.97	0.11	0.105	O I | | | |	0.62
1.667	0.96	0.11	0.111	O I | | | |	0.66
1.750	0.96	0.12	0.117	O I | | | |	0.69
1.833	1.01	0.12	0.123	O I | | | |	0.73
1.917	1.16	0.13	0.129	O I | | | |	0.77
2.000	1.22	0.14	0.137	O I | | | |	0.81
2.083	1.24	0.14	0.144	O I | | | |	0.85
2.167	1.26	0.15	0.152	O I | | | |	0.90
2.250	1.26	0.16	0.159	O I | | | |	0.94
2.333	1.27	0.17	0.167	O I | | | |	0.99
2.417	1.28	0.17	0.174	O I | | | |	1.02
2.500	1.28	0.17	0.182	O I | | | |	1.04
2.583	1.33	0.18	0.190	O I | | | |	1.06
2.667	1.48	0.18	0.198	O I | | | |	1.09
2.750	1.54	0.18	0.207	O I | | | |	1.11
2.833	1.56	0.19	0.217	O I | | | |	1.14
2.917	1.58	0.19	0.226	O I | | | |	1.17

3.000	1.58	0.19	0.236	O	I	|	|	|	1.20
3.083	1.59	0.20	0.245	O	I	|	|	|	1.23
3.167	1.60	0.20	0.255	O	I	|	|	|	1.25
3.250	1.60	0.20	0.265	O	I	|	|	|	1.28
3.333	1.60	0.21	0.274	O	I	|	|	|	1.31
3.417	1.60	0.21	0.284	O	I	|	|	|	1.34
3.500	1.60	0.21	0.293	O	I	|	|	|	1.37
3.583	1.60	0.22	0.303	O	I	|	|	|	1.39
3.667	1.60	0.22	0.312	O	I	|	|	|	1.42
3.750	1.60	0.22	0.322	O	I	|	|	|	1.45
3.833	1.65	0.23	0.332	O	I	|	|	|	1.48
3.917	1.80	0.23	0.342	O	I	|	|	|	1.51
4.000	1.86	0.24	0.353	O	I	|	|	|	1.54
4.083	1.88	0.24	0.364	O	I	|	|	|	1.58
4.167	1.90	0.24	0.375	O	I	|	|	|	1.61
4.250	1.90	0.25	0.387	O	I	|	|	|	1.64
4.333	1.96	0.25	0.398	O	I	|	|	|	1.68
4.417	2.11	0.26	0.411	O	I	|	|	|	1.71
4.500	2.17	0.26	0.424	O	I	|	|	|	1.75
4.583	2.20	0.26	0.437	O	I	|	|	|	1.79
4.667	2.22	0.27	0.450	O	I	|	|	|	1.83
4.750	2.22	0.27	0.464	O	I	|	|	|	1.87
4.833	2.28	0.28	0.477	O	I	|	|	|	1.91
4.917	2.43	0.28	0.492	O	I	|	|	|	1.95
5.000	2.49	0.29	0.507	O	I	|	|	|	2.00
5.083	2.42	0.29	0.522	O	I	|	|	|	2.05
5.167	2.14	0.30	0.535	O	I	|	|	|	2.11
5.250	2.03	0.30	0.547	O	I	|	|	|	2.15
5.333	2.04	0.31	0.559	O	I	|	|	|	2.20
5.417	2.16	0.31	0.572	O	I	|	|	|	2.25
5.500	2.20	0.31	0.585	O	I	|	|	|	2.30
5.583	2.27	0.32	0.598	O	I	|	|	|	2.35
5.667	2.42	0.32	0.612	O	I	|	|	|	2.41
5.750	2.48	0.33	0.626	O	I	|	|	|	2.46
5.833	2.51	0.33	0.641	O	I	|	|	|	2.52
5.917	2.53	0.34	0.657	O	I	|	|	|	2.58
6.000	2.54	0.34	0.672	|O	I	|	|	|	2.64
6.083	2.16	0.35	0.685	|O	I	|	|	|	2.70
6.167	0.97	0.35	0.694	|OI		|	|	|	2.73
6.250	0.52	0.35	0.697	|O		|	|	|	2.74
6.333	0.34	0.35	0.697	IO		|	|	|	2.74
6.417	0.24	0.35	0.697	IO		|	|	|	2.74
6.500	0.18	0.35	0.696	IO		|	|	|	2.74
6.583	0.20	0.35	0.695	IO		|	|	|	2.73
6.667	0.36	0.35	0.694	|O		|	|	|	2.73
6.750	0.43	0.35	0.694	|O		|	|	|	2.73
6.833	0.46	0.35	0.695	|O		|	|	|	2.73
6.917	0.49	0.35	0.696	|O		|	|	|	2.74
7.000	0.52	0.35	0.697	|O		|	|	|	2.74
7.083	0.54	0.35	0.698	|O		|	|	|	2.75
7.167	0.56	0.35	0.700	|O		|	|	|	2.75
7.250	0.58	0.35	0.701	|O		|	|	|	2.76
7.333	0.66	0.35	0.703	|O		|	|	|	2.76
7.417	0.85	0.35	0.706	|OI		|	|	|	2.78

7.500	0.94	0.35	0.710	OI				2.79
7.583	1.04	0.35	0.714	O I				2.81
7.667	1.26	0.36	0.719	O I				2.83
7.750	1.36	0.36	0.726	O I				2.85
7.833	1.47	0.36	0.733	O I				2.88
7.917	1.69	0.36	0.742	O I				2.92
8.000	1.79	0.37	0.751	O I				2.95
8.083	1.96	0.37	0.761	O I				2.99
8.167	2.37	0.37	0.774	O I				3.04
8.250	2.53	0.38	0.788	O I				3.10
8.333	2.62	0.38	0.803	O I				3.16
8.417	2.68	0.39	0.819	O I				3.22
8.500	2.72	0.39	0.835	O I				3.28
8.583	2.81	0.39	0.851	O I				3.35
8.667	3.02	0.40	0.868	O I				3.41
8.750	3.11	0.40	0.887	O I				3.49
8.833	3.22	0.41	0.906	O I				3.56
8.917	3.43	0.41	0.926	O I				3.64
9.000	3.53	0.42	0.947	O I				3.72
9.083	3.70	0.43	0.969	O I				3.81
9.167	4.10	0.43	0.993	O I				3.90
9.250	4.27	0.44	1.018	O I				4.01
9.333	4.41	0.45	1.045	O I				4.11
9.417	4.65	0.45	1.073	O I				4.22
9.500	4.76	0.46	1.103	O I				4.34
9.583	4.88	0.47	1.133	O I				4.46
9.667	5.11	0.47	1.164	O I				4.58
9.750	5.21	0.48	1.196	O I				4.70
9.833	5.33	0.49	1.229	O I				4.83
9.917	5.54	0.50	1.263	O I				4.97
10.000	5.64	0.50	1.298	O I				5.03
10.083	5.27	0.50	1.332	O I				5.07
10.167	4.04	0.51	1.361	O I				5.10
10.250	3.58	0.51	1.384	O I				5.13
10.333	3.39	0.51	1.404	O I				5.15
10.417	3.28	0.51	1.423	O I				5.17
10.500	3.22	0.51	1.442	O I				5.20
10.583	3.48	0.51	1.462	O I				5.22
10.667	4.37	0.51	1.485	O I				5.25
10.750	4.71	0.52	1.513	O I				5.28
10.833	4.86	0.52	1.542	O I				5.31
10.917	4.96	0.52	1.573	O I				5.35
11.000	5.03	0.52	1.603	O I				5.38
11.083	5.02	0.52	1.634	O I				5.42
11.167	4.88	0.53	1.665	O I				5.45
11.250	4.84	0.53	1.695	O I				5.48
11.333	4.83	0.54	1.724	O I				5.52
11.417	4.83	0.56	1.754	O I				5.55
11.500	4.83	0.58	1.783	O I				5.58
11.583	4.71	0.60	1.812	O I				5.61
11.667	4.36	0.62	1.839	O I				5.64
11.750	4.23	0.64	1.864	O I				5.67
11.833	4.24	0.65	1.889	O I				5.69
11.917	4.40	0.67	1.914	O I				5.72

12.000	4.46	0.69	1.940	O		I		5.75
12.083	4.91	0.71	1.967	O		I		5.78
12.167	6.20	0.73	2.001	O		I		5.81
12.250	6.71	0.76	2.040	O		I		5.86
12.333	7.00	0.79	2.082	O		I		5.90
12.417	7.32	0.82	2.126	O		I		5.95
12.500	7.48	0.85	2.171	O		I		6.00
12.583	7.70	0.87	2.217	O		I		6.04
12.667	8.13	0.88	2.266	O		I		6.09
12.750	8.32	0.90	2.316	O		I		6.14
12.833	8.48	0.92	2.368	O		I		6.19
12.917	8.71	0.94	2.421	O		I		6.24
13.000	8.82	0.95	2.475	O		I		6.30
13.083	9.18	0.97	2.530	O		I		6.35
13.167	10.13	0.99	2.590	O		I		6.41
13.250	10.51	1.02	2.654	O		I		6.47
13.333	10.69	1.04	2.720	O		I		6.54
13.417	10.79	1.06	2.786	O		I		6.61
13.500	10.87	1.08	2.854	O		I		6.67
13.583	10.25	1.11	2.919	O		I		6.74
13.667	8.29	1.13	2.975	O		I		6.79
13.750	7.55	1.14	3.022	O		I		6.84
13.833	7.24	1.16	3.065	O		I		6.88
13.917	7.05	1.17	3.106	O		I		6.92
14.000	6.94	1.19	3.146	O		I		6.96
14.083	7.11	1.20	3.186	O		I		7.00
14.167	7.79	1.75	3.227	O		I		7.04
14.250	8.04	2.30	3.268	O		I		7.07
14.333	8.09	2.82	3.306	O		I		7.11
14.417	7.99	3.29	3.340	O		I		7.14
14.500	7.98	3.71	3.371	O		I		7.16
14.583	7.99	4.09	3.399	O		I		7.19
14.667	8.01	4.44	3.425	O		I		7.21
14.750	8.02	4.76	3.448	O		I		7.23
14.833	7.97	5.05	3.470	O		I		7.25
14.917	7.79	5.31	3.488	O		I		7.27
15.000	7.73	5.53	3.504	O		I		7.28
15.083	7.65	5.72	3.519	O		I		7.29
15.167	7.46	5.89	3.531	O		I		7.31
15.250	7.39	6.02	3.541	O		I		7.31
15.333	7.30	6.14	3.550	O		I		7.32
15.417	7.11	6.24	3.557	O		I		7.33
15.500	7.03	6.31	3.562	O		I		7.33
15.583	6.76	6.36	3.566	O		I		7.34
15.667	6.02	6.37	3.566	O		I		7.34
15.750	5.74	6.32	3.563	O		I		7.33
15.833	5.62	6.27	3.559	O		I		7.33
15.917	5.55	6.20	3.554	O		I		7.33
16.000	5.51	6.14	3.550	O		I		7.32
16.083	4.84	6.06	3.543	O		I		7.32
16.167	2.88	5.86	3.529	O		I		7.30
16.250	2.12	5.56	3.507	O		I		7.28
16.333	1.79	5.24	3.483	O		I		7.26
16.417	1.60	4.92	3.460	O		I		7.24

16.500	1.48	4.62	3.438	| I | O | | |				7.22
16.583	1.35	4.33	3.417	| I | O | | |				7.20
16.667	1.14	4.05	3.396	| I | O | | |				7.19
16.750	1.05	3.79	3.377	| I | O | | |				7.17
16.833	1.00	3.54	3.359	| I | O | | |				7.15
16.917	0.98	3.31	3.342	| I | O | | |				7.14
17.000	0.98	3.10	3.327	| I | O | | |				7.12
17.083	0.84	2.90	3.312	| I | O | | |				7.11
17.167	0.44	2.70	3.297	| I | O | | |				7.10
17.250	0.29	2.49	3.282	| I | O | | |				7.08
17.333	0.23	2.29	3.267	| I | O | | |				7.07
17.417	0.20	2.11	3.254	| I | O | | |				7.06
17.500	0.19	1.94	3.241	| I | O | | |				7.05
17.583	0.18	1.78	3.229	| I | O | | |				7.04
17.667	0.18	1.63	3.219	| I | O | | |				7.03
17.750	0.18	1.50	3.209	| I | O | | |				7.02
17.833	0.35	1.39	3.201	| I | O | | |				7.01
17.917	0.86	1.32	3.196	| I | O | | |				7.01
18.000	1.06	1.29	3.194	| I | O | | |				7.01
18.083	1.15	1.27	3.192	| I | O | | |				7.00
18.167	1.20	1.26	3.192	| I | O | | |				7.00
18.250	1.23	1.26	3.191	| I | O | | |				7.00
18.333	1.25	1.26	3.191	| I | O | | |				7.00
18.417	1.26	1.26	3.191	| I | O | | |				7.00
18.500	1.27	1.26	3.191	| I | O | | |				7.00
18.583	1.23	1.26	3.191	| I | O | | |				7.00
18.667	1.08	1.25	3.191	| I | O | | |				7.00
18.750	1.02	1.23	3.189	| I | O | | |				7.00
18.833	0.95	1.21	3.188	| I | O | | |				7.00
18.917	0.79	1.20	3.185	| I | O | | |				7.00
19.000	0.72	1.20	3.182	| I | O | | |				7.00
19.083	0.74	1.20	3.179	| I | O | | |				6.99
19.167	0.87	1.20	3.176	| I | O | | |				6.99
19.250	0.91	1.20	3.174	| I | O | | |				6.99
19.333	0.98	1.19	3.173	| I | O | | |				6.99
19.417	1.14	1.19	3.172	| I | O | | |				6.98
19.500	1.20	1.19	3.171	| I | O | | |				6.98
19.583	1.18	1.19	3.171	| I | O | | |				6.98
19.667	1.05	1.19	3.171	| I | O | | |				6.98
19.750	1.01	1.19	3.170	| I | O | | |				6.98
19.833	0.94	1.19	3.168	| I | O | | |				6.98
19.917	0.78	1.19	3.166	| I | O | | |				6.98
20.000	0.72	1.19	3.163	| I | O | | |				6.98
20.083	0.74	1.19	3.160	| I | O | | |				6.97
20.167	0.87	1.19	3.157	| I | O | | |				6.97
20.250	0.91	1.19	3.155	| I | O | | |				6.97
20.333	0.93	1.19	3.153	| I | O | | |				6.97
20.417	0.94	1.19	3.151	| I | O | | |				6.96
20.500	0.95	1.19	3.150	| I | O | | |				6.96
20.583	0.95	1.19	3.148	| I | O | | |				6.96
20.667	0.96	1.19	3.146	| I | O | | |				6.96
20.750	0.96	1.19	3.145	| I | O | | |				6.96
20.833	0.91	1.18	3.143	| I | O | | |				6.96
20.917	0.76	1.18	3.141	| I | O | | |				6.95

21.000	0.70	1.18	3.138	| IO	|	|	|	6.95
21.083	0.73	1.18	3.134	| IO	|	|	|	6.95
21.167	0.86	1.18	3.132	| IO	|	|	|	6.95
21.250	0.91	1.18	3.130	| IO	|	|	|	6.94
21.333	0.88	1.18	3.128	| IO	|	|	|	6.94
21.417	0.74	1.18	3.125	| IO	|	|	|	6.94
21.500	0.69	1.18	3.122	| IO	|	|	|	6.94
21.583	0.72	1.18	3.119	| IO	|	|	|	6.93
21.667	0.86	1.18	3.116	| IO	|	|	|	6.93
21.750	0.91	1.17	3.114	| IO	|	|	|	6.93
21.833	0.88	1.17	3.112	| IO	|	|	|	6.93
21.917	0.74	1.17	3.110	| IO	|	|	|	6.92
22.000	0.69	1.17	3.107	| IO	|	|	|	6.92
22.083	0.72	1.17	3.103	| IO	|	|	|	6.92
22.167	0.86	1.17	3.101	| IO	|	|	|	6.91
22.250	0.91	1.17	3.099	| IO	|	|	|	6.91
22.333	0.88	1.17	3.097	| IO	|	|	|	6.91
22.417	0.74	1.17	3.094	| IO	|	|	|	6.91
22.500	0.69	1.17	3.091	| IO	|	|	|	6.91
22.583	0.67	1.17	3.088	|I O	|	|	|	6.90
22.667	0.66	1.16	3.085	|I O	|	|	|	6.90
22.750	0.65	1.16	3.081	|I O	|	|	|	6.90
22.833	0.65	1.16	3.078	|I O	|	|	|	6.89
22.917	0.64	1.16	3.074	|I O	|	|	|	6.89
23.000	0.64	1.16	3.070	|I O	|	|	|	6.89
23.083	0.64	1.16	3.067	|I O	|	|	|	6.88
23.167	0.64	1.16	3.063	|I O	|	|	|	6.88
23.250	0.64	1.16	3.060	|I O	|	|	|	6.87
23.333	0.64	1.15	3.056	|I O	|	|	|	6.87
23.417	0.64	1.15	3.053	|I O	|	|	|	6.87
23.500	0.64	1.15	3.049	|I O	|	|	|	6.86
23.583	0.64	1.15	3.046	|I O	|	|	|	6.86
23.667	0.64	1.15	3.042	|I O	|	|	|	6.86
23.750	0.64	1.15	3.039	|I O	|	|	|	6.85
23.833	0.64	1.15	3.035	|I O	|	|	|	6.85
23.917	0.64	1.15	3.032	|I O	|	|	|	6.85
24.000	0.64	1.15	3.028	|I O	|	|	|	6.84
24.083	0.54	1.14	3.024	|I O	|	|	|	6.84
24.167	0.24	1.14	3.019	I O	|	|	|	6.83
24.250	0.13	1.14	3.013	I O	|	|	|	6.83
24.333	0.08	1.14	3.005	I O	|	|	|	6.82
24.417	0.05	1.13	2.998	I O	|	|	|	6.81
24.500	0.03	1.13	2.990	I O	|	|	|	6.81
24.583	0.02	1.13	2.983	I O	|	|	|	6.80
24.667	0.01	1.13	2.975	I O	|	|	|	6.79
24.750	0.00	1.12	2.967	I O	|	|	|	6.78
24.833	0.00	1.12	2.960	I O	|	|	|	6.78
24.917	0.00	1.12	2.952	I O	|	|	|	6.77
25.000	0.00	1.12	2.944	I O	|	|	|	6.76
25.083	0.00	1.11	2.937	I O	|	|	|	6.75
25.167	0.00	1.11	2.929	I O	|	|	|	6.75
25.250	0.00	1.11	2.921	I O	|	|	|	6.74
25.333	0.00	1.11	2.914	I O	|	|	|	6.73
25.417	0.00	1.10	2.906	I O	|	|	|	6.72

25.500	0.00	1.10	2.899	I	O	|	|	|	6.72
25.583	0.00	1.10	2.891	I	O	|	|	|	6.71
25.667	0.00	1.10	2.883	I	O	|	|	|	6.70
25.750	0.00	1.09	2.876	I	O	|	|	|	6.69
25.833	0.00	1.09	2.868	I	O	|	|	|	6.69
25.917	0.00	1.09	2.861	I	O	|	|	|	6.68
26.000	0.00	1.08	2.853	I	O	|	|	|	6.67
26.083	0.00	1.08	2.846	I	O	|	|	|	6.66
26.167	0.00	1.08	2.838	I	O	|	|	|	6.66
26.250	0.00	1.08	2.831	I	O	|	|	|	6.65
26.333	0.00	1.07	2.824	I	O	|	|	|	6.64
26.417	0.00	1.07	2.816	I	O	|	|	|	6.63
26.500	0.00	1.07	2.809	I	O	|	|	|	6.63
26.583	0.00	1.07	2.801	I	O	|	|	|	6.62
26.667	0.00	1.06	2.794	I	O	|	|	|	6.61
26.750	0.00	1.06	2.787	I	O	|	|	|	6.61
26.833	0.00	1.06	2.780	I	O	|	|	|	6.60
26.917	0.00	1.06	2.772	I	O	|	|	|	6.59
27.000	0.00	1.05	2.765	I	O	|	|	|	6.58
27.083	0.00	1.05	2.758	I	O	|	|	|	6.58
27.167	0.00	1.05	2.750	I	O	|	|	|	6.57
27.250	0.00	1.05	2.743	I	O	|	|	|	6.56
27.333	0.00	1.04	2.736	I	O	|	|	|	6.56
27.417	0.00	1.04	2.729	I	O	|	|	|	6.55
27.500	0.00	1.04	2.722	I	O	|	|	|	6.54
27.583	0.00	1.04	2.715	I	O	|	|	|	6.53
27.667	0.00	1.03	2.707	I	O	|	|	|	6.53
27.750	0.00	1.03	2.700	I	O	|	|	|	6.52
27.833	0.00	1.03	2.693	I	O	|	|	|	6.51
27.917	0.00	1.03	2.686	I	O	|	|	|	6.51
28.000	0.00	1.02	2.679	I	O	|	|	|	6.50
28.083	0.00	1.02	2.672	I	O	|	|	|	6.49
28.167	0.00	1.02	2.665	I	O	|	|	|	6.49
28.250	0.00	1.02	2.658	I	O	|	|	|	6.48
28.333	0.00	1.01	2.651	I	O	|	|	|	6.47
28.417	0.00	1.01	2.644	I	O	|	|	|	6.46
28.500	0.00	1.01	2.637	I	O	|	|	|	6.46
28.583	0.00	1.01	2.630	I	O	|	|	|	6.45
28.667	0.00	1.01	2.623	I	O	|	|	|	6.44
28.750	0.00	1.00	2.616	I	O	|	|	|	6.44
28.833	0.00	1.00	2.609	I	O	|	|	|	6.43
28.917	0.00	1.00	2.602	I	O	|	|	|	6.42
29.000	0.00	1.00	2.596	I	O	|	|	|	6.42
29.083	0.00	0.99	2.589	I	O	|	|	|	6.41
29.167	0.00	0.99	2.582	I	O	|	|	|	6.40
29.250	0.00	0.99	2.575	I	O	|	|	|	6.40
29.333	0.00	0.99	2.568	I	O	|	|	|	6.39
29.417	0.00	0.98	2.561	I	O	|	|	|	6.38
29.500	0.00	0.98	2.555	I	O	|	|	|	6.38
29.583	0.00	0.98	2.548	I	O	|	|	|	6.37
29.667	0.00	0.98	2.541	I	O	|	|	|	6.36
29.750	0.00	0.97	2.535	I	O	|	|	|	6.36
29.833	0.00	0.97	2.528	I	O	|	|	|	6.35
29.917	0.00	0.97	2.521	I	O	|	|	|	6.34

30.000	0.00	0.97	2.514	I O	|	|	|	6.34
30.083	0.00	0.97	2.508	I O	|	|	|	6.33
30.167	0.00	0.96	2.501	I O	|	|	|	6.32
30.250	0.00	0.96	2.495	I O	|	|	|	6.32
30.333	0.00	0.96	2.488	I O	|	|	|	6.31
30.417	0.00	0.96	2.481	I O	|	|	|	6.30
30.500	0.00	0.95	2.475	I O	|	|	|	6.30
30.583	0.00	0.95	2.468	I O	|	|	|	6.29
30.667	0.00	0.95	2.462	I O	|	|	|	6.28
30.750	0.00	0.95	2.455	I O	|	|	|	6.28
30.833	0.00	0.95	2.449	I O	|	|	|	6.27
30.917	0.00	0.94	2.442	I O	|	|	|	6.27
31.000	0.00	0.94	2.436	I O	|	|	|	6.26
31.083	0.00	0.94	2.429	I O	|	|	|	6.25
31.167	0.00	0.94	2.423	I O	|	|	|	6.25
31.250	0.00	0.93	2.416	I O	|	|	|	6.24
31.333	0.00	0.93	2.410	I O	|	|	|	6.23
31.417	0.00	0.93	2.403	I O	|	|	|	6.23
31.500	0.00	0.93	2.397	I O	|	|	|	6.22
31.583	0.00	0.93	2.391	I O	|	|	|	6.21
31.667	0.00	0.92	2.384	I O	|	|	|	6.21
31.750	0.00	0.92	2.378	I O	|	|	|	6.20
31.833	0.00	0.92	2.372	I O	|	|	|	6.20
31.917	0.00	0.92	2.365	I O	|	|	|	6.19
32.000	0.00	0.91	2.359	I O	|	|	|	6.18
32.083	0.00	0.91	2.353	I O	|	|	|	6.18
32.167	0.00	0.91	2.346	I O	|	|	|	6.17
32.250	0.00	0.91	2.340	I O	|	|	|	6.16
32.333	0.00	0.91	2.334	I O	|	|	|	6.16
32.417	0.00	0.90	2.328	I O	|	|	|	6.15
32.500	0.00	0.90	2.321	I O	|	|	|	6.15
32.583	0.00	0.90	2.315	I O	|	|	|	6.14
32.667	0.00	0.90	2.309	I O	|	|	|	6.13
32.750	0.00	0.89	2.303	I O	|	|	|	6.13
32.833	0.00	0.89	2.297	I O	|	|	|	6.12
32.917	0.00	0.89	2.291	I O	|	|	|	6.12
33.000	0.00	0.89	2.284	I O	|	|	|	6.11
33.083	0.00	0.89	2.278	I O	|	|	|	6.10
33.167	0.00	0.88	2.272	I O	|	|	|	6.10
33.250	0.00	0.88	2.266	I O	|	|	|	6.09
33.333	0.00	0.88	2.260	I O	|	|	|	6.09
33.417	0.00	0.88	2.254	I O	|	|	|	6.08
33.500	0.00	0.88	2.248	I O	|	|	|	6.07
33.583	0.00	0.87	2.242	I O	|	|	|	6.07
33.667	0.00	0.87	2.236	I O	|	|	|	6.06
33.750	0.00	0.87	2.230	I O	|	|	|	6.06
33.833	0.00	0.87	2.224	I O	|	|	|	6.05
33.917	0.00	0.87	2.218	I O	|	|	|	6.04
34.000	0.00	0.86	2.212	I O	|	|	|	6.04
34.083	0.00	0.86	2.206	I O	|	|	|	6.03
34.167	0.00	0.86	2.200	I O	|	|	|	6.03
34.250	0.00	0.86	2.194	I O	|	|	|	6.02
34.333	0.00	0.86	2.188	I O	|	|	|	6.02
34.417	0.00	0.85	2.183	I O	|	|	|	6.01

34.500	0.00	0.85	2.177	I O	|	|	|	6.00
34.583	0.00	0.85	2.171	I O	|	|	|	6.00
34.667	0.00	0.84	2.165	I O	|	|	|	5.99
34.750	0.00	0.84	2.159	I O	|	|	|	5.99
34.833	0.00	0.84	2.153	I O	|	|	|	5.98
34.917	0.00	0.83	2.148	I O	|	|	|	5.97
35.000	0.00	0.83	2.142	I O	|	|	|	5.97
35.083	0.00	0.82	2.136	I O	|	|	|	5.96
35.167	0.00	0.82	2.131	I O	|	|	|	5.95
35.250	0.00	0.82	2.125	I O	|	|	|	5.95
35.333	0.00	0.81	2.119	I O	|	|	|	5.94
35.417	0.00	0.81	2.114	I O	|	|	|	5.94
35.500	0.00	0.81	2.108	I O	|	|	|	5.93
35.583	0.00	0.80	2.103	I O	|	|	|	5.92
35.667	0.00	0.80	2.097	I O	|	|	|	5.92
35.750	0.00	0.79	2.092	I O	|	|	|	5.91
35.833	0.00	0.79	2.086	I O	|	|	|	5.91
35.917	0.00	0.79	2.081	I O	|	|	|	5.90
36.000	0.00	0.78	2.075	I O	|	|	|	5.89
36.083	0.00	0.78	2.070	I O	|	|	|	5.89
36.167	0.00	0.78	2.065	I O	|	|	|	5.88
36.250	0.00	0.77	2.059	I O	|	|	|	5.88
36.333	0.00	0.77	2.054	I O	|	|	|	5.87
36.417	0.00	0.76	2.049	I O	|	|	|	5.87
36.500	0.00	0.76	2.043	I O	|	|	|	5.86
36.583	0.00	0.76	2.038	I O	|	|	|	5.86
36.667	0.00	0.75	2.033	I O	|	|	|	5.85
36.750	0.00	0.75	2.028	I O	|	|	|	5.84
36.833	0.00	0.75	2.023	I O	|	|	|	5.84
36.917	0.00	0.74	2.018	I O	|	|	|	5.83
37.000	0.00	0.74	2.012	I O	|	|	|	5.83
37.083	0.00	0.74	2.007	I O	|	|	|	5.82
37.167	0.00	0.73	2.002	I O	|	|	|	5.82
37.250	0.00	0.73	1.997	I O	|	|	|	5.81
37.333	0.00	0.73	1.992	I O	|	|	|	5.81
37.417	0.00	0.72	1.987	I O	|	|	|	5.80
37.500	0.00	0.72	1.982	I O	|	|	|	5.79
37.583	0.00	0.72	1.977	I O	|	|	|	5.79
37.667	0.00	0.71	1.972	I O	|	|	|	5.78
37.750	0.00	0.71	1.968	I O	|	|	|	5.78
37.833	0.00	0.71	1.963	I O	|	|	|	5.77
37.917	0.00	0.70	1.958	I O	|	|	|	5.77
38.000	0.00	0.70	1.953	I O	|	|	|	5.76
38.083	0.00	0.70	1.948	I O	|	|	|	5.76
38.167	0.00	0.69	1.943	I O	|	|	|	5.75
38.250	0.00	0.69	1.939	I O	|	|	|	5.75
38.333	0.00	0.69	1.934	I O	|	|	|	5.74
38.417	0.00	0.68	1.929	I O	|	|	|	5.74
38.500	0.00	0.68	1.925	IO	|	|	|	5.73
38.583	0.00	0.68	1.920	IO	|	|	|	5.73
38.667	0.00	0.67	1.915	IO	|	|	|	5.72
38.750	0.00	0.67	1.911	IO	|	|	|	5.72
38.833	0.00	0.67	1.906	IO	|	|	|	5.71
38.917	0.00	0.66	1.901	IO	|	|	|	5.71

39.000	0.00	0.66	1.897	IO				5.70
39.083	0.00	0.66	1.892	IO				5.70
39.167	0.00	0.65	1.888	IO				5.69
39.250	0.00	0.65	1.883	IO				5.69
39.333	0.00	0.65	1.879	IO				5.68
39.417	0.00	0.64	1.874	IO				5.68
39.500	0.00	0.64	1.870	IO				5.67
39.583	0.00	0.64	1.866	IO				5.67
39.667	0.00	0.64	1.861	IO				5.66
39.750	0.00	0.63	1.857	IO				5.66
39.833	0.00	0.63	1.853	IO				5.66
39.917	0.00	0.63	1.848	IO				5.65
40.000	0.00	0.62	1.844	IO				5.65
40.083	0.00	0.62	1.840	IO				5.64
40.167	0.00	0.62	1.835	IO				5.64
40.250	0.00	0.61	1.831	IO				5.63
40.333	0.00	0.61	1.827	IO				5.63
40.417	0.00	0.61	1.823	IO				5.62
40.500	0.00	0.61	1.818	IO				5.62
40.583	0.00	0.60	1.814	IO				5.61
40.667	0.00	0.60	1.810	IO				5.61
40.750	0.00	0.60	1.806	IO				5.61
40.833	0.00	0.59	1.802	IO				5.60
40.917	0.00	0.59	1.798	IO				5.60
41.000	0.00	0.59	1.794	IO				5.59
41.083	0.00	0.59	1.790	IO				5.59
41.167	0.00	0.58	1.786	IO				5.58
41.250	0.00	0.58	1.782	IO				5.58
41.333	0.00	0.58	1.778	IO				5.57
41.417	0.00	0.58	1.774	IO				5.57
41.500	0.00	0.57	1.770	IO				5.57
41.583	0.00	0.57	1.766	IO				5.56
41.667	0.00	0.57	1.762	IO				5.56
41.750	0.00	0.56	1.758	IO				5.55
41.833	0.00	0.56	1.754	IO				5.55
41.917	0.00	0.56	1.750	IO				5.55
42.000	0.00	0.56	1.746	IO				5.54
42.083	0.00	0.55	1.743	IO				5.54
42.167	0.00	0.55	1.739	IO				5.53
42.250	0.00	0.55	1.735	IO				5.53
42.333	0.00	0.55	1.731	IO				5.53
42.417	0.00	0.54	1.728	IO				5.52
42.500	0.00	0.54	1.724	IO				5.52
42.583	0.00	0.54	1.720	IO				5.51
42.667	0.00	0.54	1.716	IO				5.51
42.750	0.00	0.53	1.713	IO				5.51
42.833	0.00	0.53	1.709	IO				5.50
42.917	0.00	0.53	1.705	IO				5.50
43.000	0.00	0.53	1.702	IO				5.49
43.083	0.00	0.53	1.698	IO				5.49
43.167	0.00	0.53	1.694	IO				5.48
43.250	0.00	0.53	1.691	IO				5.48
43.333	0.00	0.53	1.687	IO				5.48
43.417	0.00	0.53	1.684	IO				5.47

43.500	0.00	0.53	1.680	IO				5.47
43.583	0.00	0.53	1.676	IO				5.46
43.667	0.00	0.53	1.673	IO				5.46
43.750	0.00	0.53	1.669	IO				5.46
43.833	0.00	0.53	1.665	IO				5.45
43.917	0.00	0.53	1.662	IO				5.45
44.000	0.00	0.53	1.658	IO				5.44
44.083	0.00	0.53	1.654	IO				5.44
44.167	0.00	0.53	1.651	IO				5.43
44.250	0.00	0.53	1.647	IO				5.43
44.333	0.00	0.53	1.644	IO				5.43
44.417	0.00	0.53	1.640	IO				5.42
44.500	0.00	0.53	1.636	IO				5.42
44.583	0.00	0.52	1.633	IO				5.41
44.667	0.00	0.52	1.629	IO				5.41
44.750	0.00	0.52	1.626	IO				5.41
44.833	0.00	0.52	1.622	IO				5.40
44.917	0.00	0.52	1.618	IO				5.40
45.000	0.00	0.52	1.615	IO				5.39
45.083	0.00	0.52	1.611	IO				5.39
45.167	0.00	0.52	1.608	IO				5.39
45.250	0.00	0.52	1.604	IO				5.38
45.333	0.00	0.52	1.600	IO				5.38
45.417	0.00	0.52	1.597	IO				5.37
45.500	0.00	0.52	1.593	IO				5.37
45.583	0.00	0.52	1.590	IO				5.36
45.667	0.00	0.52	1.586	IO				5.36
45.750	0.00	0.52	1.582	IO				5.36
45.833	0.00	0.52	1.579	IO				5.35
45.917	0.00	0.52	1.575	IO				5.35
46.000	0.00	0.52	1.572	IO				5.34
46.083	0.00	0.52	1.568	IO				5.34
46.167	0.00	0.52	1.564	IO				5.34
46.250	0.00	0.52	1.561	IO				5.33
46.333	0.00	0.52	1.557	IO				5.33
46.417	0.00	0.52	1.554	IO				5.32
46.500	0.00	0.52	1.550	IO				5.32
46.583	0.00	0.52	1.547	IO				5.32
46.667	0.00	0.52	1.543	IO				5.31
46.750	0.00	0.52	1.539	IO				5.31
46.833	0.00	0.52	1.536	IO				5.30
46.917	0.00	0.52	1.532	IO				5.30
47.000	0.00	0.52	1.529	IO				5.29
47.083	0.00	0.52	1.525	IO				5.29
47.167	0.00	0.52	1.522	IO				5.29
47.250	0.00	0.52	1.518	IO				5.28
47.333	0.00	0.52	1.514	IO				5.28
47.417	0.00	0.52	1.511	IO				5.27
47.500	0.00	0.52	1.507	IO				5.27
47.583	0.00	0.52	1.504	IO				5.27
47.667	0.00	0.52	1.500	IO				5.26
47.750	0.00	0.52	1.497	IO				5.26
47.833	0.00	0.52	1.493	IO				5.25
47.917	0.00	0.52	1.490	IO				5.25

48.000 0.00 0.51 1.486 IO | | | | 5.25

**********HYDROGRAPH DATA**********

Number of intervals = 1881
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 6.367 (CFS)
Total volume = 5.442 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/18/19

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25 YEAR FLOOD ROUTING
BASIN 3
MJPA 304163
4163FR25.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163uhp252425.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 13.728 (CFS)
Total volume = 6.806 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.169	0.170	0.168	0.170
2.000	0.508	0.290	0.507	0.509
3.000	0.763	0.370	0.762	0.764
4.000	1.017	0.440	1.015	1.019
5.000	1.271	0.500	1.269	1.273
5.500	1.708	0.530	1.706	1.710
6.000	2.173	0.850	2.170	2.176
7.000	3.187	1.200	3.183	3.191
8.000	4.314	16.560	4.257	4.371
9.000	5.557	23.020	5.478	5.636

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 3.4 6.86 10.30 13.73	Depth (Ft.)
0.083	0.12	0.00	0.000	O | | | |	0.00
0.167	0.48	0.00	0.002	OI | | | |	0.01
0.250	0.62	0.01	0.006	OI | | | |	0.04
0.333	0.74	0.01	0.011	OI | | | |	0.06
0.417	0.96	0.02	0.017	O I | | | |	0.10
0.500	1.05	0.02	0.023	O I | | | |	0.14
0.583	1.10	0.03	0.031	O I | | | |	0.18
0.667	1.13	0.04	0.038	O I | | | |	0.23
0.750	1.15	0.05	0.046	O I | | | |	0.27
0.833	1.22	0.05	0.053	O I | | | |	0.32
0.917	1.40	0.06	0.062	O I | | | |	0.37
1.000	1.48	0.07	0.072	O I | | | |	0.42
1.083	1.45	0.08	0.081	O I | | | |	0.48
1.167	1.29	0.09	0.090	O I | | | |	0.53
1.250	1.23	0.10	0.098	O I | | | |	0.58
1.333	1.21	0.11	0.106	O I | | | |	0.63
1.417	1.19	0.11	0.113	O I | | | |	0.67
1.500	1.19	0.12	0.121	O I | | | |	0.71
1.583	1.18	0.13	0.128	O I | | | |	0.76
1.667	1.17	0.14	0.135	O I | | | |	0.80
1.750	1.17	0.14	0.142	O I | | | |	0.84
1.833	1.23	0.15	0.149	O I | | | |	0.88
1.917	1.41	0.16	0.157	O I | | | |	0.93
2.000	1.48	0.17	0.166	O I | | | |	0.98
2.083	1.51	0.17	0.175	O I | | | |	1.02
2.167	1.53	0.18	0.185	O I | | | |	1.05
2.250	1.54	0.18	0.194	O I | | | |	1.07
2.333	1.55	0.18	0.203	O I | | | |	1.10
2.417	1.55	0.19	0.213	O I | | | |	1.13
2.500	1.56	0.19	0.222	O I | | | |	1.16
2.583	1.62	0.19	0.232	O I | | | |	1.19
2.667	1.80	0.20	0.242	O I | | | |	1.22
2.750	1.87	0.20	0.254	O I | | | |	1.25
2.833	1.90	0.20	0.265	O I | | | |	1.28
2.917	1.92	0.21	0.277	O I | | | |	1.32

3.000	1.93	0.21	0.289	O I	|	|	|	1.35
3.083	1.94	0.22	0.300	O I	|	|	|	1.39
3.167	1.94	0.22	0.312	O I	|	|	|	1.42
3.250	1.95	0.22	0.324	O I	|	|	|	1.46
3.333	1.95	0.23	0.336	O I	|	|	|	1.49
3.417	1.95	0.23	0.348	O I	|	|	|	1.53
3.500	1.95	0.24	0.360	O I	|	|	|	1.56
3.583	1.95	0.24	0.371	O I	|	|	|	1.60
3.667	1.95	0.25	0.383	O I	|	|	|	1.63
3.750	1.95	0.25	0.395	O I	|	|	|	1.67
3.833	2.01	0.25	0.407	O I	|	|	|	1.70
3.917	2.19	0.26	0.419	O I	|	|	|	1.74
4.000	2.26	0.26	0.433	O I	|	|	|	1.78
4.083	2.29	0.27	0.447	O I	|	|	|	1.82
4.167	2.31	0.27	0.461	O I	|	|	|	1.86
4.250	2.32	0.28	0.475	O I	|	|	|	1.90
4.333	2.39	0.28	0.489	O I	|	|	|	1.94
4.417	2.57	0.29	0.504	O I	|	|	|	1.99
4.500	2.65	0.29	0.520	O I	|	|	|	2.05
4.583	2.68	0.30	0.536	O I	|	|	|	2.11
4.667	2.70	0.30	0.553	O I	|	|	|	2.18
4.750	2.71	0.31	0.569	O I	|	|	|	2.24
4.833	2.30	0.31	0.584	O I	|	|	|	2.30
4.917	1.06	0.32	0.594	OI	|	|	|	2.34
5.000	0.60	0.32	0.597	OI	|	|	|	2.35
5.083	0.75	0.32	0.600	OI	|	|	|	2.36
5.167	1.68	0.32	0.606	O I	|	|	|	2.38
5.250	2.01	0.32	0.617	O I	|	|	|	2.43
5.333	2.19	0.33	0.629	O I	|	|	|	2.47
5.417	2.44	0.33	0.642	O I	|	|	|	2.53
5.500	2.56	0.34	0.657	O I	|	|	|	2.59
5.583	2.22	0.34	0.672	O I	|	|	|	2.64
5.667	1.10	0.34	0.681	OI	|	|	|	2.68
5.750	0.68	0.35	0.684	OI	|	|	|	2.69
5.833	0.52	0.35	0.686	OI	|	|	|	2.70
5.917	0.42	0.35	0.687	O	|	|	|	2.70
6.000	0.37	0.35	0.687	O	|	|	|	2.70
6.083	0.41	0.35	0.688	O	|	|	|	2.70
6.167	0.61	0.35	0.689	OI	|	|	|	2.71
6.250	0.69	0.35	0.691	OI	|	|	|	2.72
6.333	0.73	0.35	0.693	OI	|	|	|	2.73
6.417	0.76	0.35	0.696	OI	|	|	|	2.74
6.500	0.79	0.35	0.699	OI	|	|	|	2.75
6.583	0.89	0.35	0.702	O I	|	|	|	2.76
6.667	1.14	0.35	0.707	O I	|	|	|	2.78
6.750	1.24	0.35	0.713	O I	|	|	|	2.80
6.833	1.30	0.36	0.719	O I	|	|	|	2.83
6.917	1.33	0.36	0.726	O I	|	|	|	2.85
7.000	1.36	0.36	0.732	O I	|	|	|	2.88
7.083	1.39	0.36	0.739	O I	|	|	|	2.91
7.167	1.41	0.36	0.746	O I	|	|	|	2.93
7.250	1.43	0.37	0.754	O I	|	|	|	2.96
7.333	1.52	0.37	0.761	O I	|	|	|	2.99
7.417	1.75	0.37	0.770	O I	|	|	|	3.03

7.500	1.85	0.37	0.780	O	I	|	|	|	3.07
7.583	1.98	0.38	0.790	O	I	|	|	|	3.11
7.667	2.24	0.38	0.802	O	I	|	|	|	3.15
7.750	2.35	0.38	0.816	O	I	|	|	|	3.21
7.833	2.49	0.39	0.830	O	I	|	|	|	3.26
7.917	2.75	0.39	0.845	O	I	|	|	|	3.32
8.000	2.87	0.40	0.861	O	I	|	|	|	3.39
8.083	3.08	0.40	0.879	O	I	|	|	|	3.46
8.167	3.57	0.41	0.899	O	I	|	|	|	3.54
8.250	3.77	0.41	0.922	O	I	|	|	|	3.62
8.333	3.87	0.42	0.945	O	I	|	|	|	3.72
8.417	3.93	0.43	0.969	O	I	|	|	|	3.81
8.500	3.98	0.43	0.993	O	I	|	|	|	3.91
8.583	4.09	0.44	1.018	O	I	|	|	|	4.00
8.667	4.34	0.45	1.044	O	I	|	|	|	4.11
8.750	4.45	0.45	1.071	O	I	|	|	|	4.21
8.833	4.58	0.46	1.099	O	I	|	|	|	4.32
8.917	4.83	0.47	1.128	O	I	|	|	|	4.44
9.000	4.95	0.47	1.159	O	I	|	|	|	4.56
9.083	5.15	0.48	1.190	O	I	|	|	|	4.68
9.167	5.64	0.49	1.224	O	I	|	|	|	4.82
9.250	5.84	0.50	1.260	O	I	|	|	|	4.96
9.333	6.01	0.50	1.298	O	I	|	|	|	5.03
9.417	6.30	0.50	1.337	O	I	|	|	|	5.08
9.500	6.43	0.51	1.377	O	I	|	|	|	5.12
9.583	6.58	0.51	1.418	O	I	|	|	|	5.17
9.667	6.85	0.51	1.461	O	I	|	|	|	5.22
9.750	6.97	0.52	1.505	O	I	|	|	|	5.27
9.833	7.11	0.52	1.550	O	I	|	|	|	5.32
9.917	7.37	0.52	1.596	O	I	|	|	|	5.37
10.000	7.49	0.53	1.644	O	I	|	|	|	5.43
10.083	7.03	0.53	1.690	O	I	|	|	|	5.48
10.167	5.53	0.54	1.730	O	I	|	|	|	5.52
10.250	4.96	0.57	1.762	O	I	|	|	|	5.56
10.333	4.73	0.59	1.791	O	I	|	|	|	5.59
10.417	4.60	0.61	1.819	O	I	|	|	|	5.62
10.500	4.52	0.63	1.846	O	I	|	|	|	5.65
10.583	4.84	0.64	1.874	O	I	|	|	|	5.68
10.667	5.91	0.67	1.907	O	I	|	|	|	5.71
10.750	6.32	0.69	1.944	O	I	|	|	|	5.75
10.833	6.50	0.72	1.984	O	I	|	|	|	5.80
10.917	6.62	0.75	2.024	O	I	|	|	|	5.84
11.000	6.71	0.78	2.064	O	I	|	|	|	5.88
11.083	6.69	0.80	2.105	O	I	|	|	|	5.93
11.167	6.52	0.83	2.145	O	I	|	|	|	5.97
11.250	6.46	0.85	2.184	O	I	|	|	|	6.01
11.333	6.45	0.87	2.222	O	I	|	|	|	6.05
11.417	6.45	0.88	2.261	O	I	|	|	|	6.09
11.500	6.44	0.89	2.299	O	I	|	|	|	6.12
11.583	6.30	0.91	2.337	O	I	|	|	|	6.16
11.667	5.86	0.92	2.372	O	I	|	|	|	6.20
11.750	5.70	0.93	2.406	O	I	|	|	|	6.23
11.833	5.71	0.94	2.439	O	I	|	|	|	6.26
11.917	5.90	0.95	2.472	O	I	|	|	|	6.30

12.000	5.97	0.97	2.506	O	I			6.33
12.083	6.52	0.98	2.543	O	I			6.36
12.167	8.09	0.99	2.586	O	I			6.41
12.250	8.70	1.01	2.637	O	I			6.46
12.333	9.05	1.03	2.691	O	I			6.51
12.417	9.45	1.05	2.748	O	I			6.57
12.500	9.64	1.07	2.806	O	I			6.62
12.583	9.91	1.09	2.866	O	I			6.68
12.667	10.43	1.11	2.929	O	I			6.75
12.750	10.66	1.13	2.994	O	I			6.81
12.833	10.84	1.16	3.060	O	I			6.87
12.917	11.13	1.18	3.127	O	I			6.94
13.000	11.25	1.32	3.196	O	I			7.01
13.083	11.69	2.23	3.263	O	I			7.07
13.167	12.85	3.13	3.329	O	I			7.13
13.250	13.31	4.02	3.394	O	I			7.18
13.333	13.52	4.86	3.456	O	I			7.24
13.417	13.64	5.65	3.513	O	I			7.29
13.500	13.73	6.37	3.566	O	I			7.34
13.583	12.98	6.99	3.612	O	I			7.38
13.667	10.59	7.42	3.644	O	I			7.41
13.750	9.68	7.67	3.661	O	I			7.42
13.833	9.30	7.83	3.673	O	I			7.43
13.917	9.08	7.95	3.682	O	I			7.44
14.000	8.94	8.05	3.689	O	I			7.45
14.083	9.14	8.13	3.696	O	I			7.45
14.167	9.97	8.26	3.705	O	I			7.46
14.250	10.27	8.43	3.717	O	I			7.47
14.333	10.33	8.60	3.730	O	I			7.48
14.417	10.20	8.75	3.741	O	I			7.49
14.500	10.19	8.88	3.750	O	I			7.50
14.583	10.20	8.99	3.759	O	I			7.51
14.667	10.21	9.10	3.767	O	I			7.51
14.750	10.23	9.20	3.774	O	I			7.52
14.833	10.16	9.29	3.781	O	I			7.53
14.917	9.95	9.36	3.786	O	I			7.53
15.000	9.87	9.41	3.789	O	I			7.53
15.083	9.77	9.45	3.792	O	I			7.54
15.167	9.53	9.46	3.793	O	I			7.54
15.250	9.45	9.47	3.794	O	I			7.54
15.333	9.34	9.46	3.793	O	I			7.54
15.417	9.10	9.44	3.791	O	I			7.54
15.500	9.01	9.40	3.789	O	I			7.53
15.583	8.67	9.35	3.785	O	I			7.53
15.667	7.77	9.25	3.778	O	I			7.52
15.750	7.42	9.10	3.767	O	I			7.51
15.833	7.27	8.95	3.755	O	I			7.50
15.917	7.19	8.79	3.744	O	I			7.49
16.000	7.14	8.65	3.733	O	I			7.48
16.083	6.26	8.47	3.721	O	I			7.47
16.167	3.67	8.16	3.697	O	I			7.45
16.250	2.67	7.71	3.665	O	I			7.42
16.333	2.23	7.24	3.630	O	I			7.39
16.417	1.98	6.78	3.596	O	I			7.36

16.500	1.82	6.34	3.564	| I | O |				7.33
16.583	1.65	5.93	3.534	| I | O |				7.31
16.667	1.40	5.53	3.505	| I | O |				7.28
16.750	1.28	5.16	3.477	| I | O |				7.26
16.833	1.22	4.81	3.452	| I | O |				7.23
16.917	1.20	4.48	3.428	| I | O |				7.21
17.000	1.19	4.19	3.406	| I | O |				7.19
17.083	1.08	3.91	3.386	| I | O |				7.18
17.167	0.79	3.65	3.367	|I | O |				7.16
17.250	0.67	3.39	3.347	|I | O|				7.14
17.333	0.63	3.14	3.329	|I | O|				7.13
17.417	0.61	2.91	3.313	|I | O |				7.11
17.500	0.60	2.71	3.298	|I | O |				7.10
17.583	0.60	2.52	3.284	|I | O |				7.09
17.667	0.60	2.35	3.271	|I | O |				7.07
17.750	0.60	2.19	3.260	|I | O |				7.06
17.833	0.53	2.04	3.249	|I | O |				7.05
17.917	0.32	1.90	3.238	I | O |				7.05
18.000	0.24	1.75	3.228	I | O |				7.04
18.083	0.21	1.62	3.218	I | O |				7.03
18.167	0.20	1.49	3.208	I | O |				7.02
18.250	0.20	1.37	3.200	I | O |				7.01
18.333	0.20	1.27	3.192	I O |				7.00
18.417	0.20	1.20	3.185	I O |				7.00
18.500	0.20	1.20	3.178	I O |				6.99
18.583	0.35	1.19	3.172	I O |				6.98
18.667	0.80	1.19	3.167	|IO |				6.98
18.750	0.98	1.19	3.165	| O |				6.98
18.833	0.99	1.19	3.164	| O |				6.98
18.917	0.85	1.19	3.162	|IO |				6.98
19.000	0.81	1.19	3.160	|IO |				6.97
19.083	0.86	1.19	3.157	| O |				6.97
19.167	1.04	1.19	3.156	| O |				6.97
19.250	1.10	1.19	3.155	| O |				6.97
19.333	1.00	1.19	3.154	| O |				6.97
19.417	0.60	1.19	3.151	|IO |				6.96
19.500	0.46	1.19	3.147	|IO |				6.96
19.583	0.53	1.18	3.142	|IO |				6.96
19.667	0.90	1.18	3.139	| O |				6.95
19.750	1.03	1.18	3.137	| O |				6.95
19.833	1.03	1.18	3.136	| O |				6.95
19.917	0.87	1.18	3.134	| O |				6.95
20.000	0.82	1.18	3.132	|IO |				6.95
20.083	0.86	1.18	3.130	| O |				6.94
20.167	1.04	1.18	3.128	| O |				6.94
20.250	1.10	1.18	3.127	| O |				6.94
20.333	1.13	1.18	3.127	| O |				6.94
20.417	1.14	1.18	3.127	| O |				6.94
20.500	1.15	1.18	3.127	| O |				6.94
20.583	1.16	1.18	3.126	| O |				6.94
20.667	1.16	1.18	3.126	| O |				6.94
20.750	1.17	1.18	3.126	| O |				6.94
20.833	1.11	1.18	3.126	| O |				6.94
20.917	0.93	1.18	3.125	| O |				6.94

21.000	0.86	1.18	3.123	IO				6.94
21.083	0.89	1.18	3.121	O				6.93
21.167	1.05	1.18	3.119	O				6.93
21.250	1.11	1.18	3.119	O				6.93
21.333	1.07	1.18	3.118	O				6.93
21.417	0.90	1.18	3.117	O				6.93
21.500	0.84	1.18	3.115	IO				6.93
21.583	0.88	1.17	3.112	O				6.93
21.667	1.05	1.17	3.111	O				6.92
21.750	0.93	1.17	3.110	O				6.92
21.833	0.53	1.17	3.107	IO				6.92
21.917	0.69	1.17	3.103	IO				6.92
22.000	0.75	1.17	3.100	IO				6.91
22.083	0.64	1.17	3.096	IO				6.91
22.167	0.30	1.17	3.092	I O				6.91
22.250	0.17	1.16	3.085	I O				6.90
22.333	0.23	1.16	3.079	I O				6.89
22.417	0.55	1.16	3.073	IO				6.89
22.500	0.66	1.16	3.069	IO				6.88
22.583	0.71	1.16	3.066	IO				6.88
22.667	0.73	1.16	3.063	IO				6.88
22.750	0.75	1.16	3.060	IO				6.87
22.833	0.76	1.16	3.057	IO				6.87
22.917	0.77	1.15	3.055	IO				6.87
23.000	0.77	1.15	3.052	IO				6.87
23.083	0.78	1.15	3.049	IO				6.86
23.167	0.78	1.15	3.047	IO				6.86
23.250	0.78	1.15	3.044	IO				6.86
23.333	0.78	1.15	3.042	IO				6.86
23.417	0.78	1.15	3.039	IO				6.85
23.500	0.78	1.15	3.037	IO				6.85
23.583	0.78	1.15	3.034	IO				6.85
23.667	0.78	1.15	3.032	IO				6.85
23.750	0.78	1.15	3.029	IO				6.84
23.833	0.78	1.14	3.027	IO				6.84
23.917	0.78	1.14	3.024	IO				6.84
24.000	0.78	1.14	3.022	IO				6.84
24.083	0.66	1.14	3.019	IO				6.83
24.167	0.30	1.14	3.014	I O				6.83
24.250	0.16	1.14	3.008	I O				6.82
24.333	0.10	1.14	3.001	I O				6.82
24.417	0.06	1.13	2.994	I O				6.81
24.500	0.04	1.13	2.986	I O				6.80
24.583	0.02	1.13	2.978	I O				6.79
24.667	0.01	1.13	2.971	I O				6.79
24.750	0.00	1.12	2.963	I O				6.78
24.833	0.00	1.12	2.955	I O				6.77
24.917	0.00	1.12	2.948	I O				6.76
25.000	0.00	1.11	2.940	I O				6.76
25.083	0.00	1.11	2.932	I O				6.75
25.167	0.00	1.11	2.925	I O				6.74
25.250	0.00	1.11	2.917	I O				6.73
25.333	0.00	1.10	2.909	I O				6.73
25.417	0.00	1.10	2.902	I O				6.72

25.500	0.00	1.10	2.894	I O	|	|	|	|	6.71
25.583	0.00	1.10	2.887	I O	|	|	|	|	6.70
25.667	0.00	1.09	2.879	I O	|	|	|	|	6.70
25.750	0.00	1.09	2.872	I O	|	|	|	|	6.69
25.833	0.00	1.09	2.864	I O	|	|	|	|	6.68
25.917	0.00	1.09	2.857	I O	|	|	|	|	6.67
26.000	0.00	1.08	2.849	I O	|	|	|	|	6.67
26.083	0.00	1.08	2.842	I O	|	|	|	|	6.66
26.167	0.00	1.08	2.834	I O	|	|	|	|	6.65
26.250	0.00	1.08	2.827	I O	|	|	|	|	6.64
26.333	0.00	1.07	2.820	I O	|	|	|	|	6.64
26.417	0.00	1.07	2.812	I O	|	|	|	|	6.63
26.500	0.00	1.07	2.805	I O	|	|	|	|	6.62
26.583	0.00	1.07	2.797	I O	|	|	|	|	6.62
26.667	0.00	1.06	2.790	I O	|	|	|	|	6.61
26.750	0.00	1.06	2.783	I O	|	|	|	|	6.60
26.833	0.00	1.06	2.776	I O	|	|	|	|	6.59
26.917	0.00	1.06	2.768	I O	|	|	|	|	6.59
27.000	0.00	1.05	2.761	I O	|	|	|	|	6.58
27.083	0.00	1.05	2.754	I O	|	|	|	|	6.57
27.167	0.00	1.05	2.746	I O	|	|	|	|	6.57
27.250	0.00	1.05	2.739	I O	|	|	|	|	6.56
27.333	0.00	1.04	2.732	I O	|	|	|	|	6.55
27.417	0.00	1.04	2.725	I O	|	|	|	|	6.54
27.500	0.00	1.04	2.718	I O	|	|	|	|	6.54
27.583	0.00	1.04	2.711	I O	|	|	|	|	6.53
27.667	0.00	1.03	2.703	I O	|	|	|	|	6.52
27.750	0.00	1.03	2.696	I O	|	|	|	|	6.52
27.833	0.00	1.03	2.689	I O	|	|	|	|	6.51
27.917	0.00	1.03	2.682	I O	|	|	|	|	6.50
28.000	0.00	1.02	2.675	I O	|	|	|	|	6.50
28.083	0.00	1.02	2.668	I O	|	|	|	|	6.49
28.167	0.00	1.02	2.661	I O	|	|	|	|	6.48
28.250	0.00	1.02	2.654	I O	|	|	|	|	6.47
28.333	0.00	1.01	2.647	I O	|	|	|	|	6.47
28.417	0.00	1.01	2.640	I O	|	|	|	|	6.46
28.500	0.00	1.01	2.633	I O	|	|	|	|	6.45
28.583	0.00	1.01	2.626	I O	|	|	|	|	6.45
28.667	0.00	1.00	2.619	I O	|	|	|	|	6.44
28.750	0.00	1.00	2.612	I O	|	|	|	|	6.43
28.833	0.00	1.00	2.606	I O	|	|	|	|	6.43
28.917	0.00	1.00	2.599	I O	|	|	|	|	6.42
29.000	0.00	0.99	2.592	I O	|	|	|	|	6.41
29.083	0.00	0.99	2.585	I O	|	|	|	|	6.41
29.167	0.00	0.99	2.578	I O	|	|	|	|	6.40
29.250	0.00	0.99	2.571	I O	|	|	|	|	6.39
29.333	0.00	0.99	2.565	I O	|	|	|	|	6.39
29.417	0.00	0.98	2.558	I O	|	|	|	|	6.38
29.500	0.00	0.98	2.551	I O	|	|	|	|	6.37
29.583	0.00	0.98	2.544	I O	|	|	|	|	6.37
29.667	0.00	0.98	2.538	I O	|	|	|	|	6.36
29.750	0.00	0.97	2.531	I O	|	|	|	|	6.35
29.833	0.00	0.97	2.524	I O	|	|	|	|	6.35
29.917	0.00	0.97	2.517	I O	|	|	|	|	6.34

30.000	0.00	0.97	2.511	I O	|	|	|	6.33
30.083	0.00	0.96	2.504	I O	|	|	|	6.33
30.167	0.00	0.96	2.497	I O	|	|	|	6.32
30.250	0.00	0.96	2.491	I O	|	|	|	6.31
30.333	0.00	0.96	2.484	I O	|	|	|	6.31
30.417	0.00	0.96	2.478	I O	|	|	|	6.30
30.500	0.00	0.95	2.471	I O	|	|	|	6.29
30.583	0.00	0.95	2.465	I O	|	|	|	6.29
30.667	0.00	0.95	2.458	I O	|	|	|	6.28
30.750	0.00	0.95	2.451	I O	|	|	|	6.27
30.833	0.00	0.94	2.445	I O	|	|	|	6.27
30.917	0.00	0.94	2.438	I O	|	|	|	6.26
31.000	0.00	0.94	2.432	I O	|	|	|	6.26
31.083	0.00	0.94	2.426	I O	|	|	|	6.25
31.167	0.00	0.93	2.419	I O	|	|	|	6.24
31.250	0.00	0.93	2.413	I O	|	|	|	6.24
31.333	0.00	0.93	2.406	I O	|	|	|	6.23
31.417	0.00	0.93	2.400	I O	|	|	|	6.22
31.500	0.00	0.93	2.393	I O	|	|	|	6.22
31.583	0.00	0.92	2.387	I O	|	|	|	6.21
31.667	0.00	0.92	2.381	I O	|	|	|	6.20
31.750	0.00	0.92	2.374	I O	|	|	|	6.20
31.833	0.00	0.92	2.368	I O	|	|	|	6.19
31.917	0.00	0.92	2.362	I O	|	|	|	6.19
32.000	0.00	0.91	2.355	I O	|	|	|	6.18
32.083	0.00	0.91	2.349	I O	|	|	|	6.17
32.167	0.00	0.91	2.343	I O	|	|	|	6.17
32.250	0.00	0.91	2.337	I O	|	|	|	6.16
32.333	0.00	0.90	2.330	I O	|	|	|	6.16
32.417	0.00	0.90	2.324	I O	|	|	|	6.15
32.500	0.00	0.90	2.318	I O	|	|	|	6.14
32.583	0.00	0.90	2.312	I O	|	|	|	6.14
32.667	0.00	0.90	2.306	I O	|	|	|	6.13
32.750	0.00	0.89	2.299	I O	|	|	|	6.12
32.833	0.00	0.89	2.293	I O	|	|	|	6.12
32.917	0.00	0.89	2.287	I O	|	|	|	6.11
33.000	0.00	0.89	2.281	I O	|	|	|	6.11
33.083	0.00	0.89	2.275	I O	|	|	|	6.10
33.167	0.00	0.88	2.269	I O	|	|	|	6.09
33.250	0.00	0.88	2.263	I O	|	|	|	6.09
33.333	0.00	0.88	2.257	I O	|	|	|	6.08
33.417	0.00	0.88	2.251	I O	|	|	|	6.08
33.500	0.00	0.87	2.245	I O	|	|	|	6.07
33.583	0.00	0.87	2.239	I O	|	|	|	6.06
33.667	0.00	0.87	2.233	I O	|	|	|	6.06
33.750	0.00	0.87	2.227	I O	|	|	|	6.05
33.833	0.00	0.87	2.221	I O	|	|	|	6.05
33.917	0.00	0.86	2.215	I O	|	|	|	6.04
34.000	0.00	0.86	2.209	I O	|	|	|	6.04
34.083	0.00	0.86	2.203	I O	|	|	|	6.03
34.167	0.00	0.86	2.197	I O	|	|	|	6.02
34.250	0.00	0.86	2.191	IO	|	|	|	6.02
34.333	0.00	0.85	2.185	IO	|	|	|	6.01
34.417	0.00	0.85	2.179	IO	|	|	|	6.01

34.500	0.00	0.85	2.173	IO				6.00
34.583	0.00	0.85	2.168	IO				5.99
34.667	0.00	0.84	2.162	IO				5.99
34.750	0.00	0.84	2.156	IO				5.98
34.833	0.00	0.83	2.150	IO				5.98
34.917	0.00	0.83	2.144	IO				5.97
35.000	0.00	0.83	2.139	IO				5.96
35.083	0.00	0.82	2.133	IO				5.96
35.167	0.00	0.82	2.127	IO				5.95
35.250	0.00	0.81	2.122	IO				5.94
35.333	0.00	0.81	2.116	IO				5.94
35.417	0.00	0.81	2.111	IO				5.93
35.500	0.00	0.80	2.105	IO				5.93
35.583	0.00	0.80	2.100	IO				5.92
35.667	0.00	0.80	2.094	IO				5.92
35.750	0.00	0.79	2.089	IO				5.91
35.833	0.00	0.79	2.083	IO				5.90
35.917	0.00	0.78	2.078	IO				5.90
36.000	0.00	0.78	2.072	IO				5.89
36.083	0.00	0.78	2.067	IO				5.89
36.167	0.00	0.77	2.062	IO				5.88
36.250	0.00	0.77	2.056	IO				5.87
36.333	0.00	0.77	2.051	IO				5.87
36.417	0.00	0.76	2.046	IO				5.86
36.500	0.00	0.76	2.041	IO				5.86
36.583	0.00	0.76	2.035	IO				5.85
36.667	0.00	0.75	2.030	IO				5.85
36.750	0.00	0.75	2.025	IO				5.84
36.833	0.00	0.74	2.020	IO				5.84
36.917	0.00	0.74	2.015	IO				5.83
37.000	0.00	0.74	2.010	IO				5.82
37.083	0.00	0.73	2.005	IO				5.82
37.167	0.00	0.73	2.000	IO				5.81
37.250	0.00	0.73	1.995	IO				5.81
37.333	0.00	0.72	1.990	IO				5.80
37.417	0.00	0.72	1.985	IO				5.80
37.500	0.00	0.72	1.980	IO				5.79
37.583	0.00	0.71	1.975	IO				5.79
37.667	0.00	0.71	1.970	IO				5.78
37.750	0.00	0.71	1.965	IO				5.78
37.833	0.00	0.70	1.960	IO				5.77
37.917	0.00	0.70	1.955	IO				5.77
38.000	0.00	0.70	1.950	IO				5.76
38.083	0.00	0.69	1.946	IO				5.76
38.167	0.00	0.69	1.941	IO				5.75
38.250	0.00	0.69	1.936	IO				5.75
38.333	0.00	0.68	1.931	IO				5.74
38.417	0.00	0.68	1.927	IO				5.74
38.500	0.00	0.68	1.922	IO				5.73
38.583	0.00	0.67	1.917	IO				5.73
38.667	0.00	0.67	1.913	IO				5.72
38.750	0.00	0.67	1.908	IO				5.72
38.833	0.00	0.66	1.904	IO				5.71
38.917	0.00	0.66	1.899	IO				5.71

39.000	0.00	0.66	1.894	IO				5.70
39.083	0.00	0.66	1.890	IO				5.70
39.167	0.00	0.65	1.885	IO				5.69
39.250	0.00	0.65	1.881	IO				5.69
39.333	0.00	0.65	1.876	IO				5.68
39.417	0.00	0.64	1.872	IO				5.68
39.500	0.00	0.64	1.868	IO				5.67
39.583	0.00	0.64	1.863	IO				5.67
39.667	0.00	0.63	1.859	IO				5.66
39.750	0.00	0.63	1.854	IO				5.66
39.833	0.00	0.63	1.850	IO				5.65
39.917	0.00	0.62	1.846	IO				5.65
40.000	0.00	0.62	1.842	IO				5.64
40.083	0.00	0.62	1.837	IO				5.64
40.167	0.00	0.62	1.833	IO				5.63
40.250	0.00	0.61	1.829	IO				5.63
40.333	0.00	0.61	1.825	IO				5.63
40.417	0.00	0.61	1.820	IO				5.62
40.500	0.00	0.60	1.816	IO				5.62
40.583	0.00	0.60	1.812	IO				5.61
40.667	0.00	0.60	1.808	IO				5.61
40.750	0.00	0.60	1.804	IO				5.60
40.833	0.00	0.59	1.800	IO				5.60
40.917	0.00	0.59	1.796	IO				5.59
41.000	0.00	0.59	1.792	IO				5.59
41.083	0.00	0.58	1.788	IO				5.59
41.167	0.00	0.58	1.784	IO				5.58
41.250	0.00	0.58	1.780	IO				5.58
41.333	0.00	0.58	1.776	IO				5.57
41.417	0.00	0.57	1.772	IO				5.57
41.500	0.00	0.57	1.768	IO				5.56
41.583	0.00	0.57	1.764	IO				5.56
41.667	0.00	0.57	1.760	IO				5.56
41.750	0.00	0.56	1.756	IO				5.55
41.833	0.00	0.56	1.752	IO				5.55
41.917	0.00	0.56	1.748	IO				5.54
42.000	0.00	0.56	1.744	IO				5.54
42.083	0.00	0.55	1.741	IO				5.53
42.167	0.00	0.55	1.737	IO				5.53
42.250	0.00	0.55	1.733	IO				5.53
42.333	0.00	0.54	1.729	IO				5.52
42.417	0.00	0.54	1.725	IO				5.52
42.500	0.00	0.54	1.722	IO				5.51
42.583	0.00	0.54	1.718	IO				5.51
42.667	0.00	0.53	1.714	IO				5.51
42.750	0.00	0.53	1.711	IO				5.50
42.833	0.00	0.53	1.707	IO				5.50
42.917	0.00	0.53	1.703	IO				5.49
43.000	0.00	0.53	1.700	IO				5.49
43.083	0.00	0.53	1.696	IO				5.49
43.167	0.00	0.53	1.692	IO				5.48
43.250	0.00	0.53	1.689	IO				5.48
43.333	0.00	0.53	1.685	IO				5.47
43.417	0.00	0.53	1.682	IO				5.47

43.500	0.00	0.53	1.678	IO				5.47
43.583	0.00	0.53	1.674	IO				5.46
43.667	0.00	0.53	1.671	IO				5.46
43.750	0.00	0.53	1.667	IO				5.45
43.833	0.00	0.53	1.663	IO				5.45
43.917	0.00	0.53	1.660	IO				5.44
44.000	0.00	0.53	1.656	IO				5.44
44.083	0.00	0.53	1.652	IO				5.44
44.167	0.00	0.53	1.649	IO				5.43
44.250	0.00	0.53	1.645	IO				5.43
44.333	0.00	0.53	1.642	IO				5.42
44.417	0.00	0.53	1.638	IO				5.42
44.500	0.00	0.52	1.634	IO				5.42
44.583	0.00	0.52	1.631	IO				5.41
44.667	0.00	0.52	1.627	IO				5.41
44.750	0.00	0.52	1.624	IO				5.40
44.833	0.00	0.52	1.620	IO				5.40
44.917	0.00	0.52	1.616	IO				5.40
45.000	0.00	0.52	1.613	IO				5.39
45.083	0.00	0.52	1.609	IO				5.39
45.167	0.00	0.52	1.606	IO				5.38
45.250	0.00	0.52	1.602	IO				5.38
45.333	0.00	0.52	1.598	IO				5.37
45.417	0.00	0.52	1.595	IO				5.37
45.500	0.00	0.52	1.591	IO				5.37
45.583	0.00	0.52	1.588	IO				5.36
45.667	0.00	0.52	1.584	IO				5.36
45.750	0.00	0.52	1.580	IO				5.35
45.833	0.00	0.52	1.577	IO				5.35
45.917	0.00	0.52	1.573	IO				5.35
46.000	0.00	0.52	1.570	IO				5.34
46.083	0.00	0.52	1.566	IO				5.34
46.167	0.00	0.52	1.562	IO				5.33
46.250	0.00	0.52	1.559	IO				5.33
46.333	0.00	0.52	1.555	IO				5.33
46.417	0.00	0.52	1.552	IO				5.32
46.500	0.00	0.52	1.548	IO				5.32
46.583	0.00	0.52	1.545	IO				5.31
46.667	0.00	0.52	1.541	IO				5.31
46.750	0.00	0.52	1.537	IO				5.30
46.833	0.00	0.52	1.534	IO				5.30
46.917	0.00	0.52	1.530	IO				5.30
47.000	0.00	0.52	1.527	IO				5.29
47.083	0.00	0.52	1.523	IO				5.29
47.167	0.00	0.52	1.520	IO				5.28
47.250	0.00	0.52	1.516	IO				5.28
47.333	0.00	0.52	1.512	IO				5.28
47.417	0.00	0.52	1.509	IO				5.27
47.500	0.00	0.52	1.505	IO				5.27
47.583	0.00	0.52	1.502	IO				5.26
47.667	0.00	0.52	1.498	IO				5.26
47.750	0.00	0.52	1.495	IO				5.26
47.833	0.00	0.52	1.491	IO				5.25
47.917	0.00	0.51	1.488	IO				5.25

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48.000    0.00    0.51      1.484  IO      |       |       |       |     5.24

     ****************************HYDROGRAPH DATA****************************
                Number of intervals =  1881
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        9.467 (CFS)
                Total volume =       6.805 (Ac.Ft)
          Status of hydrographs being held in storage
                     Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
          Peak (CFS)      0.000     0.000     0.000     0.000     0.000
          Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
     ************************************************************************

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 11/18/19

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100 YEAR FLOOD ROUTING
BASIN 3
MJPA 304163
4163FR100.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163uhp10024100.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 19.166 (CFS)
Total volume = 9.965 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.169	0.170	0.168	0.170
2.000	0.508	0.290	0.507	0.509
3.000	0.763	0.370	0.762	0.764
4.000	1.017	0.440	1.015	1.019
5.000	1.271	0.500	1.269	1.273
5.500	1.708	0.530	1.706	1.710
6.000	2.173	0.850	2.170	2.176
7.000	3.187	1.200	3.183	3.191
8.000	4.314	16.560	4.257	4.371
9.000	5.557	23.020	5.478	5.636

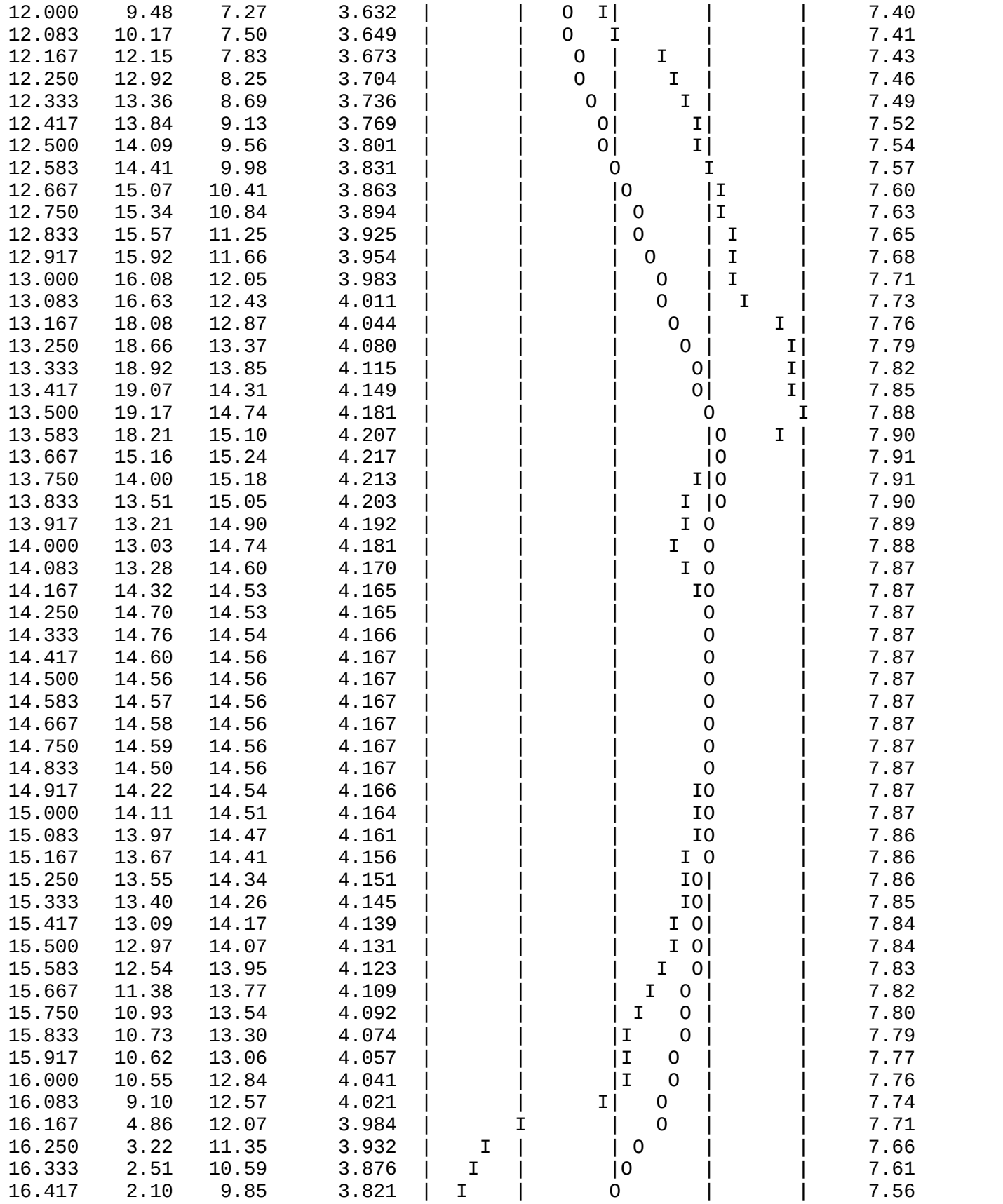
Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	4.8	9.58	14.37	19.17	Depth (Ft.)
0.083	0.15	0.00	0.001	O	|	|	|	|	0.00
0.167	0.61	0.00	0.003	OI	|	|	|	|	0.02
0.250	0.79	0.01	0.008	OI	|	|	|	|	0.05
0.333	0.95	0.01	0.014	OI	|	|	|	|	0.08
0.417	1.22	0.02	0.021	O I	|	|	|	|	0.13
0.500	1.34	0.03	0.030	O I	|	|	|	|	0.18
0.583	1.40	0.04	0.039	O I	|	|	|	|	0.23
0.667	1.43	0.05	0.048	O I	|	|	|	|	0.29
0.750	1.46	0.06	0.058	O I	|	|	|	|	0.34
0.833	1.25	0.07	0.067	O I	|	|	|	|	0.40
0.917	0.58	0.07	0.073	O	|	|	|	|	0.43
1.000	0.33	0.08	0.075	O	|	|	|	|	0.45
1.083	0.45	0.08	0.077	O	|	|	|	|	0.46
1.167	1.05	0.08	0.082	OI	|	|	|	|	0.49
1.250	1.27	0.09	0.089	O I	|	|	|	|	0.53
1.333	1.35	0.10	0.098	O I	|	|	|	|	0.58
1.417	1.40	0.11	0.107	O I	|	|	|	|	0.63
1.500	1.42	0.12	0.115	O I	|	|	|	|	0.68
1.583	1.44	0.13	0.125	O I	|	|	|	|	0.74
1.667	1.46	0.13	0.134	O I	|	|	|	|	0.79
1.750	1.48	0.14	0.143	O I	|	|	|	|	0.85
1.833	1.28	0.15	0.151	O I	|	|	|	|	0.90
1.917	0.66	0.16	0.157	OI	|	|	|	|	0.93
2.000	0.42	0.16	0.159	O	|	|	|	|	0.94
2.083	0.32	0.16	0.161	O	|	|	|	|	0.95
2.167	0.27	0.16	0.162	O	|	|	|	|	0.96
2.250	0.24	0.16	0.163	O	|	|	|	|	0.96
2.333	0.22	0.16	0.163	O	|	|	|	|	0.96
2.417	0.21	0.16	0.163	O	|	|	|	|	0.97
2.500	0.21	0.16	0.164	O	|	|	|	|	0.97
2.583	0.31	0.17	0.164	O	|	|	|	|	0.97
2.667	0.60	0.17	0.166	O	|	|	|	|	0.98
2.750	0.71	0.17	0.170	OI	|	|	|	|	1.00
2.833	0.77	0.17	0.174	OI	|	|	|	|	1.01
2.917	0.81	0.17	0.178	OI	|	|	|	|	1.03

3.000	0.83	0.17	0.182	OI	|	|	|	1.04
3.083	0.85	0.18	0.187	OI	|	|	|	1.05
3.167	0.87	0.18	0.192	OI	|	|	|	1.07
3.250	0.88	0.18	0.196	OI	|	|	|	1.08
3.333	0.90	0.18	0.201	OI	|	|	|	1.10
3.417	0.91	0.18	0.206	OI	|	|	|	1.11
3.500	0.91	0.18	0.211	OI	|	|	|	1.12
3.583	0.92	0.19	0.216	OI	|	|	|	1.14
3.667	0.93	0.19	0.221	OI	|	|	|	1.15
3.750	0.94	0.19	0.227	OI	|	|	|	1.17
3.833	1.04	0.19	0.232	OI	|	|	|	1.19
3.917	1.33	0.19	0.239	O I	|	|	|	1.21
4.000	1.45	0.20	0.247	O I	|	|	|	1.23
4.083	1.51	0.20	0.256	O I	|	|	|	1.26
4.167	1.54	0.20	0.265	O I	|	|	|	1.28
4.250	1.57	0.21	0.274	O I	|	|	|	1.31
4.333	1.68	0.21	0.284	O I	|	|	|	1.34
4.417	1.98	0.21	0.295	O I	|	|	|	1.37
4.500	2.10	0.22	0.308	O I	|	|	|	1.41
4.583	2.16	0.22	0.321	O I	|	|	|	1.45
4.667	2.20	0.23	0.334	O I	|	|	|	1.49
4.750	2.22	0.23	0.348	O I	|	|	|	1.53
4.833	2.34	0.24	0.362	O I	|	|	|	1.57
4.917	2.63	0.24	0.378	O I	|	|	|	1.62
5.000	2.76	0.25	0.394	O I	|	|	|	1.66
5.083	2.63	0.26	0.411	O I	|	|	|	1.71
5.167	2.10	0.26	0.426	O I	|	|	|	1.76
5.250	1.91	0.27	0.438	O I	|	|	|	1.79
5.333	1.93	0.27	0.449	O I	|	|	|	1.83
5.417	2.17	0.27	0.461	O I	|	|	|	1.86
5.500	2.26	0.28	0.475	O I	|	|	|	1.90
5.583	2.39	0.28	0.489	O I	|	|	|	1.94
5.667	2.69	0.29	0.504	O I	|	|	|	1.99
5.750	2.81	0.29	0.521	O I	|	|	|	2.05
5.833	2.87	0.30	0.539	O I	|	|	|	2.12
5.917	2.92	0.31	0.557	O I	|	|	|	2.19
6.000	2.95	0.31	0.575	O I	|	|	|	2.26
6.083	3.06	0.32	0.593	O I	|	|	|	2.33
6.167	3.36	0.32	0.613	O I	|	|	|	2.41
6.250	3.48	0.33	0.634	O I	|	|	|	2.50
6.333	3.54	0.34	0.656	O I	|	|	|	2.58
6.417	3.58	0.34	0.679	O I	|	|	|	2.67
6.500	3.60	0.35	0.701	O I	|	|	|	2.76
6.583	3.72	0.36	0.724	O I	|	|	|	2.85
6.667	4.01	0.37	0.748	O I	|	|	|	2.94
6.750	4.14	0.37	0.773	O I	|	|	|	3.04
6.833	4.19	0.38	0.799	O I	|	|	|	3.14
6.917	4.23	0.39	0.826	O I	|	|	|	3.25
7.000	4.25	0.39	0.852	O I	|	|	|	3.35
7.083	4.27	0.40	0.879	O I	|	|	|	3.46
7.167	4.29	0.41	0.906	O I	|	|	|	3.56
7.250	4.30	0.42	0.932	O I	|	|	|	3.67
7.333	4.41	0.42	0.959	O I	|	|	|	3.77
7.417	4.70	0.43	0.988	O I	|	|	|	3.89

7.500	4.81	0.44	1.018	O	I	|	|	|	4.00
7.583	4.96	0.45	1.048	O	I	|	|	|	4.12
7.667	5.28	0.45	1.080	O	I	|	|	|	4.25
7.750	5.41	0.46	1.114	O	|I	|	|	|	4.38
7.833	5.57	0.47	1.149	O	|I	|	|	|	4.52
7.917	5.90	0.48	1.185	O	|I	|	|	|	4.66
8.000	6.03	0.49	1.223	O	| I	|	|	|	4.81
8.083	6.29	0.50	1.262	O	| I	|	|	|	4.96
8.167	6.90	0.50	1.304	O	| I	|	|	|	5.04
8.250	7.14	0.51	1.348	O	| I	|	|	|	5.09
8.333	7.26	0.51	1.395	O	| I	|	|	|	5.14
8.417	7.33	0.51	1.441	O	| I	|	|	|	5.19
8.500	7.38	0.51	1.488	O	| I	|	|	|	5.25
8.583	7.51	0.52	1.536	O	| I	|	|	|	5.30
8.667	7.81	0.52	1.585	O	| I	|	|	|	5.36
8.750	7.94	0.53	1.636	O	| I	|	|	|	5.42
8.833	8.09	0.53	1.687	O	| I	|	|	|	5.48
8.917	8.41	0.55	1.741	O	| I	|	|	|	5.53
9.000	8.54	0.59	1.795	O	| I	|	|	|	5.59
9.083	8.79	0.63	1.850	|O	| I	|	|	|	5.65
9.167	9.40	0.67	1.909	|O	| I	|	|	|	5.72
9.250	9.65	0.71	1.969	|O	| I	|	|	|	5.78
9.333	9.86	0.75	2.032	|O	| I	|	|	|	5.85
9.417	10.21	0.80	2.095	|O	| |I	|	|	|	5.92
9.500	10.36	0.84	2.161	|O	| |I	|	|	|	5.99
9.583	10.54	0.87	2.227	|O	| |I	|	|	|	6.05
9.667	10.87	0.89	2.294	|O	| | I	|	|	|	6.12
9.750	11.01	0.92	2.363	|O	| | I	|	|	|	6.19
9.833	11.18	0.94	2.433	|O	| | I	|	|	|	6.26
9.917	11.50	0.96	2.505	|O	| | I	|	|	|	6.33
10.000	11.64	0.99	2.578	|O	| | I	|	|	|	6.40
10.083	11.06	1.01	2.649	|O	| | I	|	|	|	6.47
10.167	9.13	1.04	2.712	|O	| I	|	|	|	6.53
10.250	8.40	1.05	2.765	|O	| I	|	|	|	6.58
10.333	8.10	1.07	2.814	|O	| I	|	|	|	6.63
10.417	7.92	1.09	2.862	|O	| I	|	|	|	6.68
10.500	7.81	1.10	2.909	|O	| I	|	|	|	6.73
10.583	8.20	1.12	2.956	|O	| I	|	|	|	6.77
10.667	9.56	1.14	3.010	|O	| I	|	|	|	6.83
10.750	10.07	1.16	3.069	|O	| |I	|	|	|	6.88
10.833	10.29	1.18	3.131	|O	| |I	|	|	|	6.95
10.917	10.43	1.30	3.194	| O	| |I	|	|	|	7.01
11.000	10.53	2.12	3.255	| O	| |I	|	|	|	7.06
11.083	10.50	2.87	3.310	| O	| |I	|	|	|	7.11
11.167	10.27	3.55	3.359	| O	| |I	|	|	|	7.15
11.250	10.19	4.15	3.403	| O	| |I	|	|	|	7.19
11.333	10.17	4.69	3.443	| O	| I	|	|	|	7.23
11.417	10.15	5.18	3.479	| O	| I	|	|	|	7.26
11.500	10.14	5.62	3.512	| |O	| I	|	|	|	7.29
11.583	9.95	6.02	3.541	| | O	| I	|	|	|	7.31
11.667	9.38	6.35	3.565	| | O	| I	|	|	|	7.34
11.750	9.17	6.61	3.584	| | O	| I	|	|	|	7.35
11.833	9.17	6.84	3.601	| | O	| I	|	|	|	7.37
11.917	9.40	7.06	3.617	| | O	| I	|	|	|	7.38



16.500	1.85	9.14	3.770	| I | O|				7.52
16.583	1.58	8.47	3.721	| I | O |				7.47
16.667	1.18	7.84	3.674	|I | O |				7.43
16.750	1.00	7.23	3.630	|I | O |				7.39
16.833	0.91	6.67	3.588	|I | O |				7.36
16.917	0.88	6.15	3.550	|I | O |				7.32
17.000	0.87	5.68	3.516	|I |O |				7.29
17.083	1.05	5.26	3.485	|I O |				7.26
17.167	1.61	4.90	3.459	| I O |				7.24
17.250	1.83	4.62	3.438	| I O|				7.22
17.333	1.92	4.37	3.420	| I O|				7.21
17.417	1.98	4.16	3.404	| I O |				7.19
17.500	2.02	3.96	3.390	| I O |				7.18
17.583	2.05	3.79	3.377	| I O |				7.17
17.667	2.07	3.63	3.366	| I O |				7.16
17.750	2.09	3.49	3.355	| I O |				7.15
17.833	2.00	3.36	3.346	| I O |				7.14
17.917	1.73	3.23	3.336	| I O |				7.13
18.000	1.62	3.09	3.326	| I O |				7.12
18.083	1.58	2.96	3.316	| I O |				7.11
18.167	1.56	2.83	3.307	| I O |				7.11
18.250	1.54	2.72	3.298	| I O |				7.10
18.333	1.54	2.61	3.291	| I O |				7.09
18.417	1.53	2.52	3.284	| I O |				7.09
18.500	1.53	2.43	3.277	| I O |				7.08
18.583	1.44	2.34	3.271	| IO |				7.07
18.667	1.16	2.25	3.264	|I O |				7.07
18.750	1.06	2.15	3.257	|I O |				7.06
18.833	0.92	2.04	3.249	|I O |				7.05
18.917	0.62	1.93	3.241	|I O |				7.05
19.000	0.50	1.81	3.232	I O |				7.04
19.083	0.54	1.69	3.223	I O |				7.03
19.167	0.78	1.60	3.216	|IO |				7.03
19.250	0.87	1.53	3.211	|IO |				7.02
19.333	1.00	1.48	3.207	|IO |				7.02
19.417	1.31	1.45	3.205	| O |				7.02
19.500	1.43	1.44	3.205	| O |				7.02
19.583	1.40	1.44	3.204	| O |				7.02
19.667	1.16	1.42	3.203	|IO |				7.01
19.750	1.07	1.40	3.201	|IO |				7.01
19.833	0.95	1.36	3.199	|IO |				7.01
19.917	0.66	1.31	3.195	|IO |				7.01
20.000	0.54	1.25	3.191	I O |				7.00
20.083	0.58	1.20	3.186	I O |				7.00
20.167	0.83	1.20	3.183	|IO |				7.00
20.250	0.92	1.20	3.180	|O |				6.99
20.333	0.95	1.20	3.179	|O |				6.99
20.417	0.98	1.20	3.177	|O |				6.99
20.500	0.99	1.20	3.176	|O |				6.99
20.583	1.01	1.20	3.174	|O |				6.99
20.667	1.02	1.20	3.173	|O |				6.99
20.750	1.03	1.19	3.172	|O |				6.98
20.833	0.94	1.19	3.170	|O |				6.98
20.917	0.66	1.19	3.167	|O |				6.98

21.000	0.56	1.19	3.163	IO					6.98
21.083	0.60	1.19	3.159	|O					6.97
21.167	0.86	1.19	3.156	|O					6.97
21.250	0.96	1.19	3.154	|O					6.97
21.333	0.90	1.19	3.152	|O					6.97
21.417	0.64	1.19	3.150	|O					6.96
21.500	0.55	1.19	3.145	IO					6.96
21.583	0.61	1.18	3.141	|O					6.95
21.667	0.87	1.18	3.138	|O					6.95
21.750	0.97	1.18	3.136	|O					6.95
21.833	0.92	1.18	3.135	|O					6.95
21.917	0.66	1.18	3.132	|O					6.95
22.000	0.56	1.18	3.128	IO					6.94
22.083	0.62	1.18	3.124	|O					6.94
22.167	0.89	1.18	3.121	|O					6.94
22.250	0.98	1.18	3.119	|O					6.93
22.333	0.93	1.18	3.118	|O					6.93
22.417	0.67	1.18	3.115	|O					6.93
22.500	0.58	1.17	3.112	IO					6.93
22.583	0.54	1.17	3.107	IO					6.92
22.667	0.52	1.17	3.103	IO					6.92
22.750	0.52	1.17	3.099	IO					6.91
22.833	0.51	1.17	3.094	IO					6.91
22.917	0.50	1.17	3.089	IO					6.90
23.000	0.50	1.16	3.085	IO					6.90
23.083	0.50	1.16	3.080	IO					6.89
23.167	0.50	1.16	3.076	IO					6.89
23.250	0.50	1.16	3.071	IO					6.89
23.333	0.50	1.16	3.067	IO					6.88
23.417	0.50	1.16	3.062	IO					6.88
23.500	0.50	1.16	3.058	IO					6.87
23.583	0.51	1.15	3.053	IO					6.87
23.667	0.51	1.15	3.049	IO					6.86
23.750	0.51	1.15	3.044	IO					6.86
23.833	0.51	1.15	3.040	IO					6.85
23.917	0.51	1.15	3.035	IO					6.85
24.000	0.51	1.15	3.031	IO					6.85
24.083	0.43	1.14	3.026	IO					6.84
24.167	0.19	1.14	3.021	IO					6.84
24.250	0.10	1.14	3.014	IO					6.83
24.333	0.06	1.14	3.007	IO					6.82
24.417	0.04	1.14	2.999	IO					6.81
24.500	0.02	1.13	2.992	IO					6.81
24.583	0.01	1.13	2.984	IO					6.80
24.667	0.01	1.13	2.976	IO					6.79
24.750	0.00	1.12	2.968	IO					6.78
24.833	0.00	1.12	2.961	IO					6.78
24.917	0.00	1.12	2.953	IO					6.77
25.000	0.00	1.12	2.945	IO					6.76
25.083	0.00	1.11	2.938	IO					6.75
25.167	0.00	1.11	2.930	IO					6.75
25.250	0.00	1.11	2.922	IO					6.74
25.333	0.00	1.11	2.915	IO					6.73
25.417	0.00	1.10	2.907	IO					6.72

25.500	0.00	1.10	2.899	IO					6.72
25.583	0.00	1.10	2.892	IO					6.71
25.667	0.00	1.10	2.884	IO					6.70
25.750	0.00	1.09	2.877	IO					6.69
25.833	0.00	1.09	2.869	IO					6.69
25.917	0.00	1.09	2.862	IO					6.68
26.000	0.00	1.09	2.854	IO					6.67
26.083	0.00	1.08	2.847	IO					6.66
26.167	0.00	1.08	2.839	IO					6.66
26.250	0.00	1.08	2.832	IO					6.65
26.333	0.00	1.07	2.825	IO					6.64
26.417	0.00	1.07	2.817	IO					6.64
26.500	0.00	1.07	2.810	IO					6.63
26.583	0.00	1.07	2.802	IO					6.62
26.667	0.00	1.06	2.795	IO					6.61
26.750	0.00	1.06	2.788	IO					6.61
26.833	0.00	1.06	2.780	IO					6.60
26.917	0.00	1.06	2.773	IO					6.59
27.000	0.00	1.05	2.766	IO					6.58
27.083	0.00	1.05	2.759	IO					6.58
27.167	0.00	1.05	2.751	IO					6.57
27.250	0.00	1.05	2.744	IO					6.56
27.333	0.00	1.04	2.737	IO					6.56
27.417	0.00	1.04	2.730	IO					6.55
27.500	0.00	1.04	2.723	IO					6.54
27.583	0.00	1.04	2.715	IO					6.53
27.667	0.00	1.03	2.708	IO					6.53
27.750	0.00	1.03	2.701	IO					6.52
27.833	0.00	1.03	2.694	IO					6.51
27.917	0.00	1.03	2.687	IO					6.51
28.000	0.00	1.02	2.680	IO					6.50
28.083	0.00	1.02	2.673	IO					6.49
28.167	0.00	1.02	2.666	IO					6.49
28.250	0.00	1.02	2.659	IO					6.48
28.333	0.00	1.02	2.652	IO					6.47
28.417	0.00	1.01	2.645	IO					6.47
28.500	0.00	1.01	2.638	IO					6.46
28.583	0.00	1.01	2.631	IO					6.45
28.667	0.00	1.01	2.624	IO					6.44
28.750	0.00	1.00	2.617	IO					6.44
28.833	0.00	1.00	2.610	IO					6.43
28.917	0.00	1.00	2.603	IO					6.42
29.000	0.00	1.00	2.596	IO					6.42
29.083	0.00	0.99	2.590	IO					6.41
29.167	0.00	0.99	2.583	IO					6.40
29.250	0.00	0.99	2.576	IO					6.40
29.333	0.00	0.99	2.569	IO					6.39
29.417	0.00	0.98	2.562	IO					6.38
29.500	0.00	0.98	2.556	IO					6.38
29.583	0.00	0.98	2.549	IO					6.37
29.667	0.00	0.98	2.542	IO					6.36
29.750	0.00	0.98	2.535	IO					6.36
29.833	0.00	0.97	2.529	IO					6.35
29.917	0.00	0.97	2.522	IO					6.34

30.000	0.00	0.97	2.515	IO					6.34
30.083	0.00	0.97	2.509	IO					6.33
30.167	0.00	0.96	2.502	IO					6.32
30.250	0.00	0.96	2.495	IO					6.32
30.333	0.00	0.96	2.489	IO					6.31
30.417	0.00	0.96	2.482	IO					6.30
30.500	0.00	0.95	2.476	IO					6.30
30.583	0.00	0.95	2.469	IO					6.29
30.667	0.00	0.95	2.462	IO					6.29
30.750	0.00	0.95	2.456	IO					6.28
30.833	0.00	0.95	2.449	IO					6.27
30.917	0.00	0.94	2.443	IO					6.27
31.000	0.00	0.94	2.436	IO					6.26
31.083	0.00	0.94	2.430	IO					6.25
31.167	0.00	0.94	2.423	IO					6.25
31.250	0.00	0.93	2.417	IO					6.24
31.333	0.00	0.93	2.411	IO					6.23
31.417	0.00	0.93	2.404	IO					6.23
31.500	0.00	0.93	2.398	IO					6.22
31.583	0.00	0.93	2.391	IO					6.22
31.667	0.00	0.92	2.385	IO					6.21
31.750	0.00	0.92	2.379	IO					6.20
31.833	0.00	0.92	2.372	IO					6.20
31.917	0.00	0.92	2.366	IO					6.19
32.000	0.00	0.91	2.360	IO					6.18
32.083	0.00	0.91	2.353	IO					6.18
32.167	0.00	0.91	2.347	IO					6.17
32.250	0.00	0.91	2.341	IO					6.17
32.333	0.00	0.91	2.335	IO					6.16
32.417	0.00	0.90	2.328	IO					6.15
32.500	0.00	0.90	2.322	IO					6.15
32.583	0.00	0.90	2.316	IO					6.14
32.667	0.00	0.90	2.310	IO					6.13
32.750	0.00	0.90	2.304	IO					6.13
32.833	0.00	0.89	2.298	IO					6.12
32.917	0.00	0.89	2.291	IO					6.12
33.000	0.00	0.89	2.285	IO					6.11
33.083	0.00	0.89	2.279	IO					6.10
33.167	0.00	0.88	2.273	IO					6.10
33.250	0.00	0.88	2.267	IO					6.09
33.333	0.00	0.88	2.261	IO					6.09
33.417	0.00	0.88	2.255	IO					6.08
33.500	0.00	0.88	2.249	IO					6.07
33.583	0.00	0.87	2.243	IO					6.07
33.667	0.00	0.87	2.237	IO					6.06
33.750	0.00	0.87	2.231	IO					6.06
33.833	0.00	0.87	2.225	IO					6.05
33.917	0.00	0.87	2.219	IO					6.05
34.000	0.00	0.86	2.213	IO					6.04
34.083	0.00	0.86	2.207	IO					6.03
34.167	0.00	0.86	2.201	IO					6.03
34.250	0.00	0.86	2.195	IO					6.02
34.333	0.00	0.86	2.189	IO					6.02
34.417	0.00	0.85	2.183	IO					6.01

34.500	0.00	0.85	2.177	IO				6.00
34.583	0.00	0.85	2.172	IO				6.00
34.667	0.00	0.84	2.166	IO				5.99
34.750	0.00	0.84	2.160	IO				5.99
34.833	0.00	0.84	2.154	IO				5.98
34.917	0.00	0.83	2.148	IO				5.97
35.000	0.00	0.83	2.143	IO				5.97
35.083	0.00	0.83	2.137	IO				5.96
35.167	0.00	0.82	2.131	IO				5.96
35.250	0.00	0.82	2.126	IO				5.95
35.333	0.00	0.81	2.120	IO				5.94
35.417	0.00	0.81	2.114	IO				5.94
35.500	0.00	0.81	2.109	IO				5.93
35.583	0.00	0.80	2.103	IO				5.93
35.667	0.00	0.80	2.098	IO				5.92
35.750	0.00	0.79	2.092	IO				5.91
35.833	0.00	0.79	2.087	IO				5.91
35.917	0.00	0.79	2.081	IO				5.90
36.000	0.00	0.78	2.076	IO				5.90
36.083	0.00	0.78	2.071	IO				5.89
36.167	0.00	0.78	2.065	IO				5.88
36.250	0.00	0.77	2.060	IO				5.88
36.333	0.00	0.77	2.055	IO				5.87
36.417	0.00	0.76	2.049	IO				5.87
36.500	0.00	0.76	2.044	IO				5.86
36.583	0.00	0.76	2.039	IO				5.86
36.667	0.00	0.75	2.034	IO				5.85
36.750	0.00	0.75	2.029	IO				5.84
36.833	0.00	0.75	2.023	IO				5.84
36.917	0.00	0.74	2.018	IO				5.83
37.000	0.00	0.74	2.013	IO				5.83
37.083	0.00	0.74	2.008	IO				5.82
37.167	0.00	0.73	2.003	IO				5.82
37.250	0.00	0.73	1.998	IO				5.81
37.333	0.00	0.73	1.993	IO				5.81
37.417	0.00	0.72	1.988	IO				5.80
37.500	0.00	0.72	1.983	IO				5.80
37.583	0.00	0.72	1.978	IO				5.79
37.667	0.00	0.71	1.973	IO				5.79
37.750	0.00	0.71	1.968	IO				5.78
37.833	0.00	0.71	1.963	IO				5.77
37.917	0.00	0.70	1.958	IO				5.77
38.000	0.00	0.70	1.954	IO				5.76
38.083	0.00	0.70	1.949	IO				5.76
38.167	0.00	0.69	1.944	IO				5.75
38.250	0.00	0.69	1.939	IO				5.75
38.333	0.00	0.69	1.935	IO				5.74
38.417	0.00	0.68	1.930	IO				5.74
38.500	0.00	0.68	1.925	IO				5.73
38.583	0.00	0.68	1.921	IO				5.73
38.667	0.00	0.67	1.916	IO				5.72
38.750	0.00	0.67	1.911	IO				5.72
38.833	0.00	0.67	1.907	IO				5.71
38.917	0.00	0.66	1.902	IO				5.71

39.000	0.00	0.66	1.898	IO				5.70
39.083	0.00	0.66	1.893	IO				5.70
39.167	0.00	0.65	1.888	IO				5.69
39.250	0.00	0.65	1.884	IO				5.69
39.333	0.00	0.65	1.879	IO				5.68
39.417	0.00	0.64	1.875	IO				5.68
39.500	0.00	0.64	1.871	IO				5.67
39.583	0.00	0.64	1.866	IO				5.67
39.667	0.00	0.64	1.862	IO				5.67
39.750	0.00	0.63	1.857	IO				5.66
39.833	0.00	0.63	1.853	IO				5.66
39.917	0.00	0.63	1.849	IO				5.65
40.000	0.00	0.62	1.844	IO				5.65
40.083	0.00	0.62	1.840	IO				5.64
40.167	0.00	0.62	1.836	IO				5.64
40.250	0.00	0.62	1.832	IO				5.63
40.333	0.00	0.61	1.827	IO				5.63
40.417	0.00	0.61	1.823	IO				5.62
40.500	0.00	0.61	1.819	IO				5.62
40.583	0.00	0.60	1.815	IO				5.61
40.667	0.00	0.60	1.811	IO				5.61
40.750	0.00	0.60	1.807	O				5.61
40.833	0.00	0.60	1.802	O				5.60
40.917	0.00	0.59	1.798	O				5.60
41.000	0.00	0.59	1.794	O				5.59
41.083	0.00	0.59	1.790	O				5.59
41.167	0.00	0.58	1.786	O				5.58
41.250	0.00	0.58	1.782	O				5.58
41.333	0.00	0.58	1.778	O				5.58
41.417	0.00	0.58	1.774	O				5.57
41.500	0.00	0.57	1.770	O				5.57
41.583	0.00	0.57	1.766	O				5.56
41.667	0.00	0.57	1.762	O				5.56
41.750	0.00	0.56	1.759	O				5.55
41.833	0.00	0.56	1.755	O				5.55
41.917	0.00	0.56	1.751	O				5.55
42.000	0.00	0.56	1.747	O				5.54
42.083	0.00	0.55	1.743	O				5.54
42.167	0.00	0.55	1.739	O				5.53
42.250	0.00	0.55	1.736	O				5.53
42.333	0.00	0.55	1.732	O				5.53
42.417	0.00	0.54	1.728	O				5.52
42.500	0.00	0.54	1.724	O				5.52
42.583	0.00	0.54	1.721	O				5.51
42.667	0.00	0.54	1.717	O				5.51
42.750	0.00	0.53	1.713	O				5.51
42.833	0.00	0.53	1.710	O				5.50
42.917	0.00	0.53	1.706	O				5.50
43.000	0.00	0.53	1.702	O				5.49
43.083	0.00	0.53	1.699	O				5.49
43.167	0.00	0.53	1.695	O				5.49
43.250	0.00	0.53	1.691	O				5.48
43.333	0.00	0.53	1.688	O				5.48
43.417	0.00	0.53	1.684	O				5.47

43.500	0.00	0.53	1.680	O	|	|	|	|	5.47
43.583	0.00	0.53	1.677	O	|	|	|	|	5.46
43.667	0.00	0.53	1.673	O	|	|	|	|	5.46
43.750	0.00	0.53	1.669	O	|	|	|	|	5.46
43.833	0.00	0.53	1.666	O	|	|	|	|	5.45
43.917	0.00	0.53	1.662	O	|	|	|	|	5.45
44.000	0.00	0.53	1.659	O	|	|	|	|	5.44
44.083	0.00	0.53	1.655	O	|	|	|	|	5.44
44.167	0.00	0.53	1.651	O	|	|	|	|	5.44
44.250	0.00	0.53	1.648	O	|	|	|	|	5.43
44.333	0.00	0.53	1.644	O	|	|	|	|	5.43
44.417	0.00	0.53	1.640	O	|	|	|	|	5.42
44.500	0.00	0.53	1.637	O	|	|	|	|	5.42
44.583	0.00	0.52	1.633	O	|	|	|	|	5.41
44.667	0.00	0.52	1.630	O	|	|	|	|	5.41
44.750	0.00	0.52	1.626	O	|	|	|	|	5.41
44.833	0.00	0.52	1.622	O	|	|	|	|	5.40
44.917	0.00	0.52	1.619	O	|	|	|	|	5.40
45.000	0.00	0.52	1.615	O	|	|	|	|	5.39
45.083	0.00	0.52	1.612	O	|	|	|	|	5.39
45.167	0.00	0.52	1.608	O	|	|	|	|	5.39
45.250	0.00	0.52	1.604	O	|	|	|	|	5.38
45.333	0.00	0.52	1.601	O	|	|	|	|	5.38
45.417	0.00	0.52	1.597	O	|	|	|	|	5.37
45.500	0.00	0.52	1.594	O	|	|	|	|	5.37
45.583	0.00	0.52	1.590	O	|	|	|	|	5.36
45.667	0.00	0.52	1.586	O	|	|	|	|	5.36
45.750	0.00	0.52	1.583	O	|	|	|	|	5.36
45.833	0.00	0.52	1.579	O	|	|	|	|	5.35
45.917	0.00	0.52	1.576	O	|	|	|	|	5.35
46.000	0.00	0.52	1.572	O	|	|	|	|	5.34
46.083	0.00	0.52	1.568	O	|	|	|	|	5.34
46.167	0.00	0.52	1.565	O	|	|	|	|	5.34
46.250	0.00	0.52	1.561	O	|	|	|	|	5.33
46.333	0.00	0.52	1.558	O	|	|	|	|	5.33
46.417	0.00	0.52	1.554	O	|	|	|	|	5.32
46.500	0.00	0.52	1.551	O	|	|	|	|	5.32
46.583	0.00	0.52	1.547	O	|	|	|	|	5.32
46.667	0.00	0.52	1.543	O	|	|	|	|	5.31
46.750	0.00	0.52	1.540	O	|	|	|	|	5.31
46.833	0.00	0.52	1.536	O	|	|	|	|	5.30
46.917	0.00	0.52	1.533	O	|	|	|	|	5.30
47.000	0.00	0.52	1.529	O	|	|	|	|	5.30
47.083	0.00	0.52	1.526	O	|	|	|	|	5.29
47.167	0.00	0.52	1.522	O	|	|	|	|	5.29
47.250	0.00	0.52	1.518	O	|	|	|	|	5.28
47.333	0.00	0.52	1.515	O	|	|	|	|	5.28
47.417	0.00	0.52	1.511	O	|	|	|	|	5.27
47.500	0.00	0.52	1.508	O	|	|	|	|	5.27
47.583	0.00	0.52	1.504	O	|	|	|	|	5.27
47.667	0.00	0.52	1.501	O	|	|	|	|	5.26
47.750	0.00	0.52	1.497	O	|	|	|	|	5.26
47.833	0.00	0.52	1.494	O	|	|	|	|	5.25
47.917	0.00	0.52	1.490	O	|	|	|	|	5.25

48.000 0.00 0.51 1.486 O | | | | 5.25

**********HYDROGRAPH DATA**********

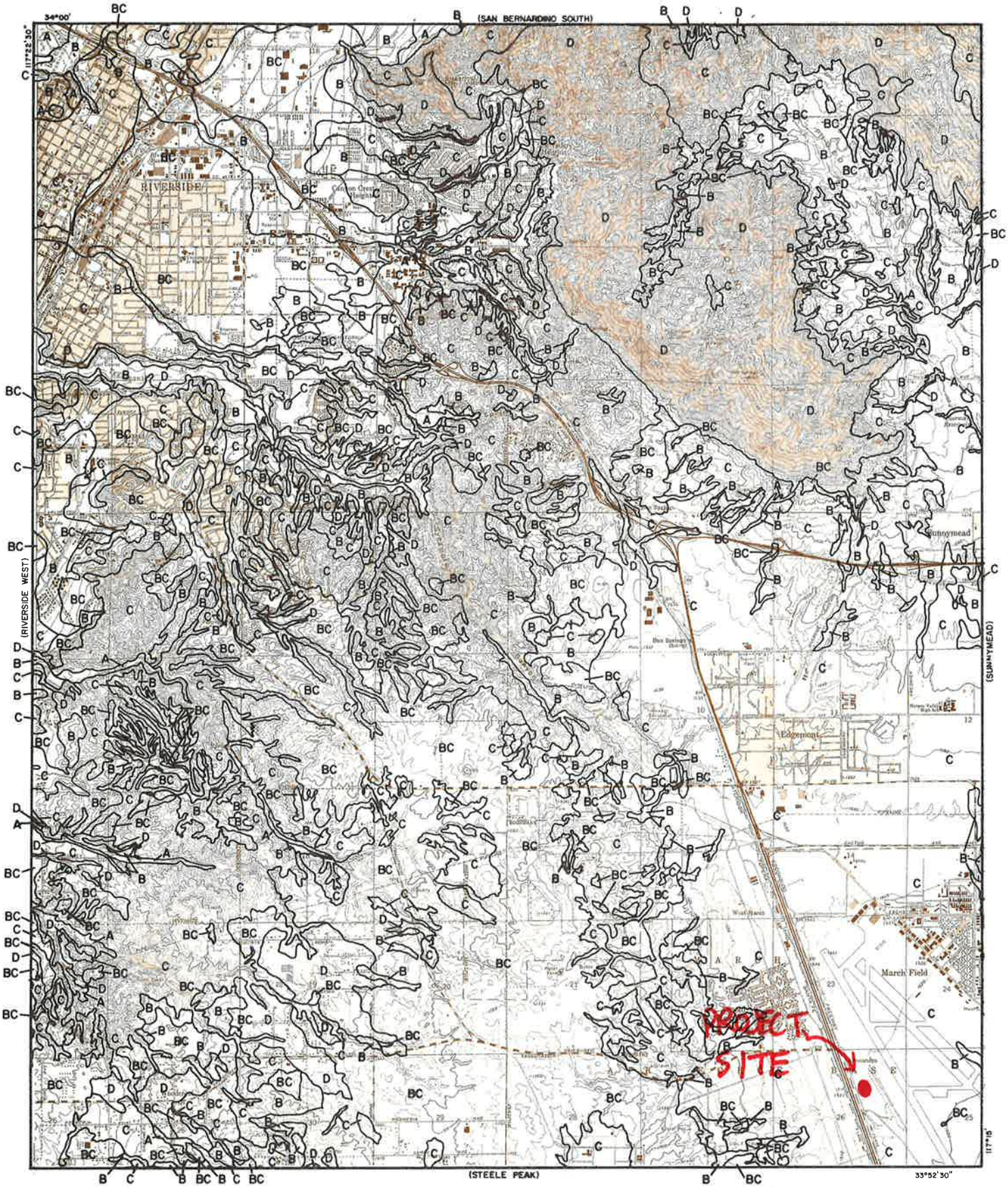
Number of intervals = 1881
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 15.240 (CFS)
Total volume = 9.964 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

Appendix E
Soil Group Map and Isohyetal Map



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

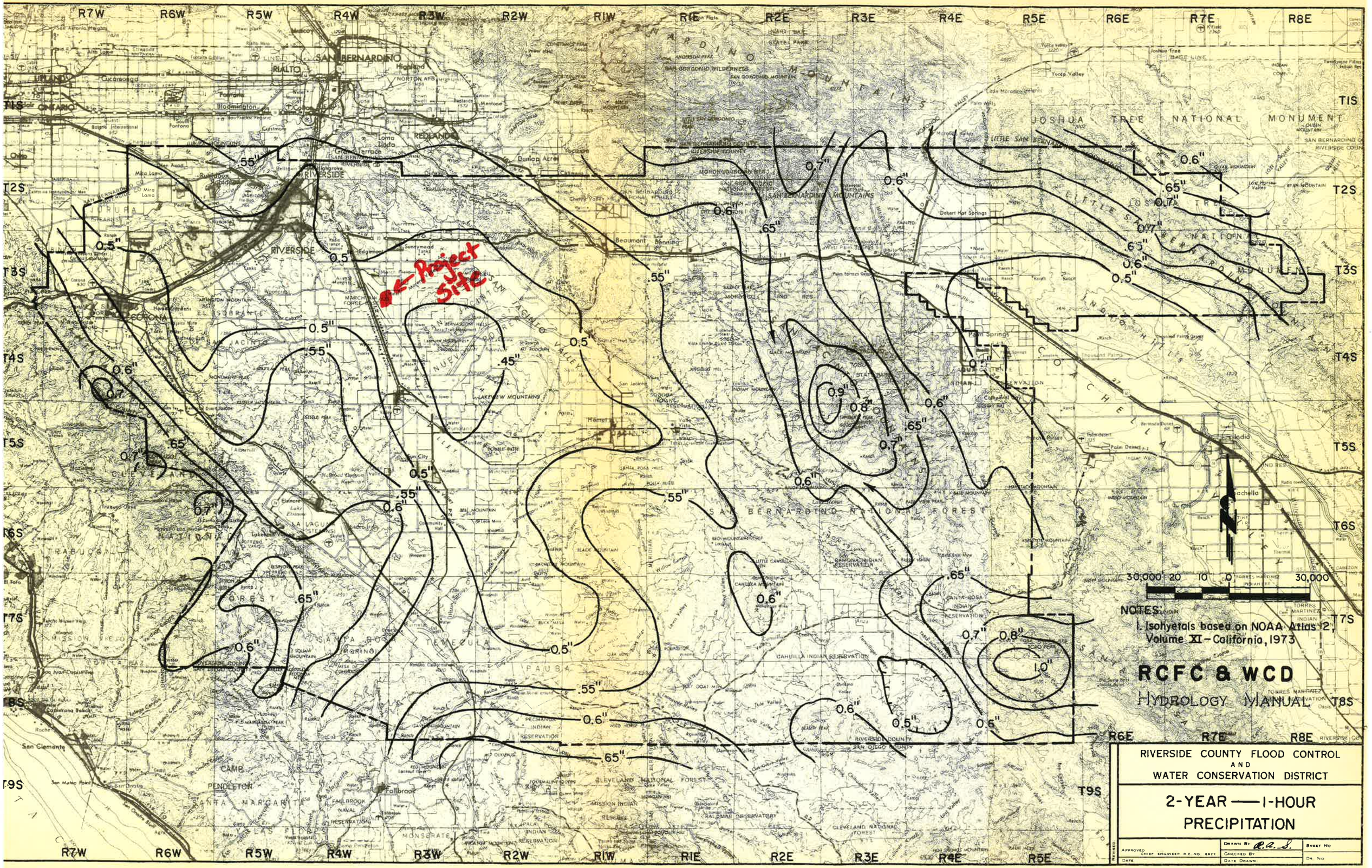
RCFC & WCD

HYDROLOGY MANUAL

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR RIVERSIDE-EAST

PLATE C-1.16


Project Site
.55"
0.5"
0.6"
0.7"
.65"
0.8"
0.9"
1.0"
.45"
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
30,000 20 10 0 30,000
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 1-HOUR PRECIPITATION
Drawn By: R.A.S.
Checked By:
Date Drawn:
Sheet No
Da No
Approved: Chief Engineer R.E. No. 6822
Date
Revised
PLATE D-4.3

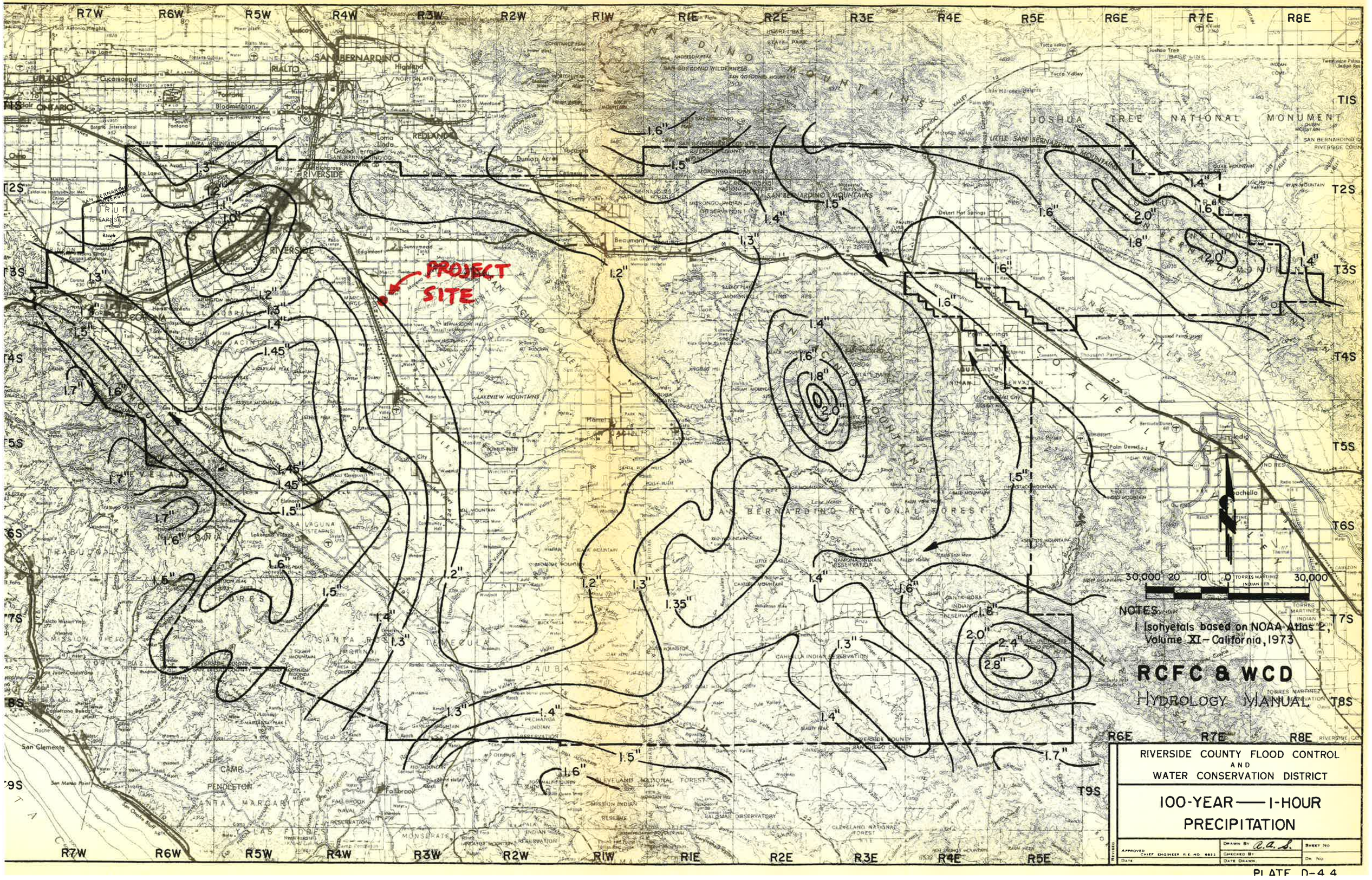
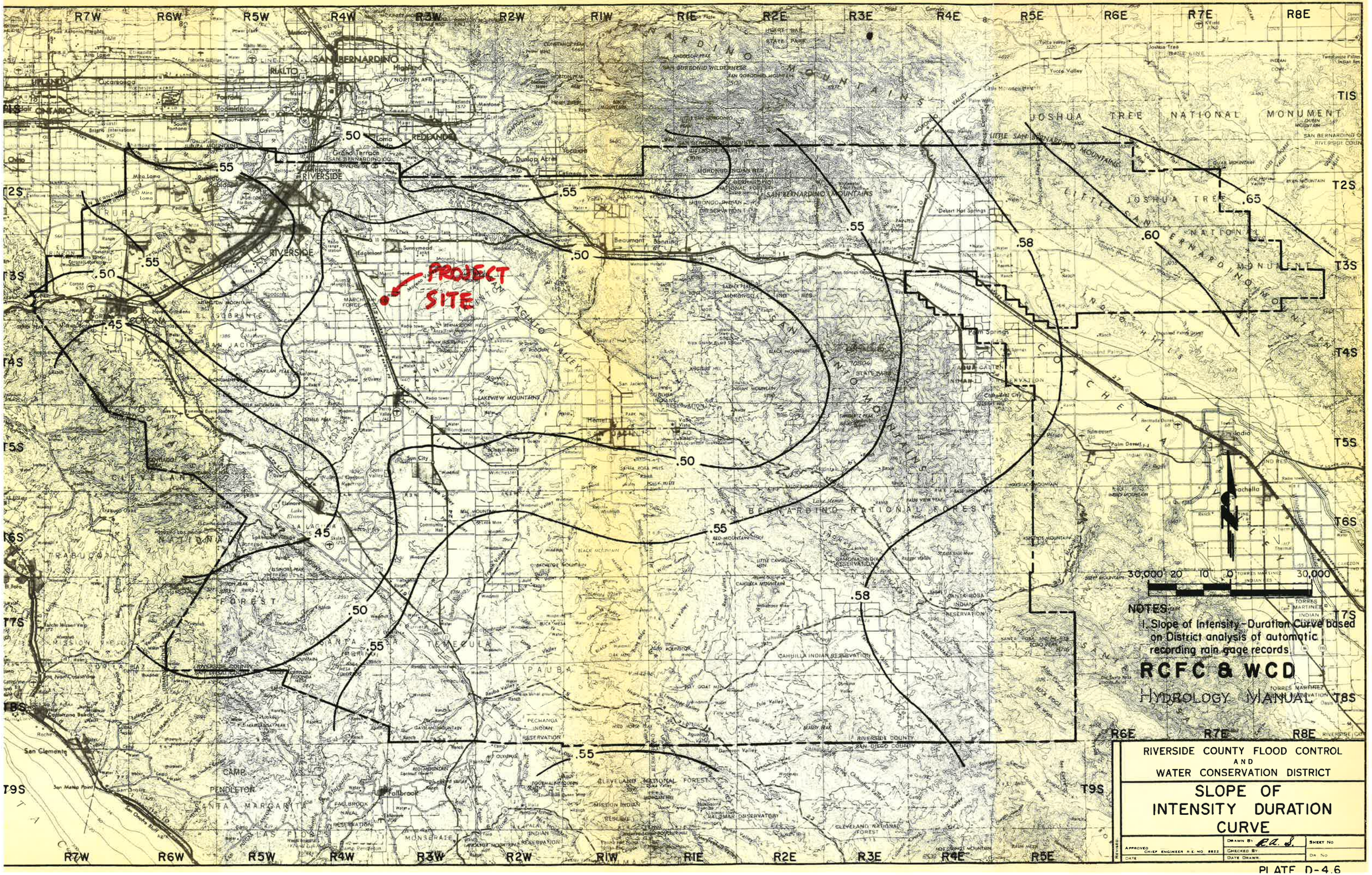

PROJECT SITE
1.0"
1.1"
1.2"
1.3"
1.4"
1.45"
1.5"
1.6"
1.7"
1.8"
2.0"
2.4"
2.8"
1.35"
R7W
R6W
R5W
R4W
R3W
R2W
R1W
R1E
R2E
R3E
R4E
R5E
R6E
R7E
R8E
T2S
T3S
T4S
T5S
T6S
T7S
T8S
T9S
SAN BERNARDINO MOUNTAINS
SAN JACINTO MOUNTAINS
SAN BERNARDINO NATIONAL FOREST
JOSHUA TREE NATIONAL MONUMENT
SAN JACINTO VALLEY
SAN GORGONIO WILDERNESS
RIVERSIDE
SAN BERNARDINO
RIALTO
REDLANDS
Beaumont
Banning
Hemet
Perris
Palm Springs
Indio
Coachella
Temecula
Fallbrook
San Clemente
Lake Elsinore
Lake Perris
Lake Hemet
Lake Cahuilla
Salton Sea
30,000 20 10 0 30,000
NOTES
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 1-HOUR PRECIPITATION
DRAWN BY: A.A.S.
CHECKED BY:
DATE DRAWN:
SHEET NO
DR. NO
APPROVED: CHIEF ENGINEER R.E. NO. 6822
DATE
REVISED

PLATE D-4.4



NOTES:

1. Slope of Intensity-Duration Curve based on District analysis of automatic recording rain gage records.

RCFC & WCD

HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SLOPE OF INTENSITY DURATION CURVE

APPROVED CHIEF ENGINEER R.E. NO. 4822	DRAWN BY: R.A.S.	SHEET NO
DATE	CHECKED BY:	DR. NO
	DATE DRAWN:	

REVISED

PLATE D-4.6

I-2 Storm Water Infiltration Report

February 23, 2016

Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Attention: Mr. Kathy Hoffer

Project No.: **15G204-3**

Subject: **Storm Water Infiltration**
Proposed D2 Air Cargo Compatible Development
SE Terminus of Van Buren Boulevard
Between I-215 and MARB
Moreno Valley, California

Reference: Geotechnical Investigation, D2 Air Cargo Compatible Development, SE Terminus of Van Buren Boulevard, Between I-215 and MARB, Moreno Valley, California, prepared for Hillwood by Southern California Geotechnical, Inc. (SCG), SCG Project No. 15G204-1, dated December 16, 2015.

Gentlemen:

In accordance your request, we have prepared this letter in order to comment on the infiltration characteristics of the on-site soils. The near surface soils generally consist of medium dense to very dense silty sands and clayey sands and stiff to hard silty clays and sandy clays. In general, these soils possess high densities and are weakly to moderately cemented. These soils are considered relatively impermeable with respect to storm water infiltration.

Based on the relatively high densities, cementation, and the silt and clay content of the near surface soils, no significant storm water infiltration should be expected within the near surface soils at the subject site.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. NIELSEN
No. 77915
CIVIL
STATE OF CALIFORNIA

Distribution: (1) Addressee
(1) Huitt-Zollars, Attention: Mr. Johnny Murad

I-3 Offsite Drainage and Flooding Limits Memorandum

ALBERT A. WEBB ASSOCIATES

16-0280

Technical Memorandum

To: Jeff Smith, MJPA

From: Joseph Caldwell, PE / CPSWQ / CPESC

Date: July 13, 2018

Re: Offsite Drainage and Flooding Limits Downstream of the Proposed VIP-215 Project

The following Technical Memorandum is prepared to address the offsite drainage and flooding limits downstream of the proposed VIP-215 project. As part of the CEQA process for the project, the March Air Reserve Base (MARB) has expressed some concern that the proposed project will increase existing flooding on the base. In order to quantify the potential impacts of the proposed development on downstream properties a two-dimensional HEC-RAS model was developed for existing conditions and proposed conditions. The results of these two models were compared against a third model representing historical drainage across the base prior to the development of the March Joint Powers Authority's Meridian Project. The results of this analysis show that for the 100-Year Storm that existing and proposed condition flooding limits on MARB are less than were historically experienced prior to the development of the Meridian Project. The results also show that the downstream floodplain limits will be slightly less following the development of the VIP215 project versus existing conditions.

Multiple hydrology studies have been prepared for the watershed that is tributary to the westerly boundary of MARB. In order to model the floodplain across the southwesterly portion of MARB, WEBB reviewed and obtained runoff data from the following sources:

- "Draft Drainage Study – Meridian Business Center – Ultimate Drainage Conditions" -- Kimley-Horn and Associates, Inc. – June 2010
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Peak flow rates from the upstream watershed were calculated for the 100-Year Storm Event. Both Kimley-Horn and K&A Engineering prepared a culvert capacity analysis to determine how much runoff crosses the I-215 Freeway and where it crosses at. WEBB independently verified the peak flow rates that cross the I-215 at various locations. It should be noted that all three analyses split flow analyses were prepared using peak flow rates. In reality these peak flow rates will experience some degree of attenuation as they pond westerly of the freeway and are routed through the various culvert crossings. By utilizing the peak flow analysis and a steady

state hydraulic analysis downstream the models results show a slightly larger floodplain footprint than will actually occur during a particular storm event. This adds an additional factor of safety to the modeling results.

Table 1 below summarizes the peak 100-Year flow rates at various locations for the three scenarios that were evaluated. **Exhibit 1** illustrates the location of these peak flow rate. The various flow rates were hydraulically modeled across a two-dimensional finite volume mesh of the study area. The peak inflow rates were modeled for an extended time to allow model to come to a steady state equilibrium. The 100-Year floodplain footprints are compared against each other in **Exhibit 2**. The maximum flow depths and peak flow velocities for the various events are shown in **Exhibits 3** through **8**.

Table 1 - Peak 100-Year Flow Rate Summary

Location	Historical Flow (cfs)	Existing Flow (cfs)	Proposed Flow (cfs)
NE of VIP215	800	200	200
Offsite Flow Tributary to VIP215	1,377	1,534	1,534
VIP215 Runoff	150	150	33
Flow to MARB	2,327	1,887	1,767

Based upon the results of the three analyses, it is concluded that under existing conditions the extents of flooding is less that it has historically been. This makes sense since the development of the Meridian Project included the construction of several very large stormwater detention basins. Peak flows that are tributary to MARB have been significantly reduced due to these basins. It is also concluded that the development of the VIP-215 site will slightly reduce the downstream flooding extents compared to existing conditions. It should be noted that in historical, existing and proposed conditions that the MARB Runway is well above the 100-Year floodplain.

An updated Master Drainage Plan for this area is currently being developed by MJPA. Several alignments have been evaluated but a preferred alignment has not yet been selected. The proposed infrastructure in the VIP-215 project is consistent with many of the alternatives currently being evaluated. The proposed VIP-215 drainage concept will be able to work with any of the MDP Alternatives that are currently being evaluated. It will either be incorporated as a main line backbone facility of the updated alternative, or it will be as a local system.

Exhibit 1 - Flow Locations

N

NE of VIP215

VIP215 Runoff

Flow to MARB

Offsite Flow
Tributary to VIP215

215

Heacock Street

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP215 Project Boundary

0 400 800 1,600 Feet

Exhibit 2 - Floodplain Model Result Comparison

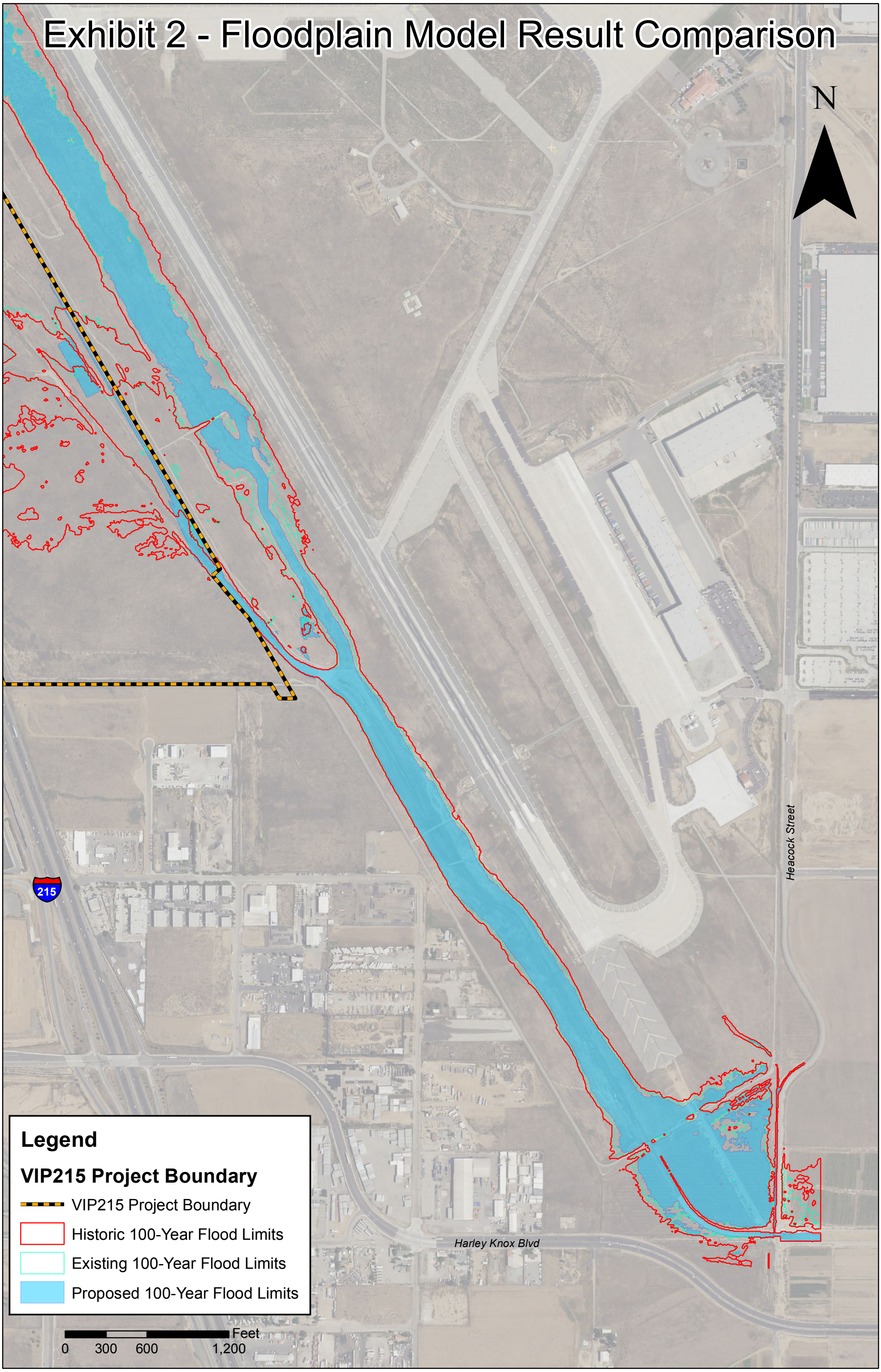


Exhibit 3 - Historical 100-Year Floodplain Depth

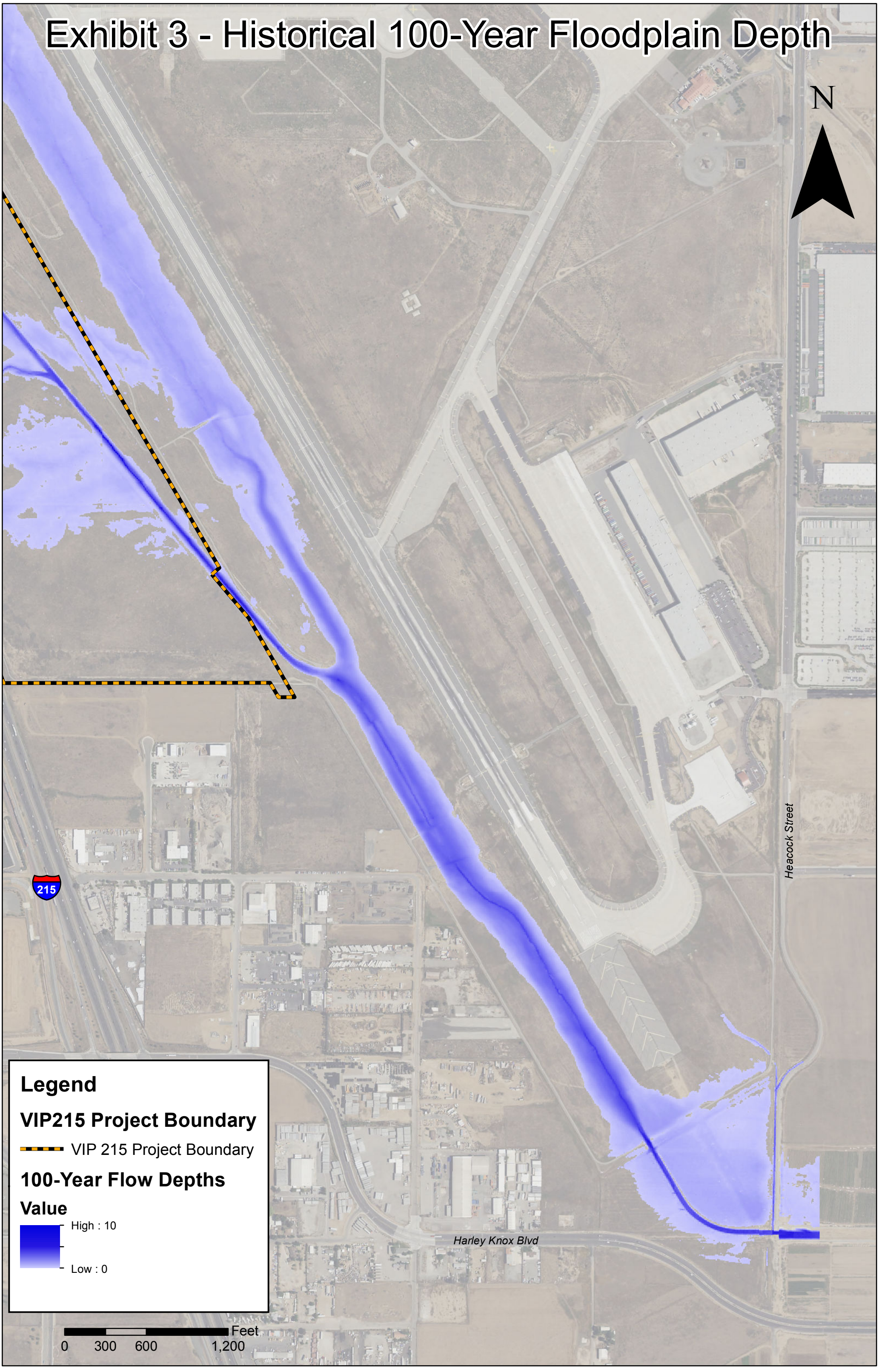


Exhibit 4 - Historical 100-Year Max Velocity

N

215

Heacock Street

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Max Velocity

Value

High : 11

Low : 0

Feet

0 300 600 1,200

Exhibit 5 - Existing 100-Year Flood Depth

N

215

Heacock Street

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Existing 100-Year Flood Depths

Value

High : 10

Low : 0

0 300 600 1,200 Feet

Exhibit 6 - Existing 100-Year Max Velocity

N

215

Heacock Street

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Max Velocity

Value

High : 11

Low : 0

0 300 600 1,200 Feet

Exhibit 7 - Proposed 100-Year Flood Depth

N

Heacock Street

215

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Proposed 100-Year Flood Depths

Value

High : 10

Low : 0

Feet

0 300 600 1,200

Exhibit 8 - Proposed 100-Year Max Velocity

N

Heacock Street

215

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Max Velocity

Value

High : 11

Low : 0

Feet

0 300 600 1,200

I-4 Offsite Street Drainage Memorandum

ALBERT A. WEBB ASSOCIATES

Technical Memorandum

To: Kathy Hoffer, Development Director, Hillwood

From: Ranjit F. Singh, P.E.

Date: Octoberss 11, 2019

Re: Offsite Street Drainage Memo
Veterans Industrial Park (VIP) 215 Project

This technical memorandum has been prepared as a supplement to the preliminary drainage report prepared by Huitt-Zollars dated 10/14/16 for the Hillwood Veterans Industrial Park (VIP) 215 project for MJPA. The background for Hillwood project and its details have not been included in this memo and can be retrieved from the above mentioned Huitt-Zollars report. The project is bound on the northeast by the existing March Air Reserve Base, to the north by the existing March Air Museum, to the south by a vacant open field, and to the west by Interstate 215. The project site is primarily vacant with existing earthen channels that convey run-off from existing CALTRANS culverts underneath Interstate 215 and continue south easterly through the project site. More details on the onsite drainage can be obtained from the Huitt-Zollars report. This memo specifically addresses drainage for the offsite streets comprised of proposed Van Buren Boulevard from the existing terminus along Interstate 215 to the project and continuing along project's south and east boundaries, as well as extending a secondary access route by constructing Western Way joining at proposed Van Buren Boulevard and connecting to existing Nandina Avenue. Drainage facilities are proposed along these offsite streets to convey flows to the above-mentioned offsite drainage facilities. See Attachment 1 for site location maps.

The developed offsite street area is approximately 90% impervious (sidewalks, curbs, paving etc.). The remaining 10% consists of landscaping in the parkway areas. The run-off generated from the proposed street right-of-way for Van Buren Blvd. is captured in sump catch basins along the street and conveyed to the larger proposed storm drains that carry offsite run-off through the proposed site. As previously mentioned, there are four existing CALTRANS culverts that convey run-off from offsite tributary areas west of Interstate 215. A separate memo was previously prepared addressing the offsite run-on drainage for the VIP 215 project. This memo has been included as Attachment 3.

See Attachment 2 for delineated offsite street drainage areas. For preliminary purposes, a conservative yield of 3 cfs /acre was assumed for the proposed project. Below table presents a breakdown of each drainage area with calculated flow rates.

DRAINAGE AREA RUN-OFF SUMMARY TABLE

DRAINAGE AREA ID	AREA (ACRES)	ASSUMED YIELD (CFS/ACRE)	ESTIMATED RUN-OFF (CFS)	ESTIMATED OFFSITE RUNON (CFS)	TOTAL ESTIMATED RUN-OFF (CFS)	REMARKS
DA-1	3.8	3.0	11.4	n/a	11.4	*Drains to CB*
DA-2	3.5	3.0	10.5	n/a	10.5	*Drains to CB*
DA-3	1.2	3.0	3.6	n/a	3.6	*Drains to CB*
DA-4	6.0	3.0	18.0	n/a	18.0	*Drains to CB*
DA-5	1.7	3.0	5.1	45 (39 +4 + 2)	50.1	*Interim - drains to Northerly Property.* *Ultimate - drains to MDP Line B-7*
DA-6	0.8	3.0	2.4	n/a	2.4	*Drains to Nandina Avenue*

These flow rates will be utilized in the sizing of catch basins and onsite storm drain facilities during final design. We estimate the catch basins to be in the range of 7' to 14' depending on the flow rates. While Van Buren Blvd. can be drained to the offsite facilities, Western way (drainage areas DA-5 and DA-6) presents a unique challenge due to lack of SD infrastructure in the vicinity.

Please refer Offsite Drainage Area Exhibit Sheet 2 of 2 in Attachment 2. As shown on the said exhibit, Western Way Drainage Area 5 directly receives offsite flows from Area 1, which generates a run off of approximately 39 cfs. Under existing (pre-development) conditions Area 1 drains to easterly property. As such, to maintain same drainage pattern, series of elliptical RCP culverts are proposed to be installed under Western Way at the intersection of Area 1 flow path with Western Way. Exact size and count of culverts will be provided during final design. It is to be noted that the post-development flow seen at these proposed culvert outlets (*outlet 1*) is slightly less than pre-development flows. This is due to the fact that portions of DA-4 and DA-5 (adjoining the easterly face of Area 1), which drained to the easterly property under pre-development conditions are now contained by the street section and routed to different points. DA-4 drains to the CBs located under Van Buren Blvd near the proposed knuckle, and DA-5 drains to the proposed low point in Western Way as explained below.

Although it is assumed that flows west of Natwar Lane are intercepted by the street and as such, are not tributary to Western Way, there exists a 24" culvert that crosses Natwar Lane and carries some flow across. Assuming free flow (non-pressure), normal depth calculations indicate that the SD may have a capacity of 8 cfs. As-built plans from Western Way Recycle Yard indicate onsite retention of flows in underground storm chambers and so this area is not tributary to Western Way. We assume similar design implementation for the remainder of the properties along Natwar Lane, and do not

consider them tributary to Western Way. However, flows from existing 24" culvert in Natwar Lane are still assumed tributary to Western way as this results in a conservative estimate for Western Way. It is to be noted that the 8 cfs is distributed unevenly among 3 different flow lines based on the topography of '*remaining property along Natwar Lane*'. This results in DA-5 receiving 6 cfs and the remaining 2 cfs is received by DA-6. DA-5 itself generates run-off in the amount of 5.1 cfs. This run-off combined with the 6 cfs run-on results in a total flow of 11.1 cfs discharged at the intersection of '*remaining property along Natwar Lane*' flow path with DA-5 (*outlet 2*). Note that the low point of Western Way is strategically located at the said intersection to maintain existing drainage patterns.

In terms of drainage patterns, it is evident from above analysis, that pre-development and post-development patterns very well match, except for routing a portion of the DA-5 run-off (which in pre-development conditions drained to outlet 1) to outlet 2. In terms of drainage peak flows, the post-development peaks also closely match the pre-development peaks due to the fact that Run-off Index (RI) for the street for both conditions are very similar due to existing paved surface of Western Way. As such, the eastern property will see no difference in **combined peak flow** as compared to existing condition. However, a slight difference is seen in **individual peak flows** when comparing outlet 1 and outlet 2 flows. But this difference is only due to the shifting of some flow from outlet 1 to outlet 2.

It is to be noted that temporary construction easement(s) will be needed to construct outlet works for the elliptical RCP culverts and any other structures, such as splash pads, etc. that will be needed at outlet 2. The details of these easement(s) will be worked out during commencement of final design.

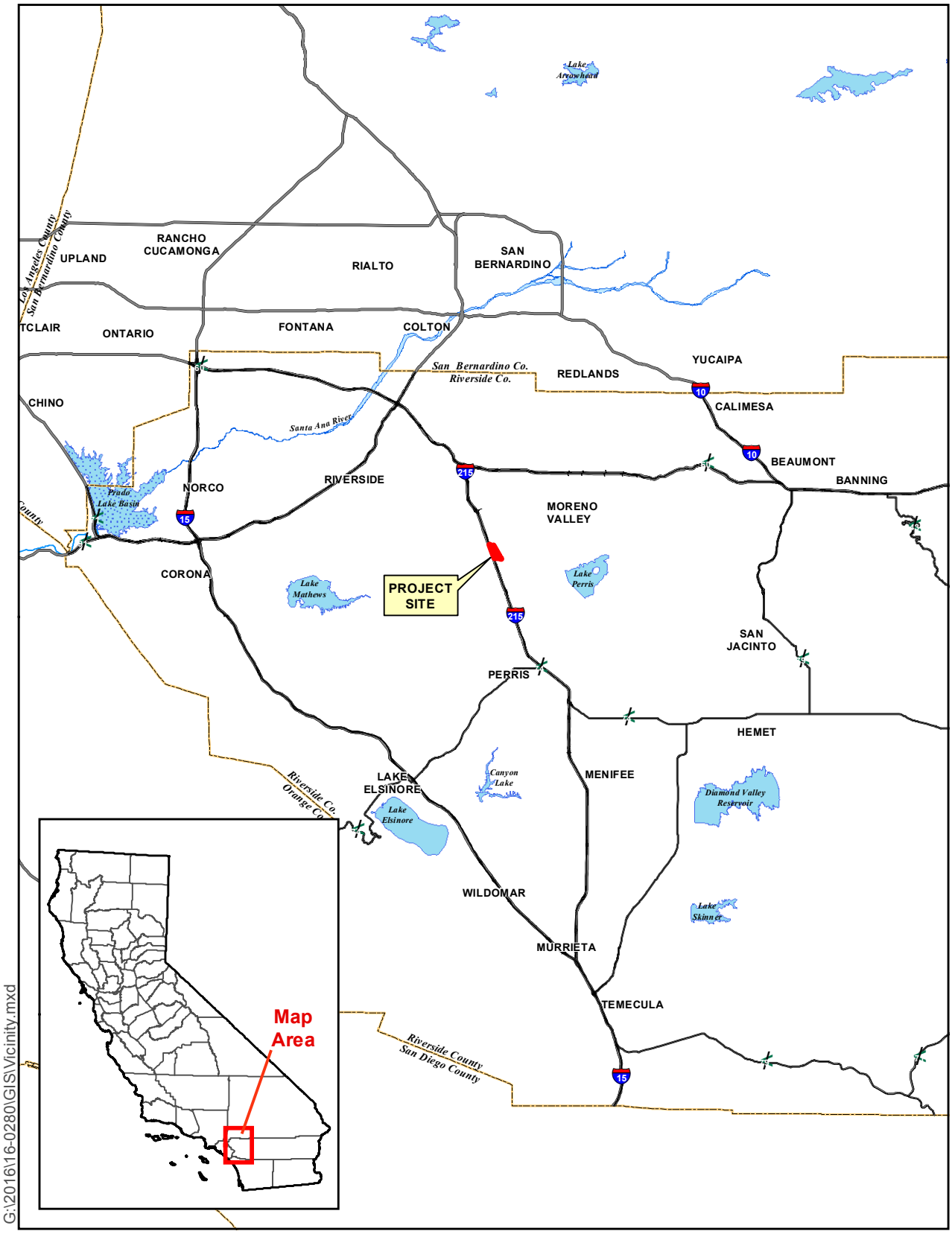
Street capacity calculation for Western Way has also been included as Attachment 4 which shows that Western Way has a street capacity of 95 cfs. The total post-condition run-off is 11.1 cfs and hence will be contained within street right-of-way. This run-off will be discharged to the easterly property in a manner to depict existing flow conditions. For example, a series of under walk drains, along easterly curb, can be used for discharging the necessary run off in a more evenly distributed manner and not as a single point discharge. There may be other options available to distribute flows evenly, but will be investigated during final design. If needed, an alternative can be replacing/supplementing the under walk drains with zero inch (easterly) curb face, of adequate length, to increase capacity of the escape route.

Finally, Western Way Drainage Area 6 drains to Nandina Avenue which has a street capacity of 62 cfs. Please see attachment 4. Adding 2.4 cfs raises the flooding depth by less than 0.01' (0.7059' – 0.699' = 0.0069'). Also, a review of existing topography indicates that some portion of Western way may already be discharging to Nandina Ave. Therefore, it is assumed that Nandina Avenue street capacity will not be adversely affected by accepting Drainage Area 6.

In the future, Western may be collected in catch basins and drained to MDP Lateral B-7.2 to MDP Lateral B-7. However, the construction of these MDP facilities is not a part of this project and will not be constructed at this time. Attachment 5 shows the MDP Plan for reference.

Should you have any questions regarding this analysis, feel free to give me a call at 951-320-6024.

ATTACHMENT 1 – Vicinity Map and Aerial Map

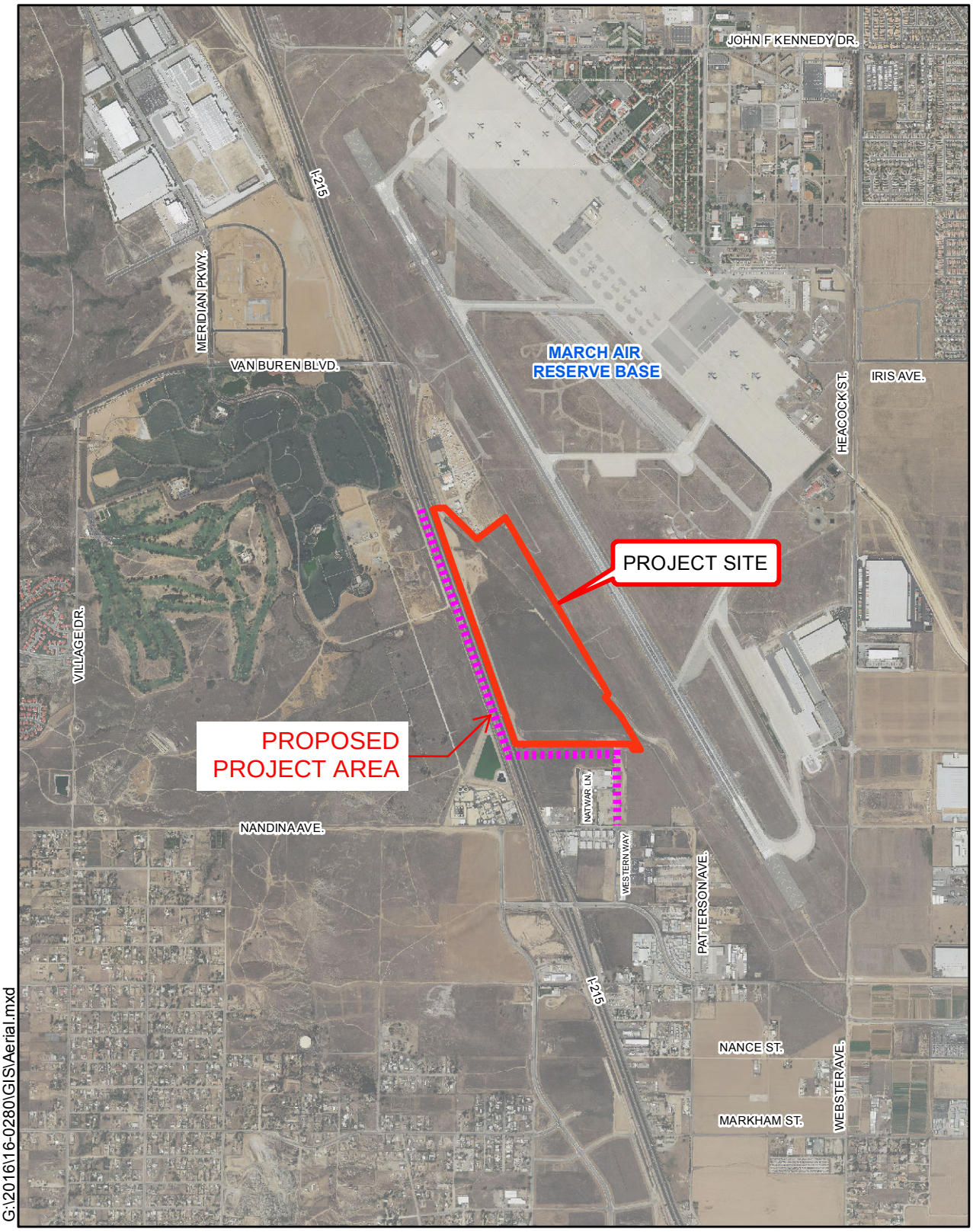


Vicinity Map
Hillwood Project

N
W E
S

0 2 4 6
Miles

Albert A. WEBB Associates



Aerial Map

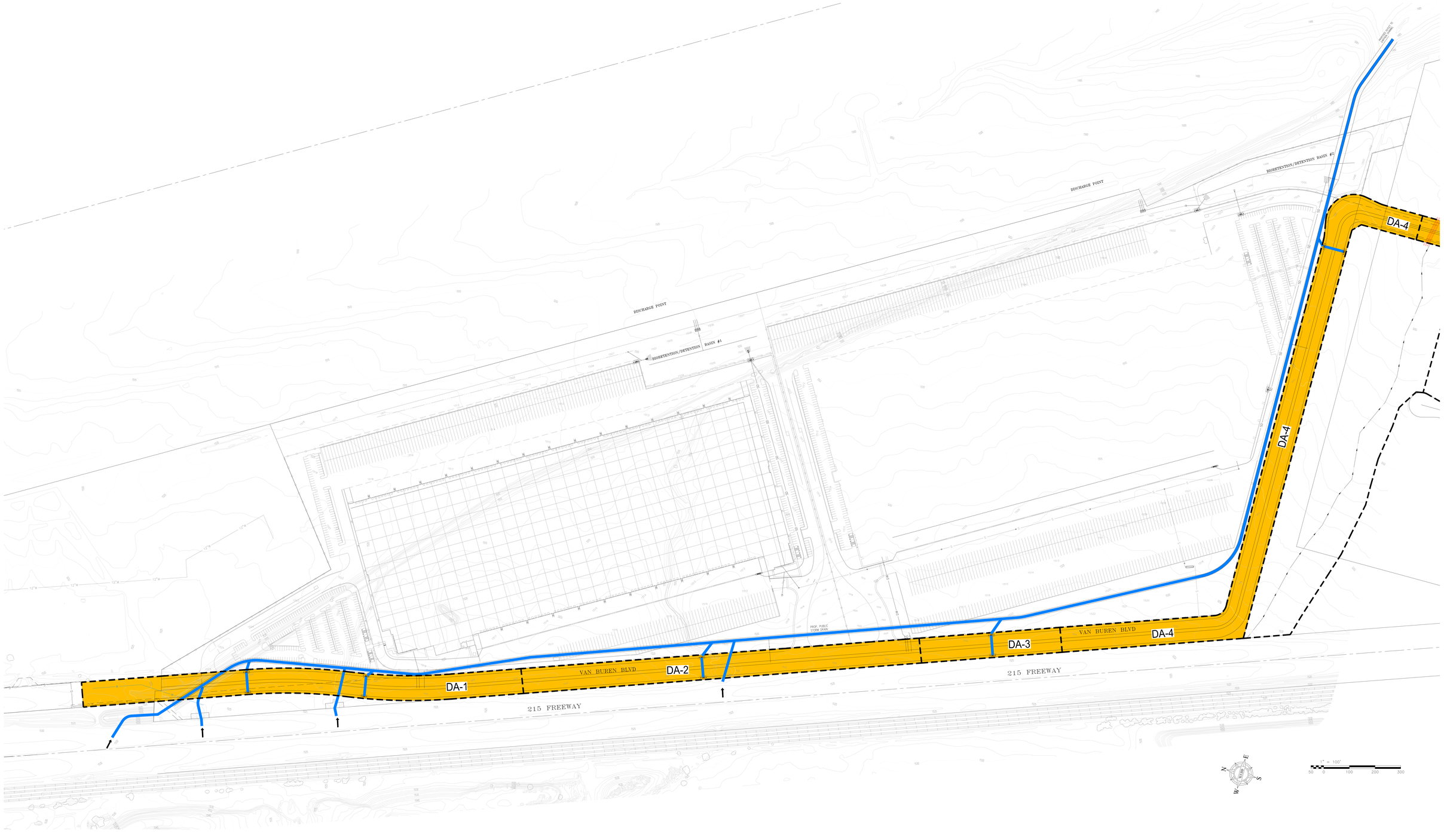
Hillwood Project

N
W E
S

0 0.25 0.5 1 Miles

Albert A. WEBB Associates

ATTACHMENT 2 – Onsite Drainage Areas Exhibit



ONSITE DRAINAGE AREA EXHIBIT

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O. 2016-0280
SHEET 1 OF 2 SHEETS

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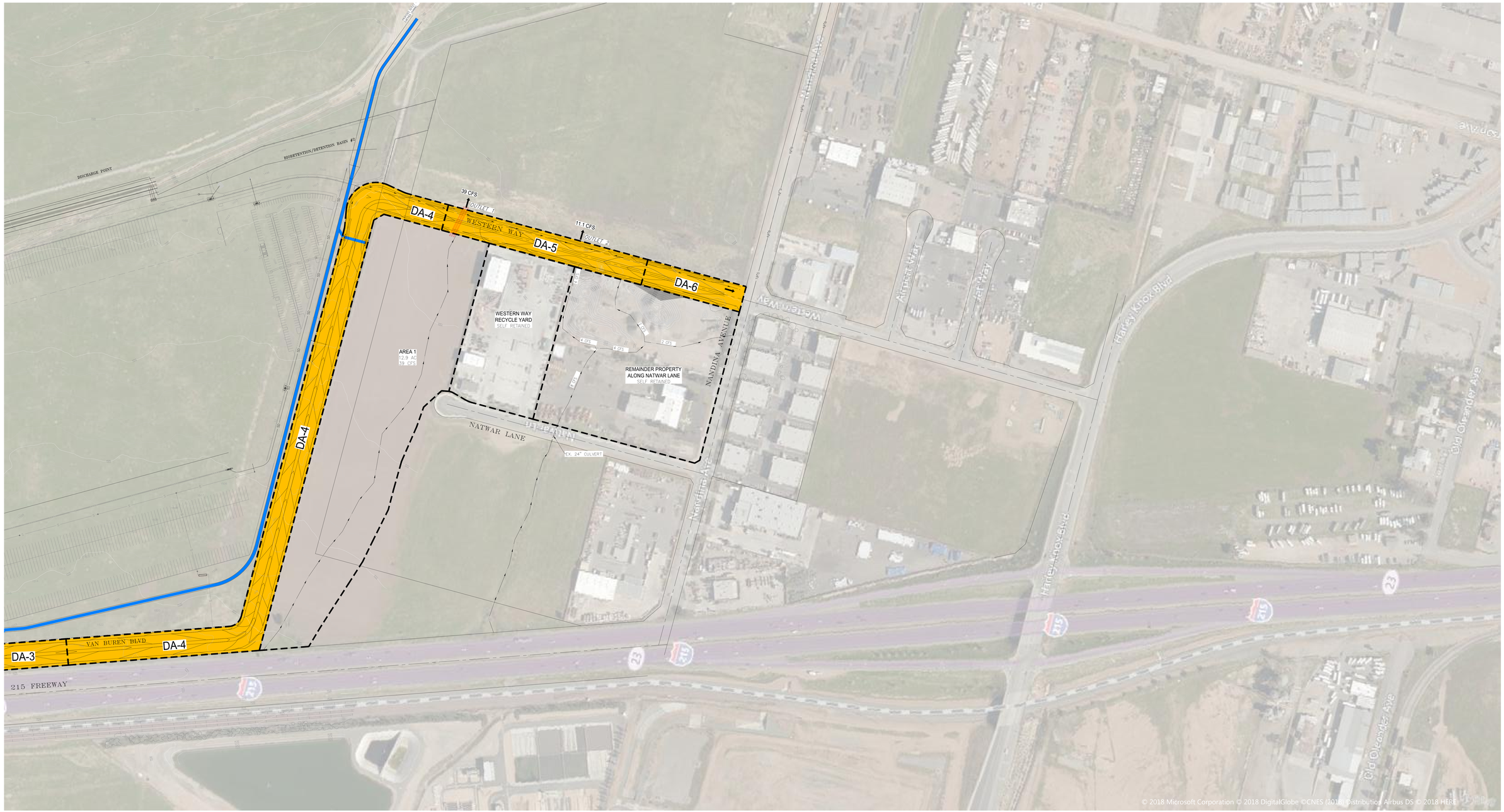

ONSITE DRAINAGE AREA EXHIBIT

1" = 100'

ALBERT A. WEBB ASSOCIATES
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3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O. 2016-0280
SHEET 2 OF 2 SHEETS

C:\DATA\PROJECTS\2016\2016-0280\EXHIBITS\EXHIBIT AND OFFSITE FLOWS_REV2.DWG 10/11/2019 11:57:28 AM

ATTACHMENT 3 – Offsite Drainage Memo

ALBERT A. WEBB ASSOCIATES

16-0280

Technical Memorandum

To: Jeff Smith, MJPA

From: Joseph Caldwell, PE / CPSWQ / CPESC

Date: July 13, 2018

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Exhibit 1 - Flow Locations

N

NE of VIP215

VIP215 Runoff

Flow to MARB

Offsite Flow
Tributary to VIP215

215

Heacock Street

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP215 Project Boundary

0 400 800 1,600 Feet

Exhibit 2 - Floodplain Model Result Comparison

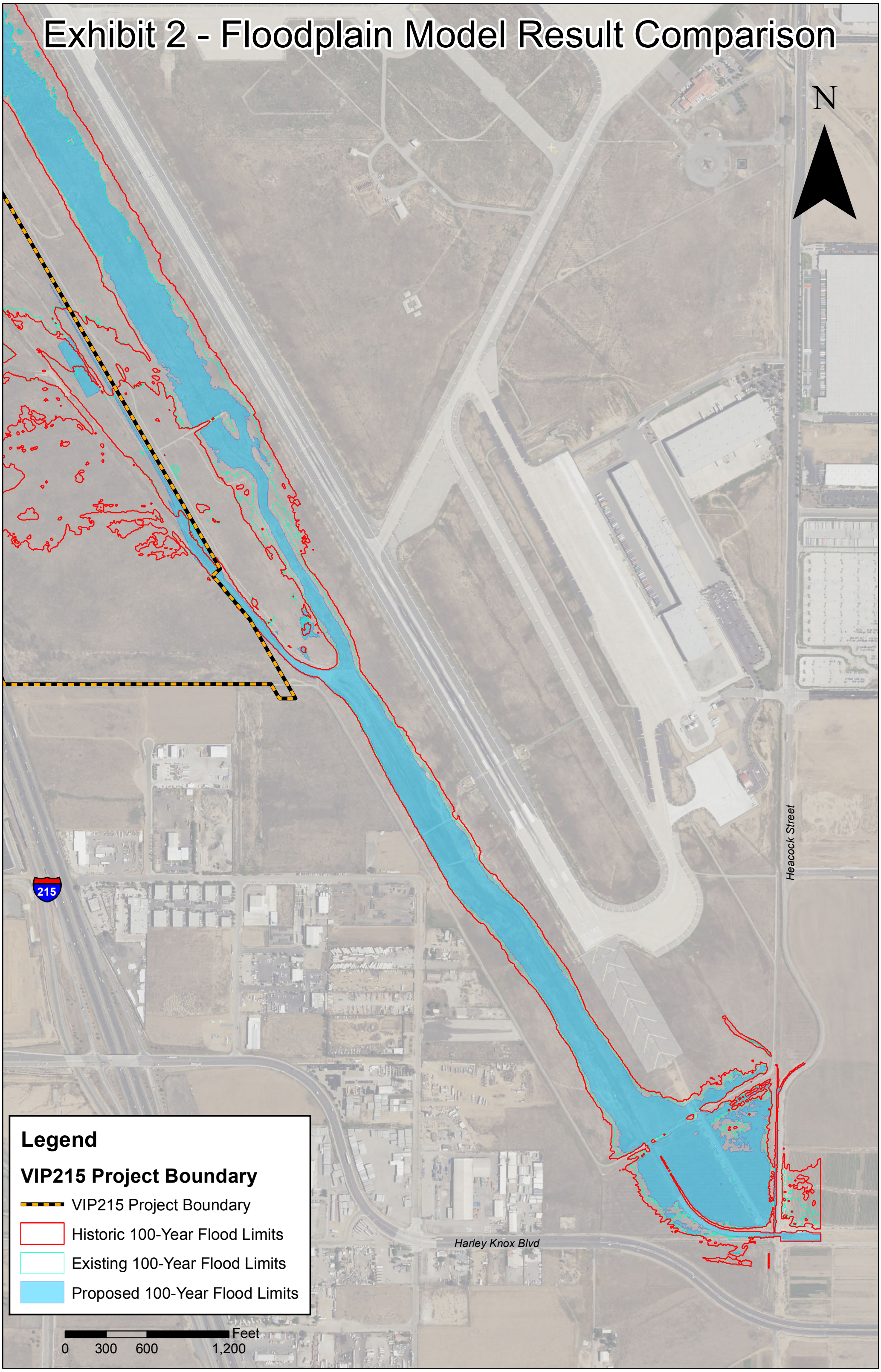


Exhibit 3 - Historical 100-Year Floodplain Depth

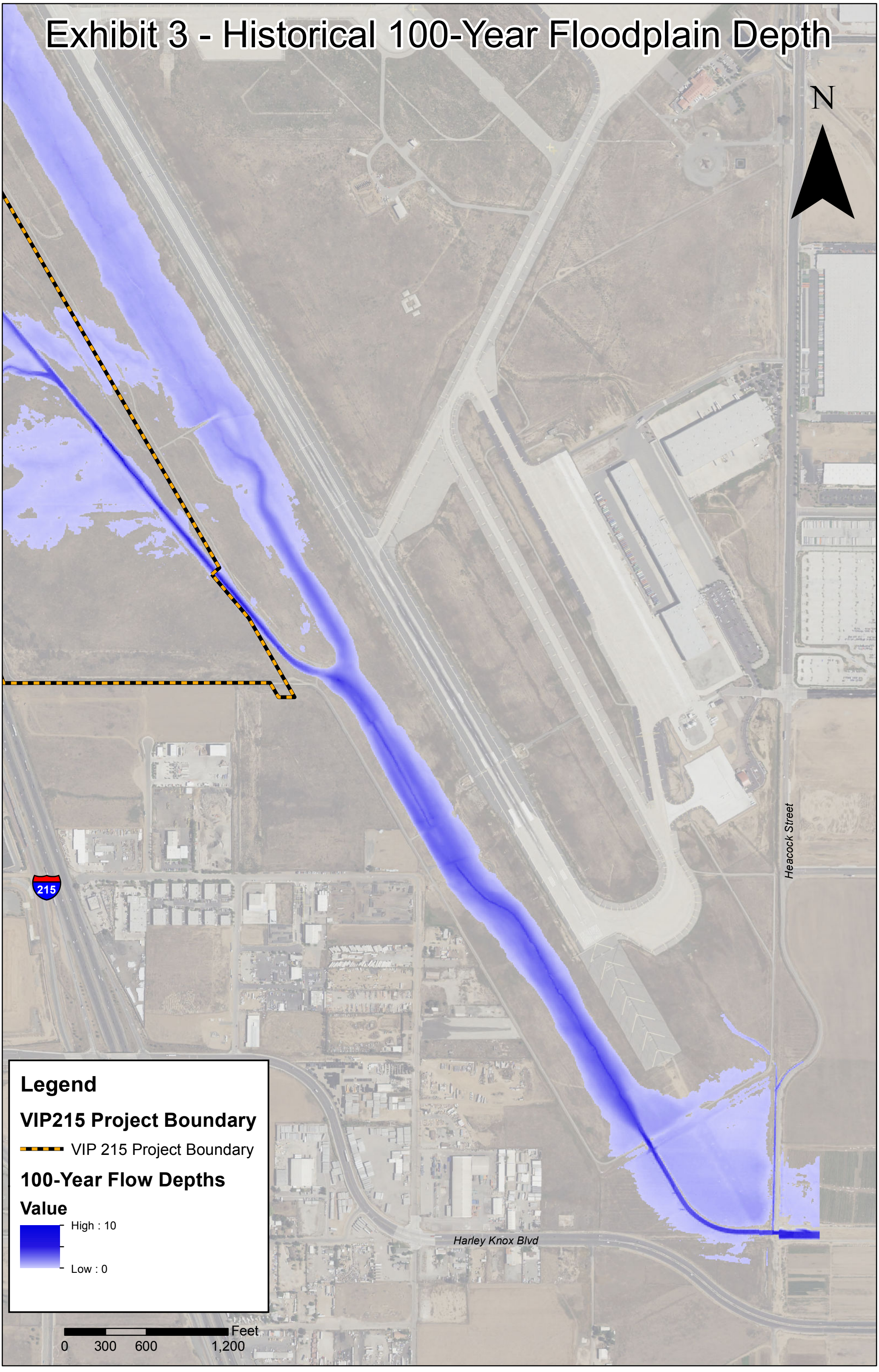


Exhibit 4 - Historical 100-Year Max Velocity

N

215

Heacock Street

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Max Velocity

Value

High : 11

Low : 0

Feet

0 300 600 1,200

Exhibit 5 - Existing 100-Year Flood Depth

N

215

Heacock Street

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Existing 100-Year Flood Depths

Value

High : 10

Low : 0

0 300 600 1,200 Feet

Exhibit 6 - Existing 100-Year Max Velocity

N

215

Heacock Street

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Max Velocity

Value

High : 11

Low : 0

0 300 600 1,200 Feet

Exhibit 7 - Proposed 100-Year Flood Depth

N

Heacock Street

215

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Proposed 100-Year Flood Depths

Value

High : 8.54749

Low : 0.000976563

0 300 600 1,200 Feet

Exhibit 8 - Proposed 100-Year Max Velocity

N

Heacock Street

215

Harley Knox Blvd

Legend

VIP215 Project Boundary

VIP 215 Project Boundary

Max Velocity

Value

High : 11

Low : 0.00033681

0 300 600 1,200 Feet

ATTACHMENT 4 – Western Way and Nandina Avenue Street Capacity Calculation

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Thursday, August 16, 2018

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Channel Analysis

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Elevation (ft)	Elevation (ft)	Manning's n
0.00	0.80	0.0150
15.00	0.50	0.0150
15.00	0.00	0.0150
17.00	0.13	0.0150
47.00	0.72	0.0150
77.00	0.13	0.0150
79.00	0.00	0.0150
79.00	0.50	0.0150
94.00	0.80	-----

Longitudinal Slope: 0.0062 ft/ft

Flow: 95.0000 cfs

Result Parameters

Depth: 0.7722 ft

Area of Flow: 27.3737 ft^2

Wetted Perimeter: 92.2434 ft

Hydraulic Radius: 0.2968 ft

Average Velocity: 3.4705 ft/s

Top Width: 91.2181 ft

Froude Number: 1.1164

Critical Depth: 0.7976 ft

Critical Velocity: 3.1962 ft/s

Critical Slope: 0.0049 ft/ft

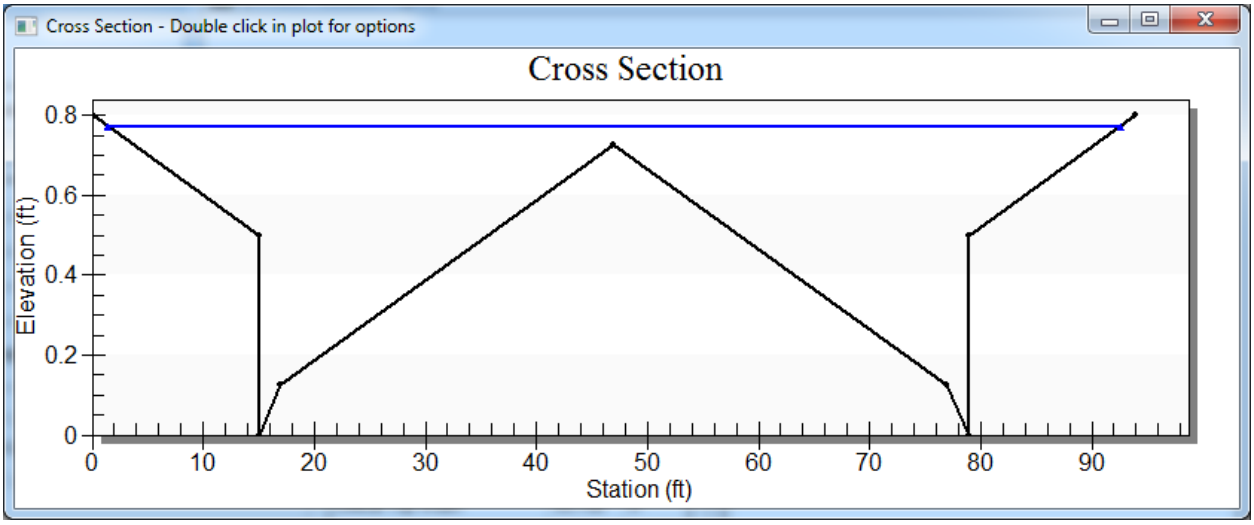
Critical Top Width: 93.76 ft

Calculated Max Shear Stress: 0.2987 lb/ft^2

Calculated Avg Shear Stress: 0.1148 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0150


Cross Section - Double click in plot for options
Cross Section
Elevation (ft)
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
80
90
Station (ft)

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Thursday, August 16, 2018

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Nandina_Ave

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Elevation (ft)	Elevation (ft)	Manning's n
0.00	0.70	0.0150
10.00	0.50	0.0150
10.00	0.00	0.0150
12.00	0.13	0.0150
34.50	0.57	0.0150
57.00	0.13	0.0150
59.00	0.00	0.0150
59.00	0.50	0.0150
69.00	0.70	-----

Longitudinal Slope: 0.0050 ft/ft

Flow: 62.0000 cfs

Result Parameters

Depth: 0.6990 ft

Area of Flow: 20.2317 ft^2

Wetted Perimeter: 69.9217 ft

Hydraulic Radius: 0.2893 ft

Average Velocity: 3.0645 ft/s

Top Width: 68.9009 ft

Froude Number: 0.9966

Critical Depth: 0.6982 ft

Critical Velocity: 3.0734 ft/s

Critical Slope: 0.0050 ft/ft

Critical Top Width: 68.82 ft

Calculated Max Shear Stress: 0.2181 lb/ft^2

Calculated Avg Shear Stress: 0.0903 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0150

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Thursday, August 16, 2018

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Nandina_Ave_Plus

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Elevation (ft)	Elevation (ft)	Manning's n
0.00	0.70	0.0150
10.00	0.50	0.0150
10.00	0.00	0.0150
12.00	0.13	0.0150
34.50	0.57	0.0150
57.00	0.13	0.0150
59.00	0.00	0.0150
59.00	0.50	0.0150
69.00	0.70	-----

Longitudinal Slope: 0.0050 ft/ft

Flow: 64.4000 cfs

Result Parameters

Depth: 0.7059 ft

Area of Flow: 20.7097 ft^2

Wetted Perimeter: 70.0327 ft

Hydraulic Radius: 0.2957 ft

Average Velocity: 3.1096 ft/s

Top Width: 69.0000 ft

Froude Number: 1.0003

Critical Depth: 0.7060 ft

Critical Velocity: 3.1091 ft/s

Critical Slope: 0.0050 ft/ft

Critical Top Width: 69.00 ft

Calculated Max Shear Stress: 0.2203 lb/ft^2

Calculated Avg Shear Stress: 0.0923 lb/ft^2

Composite Manning's n Equation: Lotter method

Manning's n: 0.0150

ATTACHMENT 5 – MDP

LEGEND

- MASTER PLAN BOUNDARY
- EXISTING FACILITY
- OPEN CHANNEL -(CONC. TRAPEZOIDAL CHANNEL, SS = 1.5 : 1 ; UNLESS OTHERWISE NOTED)
- STORM DRAIN (RCP UNLESS OTHERWISE NOTED)
- 250 or 250 — FLOW RATE - IN CUBIC FEET PER SECOND, 250 = DESIGN Q, 250 = 100 YR. Q

1" = 1200'

MASTER PLAN COST $ 142,832,000

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

MASTER DRAINAGE PLAN FOR THE PERRIS VALLEY AREA

JULY 1987 (REVISED JUNE 1991)

J. F. DAVIDSON ASSOCIATES
CIVIL ENGINEERS • PLANNERS • SURVEYORS
3426 TENTH STREET • RIVERSIDE, CALIFORNIA 92501 • (714) 686-0844
11200 S. MT. VERNON AVE., SUITE "D" • COLTON, CALIF. 92324 • (714) 825-1082

I-5 Preliminary Onsite Water Quality Management Plan (Two Buildings Option)

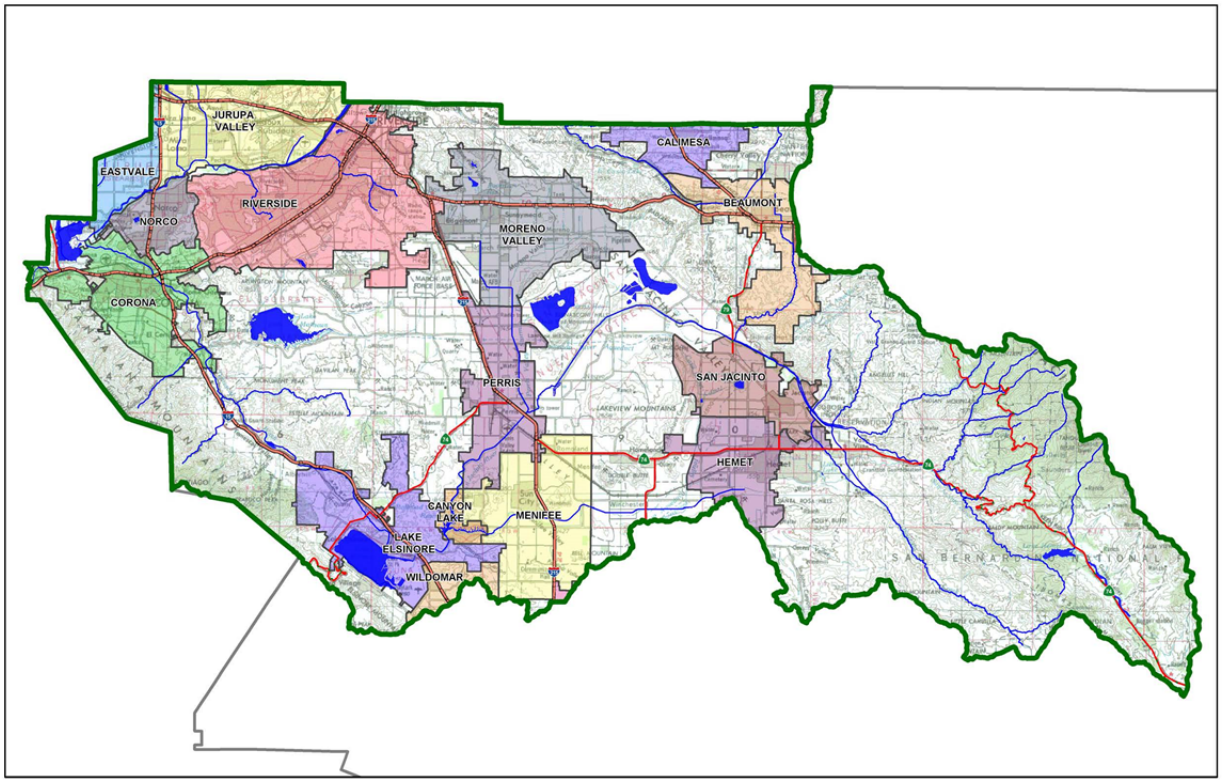
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Veterans Industrial Park 215

Development No: GPA 16-01, SP 16-02

Design Review/Case No: PP 16-06, TPM 16-06



☒ **Preliminary**
☐ **Final**

Original Date Prepared: October 17, 2016

Revision Date(s): December 4, 2019

Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**

Contact Information:

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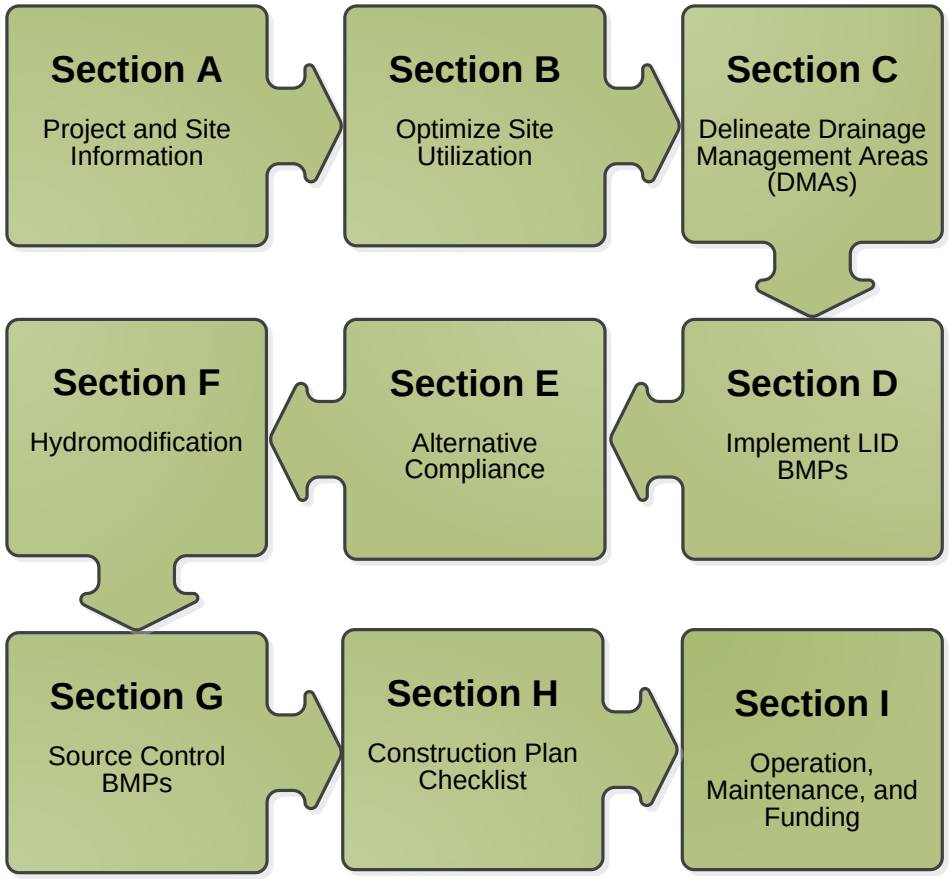
Ontario, CA 91764
909-941-7799, x11411

A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Riverside Inland Development, LLC, a California limited liability company, c/o Hillwood, A Perot Company by Huitt-Zollars for the Veterans Industrial Park 215 project.

This WQMP is intended to comply with the requirements of March Joint Powers Authority for APN 294-150-009, 294-170-005, 294-180-038, 294-140-13 and 295-300-008 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under March Joint Power Authority General Plan – Water Resources Section 1.8.

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	Date
Johnny Murad	Vice President / Project Manager
Preparer's Printed Name	Preparer's Title/Position

Preparer's Licensure:

Professional Engineer Certificate No. 67512, Exp. 6/30/2017

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Industrial Warehouse Development
Planning Area:	5,519,967 SF (126.72 ac. net)
Community Name:	Veterans Industrial Park 215
Development Name:	Veterans Industrial Park 215
PROJECT LOCATION	
Latitude & Longitude (DMS): Lat: 33°52'30", Long: -117°15'44"	
Project Watershed and Sub-Watershed: Santa Ana Watershed & San Jacinto Watershed	
APN(s): 294-170-005, 294-180-038, 294-150-005, 294-140-013, and 295-300-008	
Map Book and Page No.: Thomas Bros. Map, Page 747	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Industrial Warehouse
Proposed or Potential SIC Code(s)	4225
Area of Impervious Project Footprint (SF)	4,282,933
Total Area of proposed Impervious Surfaces within the Project Limits (SF)/or Replacement	4,282,933
Does the project consist of offsite road improvements?	☒ Y ☐ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the project limits (SF)	0 SF
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	Not in a Cellgroup (See RCA MSHCP Map in Appendix 1)
Are there any natural hydrologic features on the project site?	☒ Y ☐ N
Is a Geotechnical Report attached?	☒ Y ☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	N/A
What is the Water Quality Design Storm Depth for the project?	0.61"

The project consists of two industrial warehouse buildings being developed by Riverside Inland Development, LLC, a California limited liability company, c/o Hillwood, A Perot Company. The project site is owned by March Joint Powers Authority and is located along the east side of the Interstate 215 Freeway, adjacent to the March Air Reserve Base and south of the March Field Air Museum in the County of Riverside, CA. The gross area of the site is approximately 142.46 acres. The net area is 126.72 acres which excludes the Van Buren right of way along the west and south sides of the project and an undisturbed area at the southeast corner of the site. Based on the Geotechnical Engineers' recommendations the site soils are impermeable so infiltration BMP's are not being considered for this project.

The development has been separated into north and south drainage areas (DMA A & DMA B) to correspond with the proposed parcel split and building layout. Storm water from DMA A will be conveyed to bio-retention basin 1 on the east side of the project site. Storm water from DMA B will be conveyed to bio-retention basins 2 & 3, also located along the east side of the project site; see Appendix 1 for Post-Construction BMP Site Plan.

The site landscaping areas will not be irrigated with recycled water, and "harvest and use" is not feasible for this development.

Catch basin filters will be installed at all on-site catch basins as a pre-treatment control BMP's prior to discharging runoff to the primary treatment bio-retention basins.

The bio-retention basins have been designed to collect and treat the WQMP storm water volume in addition to mitigating the post construction runoff to levels equivalent to the pre-developed condition.

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listU ed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Jacinto River Reach 3, HU#802.11	NONE	AGR, GWR, REC1, REC2, WARM, WILD	Not designated as RARE
Canyon Lake, HU#802.11, 802.12	List on 2010 USEPA 303(d) and in TMDL required list. Nutrients, Pathogens	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not designated as RARE
San Jacinto River Reach 1, HU#802.32,802.31	NONE	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not designated as RARE
Lake Elsinore HU#802.31	List on 303(d) list and being addressed by USEPA approved TMDL Nutrients, Organic Enrichment/Low Dissolved Oxygen, PCB's, Sedimentation/Siltation, Unknown Toxicity	MUN, REC1, REC2, WARM, WILD	Not designated as RARE

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☒ Y	☐ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* County of Riverside Building & Grading Permits	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, constraints might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. Opportunities might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Site Constraint:

Based on the site specific infiltration tests and report prepared by Southern Calif. Geotechnical (see Appendix 3), the site soils are impermeable and the soils engineer does not recommend that infiltration be used on this site. The site is being developed as a large scale industrial warehouse building with paved truck docks and parking areas.

Solution:

The site drainage design has incorporated three bio-retention basins located on the east side and southeast corner of the project site. All site drainage will be conveyed to the bio-retention basins where the runoff will pass through a filter media into a layer of gravel and through a perforated pipe network beneath the basin footprint. Ultimately the runoff will gravity drain to the proposed off-site regional storm drain box culvert along Van Buren.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

Yes, the existing drainage pattern is a sheet flow condition that drains from northwest to southeast. The development will mimic the existing drainage pattern by implementing a grading design that directs site runoff toward the southeast corner of the subject site where it will re-enter the existing open earthen channel.

Did you identify and protect existing vegetation? If so, how? If not, why?
No, the site does not have any significant vegetation to be protected. A new landscape plan will be prepared to implement a drought tolerant landscape scheme for the project area.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?
No, a soils engineer was consulted and after review of the subject site soil characteristics the soils engineer issued a letter/report to the developer indicating that the site soils generally consist of medium dense to very dense silty sands and clayey sands and stiff to hard silty clays and sandy clays. In general, these soils possess high densities and are weakly to moderately cemented. These soils are considered relatively impermeable with respect to storm water infiltration. Since the subject site has no significant infiltration capacity, infiltration facilities should not be considered for the subject site.

Did you identify and minimize impervious area? If so, how? If not, why?
Yes, the site plan has allocated large landscape buffer areas in excess of the local jurisdictional requirements. The planned landscaped areas are anticipated to have some runoff absorption properties, however, they have also been designed to drain to the storm drain system and bio-retention basins.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?
No, there are no natural impervious areas.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1]	Area (Sq. Ft.)	DMA Type
DMA A	Mixed Surface Types	2,623,659	D
DMA B	Mixed Surface Types	1,268,481	D
DMA C	Mixed Surface Types	1,627,595	D

[1] *Reference Table 2-1 in the WQMP Guidance Document to populate this column*

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet)	Post-project surface type	Runoff factor	Product			
	[A]		[B]	[C] = [A] x [B]	DMA name /ID	[D]	[C]/[D]
None							

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA A	Bio-retention Basin 1
DMA B	Bio-retention Basin 2
DMA C	Bio-retention Basin 3

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site. If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?	X	
If Yes, list affected DMAs: The soils engineer has determined that the project site soils have no infiltration capacity and that infiltration BMP's should not be used on this site.	DMA A DMA B	
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs: The entire site would have significant cut and fill conditions to make the proposed development possible.		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here: The soils engineer has determined that the project site soils have no infiltration capacity and that infiltration BMP's should not be used on this site.		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☐ Reclaimed water will be used for the non-potable water demands for the project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If neither of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: 1,301,586 SF

Type of Landscaping (Conservation Design or Active Turf): Conservation Design

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: 4,218,732 SF

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: 0.84 AC/AC

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: 3,597,664 SF

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
3,543,735 SF	1,301,586 SF

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: 150

Project Type: Industrial

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: 4,218,732 SF = 96.8 AC

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-1 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: 175 TU/AC

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: 16,940

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	Projected number of toilet users (Step 1)
16,940	150

Other Non-Potable Use Feasibility (N/A)

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-3 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-3: N/A

Step 4: Multiply the unit value obtained from Step 4 by the total of impervious areas from Step 3 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**
N/A	*N/A*

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment, unless a site-specific analysis has been completed that demonstrates technical infeasibility as noted in D.3 below.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☒ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA A	☐	☐	☒	☐	☐
DMA B	☐	☐	☒	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

Base on the information provided in Section D, bioretention LID BMP will be utilized for the entire site. See Appendix 1 Post-Construction BMP Site Map for bioretention basins detail.

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Areas x Runoff Factor**	***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]			
DMA A	*2,623,659*	*Mixed*	*0.76*	*0.55*	*1,443,012*	*Design Storm Depth (in)*	*Design Capture Volume,* $\mathbf{V_{BMP}}$ *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	$A_T = \Sigma[A]$ 2,623,659				$\Sigma = [D]$ 1,443,012	[E] 0.61	$[F] = \frac{[D]x[E]}{12}$ 73,351	[G] ***119,934***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Table D.4 DCV Calculations for LID BMPs

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Areas x Runoff Factor**	***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]			
DMA B	*1,268,481*	*Mixed*	*0.78*	*0.58*	*735,719*	*Design Storm Depth (in)*	*Design Capture Volume,* $\mathbf{V_{BMP}}$ *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	$A_T = \Sigma[A]$ 1,268,481				$\Sigma = [D]$ 735,719	[E] 0.61	$[F] = \frac{[D]x[E]}{12}$ 37,399	[G] ***73,639***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Table D.5 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Enter BMP Name / Identifier Here*		
	[A]		[B]	[C]	[A] x [C]			
DMA C	*1,627,595*	*Mixed*	*0.78*	*0.58*	*944,005*	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	$A_T = \Sigma[A]$ 1,627,595				$\Sigma = [D]$ 944,005	[E] 0.61	$[F] = \frac{[D]x[E]}{12}$ 47,987	[G] ***74,416***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

E.1 Identify Pollutants of Concern (N/A)

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☒ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☐ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☐	☒	☐	☐	☒	☐	☐

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits (N/A)

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	
Total Credit Percentage[1]	

[1] *Cannot Exceed 50%*
[2] *Obtain corresponding data from Table 3-8 in the WQMP Guidance Document*

E.3 Sizing Criteria (N/A)

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
						Design Storm Depth (in)	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12
[H] is from the Total Credit Percentage as Calculated from Table E.2 above
[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
Catch Basin Filters (Pre-treatment)	Trash, Sediment and oil/grease.	TSS – 93%

[1] *Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.*
[2] *Cross Reference Table E.1 above to populate this column.*
[3] *As documented in a Co-Permittee Approved Study and provided in Appendix 6.*

Catch basin filters (Bio-Clean or approved equal) will be provided in all on-site catch basins as a pre-treatment control BMP prior to allowing runoff to be conveyed to the primary treatment BMP.

The catch basin filters will help remove large debris, trash, sediment and oil/grease from the runoff before outleting into the downstream storm drain systems. Refer to Post-Construction BMP Site Map in Appendix 1 for the specific locations where these catch basin filters will be implemented.

Specific project site pollutants that will be treated by these Bio-Clean Filter Systems are as follows: Heavy Metals, Sediments, Trash & Debris, and Oil & Grease.

An important note that must be observed is that these Bio-Clean filter systems will not act as a primary treatment control BMPs but as pre-treatment or secondary treatment control BMPs. To ensure maximum performance, these catch basin filters must be maintained as required per the manufacturer's guidelines.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	INSERT VALUE	INSERT VALUE	INSERT VALUE
Volume (Cubic Feet)	INSERT VALUE	INSERT VALUE	INSERT VALUE

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.
b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.
c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

We have designed the bio-retention basins to detain the differential runoff between the pre-development and post-development condition for the 1, 2, 5, 10, 25, and 100 year storms.

A pre-development and post-development unit hydrograph has been prepared for the 2-year storm event for the three bio-retention basins and the results indicate that the post-development runoff rates are less than the pre-development runoff rates.

See Appendix 7 for the supporting hydrology analysis, which include:

Summary of Basin Routing Calculations for each storm event

Pre-development and Post–development 2-year storm event unit hydrograph analysis

Post-development 2-year storm event basin routing analysis

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural /Non-Structural Source Control BMPs	Operational Source Control BMPs
On-Site Storm Drain Inlet	Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.	• Maintain and periodically repaint or replace inlet markings. • Provide stormwater pollution prevention information to new site owners, lessees, or operators. • See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com • Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."

Loading Docks	The project site will have truck docks which shown on the Post-Construction BMP Site Plan. The truck docks shall be inspected on a weekly basis to help ensure that any trash and debris are collected prior to being washed into the underground storm drain system. All storm water runoff from the loading dock areas will be discharged into infiltration basins and/or underground infiltration chambers prior to conveyance to the public storm drain system. Documentation of such inspection/maintenance shall be kept by the owner in perpetuity.	• Move loaded and unloaded items indoors as soon as possible. See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Fire Sprinkler Test Water	Underground fire protection service and fire sprinklers test will be provided per the uniform fire code and the requirements of the County of Riverside	• Provide a means to drain fire sprinkler test water to the sanitary sewer.
Plazas, sidewalks, and parking lots.	Documentation of such sweeping shall be kept by the owner inperpetuity. Frequency of sweeping shall be adjusted as needed to maintain a clean site.	• Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

Section H: Construction Plan Checklist

"This section will be completed and addressed at the time of the final WQMP submittal"

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

"This section will be completed and addressed at the time of the final WQMP submittal"

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism:

BMP	Responsible Party(s)	Inspection/Maintenance Activities Required	Minimum Frequency of Activities
On-Site Storm Drain Filter	Owner	See Appendix 10 -The Owner will contract a contractor to inspect and maintain all catch basin filters located throughout the site. -The contracted party must have the proper training and knowledge to perform maintenance procedures on all catch basin filters. -The contracted party will inspect all the catch basin filters every three months, at the beginning of the wet season, and after periods of heavy runoff. -The contracted party will inspect for sediment, trash and debris build up and that the systems are properly functioning. Sediments, trash, and debris build up within the catch basin filter systems would be hand or vacuumed cleaned every three months or if during inspection ¼ of the catch basin filter system is full. Hand cleaning will require that the filter be removed from the catch basins. The waste material will then be dumped into a DOT approved container for disposal. Vacuum cleaning requires the filter system to be cleaned in place with the use of an industrial vacuum truck/trailer. The waste material will then be dumped into a DOT approved container for disposal. -Confined Space procedures must be followed at all times. -When all the waste materials have been removed, the catch basin filters must be inspected for continued serviceability. -Minor damage or defects found shall be corrected on the spot and a notation made on the maintenance record. The filter media shall be inspected for defects and continued serviceability and replaced as necessary if needed during any inspection. -The filter media though shall be replaced once a year as a regular maintenance service. All spent media filters must be placed in the DOT approved container, along with the collected waste materials. -Since the collected materials most likely contain petroleum hydrocarbons, heavy metals and other harmful pollutants, the materials must be treated as an EPA Class 2 Hazardous Waste and therefore proper disposal will be imposed by the City of Moreno Valley or the County of Riverside. Therefore the Owner will contract a contractor with OSHA 1910.120 training in handling hazardous waste material. The contracted party will also be qualified as a licensed hazardous waste transporter to dispose of the all the collected waste materials in a lawful and timely manner and following all City of Moreno Valley or County of Riverside requirements. The waste material will be transported and disposed at an approved Hazardous Waste Facility.	Quarterly
Landscape and Irrigation	Owner	See CASQA BMP Fact Sheet SD-10 in Appendix 10 -Site landscaping design shall be implemented in accordance with the requirements of the site specific WQMP and local agency	Weekly

		requirements. -Site landscaping maintenance shall begin immediately after it has been planted. -Maintenance of landscaping shall occur on a weekly basis and adjusted accordingly based on current conditions and seasonal needs. -Inspection of irrigation system shall be provided on a bi-weekly basis to ensure proper function of the irrigation system, no significant overspray is occurring. -Malfunctioning systems shall be repaired or replaced immediately. -Inspect plant health on a monthly basis. Repair or replace unhealthy plants as needed. -Inspect side slopes of basins and sloped areas on a bi-weekly basis and repair as needed. Re-plant and apply erosion protection to those areas to help prevent erosion in the future. -Landscape clippings shall be swept and picked up immediately to prevent it from entering the storm drain system or adjacent sedimentation basins and filtration basins. Dispose of landscape clippings in a legal manner	
MS4 Stenciling and Signage	Owner	See CASQA BMP Fact Sheet SD-13 in Appendix 10 -MS4 Stenciling and signage shall be placed during construction and inspection and maintenance shall begin upon completion of construction. -Inspect catch basin stenciling on a bi-monthly basis. Replace any damaged, missing or faded stencils in a timely manner.	Bi-monthly
Common area litter control, loading docks and trash storage areas	Owner	See CASQA BMP Fact Sheet SD-32 in Appendix 10 -Inspection and Maintenance of common areas, loading docks and trash storage areas shall begin upon completion of construction. -Visual inspection of trash storage areas shall take place on a weekly basis and adjusted on an as needed basis. -Inspect areas for trash and debris. Remove any found trash and debris immediately. Dispose of trash and debris in a legal manner. -Inspect areas for any spills. Pick up/clean up found spills immediately. Dispose of spill material in a legal manner.	Daily
Parking lot sweeping		See CASQA BMP Fact Sheet SE-7 in Appendix 10 -Parking lot sweeping shall being after the completion of construction and take place on a monthly basis. Dispose of picked up material in a legal manner.	Monthly
Drainage facility (including roof drains) inspection and maintenance		-Inspection and maintenance of site drainage facilities and roof drains shall begin immediately upon completion of construction. -Catch basins and roof drain inlet shall be clear of any debris -prior to any storm event to ensure proper function of the roof drains. Collected debris shall be disposed of in a legal manner. Catch basin filters shall be inspected on a monthly basis. Catch basin filters that have exceeded 50% of the storage capacity shall be cleaned immediately. -Catch basin filters shall be maintained per the manufacturer's specifications. -Damaged catch basin filters shall be replaced with an approved equal prior to the next storm event or as soon as practicable.	Monthly & after rain event

Bioretention Basin (Sand Filters)		See Appendix 10 -Once the sedimentation and sand filter basin have gone on-line, inspections should occur after every major storm for the first year to ensure that proper stabilization and function is achieved. Continuous inspection and maintenance shall be provided once every six months. Special attention should be paid to how long water remains standing in the basin after a storm; standing water within the basin more than 48 hours after a storm indicates that the filtration rates are insufficient and maintenance of the filter basin bottom is needed. If standing water remains after 48 hours, the standing water shall be removed in accordance with the local agency guidelines and maintenance of the filter basin bottom shall be scheduled immediately. Factors that are typically responsible for clogging the filter basin bottom include upstream sediment erosion and excessive compaction of the basin bottom. These should be repaired immediately to help achieve the desired filtration rates. -Observe and document evidence of collected sediments, trash, debris and oils/greases. -Sediments, trash, debris and oils/greases shall be removed and disposed of in a legal manner. -Observe and document evidence of erosion of side slopes or flowlines. -Schedule repair of eroded side slopes or flowlines immediately. -Protection measures against further erosion shall be placed until the eroded areas are repaired. Protection measures should be at a minimum placement of gravel bags and fiber rolls to prevent further erosion of the affected areas until the areas have been repaired and vegetation has been established.	Every 6 months

Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☐ Y ☒ N

Owner Information:
March Joint Powers Authority

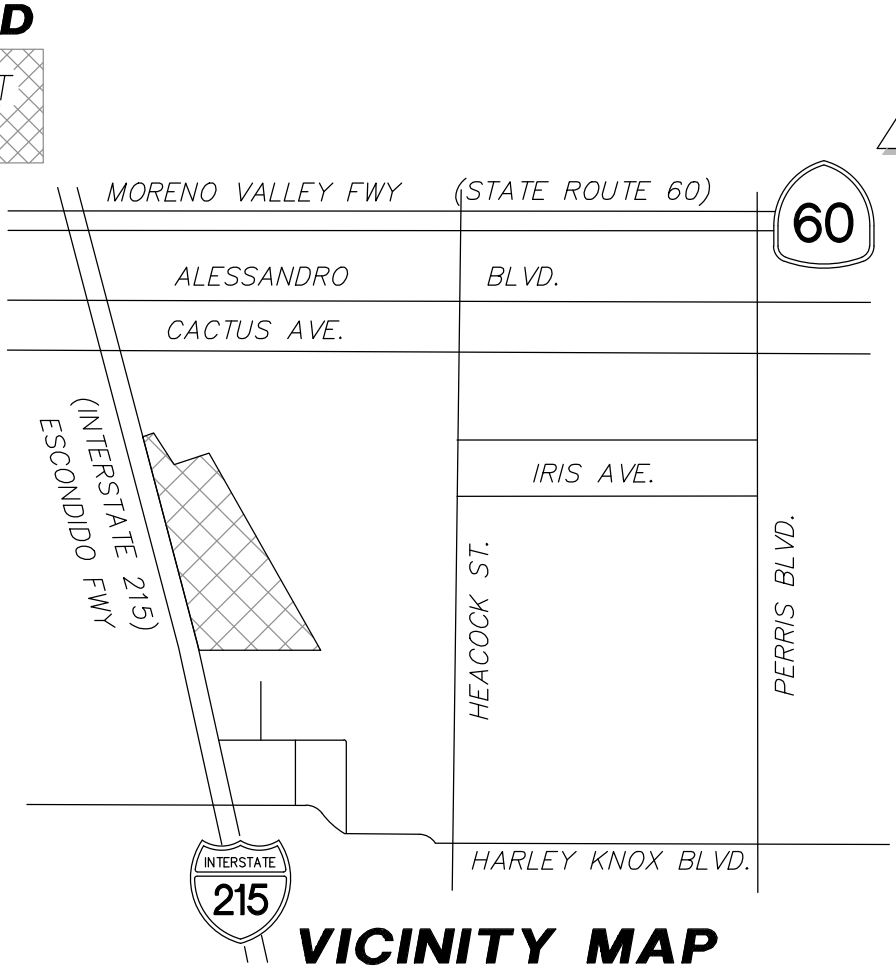
Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map

LEGEND

PROJECT LIMITS



VICINITY MAP

NOT TO SCALE

DISCHARGE POINT
OVERFLOW CMP RISER

PROP. STORM DRAIN
CONNECT TO PROPOSED 10'x10' RCB

BMP No.1
BIORETENTION BASIN 1
AREA = 70,202 SF
$V_{PROPOSED}$ = 119,934 CF

PROPERTY LINE

PROP. STORM DRAIN

TRUCK DOCK AREA
*BMP SC-30 & SD-31

PROP. ROOF DRAIN OULET
TO PAVEMENT (TYP.)

DMA A

AREA = 2,623,659 SF
V_{BMP} = 73,351 CF
$V_{PROVIDED}$ = 119,934 CF

0.5% BUILDING SLOPES @

PROP. 14'x7' RCB

PROP. STORM DRAIN

EXIST. HEADWALL

EXIST. OUTLET

EXIST. 97" MWD WATER

EXIST. CALTRANS CULVERT

EXIST. HEADWALL

EXIST. CALTRANS CULVERT

100' MWD EASEMENT

WESTERN WAY

PROP. RIGHT OF WAY/PL

EXIST. 97" MWD WATER

EXIST. HEADWALL

EXIST. CALTRANS CULVERT

100' MWD EASEMENT

FREEWAY 215

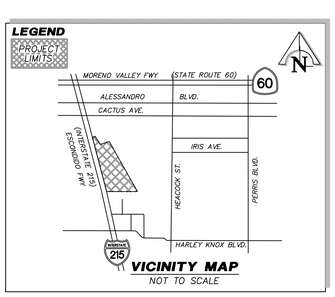
*SEE WQMP REPORT APPENDIX 10 FOR BMP FACT SEET

WQMP BMP NOTES

1. BIORETENTION BASIN, SEE DETAIL ON SHEET 2
2. INSTALL CURB INLET WITH FILTER, SEE DETAIL ON SHEET 2 *BMP SD-13
3. INSTALL GRATE INLET WITH FILTER, SEE DETAIL ON SHEET 2 *BMP SD-13

LEGEND

- SD — PROPOSED STORM DRAIN
- WQMP BOUNDARY
- FW — FIRE WATER LINE
- PROPOSED CURB OPENING INLET W/ FILTER INSERT
- PROPOSED LANDSCAPED AREA (MINIMIZE COMPACTION) *BMP SC-41, SD-10, SD-12
- CB CATCH BASIN
- HP HIGH POINT
- GB GRADE BREAK
- TC TOP OF CURB
- FL FLOW-LINE
- FS FINISH SURFACE
- CF CURB FACE
- INV INVERT
- FLOW DIRECTION



VICINITY MAP
NOT TO SCALE

TRASH ENCLOSURE
NOT TO SCALE

A PROPOSED PUBLIC STORM DRAIN SYSTEM (REINFORCED CONCRETE BOX) WILL BE INSTALLED ALONG THE WESTERLY AND SOUTHERLY PROPERTY LINES TO INTERCEPT AND CONVEY THE OFF-SITE STORM WATER TO THE EXISTING OPEN EARTHEN CHANNEL LOCATED NEAR THE SOUTHEAST CORNER OF THE SITE.

SCALE: 1"= 80'

PROJECT BMP CONFORMANCE ANALYSIS

NAME	AREA (SF)	i	C	V_{BMP} (CF)	BMP	d_P (FT)	d_S (FT)	W_T (FT)	d_E (FT)	$A_{PROVIDE}$ (SF)	$V_{PROVIDE}$ (CF)
DMA A	2,623,659	0.76	0.55	**73,351**	BIORETENTION BASIN 1	0.50'	2.0	~150	1.50	**70,202**	**119,934**

REGISTERED PROFESSIONAL ENGINEER JOHNNY MURAD NO. 67512 EXPIRATION 6-30-2017 CIVIL STATE OF CALIFORNIA

REV	DESCRIPTION	DATE

POST CONSTRUCTION BMP SITE PLAN
FOR
VETERANS INDUSTRIAL PARK PP16-06
EAST OF 215 FREEWAY
COUNTY OF RIVERSIDE

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 * ONTARIO, CALIFORNIA 91764 * (909) 941-7799

APPROVED BY JOHNNY MURAD — R.C.E. 67512 — EXPIRES 6-30-17 — DATE

DESIGNED BY	JM
DRAWN BY	H-Z STAFF
CHECKED BY	JM
FIELD BOOK	
JOB NO.	304163.01

SHEET 1 OF 2 SHEETS

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PROP. STORM DRAIN
CONNECT TO PROPOSED 10'x10' RCB

BMP No.1
BIORETENTION BASIN 1
AREA = 70,202 SF
$V_{PROPOSED}$ = 119,934 CF

BMP No.2
BIORETENTION BASIN 2
AREA = 36,518 SF
$V_{PROPOSED}$ = 73,639 CF

BMP No.3
BIORETENTION BASIN 3
AREA = 36,908 SF
$V_{PROPOSED}$ = 74,416 CF

DISCHARGE POINT
OVERFLOW CMP RISER

PROPERTY LINE

PROP. STORM DRAIN
CONNECT TO PROPOSED 10'x10' RCB

TRASH ENCLOSURE
*BMP SD-32

PROP. CONCRETE TRAP CHANNEL

PROP. 10'x10' RCB

WESTERN WAY

TRUCK DOCK AREA
*BMP SC-30 & SD-31

PROP. ROOF DRAIN OULET TO PAVEMENT (TYP.)

DMA B

AREA = 1,268,481 SF
V_{BMP} = 37,399 CF
$V_{PROVIDED}$ = 73,639 CF

PROP. STORM DRAIN

1516.00 FF
1515.00 FF
1514.00 FF
1513.00 FF
1512.00 FF
1511.00 FF
1510.00 FF
1509.00 FF

BUILDING SLOPES @ 0.5%

DMA C

AREA = 1,627,595 SF
V_{BMP} = 47,987 CF
$V_{PROVIDED}$ = 74,416 CF

PROP. STORM DRAIN

PROP. RIGHT OF WAY/PL

PROP. 14'x10' RCB

PROP. 10'x10' RCB

100' MWD EASEMENT

EXIST. 97" MWD WATER

FREEWAY 215

SCALE: 1" = 80'

WQMP BMP NOTES

1. BIORETENTION BASIN, SEE DETAIL HEREON
2. INSTALL CURB INLET WITH FILTER, SEE DETAIL ON SHEET 2
3. INSTALL GRATE INLET WITH FILTER, SEE DETAIL ON SHEET 2

NOTES

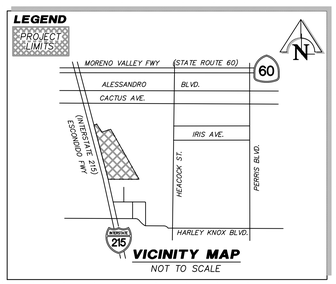
1. NO RUN-ON FLOW TO THE PROJECT SITE.
2. INLET FILTERS ARE ONLY FOR PRE TREATMENT PURPOSE.
3. PROJECT AREA PLAZA, SIDEWALK, AND PARKING LOT WILL BE SWEPT REGULARLY ON A MONTHLY BASIS PER *BMP SD-7

LEGEND

- SD — PROPOSED STORM DRAIN
- WQMP BOUNDARY
- FW — FIRE WATER LINE
- PROPOSED CURB OPENING INLET W/ FILTER INSERT
- PROPOSED LANDSCAPED AREA (MINIMIZE COMPACTION)
- CB — CATCH BASIN
- HP — HIGH POINT
- GB — GRADE BREAK
- TC — TOP OF CURB
- FL — FLOW-LINE
- FS — FINISH SURFACE
- CF — CURB FACE
- INV — INVERT
- SW — SIDEWALK
- FLOW DIRECTION

A PROPOSED PUBLIC STORM DRAIN SYSTEM (REINFORCED CONCRETE BOX) WILL BE INSTALLED ALONG THE WESTERLY AND SOUTHERLY PROPERTY LINES TO INTERCEPT AND CONVEY THE OFF-SITE STORM WATER TO THE EXISTING OPEN EARTHEN CHANNEL LOCATED NEAR THE SOUTHEAST CORNER OF THE SITE.

VICINITY MAP
NOT TO SCALE



BIO CLEAN FULL CAPTURE FILTER WITH TROUGH SYSTEM

FOR USE IN CURB INLETS WITH WINGS

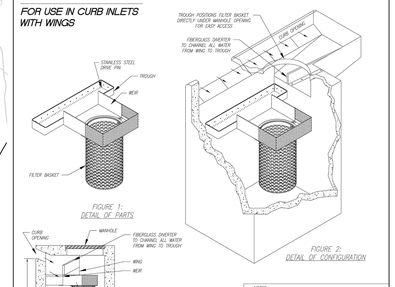


FIGURE 1: DETAIL OF PARTS

FIGURE 2: DETAIL OF CONFIGURATION

FIGURE 4: DETAIL OF PROFILE

FIGURE 3: DETAIL OF MOUNTING

NOTES:
1. TROUGH SYSTEM PROVIDES FOR ENTIRE COVERAGE OF INLET OPENING TO 75 DEPTH ALL FLOW TO FILTER.
2. TROUGH SYSTEM MANUFACTURED FROM MARINE GRADE FIBERGLASS, SELF-EXTINGUISHING FOR UV PROTECTION.
3. TROUGH SYSTEM INCLUDES THE CATCH BASIN WITH NON-CORROSIVE HARDWARE.
4. FILTER MANUFACTURED OF 100% STAINLESS STEEL.
5. FILTER MADE OF NON-CLOGGIN SCREEN WITH 4.7 MM OPENINGS TO MEET OR EXCEED TREATMENT REQUIREMENTS.
6. FILTER CAN BE FITTED WITH FOR/SUBSEQUENT BOOM.
7. FILTER IS LOCATED DIRECTLY UNDER THE MANHOLE FOR EASY REMOVAL AND MAINTENANCE.
8. LENGTH OF TROUGH CAN VARY FROM 2' TO 30'.
9. OUTLET STANDARD AND CUSTOM MODEL SIZES AVAILABLE – CONTACT BIO CLEAN FOR SPECIFIC APPLICATION.
10. CONSIDERS A SAFETY FACTOR OF 2.0.
11. BYPASS IS INCLUDED AN OVERFLOW OF THE TROUGH SYSTEM AND IS EQUAL TO THE CAPACITY OF THE CURB OPENING.
12. BYPASS CAPACITY IS BASED ON THE GRATE BEING FULL.
13. ADDITIONAL TREATMENT AND STORAGE CAPACITY CAN BE ACHIEVED BY UTILIZING MULTIPLE FILTER BASKETS.

DRAWING: BIO CLEAN CURB INLET FILTER DETAILS	MEETS FULL CAPTURE REQUIREMENTS
TREATMENT FLOW RATE: 1.65 cfs	MODEL #: BC-CURB-FC
WARRANTY: 5 YEAR MANUFACTURERS	PROJECT:
BIO CLEAN ENVIRONMENTAL SERVICES, INC.	REVISIONS: DATE:
3990 CONCOURS, SUITE 330 • ONTARIO, CA 91764	REVISIONS: DATE:
PHONE: 800-450-1945 FAX: 909-941-3176	REVISIONS: DATE:
DATE: 10/12/2017 SCALE: NTS	REVISIONS: DATE:
DRAFTER: M.C.F. UNITS = INCHES	REVISIONS: DATE:

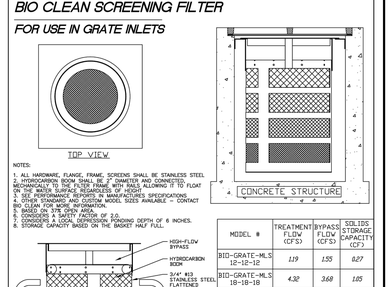
Bio Clean
A Forterra Company

PAGE 1

CURB INLET BASKET SYSTEM
(2) NOT TO SCALE

BIO CLEAN SCREENING FILTER

FOR USE IN GRATE INLETS



NOTES:
1. ALL HARDWARE, FLANGE, FRAME, SCREENS SHALL BE STAINLESS STEEL
2. HYDROBOOM® BOOM SHALL BE 2" DIAMETER AND CONNECTED MECHANICALLY TO THE FILTER FRAME WITH RAILS ALLOWING IT TO FLOAT UP AND DOWN WITH THE WATER LEVEL IN THE BASIN.
3. FOR PERFORMANCE REPORTS ON MANUFACTURERS SPECIFICATIONS
4. OTHER STANDARD AND CUSTOM MODEL SIZES AVAILABLE – CONTACT BIO CLEAN FOR MORE INFORMATION.
5. TREATMENT FLOW IS RATED AT 75 GPM/SF
6. CONSIDERS A SAFETY FACTOR OF 2.0.
7. CONSIDERS A LOCAL DEPRESSION FUNDING DEPTH OF 6 INCHES.
8. STORAGE CAPACITY BASED ON THE BASKET HALF FULL.

MODEL #	TREATMENT FLOW (CFS)	BYPASS FLOW (CFS)	SOLIDS STORAGE CAPACITY (CF)
BIO-GRATE-MLS 12-12-12	1.19	1.55	0.27
BIO-GRATE-MLS 18-18-18	4.32	3.68	1.85
BIO-GRATE-MLS 24-24-24	7.67	4.83	2.41
BIO-GRATE-MLS 30-30-24	12.97	6.21	3.98
BIO-GRATE-MLS 25-38-24	13.53	6.59	4.16
BIO-GRATE-MLS 36-36-24	19.64	7.60	5.94
BIO-GRATE-MLS 48-48-18	24.84	10.13	7.92

*FLOW RATES CALCULATED USING THE FOLLOWING EQUATION

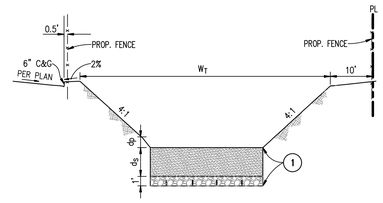
$Q = C_d * A * \sqrt{2gh}$ — C_d = COEFFICIENT OF ORIFICE = .62

DRAWING: BIO CLEAN GRATE INLET FILTER DETAILS	MULTI-LEVEL SCREENING
TYPICAL MODEL DETAIL	
WARRANTY: 5 YEAR MANUFACTURERS	PROJECT:
BIO CLEAN ENVIRONMENTAL SERVICES, INC.	REVISIONS: DATE:
3990 CONCOURS, SUITE 330 • ONTARIO, CA 91764	REVISIONS: DATE:
PHONE: 800-450-1945 FAX: 909-941-3176	REVISIONS: DATE:
DATE: 10/12/17 SCALE: 1/2" = 1'-0"	REVISIONS: DATE:
DRAFTER: M.C.F. UNITS = INCHES	REVISIONS: DATE:

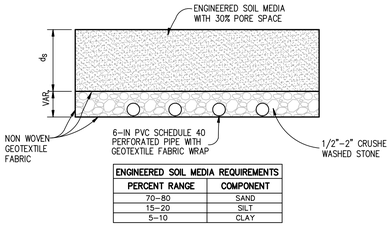
Bio Clean
A Forterra Company

PAGE 2

GRATE INLET SKIMMER BOX
(3) NOT TO SCALE



SECTION B-B
NOT TO SCALE



ENGINEERED SOIL MEDIA REQUIREMENTS	
PERCENT RANGE	COMPONENT
70–80	SAND
15–20	SILT
5–10	CLAY

(1) BIORETENTION BASIN MEDIA DETAIL
NOT TO SCALE

PROJECT BMP CONFORMANCE ANALYSIS

NAME	AREA (SF)	i	C	V_{BMP} (CF)	BMP	d_P (FT)	d_S (FT)	W_T (FT)	d_E (FT)	$A_{PROVIDE}$ (SF)	$V_{PROVIDE}$ (CF)
DMA B	1,268,481	0.78	0.58	**37,399**	BIORETENTION BASIN 2	0.50'	3.0	~100'	1.79	**36,518**	**73,639**
DMA C	1,627,595	0.78	0.58	**47,987**	BIORETENTION BASIN 3	0.50'	3.0	~100'	1.79	**36,909**	**74,416**

REGISTERED PROFESSIONAL ENGINEER — NO. 67512 EXPIRATION 6-30-2017 — CIVIL — STATE OF CALIFORNIA

REV	DESCRIPTION	DATE

POST CONSTRUCTION BMP SITE PLAN
FOR
VETERANS INDUSTRIAL PARK PP16-06
EAST OF 215 FREEWAY
COUNTY OF RIVERSIDE

HUITT~ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

APPROVED BY JOHNNY MURAD — R.C.E. 67512 — EXPIRES 6-30-17 — DATE

DESIGNED BY	JM
DRAWN BY	H-Z STAFF
CHECKED BY	JM
FIELD BOOK	
SHEET	2 OF 2 SHEETS
JOB NO.	304163.01

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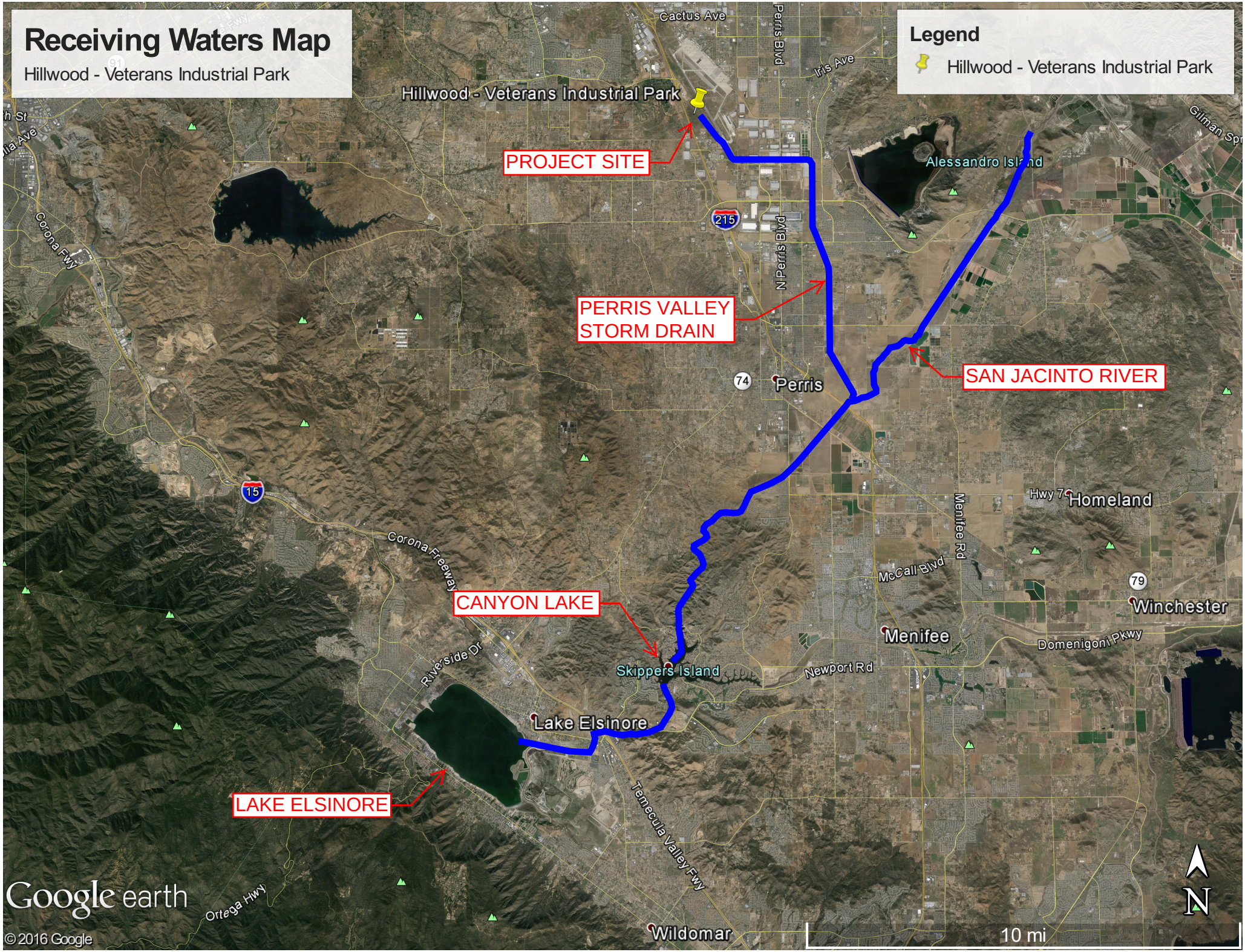
Receiving Waters Map
Hillwood - Veterans Industrial Park
Legend
Hillwood - Veterans Industrial Park
Hillwood - Veterans Industrial Park
PROJECT SITE
PERRIS VALLEY
STORM DRAIN
SAN JACINTO RIVER
CANYON LAKE
LAKE ELSINORE
Cactus Ave
Perris Blvd
Iris Ave
Alessandro Island
Gilman Spr
215
N Perris Blvd
Corona Fwy
74
Perris
15
Corona Freeway
Hwy 74
Homeland
Menifee Rd
McCall Blvd
79
Winchester
Menifee
Domenigoni Pkwy
Riverside Dr
Skippers Island
Newport Rd
Lake Elsinore
Temecula Valley Fwy
Ortega Hwy
Wildomar
Google earth
© 2016 Google
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RCA MSHCP Information App

with Web AppBuilder for ArcGIS

Appendix 2: Construction Plans

Attached Conceptual Grading and Drainage Plans

This section will be completed and addressed at the time of the final WQMP submittal

Grading and Drainage Plans

PRELIMINARY EARTHWORK VOLUMES		
	CUT (CY)	FILL (CY)
RAW VOLUMES:	445,070	247,724
(–) Shrinkage(10%):	45,907	–
(+) Subsidence(0.1):	–	20,747
Subtotal:	413,163	268,471
Overexcavation Raw:	165,503	165,503
(–) Shrinkage:	16,550	–
Subtotal:	148,953	165,503
Additional Volumes:		
Total:	562,116	433,974

128,142 CY LONG

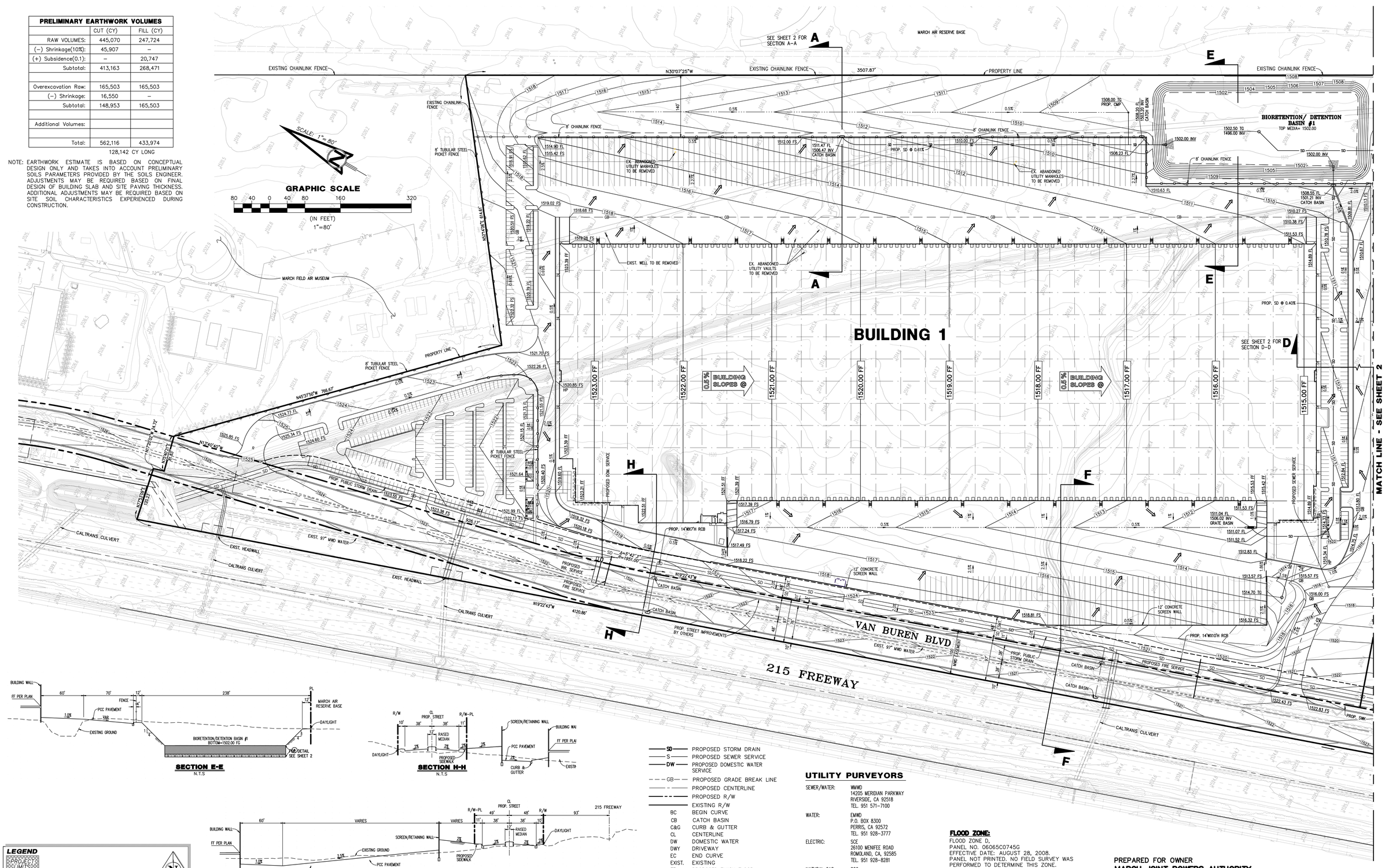
NOTE: EARTHWORK ESTIMATE IS BASED ON CONCEPTUAL DESIGN ONLY AND TAKES INTO ACCOUNT PRELIMINARY SOILS PARAMETERS PROVIDED BY THE SOILS ENGINEER. ADJUSTMENTS MAY BE REQUIRED BASED ON FINAL DESIGN OF BUILDING SLAB AND SITE PAVING THICKNESS. ADDITIONAL ADJUSTMENTS MAY BE REQUIRED BASED ON SITE SOIL CHARACTERISTICS EXPERIENCED DURING CONSTRUCTION.

SCALE: 1"= 80'

GRAPHIC SCALE

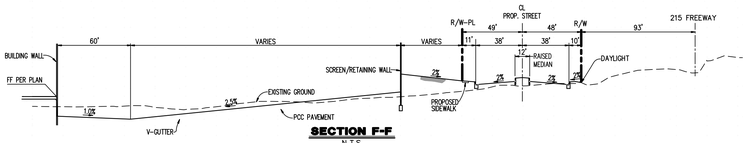
80 40 0 40 80 160 320

(IN FEET)
1"=80'

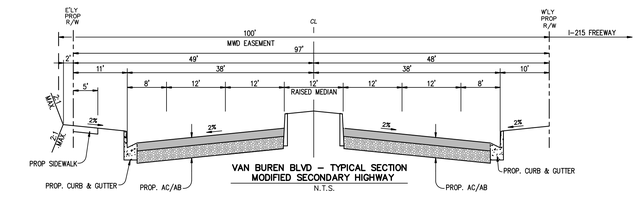


SECTION E–E
N.T.S

SECTION H–H
N.T.S



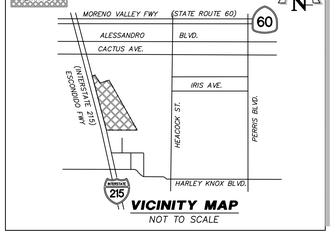
SECTION F–F
N.T.S



VAN BUREN BLVD – TYPICAL SECTION
MODIFIED SECONDARY HIGHWAY
N.T.S.

LEGEND

PROJECT LIMITS



VICINITY MAP
NOT TO SCALE

- SD —— PROPOSED STORM DRAIN
- S —— PROPOSED SEWER SERVICE
- DW —— PROPOSED DOMESTIC WATER SERVICE
- GB —— PROPOSED GRADE BREAK LINE
- —— PROPOSED CENTERLINE
- —— PROPOSED R/W
- —— EXISTING R/W

BC	BEGIN CURVE
CB	CATCH BASIN
C&G	CURB & GUTTER
CL	CENTERLINE
DW	DOMESTIC WATER
DWY	DRIVEWAY
EC	END CURVE
EXIST.	EXISTING
FF	PROPOSED FINISH FLOOR ELEVATION
FS	FINISHED SURFACE
FL	FLOWLINE
GB	GRADE BREAK
PL	PROPERTY LINE
PROP.	PROPOSED
RW	RECYCLED WATER
R/W	RIGHT–OF–WAY
SD	STORM DRAIN
SW	SIDEWALK
P.I.P.	PROTECT IN PLACE

UTILITY PURVEYORS

SEWER/WATER:	WMWD 14205 MERIDIAN PARKWAY RIVERSIDE, CA 92518 TEL. 951 571–7100
WATER:	EMWD P.O. BOX 8300 PERRIS, CA 92572 TEL. 951 928–3777
ELECTRIC:	SCE 26100 MENIFEE ROAD ROMOLAND, CA, 92585 TEL. 951 928–8281
NATURAL GAS:	SCG 25200 TRUMBLE ROAD ROMOLAND, CA 92380
TELEPHONE:	FRONTIER 150 S. JUANITA STREET HEMET, CA 92543 TEL. 951 658–7305
TV CABLE:	SPECTRUM 1500 S. AUTO CENTER DRIVE ONTARIO, CA 91761 TEL. 909 390–4460

FLOOD ZONE:
FLOOD ZONE D,
PANEL NO. 06065C0745G
EFFECTIVE DATE: AUGUST 28, 2008.
PANEL NOT PRINTED. NO FIELD SURVEY WAS PERFORMED TO DETERMINE THIS ZONE.

AREA
GROSS AREA = ±142.25 ACRES

TOPO
SOURCE: DMI (DIGITAL MAPPING, INC.), DATE: 10–20–15
DATE OF FIELD SURVEY: NOVEMBER, 2015.

BENCHMARK
ELEVATIONS SHOWN HEREON ARE DERIVED FROM THE NATIONAL GEODETIC SURVEY VERTICAL CONTROL NETWORK. BENCHMARK NUMBER PID DX2725 DESIGNATION Z1143, ELEVATION 1532.70' (NAVD29).

PREPARED FOR OWNER
MARCH JOINT POWERS AUTHORITY
14205 MERIDIAN PARKWAY, SUITE 140
RIVERSIDE, CA 92518
PH: 951–656–7000

PREPARED FOR DEVELOPER
RIVERSIDE INLAND DEVELOPMENT, LLC
901 VIA PIEMONTE
ONTARIO, CA 91764
PH: 909–382–0033

PREPARED IN THE OFFICE OF
HUITT–ZOLLARS, INC.
3990 CONCOURS, SUITE 330
ONTARIO, CALIFORNIA 91764
PHONE: (909) 941–7799

REGISTERED PROFESSIONAL ENGINEER JOHNNY MURAD No. 67512 Expiration 6–30–19 CIVIL STATE OF CALIFORNIA

CONCEPTUAL GRADING & UTILITY PLAN
FOR
VETERANS INDUSTRIAL PARK 215
GPA 16-01, SP 16-02, PP 16-06, TPM 16-06

HUITT–ZOLLARS
HUITT–ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941–7799

APPROVED BY JOHNNY MURAD — R.C.E. 67512 — EXPIRES 6–30–19 — DATE 10–04–18

DESIGNED BY JM/DW
DRAWN BY H–Z STAFF
CHECKED BY JM/DW
FIELD BOOK

SHEET 1 OF 2 SHEETS
JOB NO. 304163.01

D:\Projects\304163.01 – Hillwood – March JPA Industrial\VIS Design\VIS1 DWG's\conceptual grading\LCDN01.dwg, Layout 01, Dec 05 2019 7:34am

MATCH LINE - SEE SHEET 1

MARCH AIR RESERVE BASE

PROPERTY LINE

N30°07'25"W 3507.87'

EXISTING CHAINLINK FENCE

OFF-SITE GRADING

N49°46'59"E 73.50'

N39°57'49"W 421.43'

EXISTING EARTHEN CHANNEL

N30°06'29"W 670.22'

EXISTING CHAINLINK FENCE

BIORETENTION/ DETENTION BASIN #2
TOP MEDIA= 1498.50

BIORETENTION/ DETENTION BASIN #3
TOP MEDIA= 1496.00

8' CHAINLINK FENCE

8' TUBULAR STEEL FENCE

PROP. 18" SD @ 0.33%

12' CONCRETE SCREEN WALL

PROP. 14'WX10'H RCB BY OTHERS

PROP. 10'WX10'H RCB BY OTHERS

BUILDING 2

1515.00 FF | 1514.00 FF | 1513.00 FF | 1512.00 FF | 1511.00 FF | 1510.00 FF | 1509.00 FF

0.6% BUILDING SLOPES @

PROPOSED DOM. SERVICE
PROPOSED IRR SERVICE
PROPOSED FIRE SERVICE

PROPOSED SEWER MAIN

PROPOSED SEWER SUMP AND PUMP SYSTEM

PROP. SEWER FORCE MAIN

EXIST. 10" SEWER FORCE MAIN TO BE RELOCATED

EXIST. MH ADJUST TO GRADE (TYP.)

PROP. STREET IMPROVEMENTS

PROP. RIGHT OF WAY/PL

EXIST. RIGHT OF WAY/PL

MWD EASEMENT

EXIST. 97" MWD WATER

PROP. SWK

CATCH BASIN

VAN BUREN BLVD

N19°22'43"W 4120.86'

L=81.47'
R=66.00
Δ=70°43'25"

2981.28'

215 FREEWAY

N89°53'52"E 1805.75'

PROP. 36" RCP

PROP. 30" RCP

PROP. 24" RCP

PROP. FIRE SERVICE

EXIST. 97" MWD WATER

WESTERN WAY

NOT TO SCALE

PROP. STREET IMPROVEMENTS

EXIST. 8" WATER

PROP. 8" LINE W/ 12-15" TRAP SEAMING BY OTHERS

N30°09'25"W 124.78

N89°53'52"E 1178.86

L=148.66'
R=100.00'
Δ=85°12'53"

L=219.89'
R=115.00'
Δ=109°33'42"

N89°53'52"E 43.98'

5' TUBULAR STEEL FENCE

487.45 INV
487.95 INV

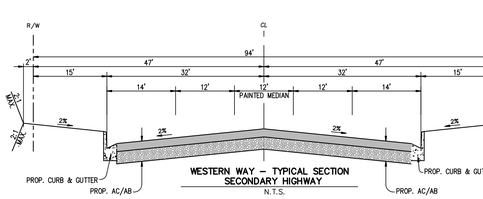
GRAPHIC SCALE

80 40 0 40 80 160 320

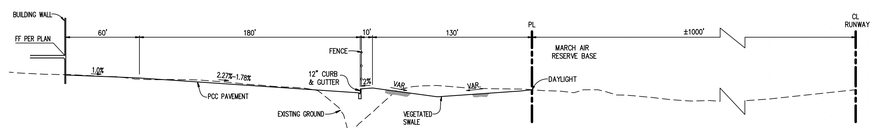
(IN FEET)
1"=80'

SCALE: 1"= 80'

SECTION K-K
N.T.S



WESTERN WAY – TYPICAL SECTION SECONDARY HIGHWAY
N.T.S.



SECTION A-A
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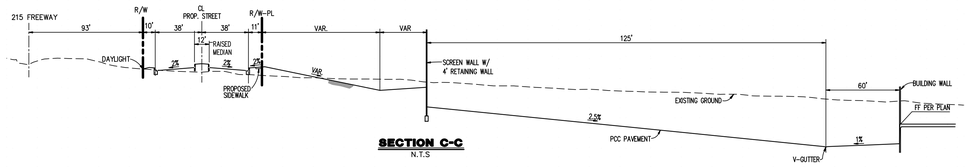

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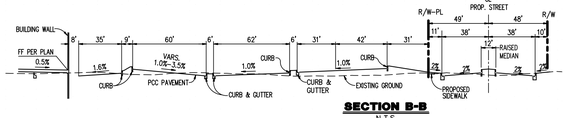

SECTION B-B
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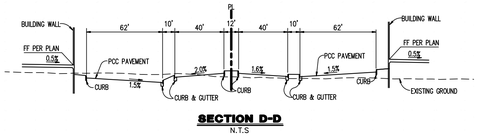
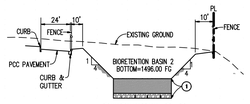
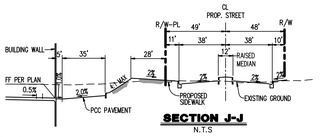


SECTION D-D
N.T.S



SECTION G-G
N.T.S



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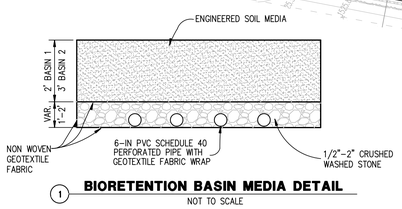

1 **BIORETENTION BASIN MEDIA DETAIL**
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
JOHNNY MURAD
No. 67512
Expiration 6-30-19
CIVIL
STATE OF CALIFORNIA

CONCEPTUAL GRADING & UTILITY PLAN
FOR
VETERANS INDUSTRIAL PARK 215
GPA 16-01, SP 16-02, PP 16-06, TPM 16-06

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 * ONTARIO, CALIFORNIA 91764 * (909) 941-7799

APPROVED BY JOHNNY MURAD — R.C.E. 67512 — EXPIRES 6-30-19 — DATE 10-04-18

DESIGNED BY JM/DW
DRAWN BY H-Z STAFF
CHECKED BY JM/DW
FIELD BOOK

SHEET 2 OF 2 SHEETS
JOB NO. 30416.3.01

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Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

February 23, 2016

Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Attention: Mr. Kathy Hoffer

Project No.: **15G204-3**

Subject: **Storm Water Infiltration**
Proposed D2 Air Cargo Compatible Development
SE Terminus of Van Buren Boulevard
Between I-215 and MARB
Moreno Valley, California

Reference: Geotechnical Investigation, D2 Air Cargo Compatible Development, SE Terminus of Van Buren Boulevard, Between I-215 and MARB, Moreno Valley, California, prepared for Hillwood by Southern California Geotechnical, Inc. (SCG), SCG Project No. 15G204-1, dated December 16, 2015.

Gentlemen:

In accordance your request, we have prepared this letter in order to comment on the infiltration characteristics of the on-site soils. The near surface soils generally consist of medium dense to very dense silty sands and clayey sands and stiff to hard silty clays and sandy clays. In general, these soils possess high densities and are weakly to moderately cemented. These soils are considered relatively impermeable with respect to storm water infiltration.

Based on the relatively high densities, cementation, and the silt and clay content of the near surface soils, no significant storm water infiltration should be expected within the near surface soils at the subject site.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. NIELSEN
No. 77915
CIVIL
STATE OF CALIFORNIA

Distribution: (1) Addressee
(1) Huitt-Zollars, Attention: Mr. Johnny Murad

GEOTECHNICAL INVESTIGATION
PROPOSED D2 AIR CARGO COMPATIBLE DEVELOPMENT

SE Terminus of Van Buren Boulevard,
Between I-215 and MARB
Moreno Valley, California
For Hillwood

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

December 16, 2015

Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Attention: Mr. Ned Sciortino

Project No.: **15G204-1**

Subject: **Geotechnical Investigation**
Proposed D2 Air Cargo Compatible Development
SE Terminus of Van Buren Boulevard
Between I-215 and MARB
Moreno Valley, California

Gentlemen:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. NIELSEN
No. 77915
CIVIL
STATE OF CALIFORNIA

John A. Seminara, CEG 2125
Principal Geologist

PROFESSIONAL GEOLOGIST
JOHN A. SEMINARA
No. 2125
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Distribution: (2) Addressee

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APPENDICES

A Plate 1: Site Location Map
Plate 2: Boring Location Plan
B Boring Logs
C Laboratory Test Results
D Grading Guide Specifications
E Seismic Design Parameters
F Liquefaction Evaluation Spreadsheets

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Site Preparation

- Initial site preparation should include stripping of the surficial vegetation including existing moderate to dense native grass and weed growth, trees and any organic soils. These materials should be properly disposed of off-site.
- Concrete slabs and foundations from a previously demolished structure are present in the northeast portion of the site. Manholes are present throughout the central portion of the site, indicating that utilities are present in the central portion of the site. Initial site preparation should also include demolition of any remnants of former development which will not be reused with the proposed development including pavements, floor slabs, foundations, utilities, septic systems, and any other improvements that will not remain in place with the new development. Concrete and asphalt debris may be re-used within the compacted fills, provided they are pulverized and the maximum particle size is less than 2 inches.
- The near surface soils encountered at most of the borings consist of high strength older alluvium. However, some of the borings encountered moderate strength younger alluvial soils within the upper 1½ to 5½± feet.
- Although the soils generally possess moderate to high strengths, the near surface soils vary somewhat in composition and density and also possess moisture contents lower than the optimum moisture content. Therefore, remedial grading is considered warranted within the new building and retaining wall areas in order to remove a portion of the near-surface soils and replace them as compacted structural fill.
- The existing soils within the building area should be overexcavated to a depth of at least 2 feet below existing grade and to a depth of at least 2 feet below proposed pad grade. The soils within the proposed foundation influence zones should be overexcavated to a depth of at least 2 feet below proposed foundation bearing grades. The overexcavation should also extend to a sufficient depth to remove any soils disturbed during demolition and any artificial fill soils, if encountered.
- After the recommended overexcavation has been completed, the resulting subgrade soils should be evaluated by the geotechnical engineer to identify any additional soils that should be overexcavated. The resulting subgrade should then be scarified to a depth of 12 inches and thoroughly moisture conditioned to 2 to 4 percent above optimum moisture content. The resulting subgrade should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.
- The new parking area subgrade soils are recommended to be scarified to a depth of 12± inches, moisture conditioned to 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.

- 3,000 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings due to the low expansion potential of the on-site soils. Additional reinforcement may be necessary for structural considerations.

Building Floor Slabs

- Conventional Slab-on-Grade, 6 inches thick.
- Modulus of Subgrade Reaction: k = 125 psi/in
- Minimum slab reinforcement: No. 3 bars at 18 inches on center in both directions due to the presence of low expansive soils. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed loading.

Pavements

ASPHALT PAVEMENTS (R = 30)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	6	8	10	11	13
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6½	8	9
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 15P395R, dated October 12, 2015. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. Based on the location of the subject site, this investigation also included a site specific liquefaction evaluation. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located at the southeast terminus of Van Buren Boulevard in Moreno Valley, California. The site is bounded to the north by the March Air Field Museum, to the east by the March Air Reserve Base (MARB) flight line, to the south by vacant land, and to the west by the Escondido Freeway (Interstate 215). The general location of the site is illustrated on the Site Location Map, included as Plate 1 in Appendix A of this report.

The site consists of four (4) irregular shaped parcels, which total 155± acres in size. The site is presently vacant and undeveloped, except for several small footings and slabs, from a previously demolished structure in the northeastern area of the site. Ground surface cover throughout the majority of the site consists of moderate to heavy native grass and weed growth with areas of exposed soil. A soil stockpile, approximately 100± feet long, 32± feet wide, and 10± feet high, is present in the northwest area of the site. Occasional trees of various sizes were observed throughout the site.

A drainage channel trends from the northwest corner of the site to the southeast corner of the site. The channel has a trapezoidal shaped cross-section and appears to be of artificial construction. This channel is approximately 15± feet wide and 7± feet deep. Limited portions of the channel, near the northern and southern property lines, are lined with concrete and limited portions of the channel are lined with small boulders. Two drainage courses are present in the northern portion of the site. These drainage courses are present at the western property line and terminate at the aforementioned channel. The depths of both of the drainage courses range between 2 and 4± feet.

Topographic information for the subject site was obtained from a topographic plan provided by the client. Based on this plan, the existing site grades range from a maximum elevation of 1524.0± feet mean sea level (msl) in the northwest corner of the site to a minimum elevation of 1500.0± feet msl in the southeast corner of the subject site. There is approximately 24 feet of elevation differential across the site. Site topography on the west side of the channel generally slopes downward to the southeast at a gradient of approximately 1 percent. On the east side of the channel, site topography generally slopes downward to the south at a gradient between 0.5 and 1 percent.

3.2 Proposed Development

A master site plan, prepared by RGA, was provided to our office. Based on this plan, the site will be developed with three (3) distribution/logistics buildings. These buildings will be constructed to be convertible to accommodate air cargo facilities. The buildings, identified as Buildings A through C, will possess footprint areas of 985,998± ft^2, 557,653± ft^2, 846,019± ft^2, respectively.

The buildings will be surrounded by asphaltic concrete and/or Portland cement concrete pavements with limited landscape planter areas.

Detailed structural information has not been provided. It is assumed that the new buildings will be single-story structures of tilt-up concrete construction, typically supported on a conventional shallow foundation system with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 3 to 5 kips per linear foot, respectively.

No significant amounts of below grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the assumed topography, cuts and fills of 6 to 10± feet are expected to be necessary to achieve the proposed site grades. Deeper fills are expected to be necessary in the area of the existing drainage channel which is present within the footprint of Buildings A and B and in the proposed pavement areas on the east side of Buildings B and C.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of twenty-three (23) borings advanced to depths of 5 to 50± feet below existing site grades. Eight (8) of the borings were drilled to depths of 50± feet as part of the liquefaction evaluation. Eleven (11) additional borings were drilled within the building footprint areas to depths of 15 to 20± feet. Four (4) borings were drilled to depths of 5± feet within the proposed surrounding pavement areas. All of the borings were logged during drilling by a member of our staff.

The borings were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and relatively undisturbed soil samples were taken during drilling. Relatively undisturbed samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. Samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Younger Alluvium

The majority of the borings encountered older native alluvium at the ground surface. However, seven of the twenty-three borings encountered younger alluvial soils at the ground surface, extending to depths of 1½ to 5½± feet. These younger alluvial soils generally consist of medium dense silty fine sands with varying quantities of medium to coarse sands and occasional medium dense clayey fine sands.

Older Alluvium

Older alluvium was encountered at all of the borings, either at the ground surface, or beneath the younger alluvium, except at Boring No. B-22, which was terminated in younger alluvium at a depth of 5± feet. The near surface older alluvium generally consists of medium dense to very

dense clayey sands and silty sands and very stiff to hard fine sandy clays with varying amounts of medium to coarse sand, silt, and fine gravel. Occasional strata of well graded, dense to very dense sands were encountered at a depth greater than 20± feet. Older alluvial soils extend to at least the maximum depth explored of 50± feet at the boring locations.

Groundwater

Free water was encountered during drilling at eight of the borings at the subject site. Boring Nos. B-1, B-4, B-8, B-9, B-13, B-14, B-17 and B-19 encountered free water at depths ranging from 22± feet to 36± feet. Based on the water level measurements and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at depths of 22 to 36± feet below the existing site grades at the time of subsurface exploration.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level for the site. The primary reference used to determine the groundwater depths in this area is a monitoring well located approximately 1.6 miles north of the subject site. In this well, the groundwater level is 17± feet (September 2015) below the ground surface.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration program were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Soluble Sulfates

Representative samples of the near-surface soils were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The result of the soluble sulfate testing is presented below, and is discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	ACI 318 Classification
B-2 @ 0 to 5 feet	0.002	Negligible
B-3 @ 0 to 5 feet	0.002	Negligible
B-19 @ 0 to 5 feet	0.001	Negligible

Consolidation

Selected soil samples have been tested to determine their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at

an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-12 in Appendix C of this report.

Maximum Dry Density and Optimum Moisture Content

Representative bulk samples were tested to determine their maximum dry density and optimum moisture content. The results were obtained using the Modified Proctor procedure, per ASTM D-1557. These test results are enclosed in presented on Plates C-13 through C-16 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water, and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	**Expansion Index**	**Expansion Potential**
B-3 @ 0 to 5 feet	22	Low
B-4 @ 0 to 5 feet	15	Very Low
B-9 @ 0 to 5 feet	38	Low
B-13 @ 0 to 5 feet	33	Low
B-14 @ 0 to 5 feet	21	Low

California Bearing Ratio (CBR)

One representative bulk sample was submitted to a subcontracted laboratory and tested to determine its CBR values at three different densities. The resulting CBR values are plotted on a chart of CBR versus Dry density. The samples were tested in accordance with ASTM D-1883, Standard Test Method for CBR of Laboratory Compacted Soils. The results of the CBR testing are presented below. The CBR laboratory data sheets are included in Appendix C.

Boring No. B-20 @ 0-5 feet	
Material	**CBR-Value**
Subgrade Compacted to 84% Relative Compaction	1
Subgrade Compacted to 92% Relative Compaction	7
Subgrade Compacted to 98% Relative Compaction	21

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations. The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

Based on standards in place at the time of this report, the proposed development must be designed in accordance with the requirements of the 2013 edition of the California Building Code (CBC). The CBC provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2013 CBC Seismic Design Parameters have been generated using U.S. Seismic Design Maps, a web-based software application developed by the United States Geological Survey. This software application, available at the USGS web site, calculates seismic design parameters in accordance with the 2013 CBC, utilizing a database of deterministic site accelerations at 0.01 degree intervals. The table below is a compilation of the data provided by the USGS application. A copy of the output generated from this program is included in Appendix E of this report. A

copy of the Design Response Spectrum, as generated by the USGS application is also included in Appendix E. Based on this output, the following parameters may be utilized for the subject site:

2013 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	1.500
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.600
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	1.500
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	0.900
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.000
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.600

Ground Motion Parameters

The liquefaction evaluation was performed using a site acceleration consistent with maximum considered earthquake ground motions, as required by the 2013 CBC. The peak ground acceleration (PGA) was determined in accordance with Section 11.8.3 of ASCE 7-10. The parameter PGA_M is the maximum considered earthquake geometric mean (MCE_G) PGA, multiplied by the appropriate site coefficient from Table 11.8-1 of ASCE 7-10. The web-based software application U.S. Seismic Design Maps (described in the previous section) was used to determine PGA_M, which is 0.50g. A portion of the program output is included as Plate 2 of this report. An associated earthquake magnitude was obtained from the 2008 USGS Interactive Deaggregation application available on the USGS website. The deaggregated modal magnitude is 7.58, based on the peak ground acceleration and NEHRP soil classification D.

Liquefaction

The Riverside County Land Information System indicates that the subject site is located within a zone of moderate high liquefaction susceptibility. Based on this mapping, the scope of this geotechnical investigation included a site-specific liquefaction evaluation.

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Non-sensitive clayey (cohesive) soils which possess a plasticity index of at least 18 (Bray and Sancio, 2006) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The liquefaction analysis was conducted in accordance with the requirements of Special Publication 117A (CDMG, 2008), and currently accepted practice (SCEC, 1997). The liquefaction potential of the subject site was evaluated using the empirical method developed by Boulanger and Idriss (Boulanger and Idriss, 2008). This method predicts the earthquake-induced liquefaction potential of the site based on a given design earthquake magnitude and peak ground acceleration at the subject site. This procedure essentially compares the cyclic resistance ratio (CRR) [the cyclic stress ratio required to induce liquefaction for a cohesionless soil stratum at a given depth] with the earthquake-induced cyclic stress ratio (CSR) at that depth from a specified design earthquake (defined by a peak ground surface acceleration and an associated earthquake moment magnitude). CRR is determined as a function of the corrected SPT N-value $(N_1)_{60\text{-}cs}$, adjusted for fines content. The factor of safety against liquefaction is defined as CRR/CSR. Based on Special Publication 117A, a factor of safety of at least 1.3 is required in order to demonstrate that a given soil stratum is non-liquefiable. Additionally, in accordance with Special Publication 117A, clayey soils which do not meet the criteria for liquefiable soils defined by Bray and Sancio (2006), loose soils with a plasticity index (PI) less than 12 and moisture content greater than 85% of the liquid limit, are considered to be insusceptible to liquefaction. Non-sensitive soils with a PI greater than 18 are also considered to be non-liquefiable.

As part of the liquefaction evaluation, Boring Nos. B-1, B-4, B-8, B-9, B-13, B-14, B-17 and B-19 were extended to depths of 50± feet. The liquefaction analysis procedure is tabulated on the spreadsheet forms included in Appendix F of this report, using the data obtained from these borings. The liquefaction potential of the site was analyzed utilizing a PGA_M of 0.5g for a magnitude 7.58 seismic event.

The historic high groundwater depth is assumed to be approximately 17 feet based on readily available monitoring well data from the internet. It should be noted that the closest well was located approximately 1.6 miles north of the site.

If liquefiable soils are identified, the potential settlements that could occur as a result of liquefaction are determined using the equation for volumetric strain due to post-cyclic reconsolidation (Yoshimine et. al, 2006). This procedure uses an empirical relationship between the induced cyclic shear strain and the corrected N-value to determine the expected volumetric strain of saturated sands subjected to earthquake shaking. This analysis is also documented on the spreadsheets included in Appendix F.

Conclusions and Recommendations

The results of the liquefaction analysis did not identify potentially liquefiable soils at the site. Soils which are located above the historic groundwater table, or possess factors of safety in excess of 1.3 are considered non-liquefiable. Some silty clay and sandy clay strata are also considered non-liquefiable due to their cohesive characteristics and the results of the Atterberg limits testing with respect to the criteria of Bray and Sancio (2006). Based on the results of this analysis, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

Most of the borings encountered high strength older alluvium at or near the ground surface. Some of the borings encountered moderate strength, lower density younger alluvium within the upper 1½ to 5½± feet below the ground surface. The results of consolidation/collapse testing indicate that the near surface younger and older alluvial soils possess favorable consolidation characteristics. Although the majority of the soils possess relatively high strengths, the soils present in the building pad areas possess variable compositions and densities and have moisture contents below the optimum moisture content. Based on these considerations, some remedial grading is considered to be warranted within the proposed building areas in order to provide uniform support characteristics by removing and replacing a portion of the near-surface older and younger alluvium and replacing these soils as compacted structural fill.

Additional overexcavation may be necessary within the existing drainage course and channel areas due to the presence of low-density sediments which may be present in the channel and/or drainage courses. The extent and presence of such materials is presently unknown, because these areas were not accessible to the drill rig during subsurface exploration.

Settlement

The recommended remedial grading will remove the upper portion of the older and younger alluvial soils, and replace these materials as compacted structural fill. The native soils that will remain in place below the depth of recommended overexcavation possess favorable consolidation/collapse characteristics. Therefore, following completion of the recommended grading, post-construction settlements are expected to be within tolerable limits.

Expansion

The near surface soils at this site generally consist of silty and clayey sands. Laboratory testing indicates that these materials possess very low to low expansion potentials (EIs between 15 and 38). The foundation and floor slab design recommendations contained within this report are made in consideration of the expansion index test results. It is recommended that additional expansion index testing be conducted at the completion of rough grading to verify the expansion potential of the as-graded building pad.

Soluble Sulfates

The results of the soluble sulfate testing indicate that the selected samples of the on-site soils contain negligible concentrations of soluble sulfates, in accordance with American Concrete Institute (ACI) guidelines. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building area.

Shrinkage/Subsidence

Based on the results of the laboratory testing, removal and recompaction of the younger alluvial soils is estimated to result in an average shrinkage of 8 to 12 percent. Shrinkage on the order of 4 to 8 percent is expected during the removal and recompaction of the near surface older alluvium. Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1± feet. This estimate may be used for grading in areas that are underlain by native alluvial soils.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Grading and Foundation Plan Review

No grading and foundation plans were available at the time of this report. It is therefore recommended that we be provided with copies of the preliminary plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site preparation should include stripping of any topsoil, vegetation and organic debris on the site. Based on conditions observed at the time of the subsurface exploration, this will include localized areas of shrubs, grasses and trees. These materials should be disposed of off-site. The actual extent of stripping should be determined in the field by a representative of the geotechnical engineer, based on the organic content and the stability of the encountered materials.

Remnants of previous development, including concrete slabs and footings were observed in the northeastern portion of the property. Additionally, a few manholes are present in the central portion of the site, indicating the presence of buried utility lines. Initial site preparation should include demolition of any remnants of former development, including any floor slabs, foundations, utilities, septic systems, and any other improvements that will not remain in place with the new development. Concrete and asphalt debris may be re-used within the compacted fills, provided they are pulverized and the maximum particle size is less than 2 inches.

Treatment of Existing Soils: Building Pads

Remedial grading should be performed within the proposed building areas in order to provide uniform support characteristics for the proposed building foundations and floor slabs. Any soils disturbed during site stripping and demolition of the remnants of previous development should be removed and replaced as structural fill. It is recommended that the existing soils within the proposed building areas be overexcavated to depths of at least 2 feet below proposed building pad subgrade elevation and to a depth of at least 2 feet below existing grade, whichever is greater.

Additional overexcavation should be performed within the influence zones of the new foundations, to provide for a new layer of compacted structural fill extending to a depth of 2 feet below proposed bearing grade.

The overexcavation areas should extend at least 5 feet beyond the building perimeter and foundations, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the building areas should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrades, as well as to support the foundation loads of the new structures. This evaluation should include proofrolling and probing to identify any soft, loose or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if undocumented fill materials or loose, porous, or low density native soils are encountered at the base of the overexcavation. As discussed in the previous section of this report, deeper overexcavation may be necessary to remove low-density sediments in the existing channel and drainage courses, which are present with the proposed Building A footprint area. As discussed above, the actual presence and depth of such sediments are unknown.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches, moisture treated to 2 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining and site walls should be overexcavated to a depth of 2 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. Any undocumented fill soils within any of these foundation areas should be removed in their entirety. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning, and recompacting the upper 12 inches of exposed subgrade soils, as discussed for the building areas. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Parking and Drive Areas

Based on economic considerations, overexcavation of the existing soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength, or unstable, soils are identified by the geotechnical engineer during grading. Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations.

The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. Any such materials should be removed to a level of firm and unyielding soil. The exposed subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to at least 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength surficial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking and drive areas. The grading recommendations presented above do not completely mitigate the extent of variable density and low expansive soils within proposed parking and drive areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking area should be graded in a manner similar to that described for the building area.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above the optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the 2013 CBC and the grading code of the City of Moreno Valley.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. It is recommended that materials in excess of 3 inches in size not be used for utility trench backfill. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by City of Moreno Valley. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of silty sands and clayey sands. Some of these materials may be subject to minor caving within shallow excavations. Where caving does occur, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, the inclination of temporary slopes should not exceed 1.5h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Moisture Sensitive Subgrade Soils

Most of the near surface soils possess appreciable silt and clay content and may become unstable if exposed to significant moisture infiltration or disturbance by construction traffic. In addition, based on their granular content, some of the on-site soils will also be susceptible to erosion. The site should, therefore, be graded to prevent ponding of surface water and to prevent water from running into excavations.

Expansive Soils

The near surface on-site soils have been determined to possess a low expansion potential. Therefore, care should be given to proper moisture conditioning of all building pad subgrade soils to a moisture content of 2 to 4 percent above the Modified Proctor optimum during site grading. All imported fill soils should have very low expansive (EI < 20) characteristics. In addition to adequately moisture conditioning the subgrade soils and fill soils during grading, special care must be taken to maintain moisture content of these soils at 2 to 4 percent above the Modified Proctor optimum. This will require the contractor to frequently moisture condition these soils throughout the grading process, unless grading occurs during a period of relatively wet weather.

Groundwater

The static groundwater table at this site was present at depths between 22 and 36± feet below the existing site grades. Therefore, groundwater is not expected to impact grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pads will be underlain by structural fill soils used to replace variable strength, variable composition, dry of optimum, near surface alluvium. These new structural fill soils are expected to extend to depths of at least 2 feet below proposed foundation bearing grade, underlain by 1± foot of additional soil that has been scarified, moisture conditioned, and recompacted. Based on this subsurface profile, the proposed structure may be supported on conventional shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 3,000 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom) due to the presence of low expansive soils. Additional reinforcement may be necessary for structural considerations.
- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 24 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.
- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to

at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to at least 2 to 4 percent of the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. **Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.**

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 3000 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floors of the new structures may be constructed as conventional slabs-on-grade supported on newly placed structural fill, extending to a depth of at least 2 feet below the proposed building pad grade. Based on geotechnical considerations, the floor slab may be designed as follows:

- Minimum slab thickness: 6 inches.

- Minimum slab reinforcement: No. 3 bars at 18 inches on center in both directions due to the presence of low expansive soils. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed loading.

- Modulus of Subgrade Reaction: k = 125 psi/in.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area of the proposed slab where such moisture sensitive floor coverings are expected. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.
- Moisture condition the floor slab subgrade soils to 2 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.
- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slabs should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Although not indicated on the site plan, some small retaining walls (less than 3 to 4 feet in height) may be required to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The near surface soils generally consist of clayey sands and silty sands with occasional clays. Based on their classifications, these soils are expected to possess a friction angle of at least 30 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the

heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		Soil Type
		On-Site Clayey Sands and Silty Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		130 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	42 lbs/ft^3
	Active Condition (2h:1v backfill)	67 lbs/ft^3
	At-Rest Condition (level backfill)	63 lbs/ft^3

Regardless of the backfill type, the walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2013 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed compacted structural fill, extending to a depth of at least 2 feet below the proposed bearing grade. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 8-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

The following pavement designs are provided for truck and automobile traffic. However, we understand that the new pavements on the east sides of the proposed building may also be subjected to traffic from aircraft. Based on conversations with the client and the project civil engineer, information regarding the volume of airplane traffic and types of airplanes is presently not available. Therefore, the following pavement designs do not include airplane traffic. SCG will provide an addendum pavement design report after additional information regarding airplane traffic has been provided.

Pavement Subgrades

It is anticipated that the new pavements will be supported on a layer of existing soils which have been scarified, thoroughly moisture conditioned and recompacted. The near surface soils generally consist of silty and clayey sands and possess an R-value of 30, based on a correlation with the results of the CBR testing. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering controlled conditions. It is recommended that R-value and/or CBR testing be performed after completion of rough grading. Depending upon the results of this testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20 year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=30)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	6	8	10	11	13
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6½	8	9
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness. The actual joint spacing and reinforcing of the Portland cement concrete pavements should be determined by the structural engineer.

7.0 GENERAL COMMENTS

This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

8.0 REFERENCES

Blake, Thomas F., *FRISKSP, A Computer Program for the Probabilistic Estimation of Peak Acceleration and Uniform Hazard Spectra Using 3-D Faults as Earthquake Sources*, Version 4.00, 2000.

California Division of Mines and Geology (CDMG), "Guidelines for Evaluating and Mitigating Seismic Hazards in California," State of California, Department of Conservation, Division of Mines and Geology, Special Publication 117, 1997.

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Seed, H. B., and Idriss, I. M., "Simplified Procedure for Evaluating Soil Liquefaction Potential using field Performance Data," Journal of the Soil Mechanics and Foundations Division, American Society of Civil Engineers, September 1971, pp. 1249-1273.

Sadigh, K., Chang, C. –Y., Egan, J. A., Makdisi. F., Youngs, R. R., "*Attenuation Relationships for Shallow Crustal Earthquakes Based on California Strong Motion Data"*, Seismological Research Letters, Seismological Society of America, Volume 68, Number 1, January/ February 1997, pp. 180-189.

Southern California Earthquake Center (SCEC), University of Southern California, "Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California," Committee formed 1997.

Tokimatsu K., and Seed, H. B., "Evaluation of Settlements in Sands Due to Earthquake Shaking," Journal of the Geotechnical Engineering Division, American society of Civil Engineers, Volume 113, No. 8, August 1987, pp. 861-878.

Tokimatsu, K. and Yoshimi, Y., "*Empirical Correlations of Soil Liquefaction Based on SPT N-value and Fines Content,"* Seismological Research Letters, Eastern Section Seismological Society Of America, Volume 63, Number 1, p. 73.

Youd, T. L. and Idriss, I. M. (Editors), "Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils," Salt Lake City, UT, January 5-6 1996, NCEER Technical Report NCEER-97-0022, Buffalo, NY.

APPENDIX A

SOURCE: RIVERSIDE COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP

D2 AIR CARGO COMPATIBLE DEVELOPMENT

MORENO VALLEY, CALIFORNIA

SCALE: 1" = 2400'	
DRAWN: MRM CHKD: JAS	
SCG PROJECT 15G204-1	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

NORTH

SoCalGeo

GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

NOTE: SITE MAP PROVIDED BY RGA ARCHITECTS

BORING LOCATION PLAN

D2 AIR CARGO COMPATIBLE DEVELOPMENT

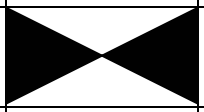
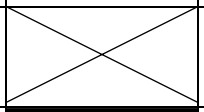
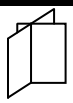
MORENO VALLEY, CALIFORNIA

SCALE: 1" = 400'	
DRAWN: MRM CHKD: JAS	
SCG PROJECT 15G204-1	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

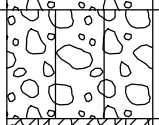
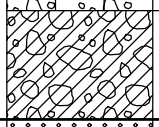
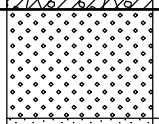
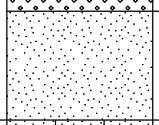
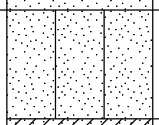
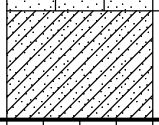
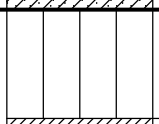
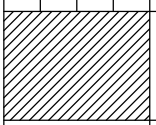
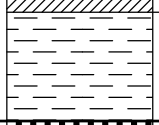
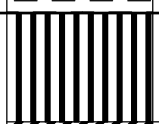
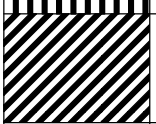
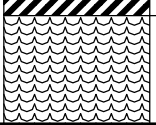
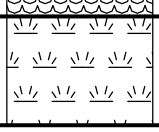
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: 23 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		23			YOUNGER ALLUVIUM: Light Brown Silty fine Sand, trace medium to coarse Sand, trace Clay, medium dense-damp		3					
		29			OLDER ALLUVIUM: Gray Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, medium dense-damp to moist		7					
5		30	4.5+		Brown fine to medium Sandy Clay, hard-damp to moist		6 9					
		35			Red Brown Clayey fine to coarse Sand, trace fine Gravel, trace to little Silt, dense-damp to moist		6					
10												
		21			Brown Clayey fine Sand, trace to little Silt, trace medium Sand, trace Iron oxide staining, medium dense-moist		13					
15												
		17			Gray Brown Clayey fine to coarse Sand, little Silt, medium dense-moist		13			18		
20												
		33			Groundwater encountered at 23 feet during drilling		13					
25					Brown Silty fine Sand, trace to little Clay, trace Iron oxide staining, dense-wet		16			33		
		26			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, dense-wet		16					
30												
		35					15					

TBL 15G204 GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-1a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: 23 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
40		38			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, dense-wet		17					
45		41					14					
50		56					14					
					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-1b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/28/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 13 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		32			YOUNGER ALLUVIUM: Light Brown Silty fine Sand, trace Clay, trace medium Sand, trace fine root fibers, slightly porous, medium dense-damp	101	3					
		52	4.0		OLDER ALLUVIUM: Brown fine Sandy Clay, trace Silt, trace medium to coarse Sand, slightly porous, hard-damp	116	6					
5		59			Brown Clayey fine to medium Sand, trace Silt, trace coarse Sand, dense-damp	121	5					
		85/10			Brown Silty fine Sand, trace medium to coarse Sand, trace to little Clay, dense to very dense-moist	127	9					
10		53	4.5+		Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace Silt, trace calcareous veining, dense to hard-moist	114	11					
		15			Brown fine Sandy Silt, trace Clay, medium dense-very moist		18					
15												
		19			Light Gray Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp		6					
20					Boring Terminated at 20'							

TBL 15G204 GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/28/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 12 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		52			OLDER ALLUVIUM: Light Brown Silty fine Sand, trace medium to coarse Sand, trace Clay, very dense-damp		5					EI = 22 @ 0 to 5'
		54			Gray Brown Clayey fine to medium Sand, very dense-damp		5					
5		39			Light Brown Clayey fine Sand, litle Silt, trace medium Sand, trace calcareous veining, dense-moist		8					
		40	4.5		Gray Brown fine Sandy Clay, trace Silt, trace medium to coarse Sand, trace Iron oxide staining, dense to hard-moist		10					
10												
		20	2.0		@13½ to 15 feet, Brown, trace medium Sand, moist to very moist		15					
15					Boring Terminated at 15'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/28/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 23 feet
CAVE DEPTH: 37 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		44	4.5+		OLDER ALLUVIUM: Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace to little Silt, slightly porous, dense-damp		5					EI = 15 @ 0 to 5'
		64			Light Red Brown Clayey fine Sand, trace medium to coarse Sand, little Silt, trace Iron oxide staining, very dense-moist		9					
5		26	4.5+		Brown fine to medium Sandy Clay, trace coarse Sand, little Silt, trace calcareous veining, very stiff-moist		11					
		21					9					
10												
		18	3.5		Brown Clayey fine Sand to fine Sandy Clay, trace to little Silt, trace medium Sand, trace Iron oxide staining, medium dense to very stiff-moist to very moist		14					
15												
		26			Light Gray Brown Silty fine to coarse Sand, trace Clay, trace calcareous veining, medium dense-moist		10			25		
20												
		19			Light Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, medium dense to very dense-wet Groundwater encountered at 23 feet during drilling		16			14		
25												
		34					15					
30												
		52					14					

TBL 15G204 GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-4a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: 23 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 37 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Light Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, medium dense to very dense-wet							
					Red Brown to Gray Brown Clayey fine to coarse Sand, trace fine Gravel, trace Silt, dense to very dense-wet							
40		67					16					
45		47					15					
50		52					16					
					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-4b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		35			OLDER ALLUVIUM: Brown to Dark Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, trace fine root fibers, slightly porous, dense-damp	99	3					
		45				118	7					
5		50/6"			Light Brown Silty fine Sand, trace medium Sand, trace Clay, dense-damp to moist		5					Disturbed Sample
		50				109	9					
		15			Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, medium dense-damp	112	4					
10												
					Gray Brown fine Sandy Silt, trace to little Clay, trace Iron oxide staining, medium dense-very moist							
		19					16					
15												
					Gray Brown Clayey fine Sand, little Silt, trace medium Sand, trace Iron oxide staining, medium dense-very moist							
		18					16					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 18 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		62			OLDER ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, trace Clay, very dense-damp		6					
		33			Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, little Silt, dense-damp to moist		7					
5		22	4.5		@ 6 to 10 feet, trace Iron oxide staining, trace calcareous veining, medium dense		11					
		24					11					
10					Brown fine to medium Sandy Clay, trace Silt, dense-damp to moist							
		31	4.5				8					
15					Gray Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, medium dense-damp							
		23					6					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-7

JOB NO.: 15G204 | DRILLING DATE: 10/29/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, trace Clay, dense-damp							
		48				109	5					
					Dark Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, slightly porous, dense-damp to moist							
		50/4"					7					Disturbed Sample
5		50/6"				102	7					
					Brown Clayey fine Sand to fine Sandy Clay, little Silt, trace medium Sand, medium dense to very stiff-moist to very moist							
		28	4.5+			119	13					
		20	4.5+			114	11					
10												
		25	3.0				26					
15					Boring Terminated at 15'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-7

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-8

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 22 feet
CAVE DEPTH: 36 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	
		21			ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, trace Clay, medium dense-very moist		13					
		57	2.0		OLDER ALLUVIUM: Brown fine to medium Sandy Clay, trace coarse Sand, trace Silt, hard-moist		8					
5		38	4.5+				10					
					Light Brown Silty fine Sand, trace medium Sand, trace Clay, dense-very moist		18					
		20			Brown Clayey fine Sand, trace medium Sand, trace Silt, medium dense-damp to moist		8					
10												
					Red Brown Clayey fine to medium Sand, trace Silt, medium dense-very moist							
		22					13					
15												
					Brown Clayey fine Sand, trace medium to coarse Sand, trace Silt, trace calcareous veining, medium dense-very moist to wet							
		16					16			38		
20												
					Gray Brown fine to coarse Sand, little Clay, trace fine Gravel, medium dense-wet Groundwater encountered at 22 feet during drilling							
		22					15			13		
25												
		73					17					
					Gray Brown Clayey fine to coarse Sand, trace Silt, well cemented, very dense-wet		14					
30												
					Orange Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, moderately cemented, dense-wet							
		41					14					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-8a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-8

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 22 feet
CAVE DEPTH: 36 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Orange Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, moderately cemented, dense-wet							
					Light Gray Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, medium dense to dense-wet							
		42					15					
40												
		29					15			19		
45												
		41					15					
50					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-8b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-9

JOB NO.: 15G204 | DRILLING DATE: 10/29/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 40 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Gray Brown Clayey fine to medium Sand, trace coarse Sand, trace fine Gravel, trace Silt, dense-damp							
		45	4.5+				6					EI = 38 @ 0 to 5'
		64			Light Brown Clayey fine Sand, little Silt, trace medium to coarse Sand, very dense-moist		9					
5		27	4.0		Brown fine to medium Sandy Clay, trace coarse Sand, trace Silt, medium dense to very stiff-moist		11					
		24	3.0				13					
10												
		33	4.5+		Red Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace to little Silt, trace calcareous veining, dense to hard-moist		11					
15												
		24			Light Gray Silty fine to medium Sand, trace coarse Sand, trace to little Clay, medium dense-damp to moist		7			17		
20												
		24			Light Gray Clayey fine to coarse Sand, trace Silt, medium dense to dense-damp to moist		6			13		
25												
		33			@ 28½ to 30 feet, trace fine Gravel		11					
30												
		47			Gray Brown fine to coarse Sand, little Clay, trace fine Gravel, dense-moist to very moist		14					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-9a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-9

JOB NO.: 15G204 | DRILLING DATE: 10/29/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 40 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Gray Brown fine to coarse Sand, little Clay, trace fine Gravel, dense-moist to very moist							
					Groundwater encountered at 36 feet during drilling							
					Red Brown Clayey fine Sand, trace Silt, trace fine Gravel, dense to very dense-wet							
		37					21					
40												
		47					16					
45												
		50					16					
50					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-9b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-10

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 16 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		36	4.5		OLDER ALLUVIUM: Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace Silt, dense to hard-damp to moist		7					
		48			Light Brown Silty fine Sand, little Clay, trace medium to corase Sand, dense-damp to moist		7					
5		41	4.5+		Brown fine Sandy Clay, trace medium to coarse Sand, trace Silt, hard-moist		12					
		34	3.75				11					
10					Gray Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, medium dense-damp							
		24					5					
15					Gray Brown Clayey fine Sand, trace medium Sand, trace Silt, medium dense-damp		5					
					Brown fine Sandy Clay, trace medium Sand, trace Silt, trace Iron oxide staining, very stiff-moist to very moist							
		22	4.5+				13					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-10

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-11

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 11 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		33			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, dense-damp		6					
		20	4.5+		Red Brown fine to medium Sandy Clay, trace coarse Sand, trace Silt, medium dense to very stiff-moist		11					
5												
		35	3.5		Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace coarse Sand, dense to hard-moist		8					
		41	4.5+				7					
10												
					Brown fine Sandy Clay, little Silt, trace medium to coarse Sand, very stiff-moist							
		29	2.0				10					
15					Boring Terminated at 15'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-11

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-12

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 17 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		15			YOUNGER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, slightly porous, medium dense-damp	101	3					
		17			Brown Clayey fine to medium Sand, trace coarse Sand, trace fine Gravel, trace Silt, medium dense to dense-damp	107	3					
5		47				110	8					
		31	4.5		OLDER ALLUVIUM: Light Brown Clayey fine Sand, trace medium Sand, trace Silt, trace Iron oxide staining, dense-moist	114	8					
		41	4.5+		Red Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace Silt, medium dense to very stiff-moist to very moist	117	14					
10												
		19	4.5				12					
15												
		25			Gray Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, medium dense-damp		6					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-12

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-13

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace Silt, dense-damp							
		46					5					EI = 33 @ 0 to 5'
					Light Brown Silty fine Sand, trace medium Sand, trace to little Clay, very dense-damp							
		50/6"					6					
5					Brown Clayey fine Sand, trace medium to coarse Sand, little Silt, trace calcareous veining, medium dense to dense-moist							
		32					8					
		22					12					
10					Brown Clayey fine to medium Sand, trace coarse Sand, medium dense-damp to moist							
		16					7					
15					Gray Brown fine to coarse Sand, little Clay, trace Silt, trace fine Gravel, medium dense-damp							
		18					5			18		
20					Gray Brown to Red Brown Clayey fine to coarse Sand, trace medium Sand, trace Silt, medium dense-moist to very moist							
		22					17			37		
25												
		19					13			27		
30					Red Brown Clayey fine to coarse Sand, little Silt, dense to very dense-very moist to wet							
		42					12					

TBL 15G204.GPJ SOCAL3EO.GDT 12/17/15

TEST BORING LOG

PLATE B-13a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-13

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Red Brown Clayey fine to coarse Sand, little Silt, dense to very dense-very moist to wet Groundwater encountered at 36 feet during drilling							
40		50					14					
45		43					14					
50		79/11"					14					
					Boring Terminated at 50'							

TBL 15G204 GPJ SOCALGEO GDT 12/17/15

TEST BORING LOG **PLATE B-13b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-14

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace to little coarse Sand, trace Silt, trace fine Gravel, medium dense-damp							
		26					4					EI = 21 @ 0 to 5'
		32	4.5		@ 3½ to 35 feet, Clayey fine to medium Sand to fine to medium Sandy Clay, dense-hard		6					
5												
		69			Red Brown Clayey fine Sand, little medium to coarse Sand, trace Silt, very dense-damp to moist		6					
		68					12					
10												
					Light Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
		15					4					
15												
					Light Gray Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, trace calcareous veining, dense to very dense-moist							
		80					10					
20												
		37					8			20		
25												
					Light Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, dense to very dense-moist to wet							
		59					11					
30												
		42					13					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-14a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-14

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
40		47			Light Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, dense to very dense-moist to wet Groundwater encountered at 36 feet during drilling		15					
45		60					15					
50		68					16					
					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-14b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-15

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 18 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		20			ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, trace fine root fibers, very porous, medium dense-damp	101	3					
		48			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace to little Silt, trace fine root fibers, slightly porous, dense-damp	110	4					
5		47				112	4					
		49	2.5		Orange Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace Silt, trace Iron oxide staining, dense to hard-damp to moist	116	6					
10		55	3.5			102	12					
		26	4.0		Brown to Gray Brown fine Sandy Clay, trace Silt, trace medium to coarse Sand, trace calcareous nodules, very stiff-very moist		19					
15												
		24	4.0				16					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-15

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-16

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		42			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, trace calcareous veining, dense-damp		4					
		18	4.5+		@ 3½ to 8 feet, Clayey fine to medium Sand to fine to medium Sandy Clay, medium dense to very stiff-damp to moist		5					
5		29	4.5				10					
		22	4.5		Red Brown fine to medium Sandy Clay, trace coarse Sand, trace Silt, very stiff-moist		11					
10					Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, medium dense-moist							
		25					10					
15					Boring Terminated at 15'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-16

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-17

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 31 feet
CAVE DEPTH: 39 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		26			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, slightly porous, trace fine Gravel, medium dense-damp		5					
		23					6					
5		32	4.5+		Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, slightly porous, trace Iron oxide staining, dense to hard-moist		12					
		32	4.0		Red Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace coarse Sand, trace Silt, trace fine Gravel, trace Iron oxide staining, medium dense to dense to hard-moist		10					
10												
		18	4.5				11					
15												
		84			Light Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace calcareous veining, very dense-moist		9					
20												
		31			Light Gray Brown to Red Brown Clayey fine to coarse Sand, trace fine Gravel, dense-very moist		14					
25												
		37					19					
30					Groundwater encountered at 31 feet during drilling							
		47					16					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-17a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-17

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 31 feet
CAVE DEPTH: 39 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
40		53			Light Gray Brown to Red Brown Clayey fine to coarse Sand, trace fine Gravel, dense-very moist		15					
45		37			Brown Silty fine Sand, trace Clay, trace medium to coarse Sand, dense-wet		19					
		47					23					
50					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-17b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-18

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 16 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					YOUNGER ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, trace Clay, trace fine root fibers, slightly porous, medium dense-damp							
		25				105	3					
					OLDER ALLUVIUM: Brown Clayey fine to medium Sand, little coarse Sand, trace Silt, medium dense to dense-damp							
		40				129	5					
5		63				105	4					
					Light Brown Clayey fine Sand, little Silt, trace medium Sand, medium dense-damp							
		32				97	4					
					Red Brown fine to coarse Sand, trace Clay, trace to little Silt, trace fine Gravel, medium dense-damp							
		32	4.5		Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace Silt, slightly porous, trace Iron oxide staining, medium dense to dense to very stiff to hard-damp to moist	107	6					
10												
		32	4.0				14					
15												
					Light Gray Brown fine Sandy Silt, trace Clay, trace medium Sand, trace calcareous veining, dense-moist							
		40					11					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-18

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-19

JOB NO.: 15G204 | DRILLING DATE: 11/3/15 | WATER DEPTH: 33 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 39 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Brown Clayey fine Sand, trace medium to coarse Sand, trace Silt, trace fine root fibers, medium dense to very dense-damp to moist							
		25					7					
		53					5					
5												
		63/11"			@ 6 to 7½ feet, Red Brown		7					
		22			Brown Clayey fine Sand to fine Sandy Clay, trace Silt, trace medium Sand, medium dense to very stiff-very moist		13					
10												
					Brown Clayey fine to medium Sand, trace Silt, trace calcareous veining, well cemented, very dense-moist							
		54					11					
15												
					Brown fine to coarse Sand, little Clay, little Silt, dense-moist							
		39					12					
20												
					Gray Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, well cemented, very dense-damp to moist							
		52					9					
25												
					Brown to Red Brown Clayey fine to coarse Sand, trace fine Gravel, trace Silt, dense-moist to wet							
		47					9					
30												
					Groundwater encountered at 33 feet during drilling							
		45					14					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-19a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-19

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 11/3/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 33 feet
CAVE DEPTH: 39 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
40		39			Brown to Red Brown Clayey fine to coarse Sand, trace fine Gravel, trace Silt, dense-moist to wet		15					
45		51			Red Brown Silty fine to coarse Sand, trace to little Clay, trace fine Gravel, very dense-wet		13					
50		65					15					
					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-19b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-20

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 11/3/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 3 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	32			OLDER ALLUVIUM: Brown Clayey fine Sand, trace medium to coarse Sand, trace fine root fibers, slightly porous, dense-damp		5					
	X	30					6					
5					Boring Terminated at 5'							

TBL 15G204.GPJ SOCAL 3EO.GDT 12/17/15

TEST BORING LOG

PLATE B-20

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-21

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 11/3/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 3 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	27			OLDER ALLUVIUM: Brown Clayey fine Sand, trace medium Sand, trace fine root fibers, medium dense-damp		3					
	X	55			Light Gray Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, very dense-damp		5					
5					Boring Terminated at 5'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-21

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-22

JOB NO.: 15G204 | DRILLING DATE: 11/3/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 3 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	12			YOUNGER ALLUVIUM: Light Brown Silty fine Sand, trace medium to coarse Sand, trace Clay, medium dense-damp		3					
	X	11					4					
5					Boring Terminated at 5'							

TBL 15G204.GPJ SOCAL3EO.GDT 12/17/15

TEST BORING LOG **PLATE B-22**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-23

JOB NO.: 15G204 | DRILLING DATE: 11/3/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 3 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	27			OLDER ALLUVIUM: Light Brown Clayey fine Sand, trace medium to coarse Sand, little Silt, medium dense-damp		4					
	X	37			Gray Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, dense-damp		6					
5					Boring Terminated at 5'							

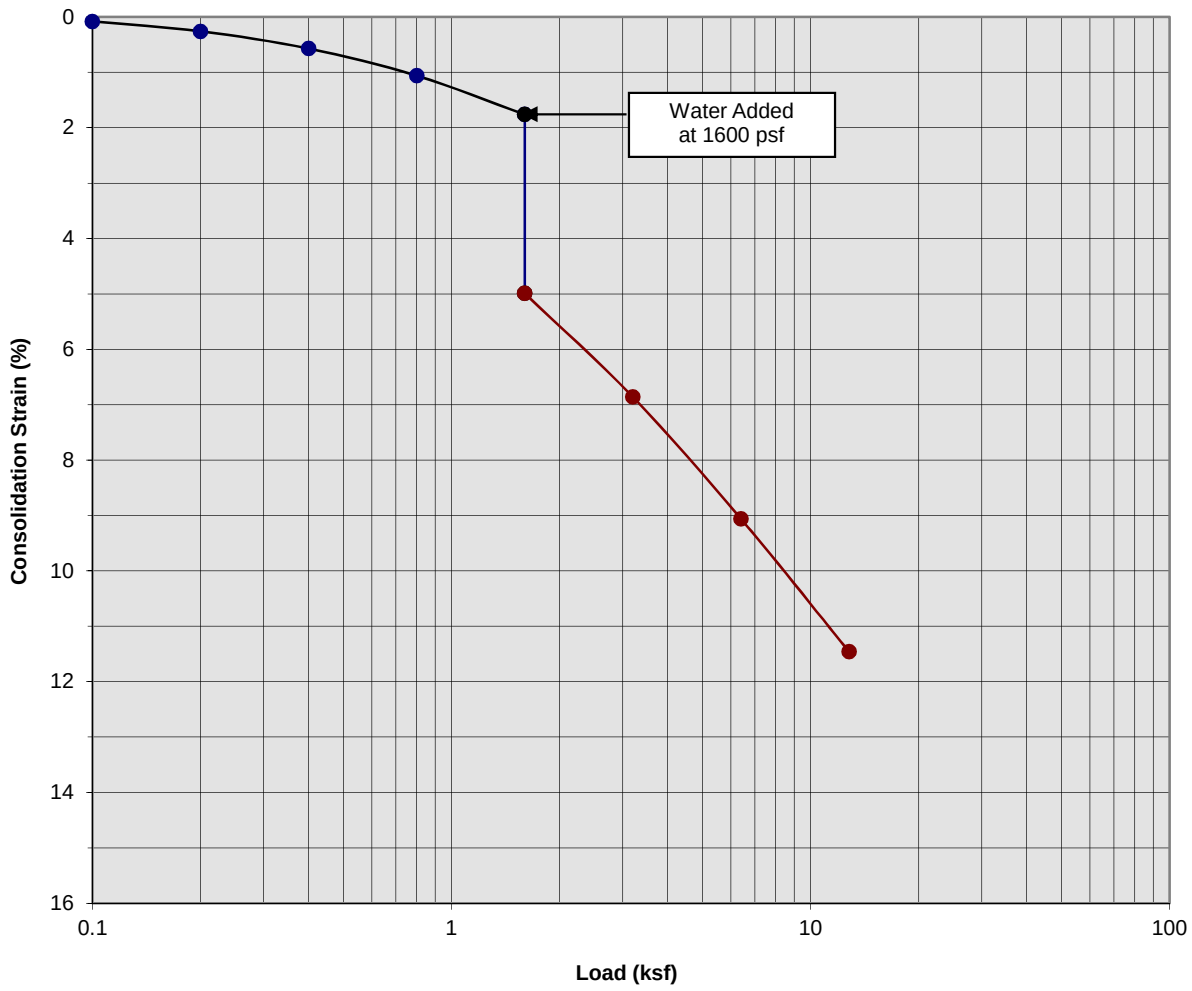
TBL 15G204.GPJ SOCAL3EO.GDT 12/17/15

TEST BORING LOG

PLATE B-23

APPENDIX C

Consolidation/Collapse Test Results



Classification: Brown Clayey fine to medium Sand, trace coarse Sand

Boring Number:	B-12	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	3 to 4	Initial Dry Density (pcf)	107.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.23

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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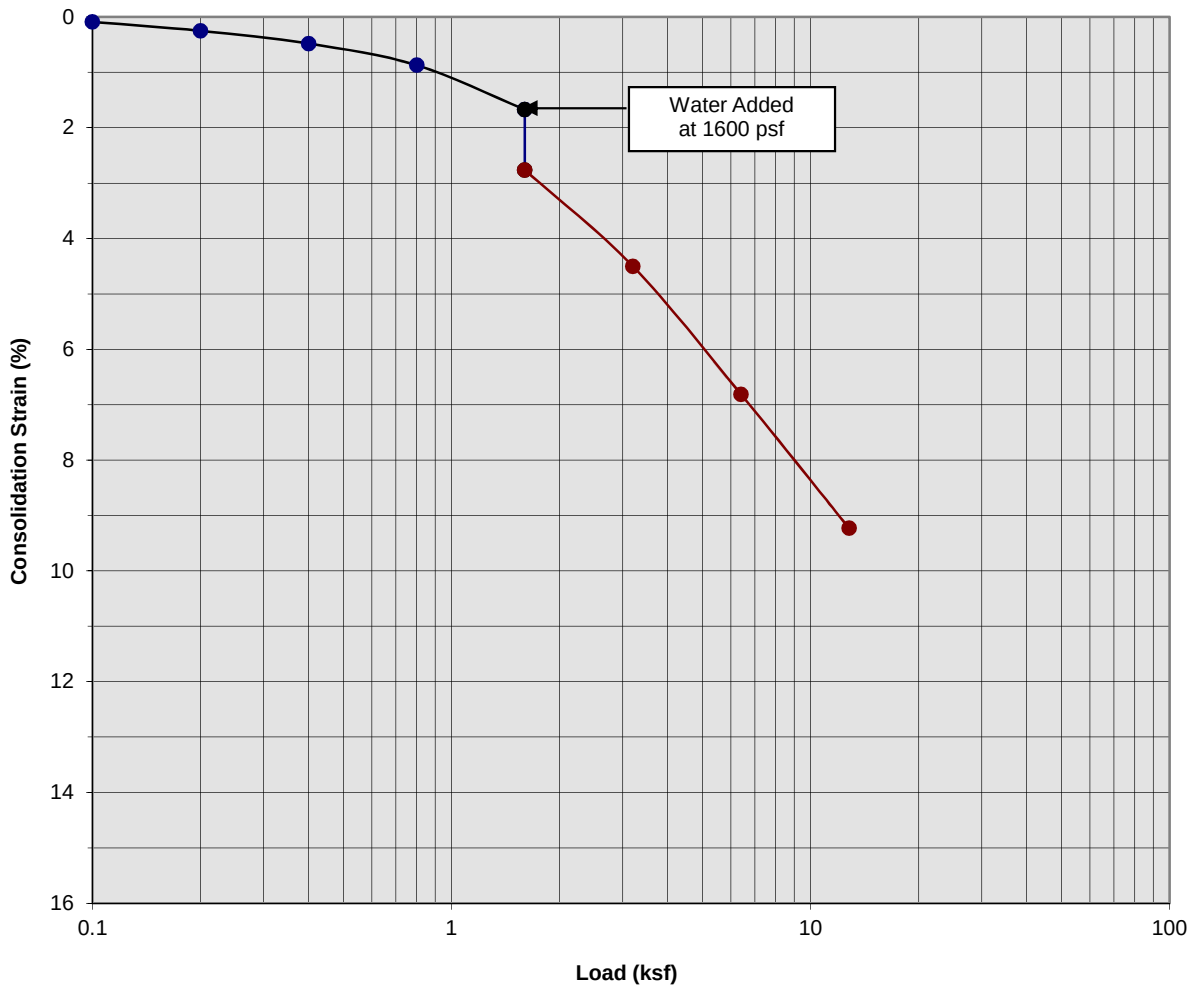
Consolidation/Collapse Test Results



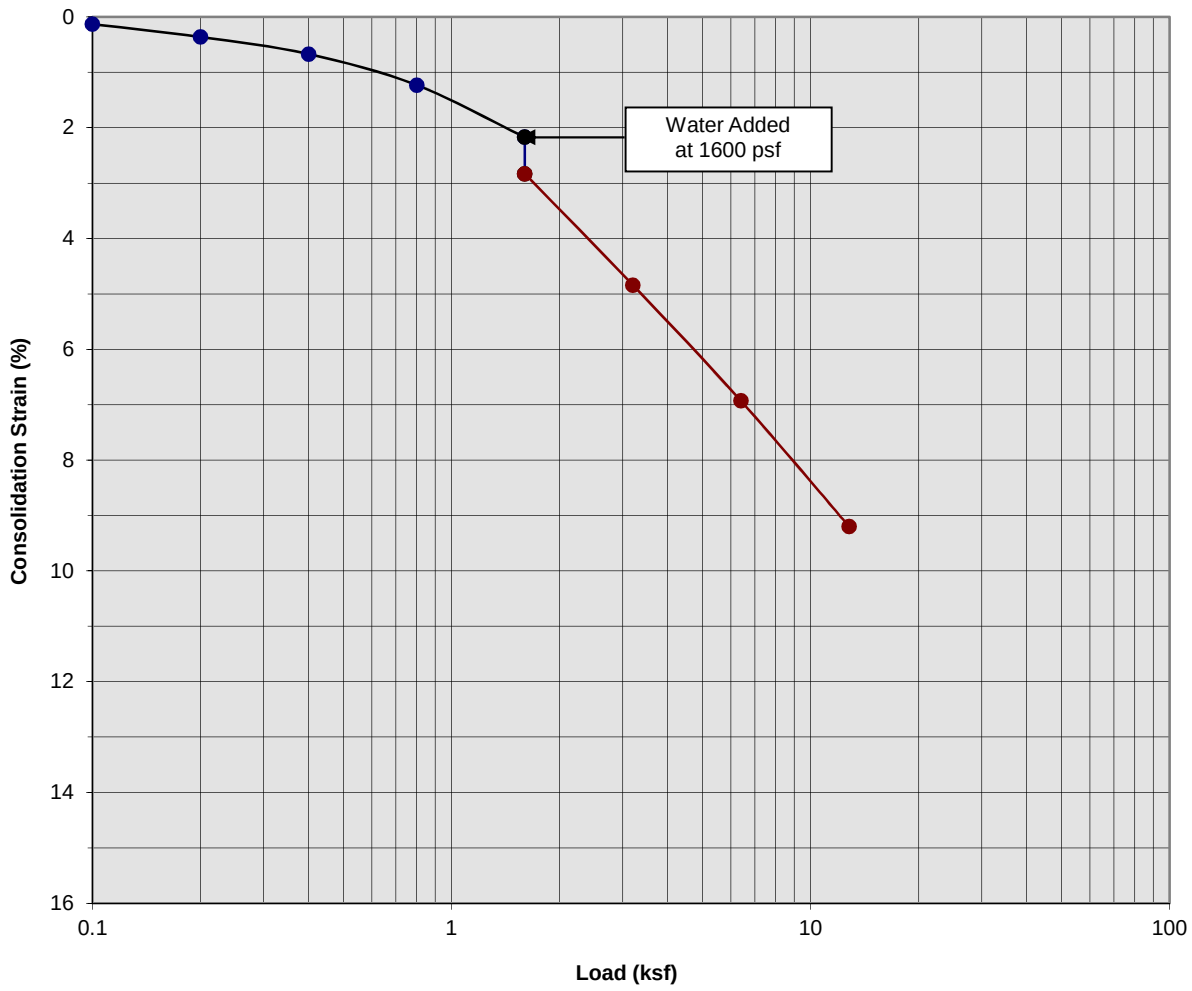
Classification: Light Brown Clayey fine Sand, trace medium Sand, trace Silt

Boring Number:	B-12	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	5 to 6	Initial Dry Density (pcf)	109.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.09

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



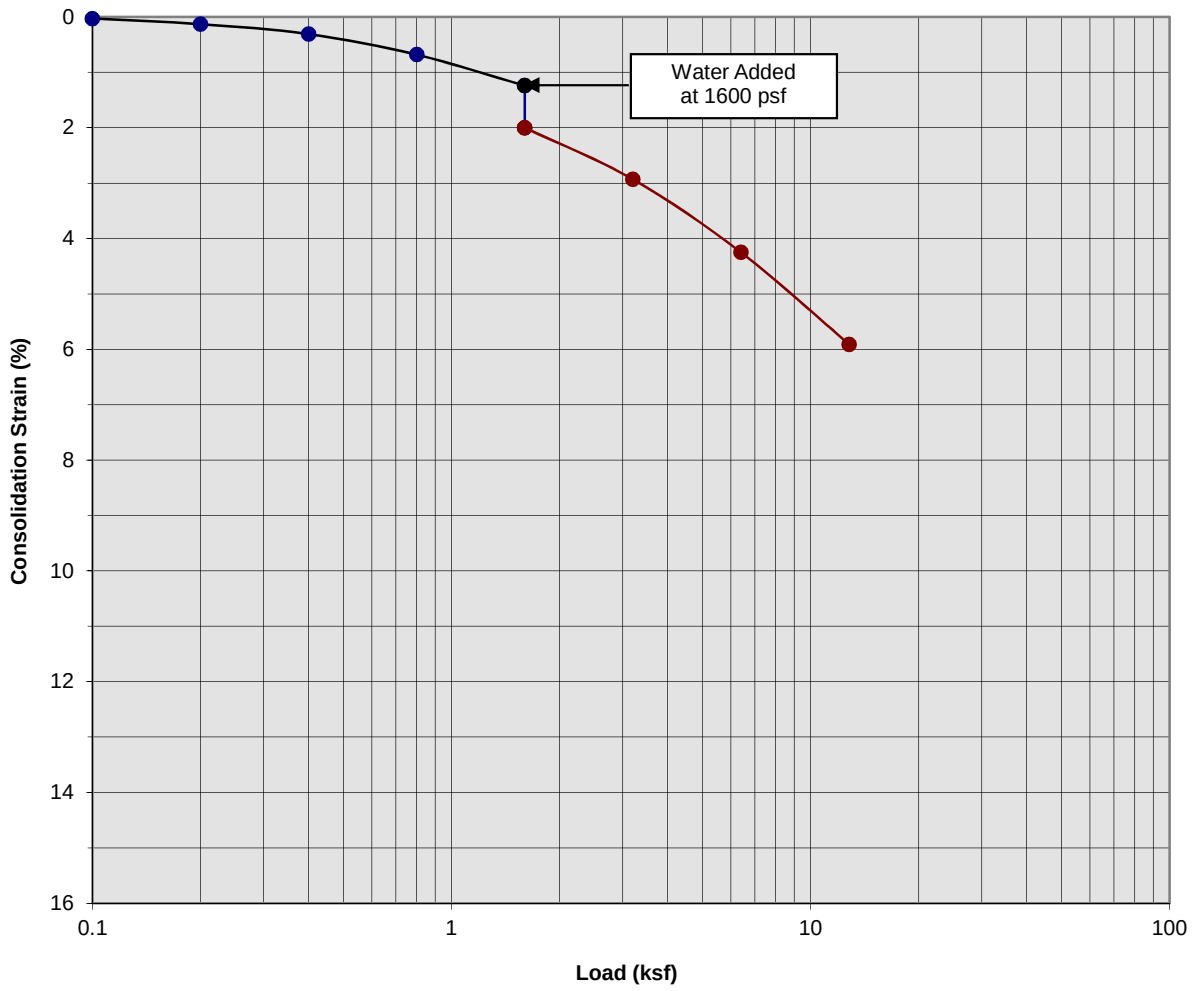
Classification: Red Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt

Boring Number:	B-12	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	7 to 8	Initial Dry Density (pcf)	113.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.66

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Clayey fine Sand, trace medium Sand, trace to little Silt

Boring Number:	B-12	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	117.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.76

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 4

SoCalGeo
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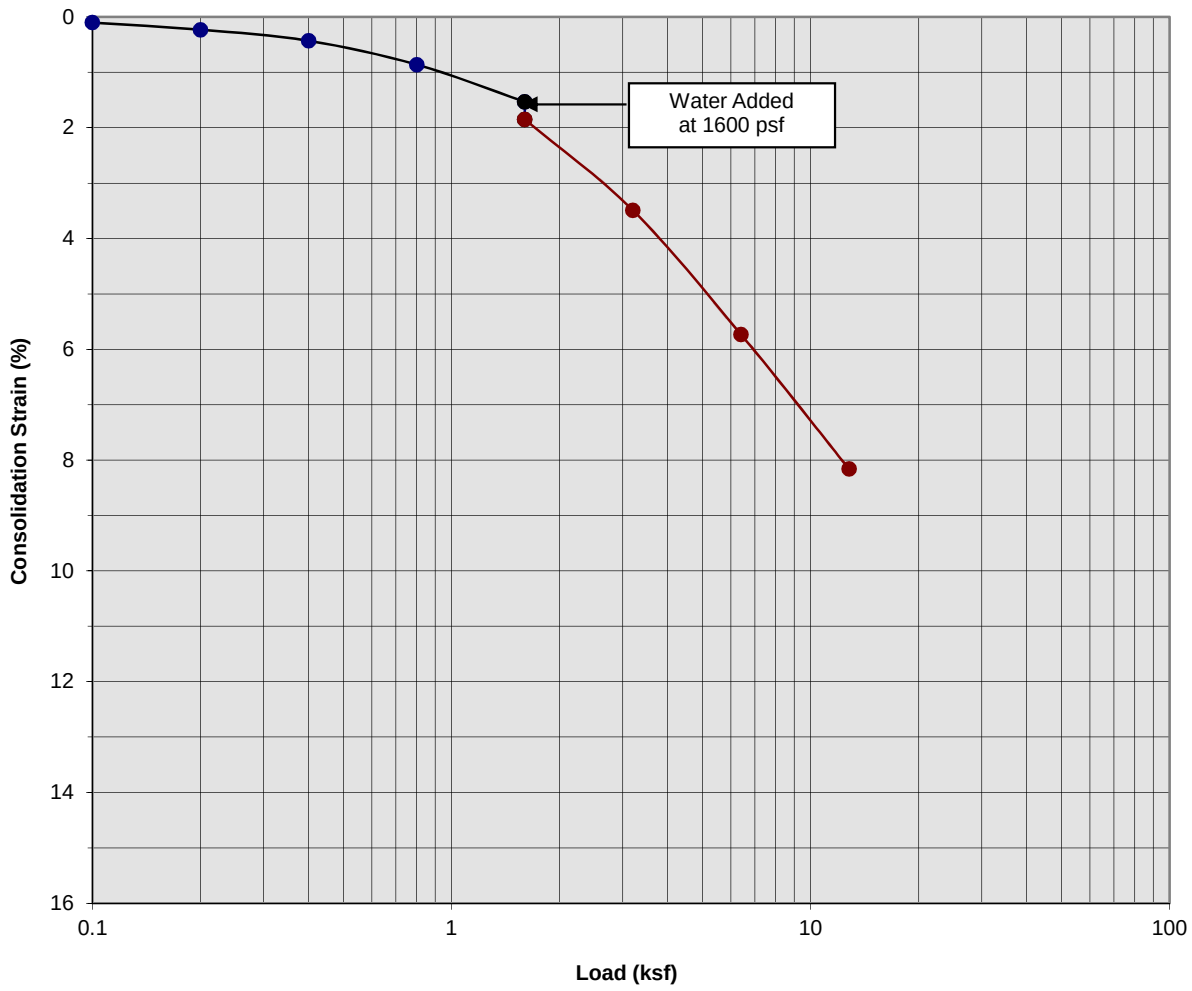
Consolidation/Collapse Test Results



Classification: Brown Clayey fine to medium Sand, trace coarse Sand, trace to little Silt

Boring Number:	B-15	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	110.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.32

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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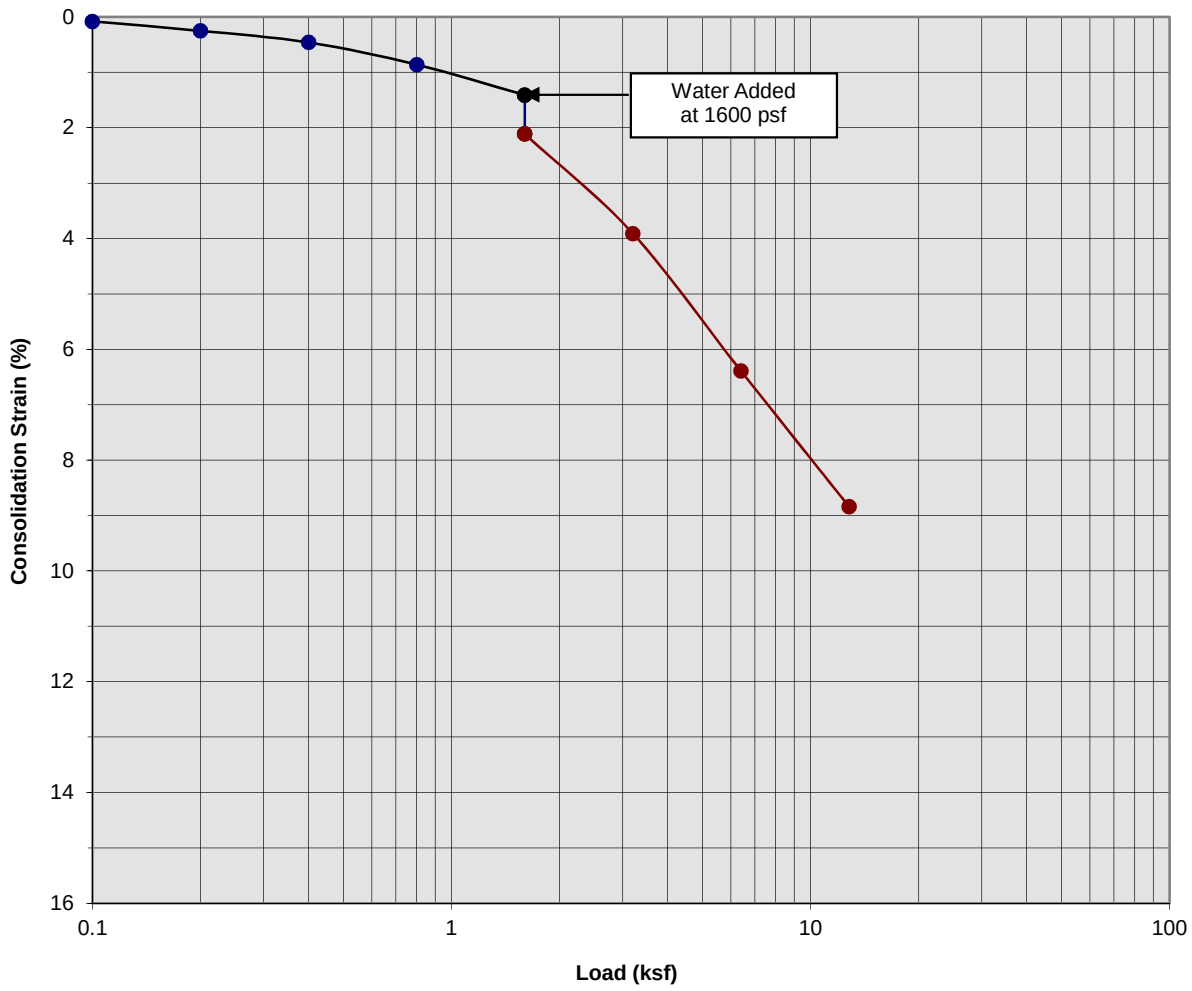
Consolidation/Collapse Test Results



Classification: Brown Clayey fine to medium Sand, trace coarse Sand, trace to little Silt

Boring Number:	B-15	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	5 to 6	Initial Dry Density (pcf)	112.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.70

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 6

SoCalGeo
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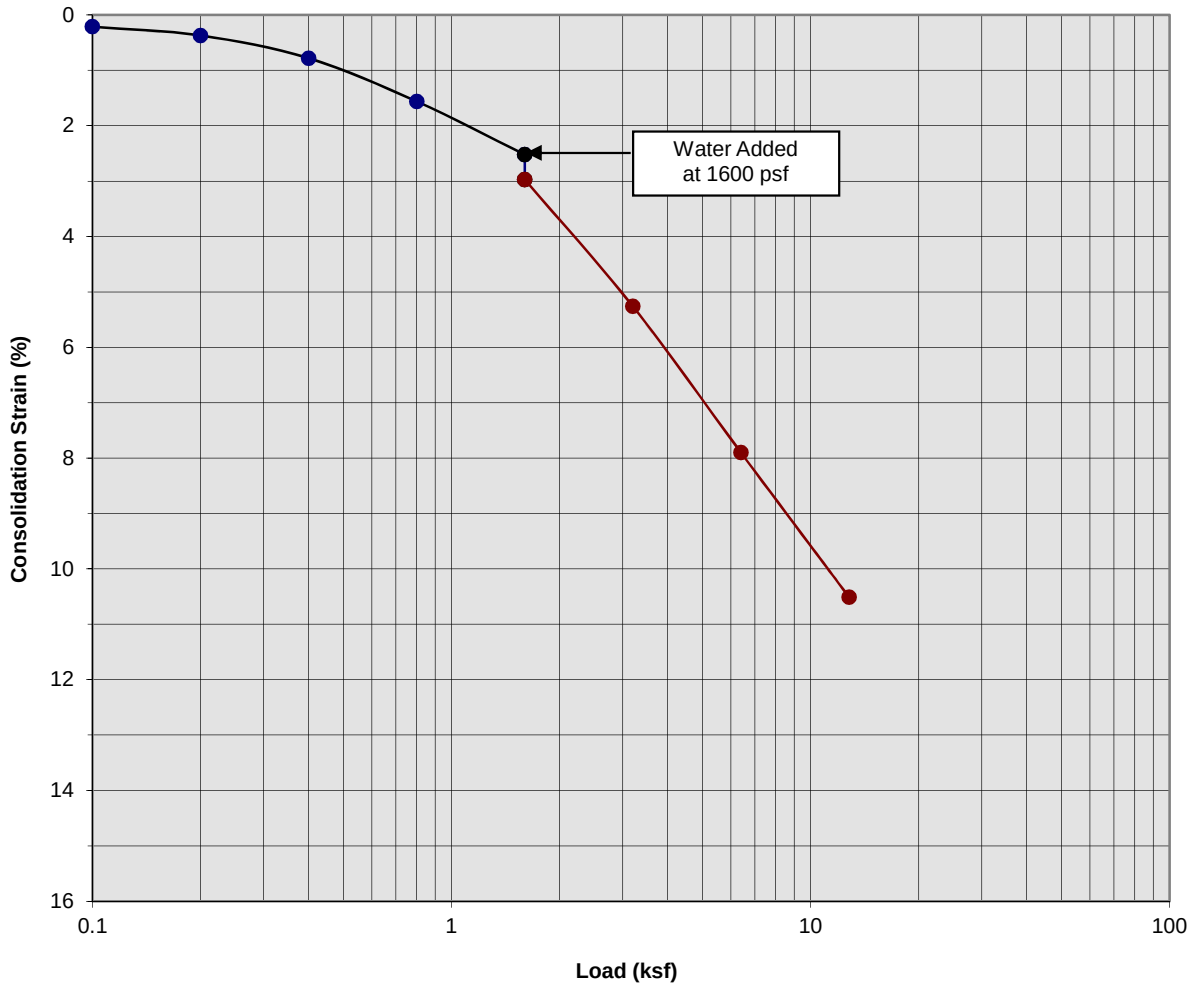
Consolidation/Collapse Test Results



Classification: Orange Brown Clayey fine Sand, trace medium to coarse Sand, trace Silt

Boring Number:	B-15	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	7 to 8	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	129.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.45

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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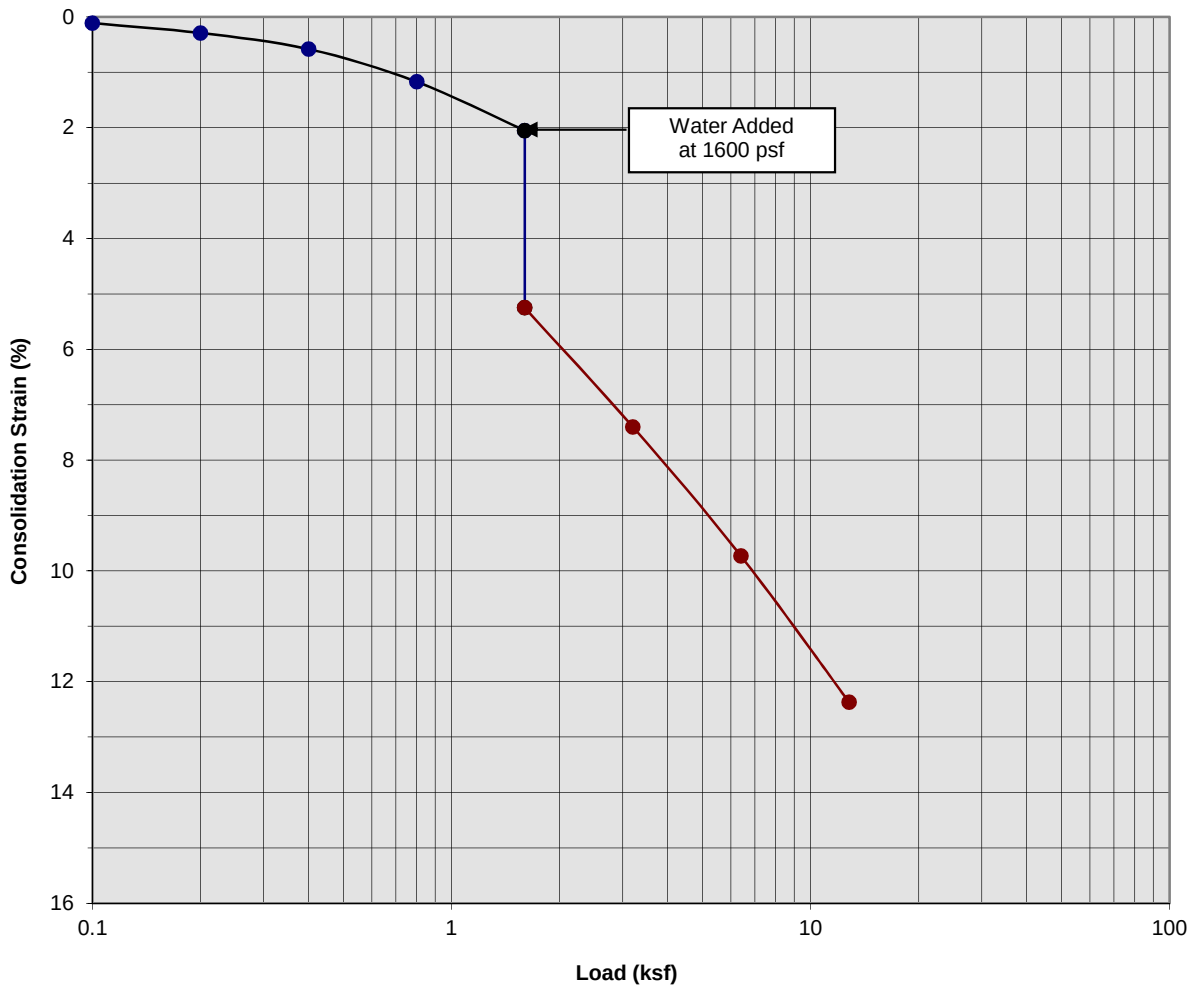
Consolidation/Collapse Test Results



Classification: Orange Brown Clayey fine Sand, trace medium to coarse Sand, trace Silt

Boring Number:	B-15	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	9 to 10	Initial Dry Density (pcf)	102.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	116.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.20

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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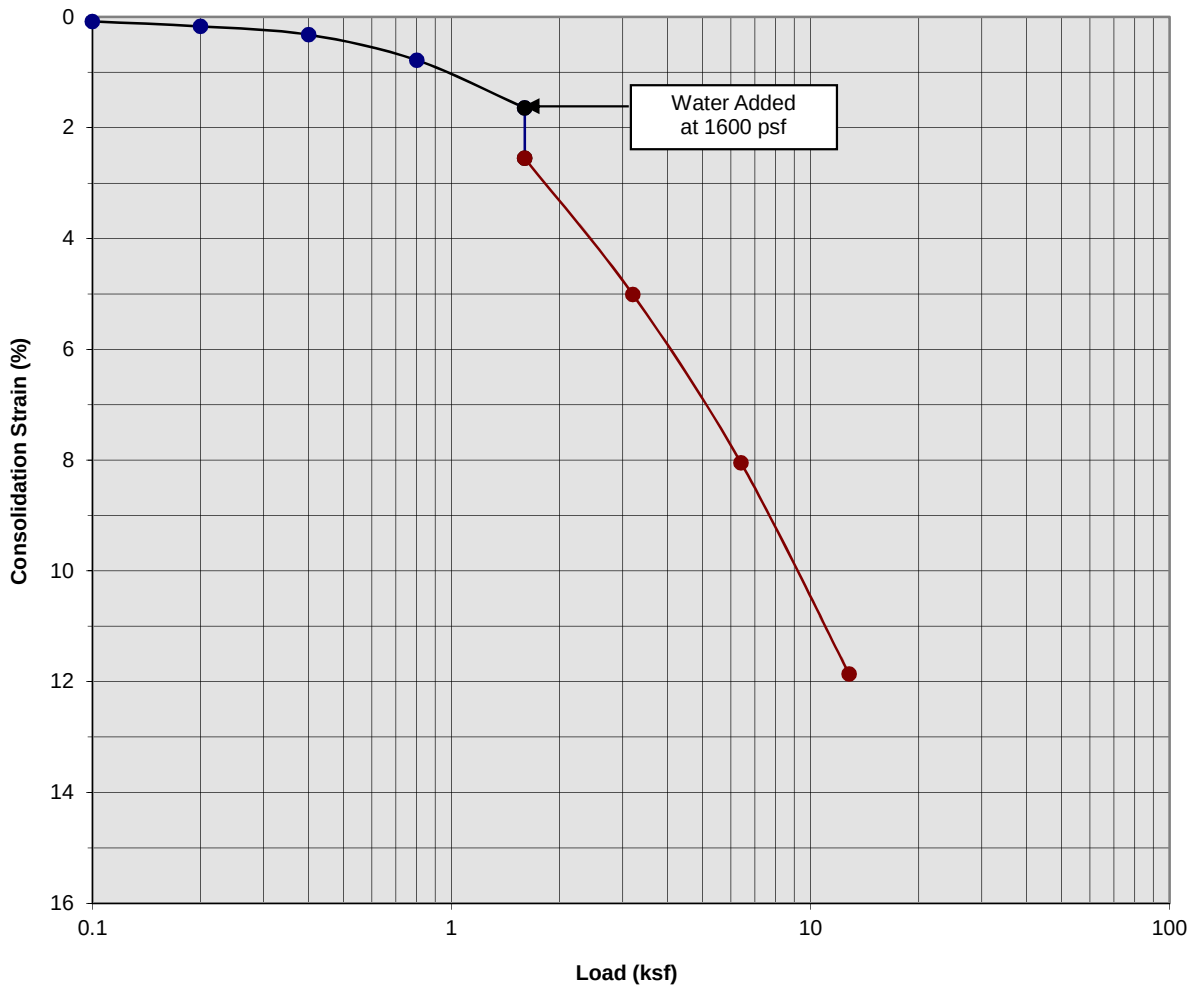
Consolidation/Collapse Test Results



Classification: Light Brown Silty fine Sand, trace medium Sand, trace Clay

Boring Number:	B-18	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	1 to 2	Initial Dry Density (pcf)	105.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.91

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 9

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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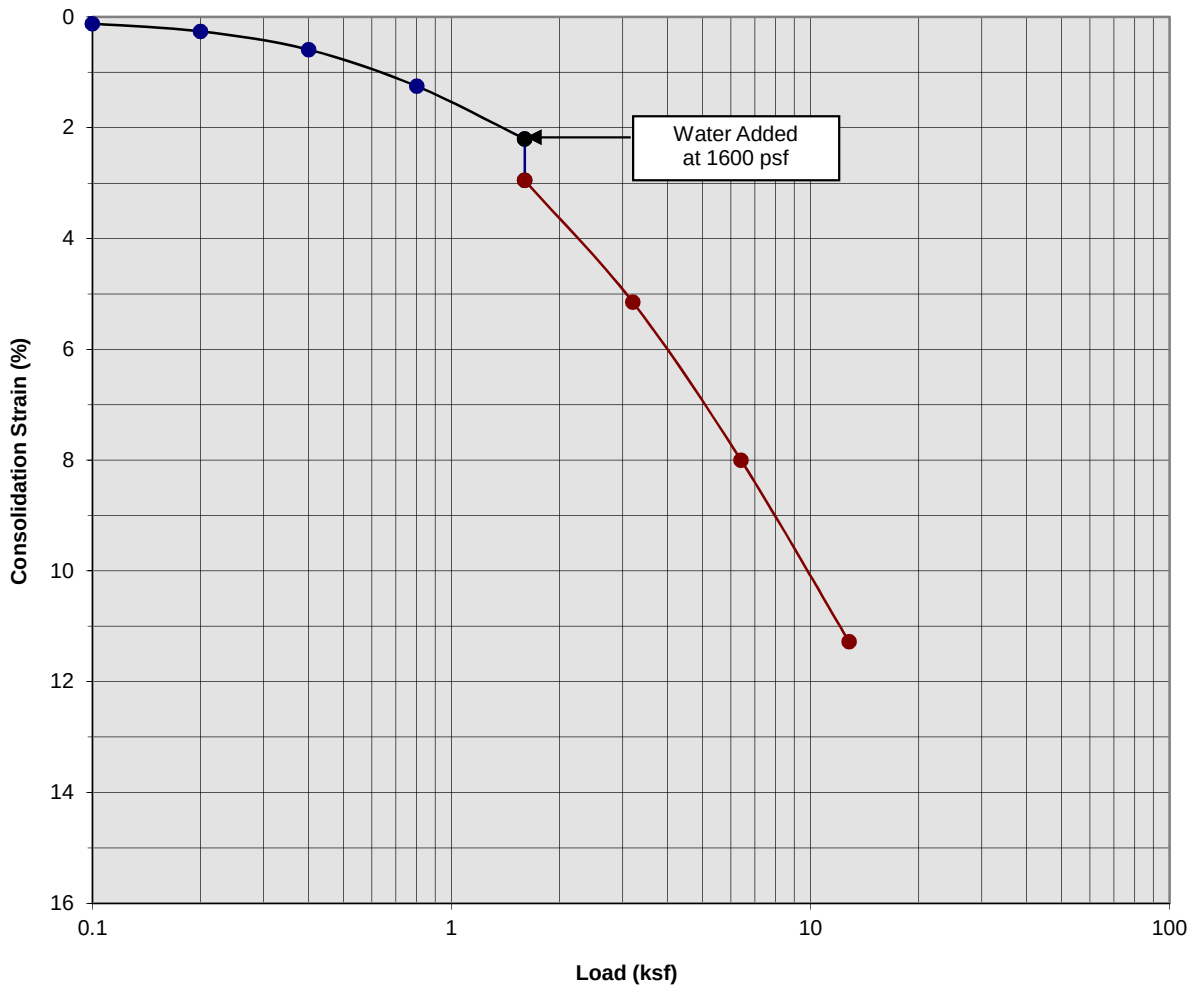
Consolidation/Collapse Test Results



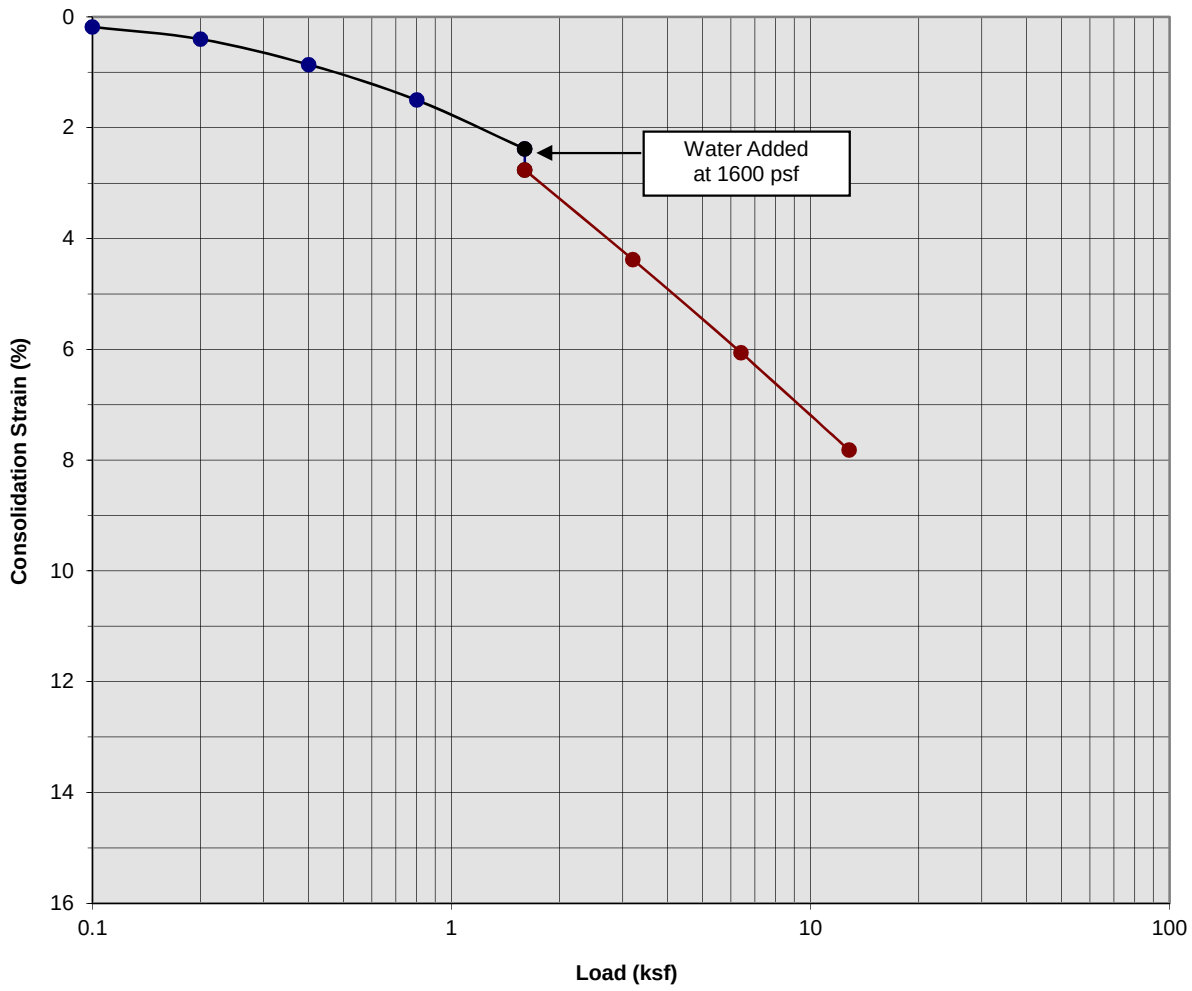
Classification: Brown Clayey fine to medium Sand, little coarse Sand, trace Silt

Boring Number:	B-18	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	5 to 6	Initial Dry Density (pcf)	104.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.75

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 10

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown fine to coarse Sand, trace Clay, trace to little Silt, trace fine Gravel

Boring Number:	B-18	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	97.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	105.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.38

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 11

SoCalGeo
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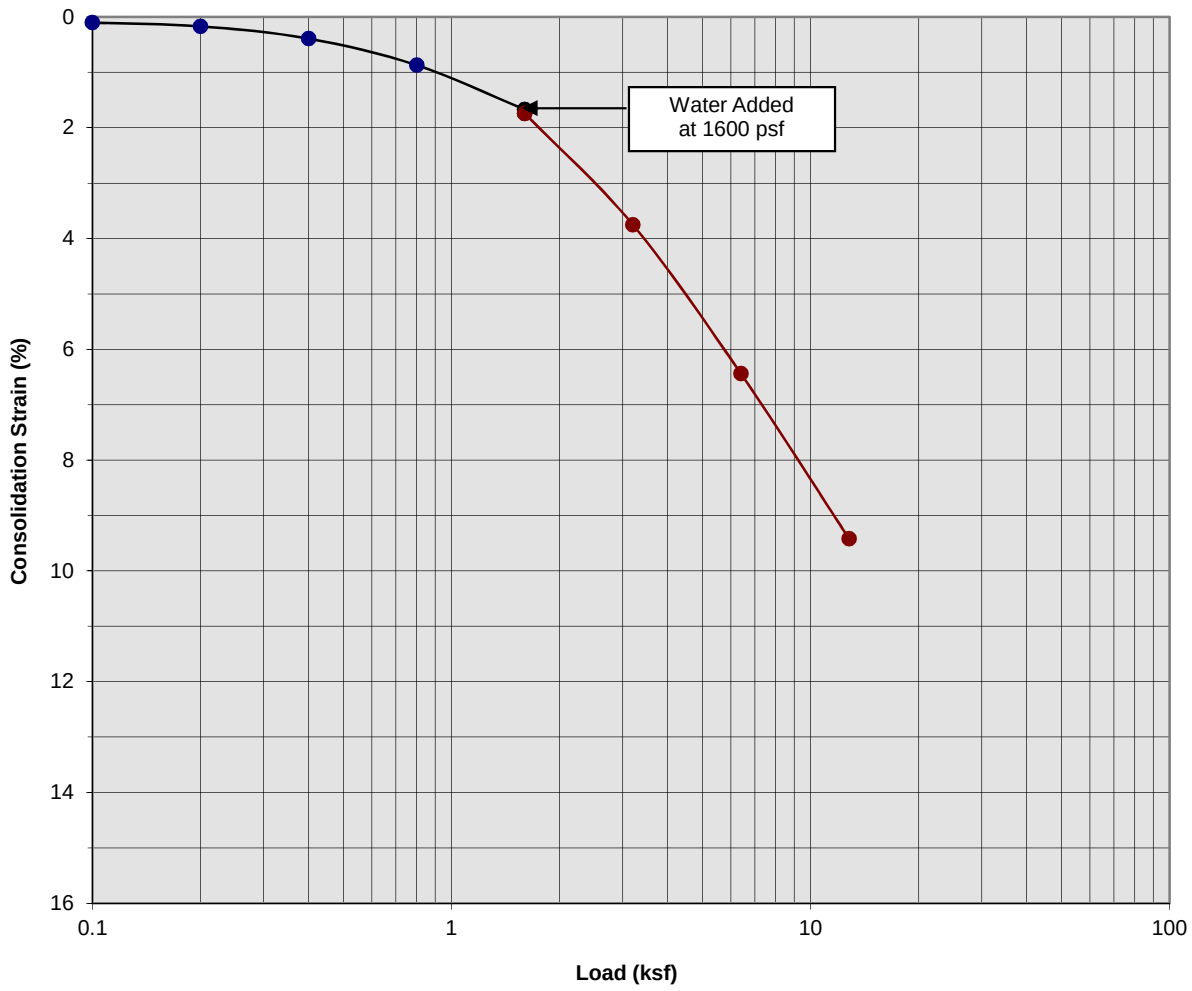
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand

Boring Number:	B-18	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	9 to 10	Initial Dry Density (pcf)	105.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	116.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.07

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 12

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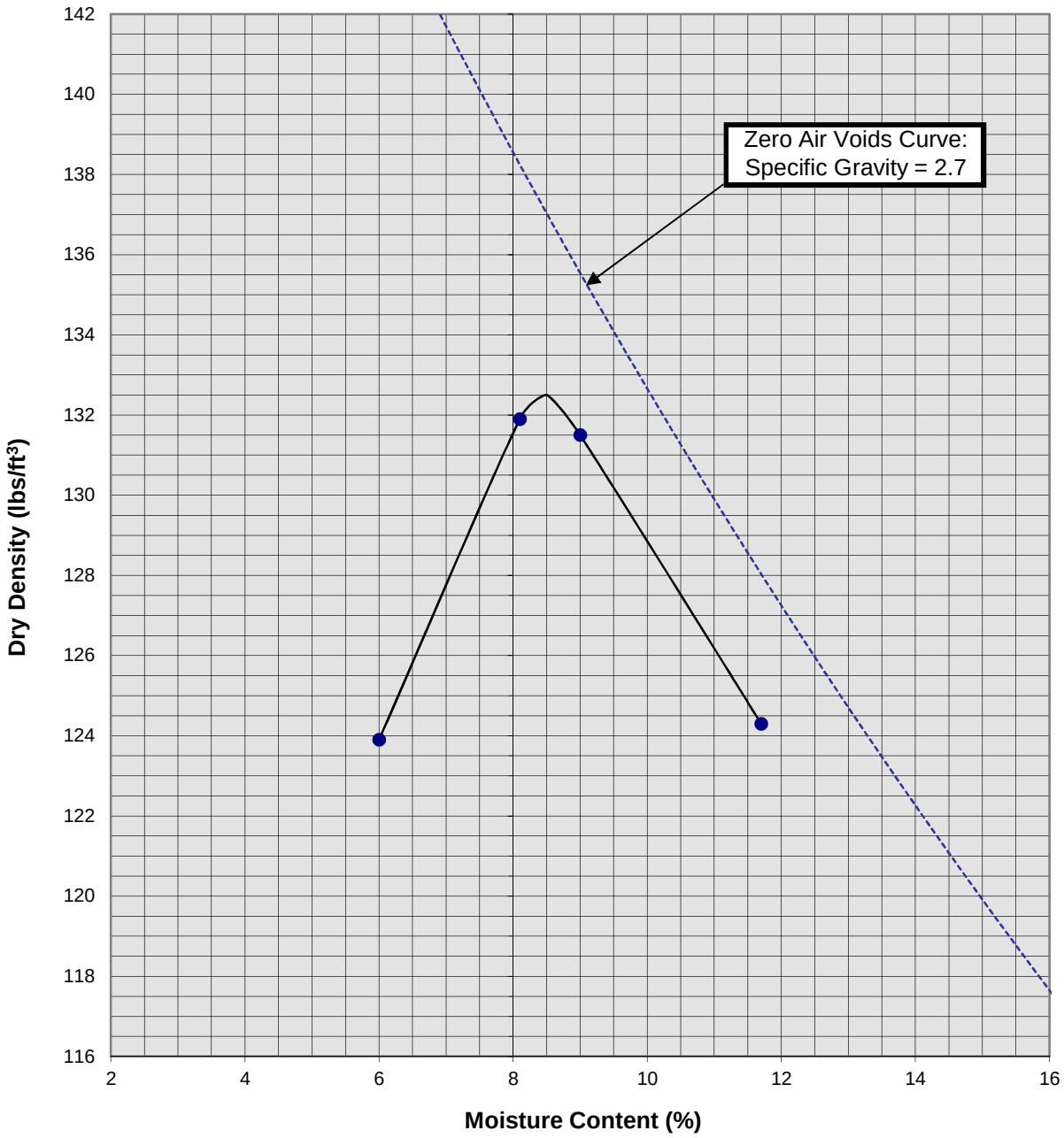
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-4 @ 0 to 5'
Optimum Moisture (%)	8.5
Maximum Dry Density (pcf)	132.5
Soil Classification	Light Red Brown Clayey fine Sand

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Moreno Valley, California
Project No. 15G204

PLATE C-13

SoCalGeo
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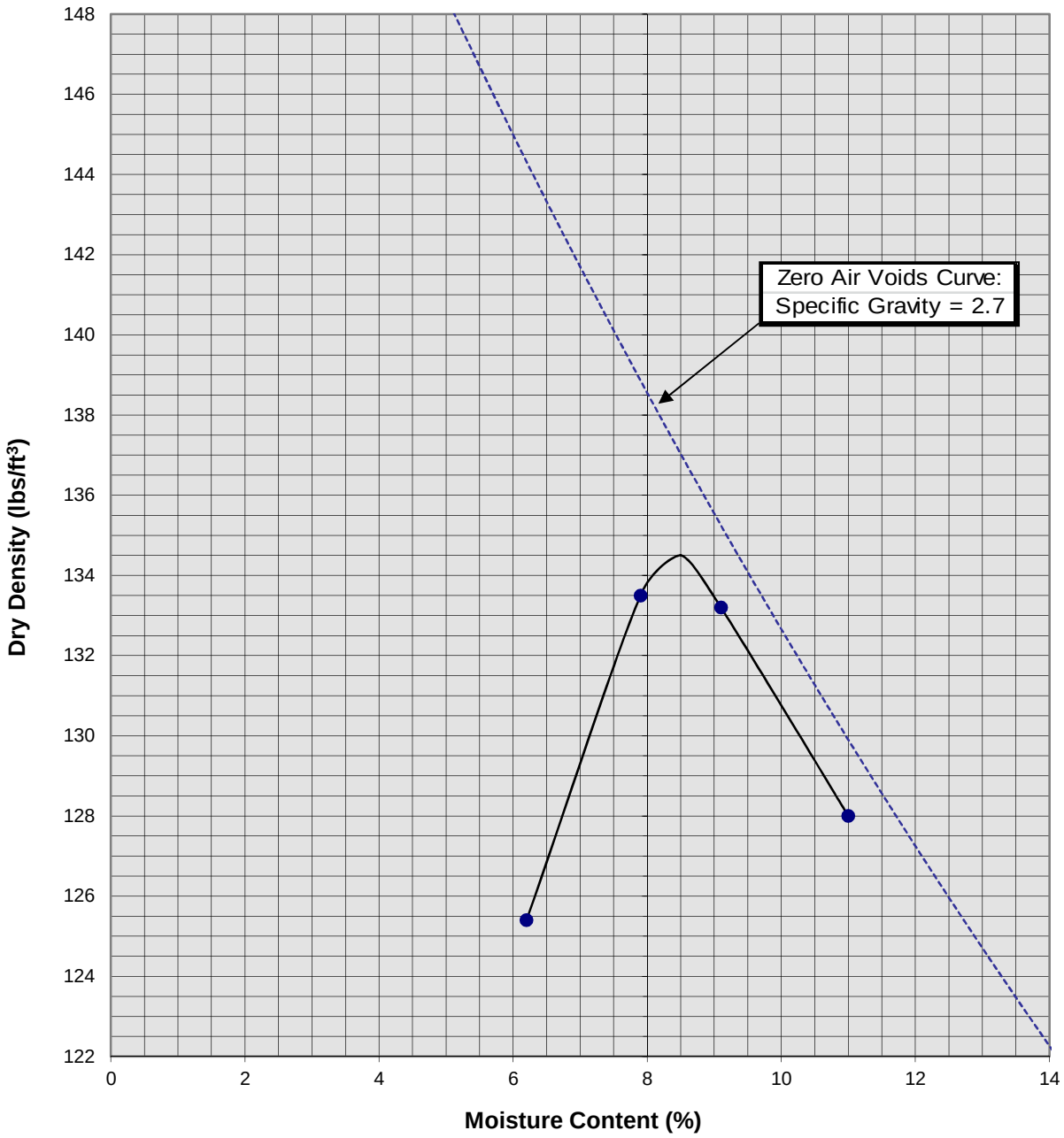
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-13 @ 0 to 5'
Optimum Moisture (%)	8.5
Maximum Dry Density (pcf)	134.5
Soil Classification	Red Brown Clayey fine to medium Sand

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Moreno Valley, California
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PLATE C-14

SoCalGeo
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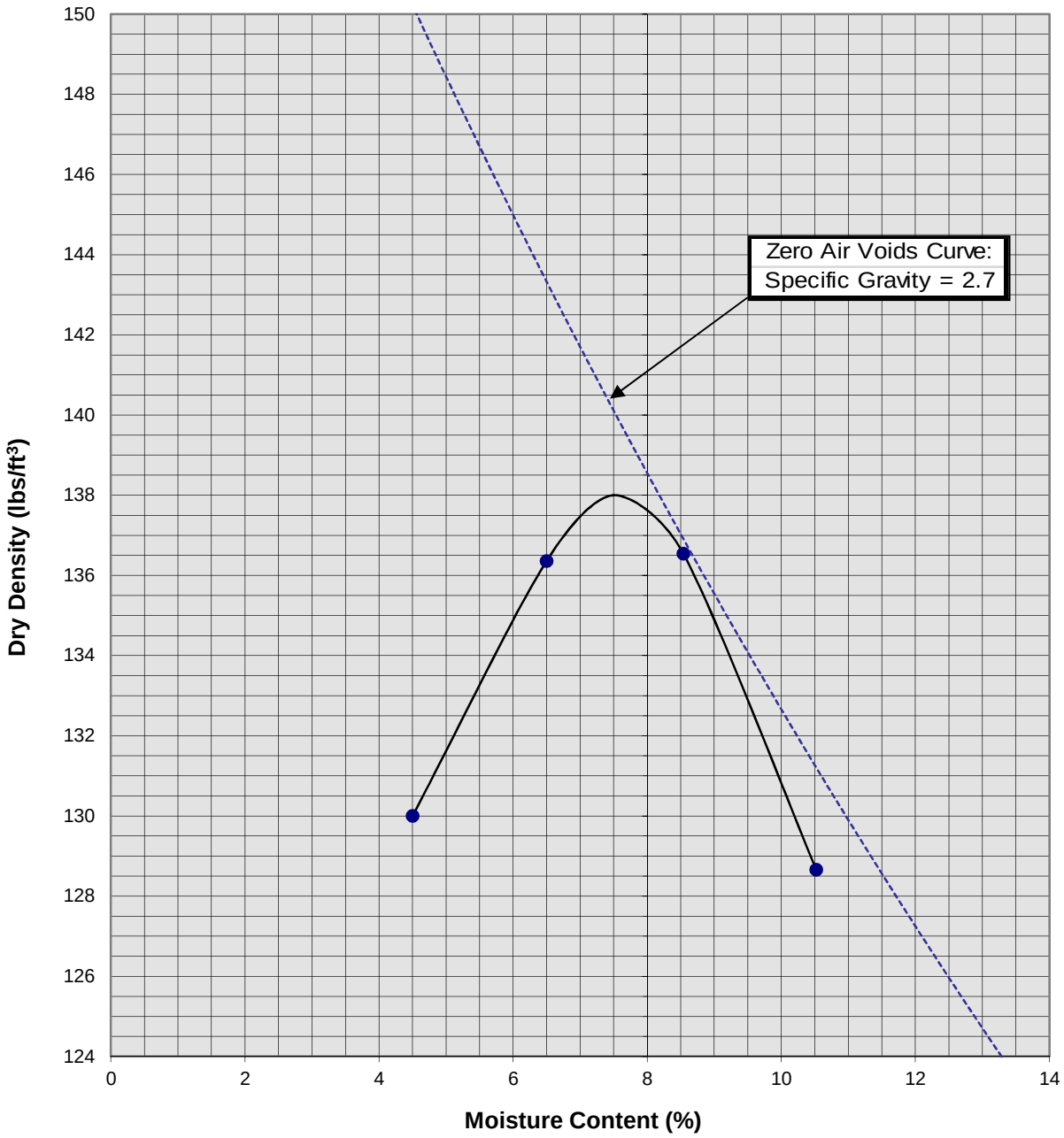
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-14 @ 0 to 5'
Optimum Moisture (%)	7.5
Maximum Dry Density (pcf)	138
Soil Classification	Dark Brown Clayey fine to medium Sand, trace Silt & fine Gravel

D2 Air Cargo Compatible Dev.
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PLATE C-15

SoCalGeo
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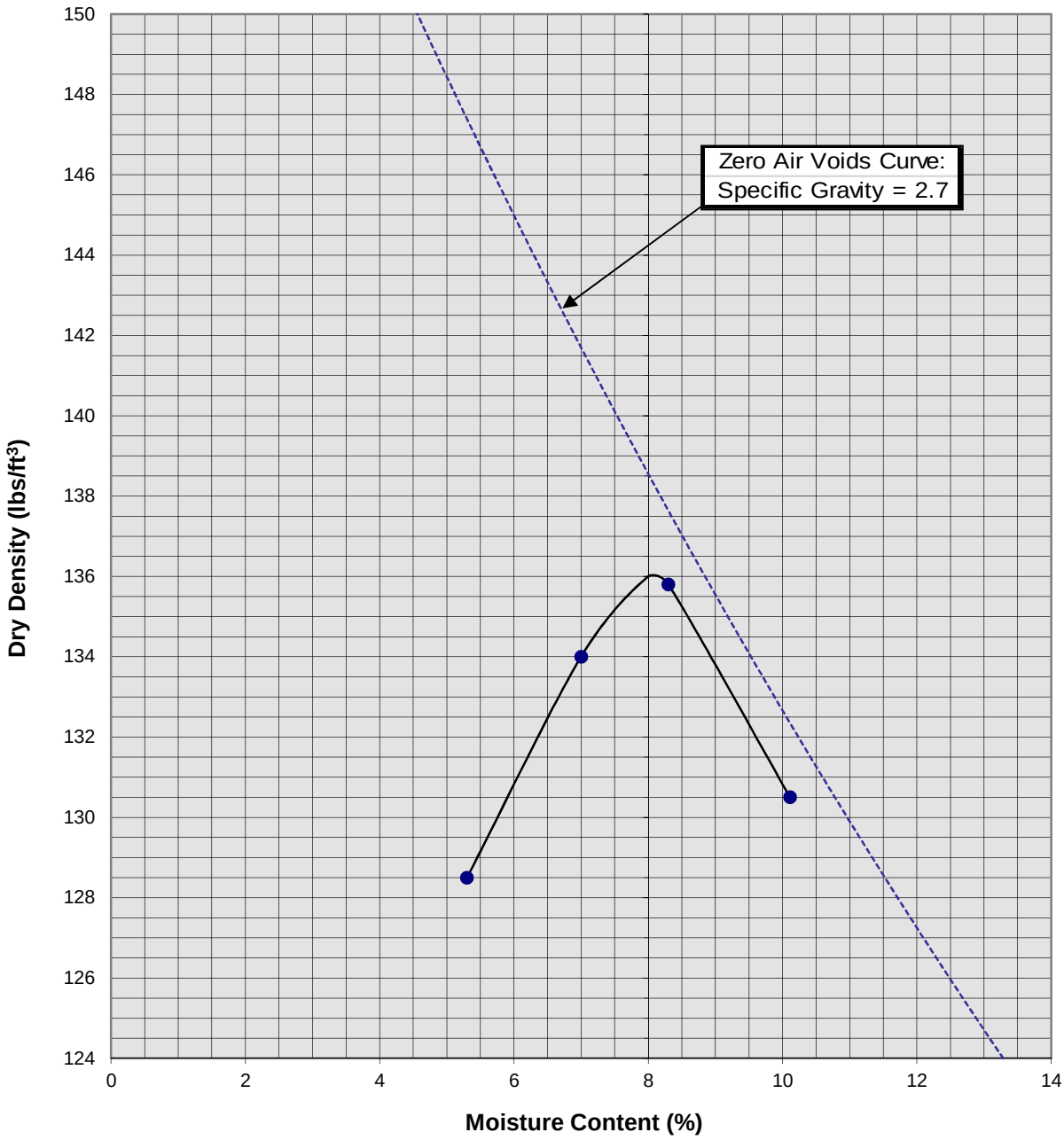
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-20 @ 0 to 5'
Optimum Moisture (%)	8
Maximum Dry Density (pcf)	135.5
Soil Classification	Brown Silty fine Sand

D2 Air Cargo Compatible Dev.
Moreno Valley, California
Project No. 15G204

PLATE C-16

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APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

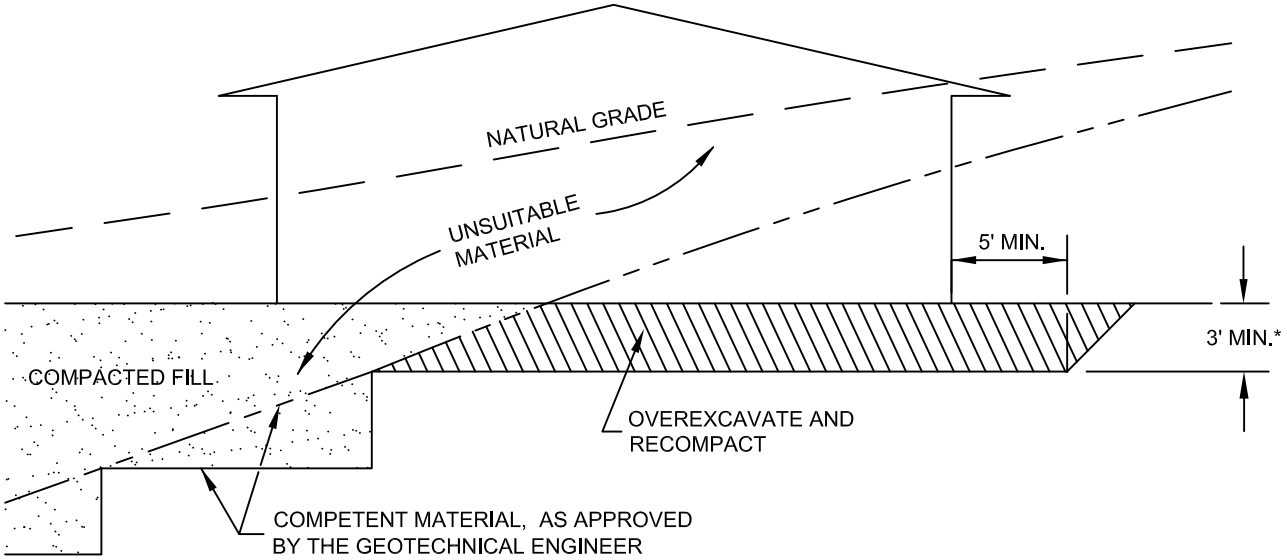
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

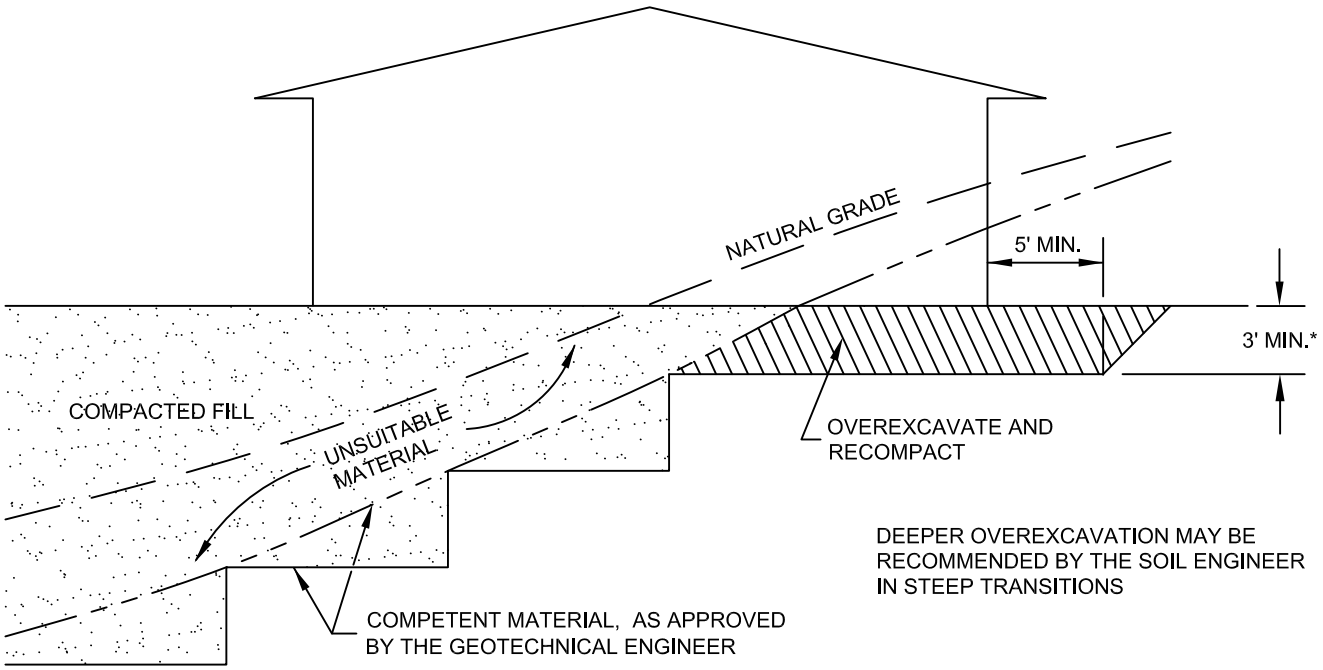
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

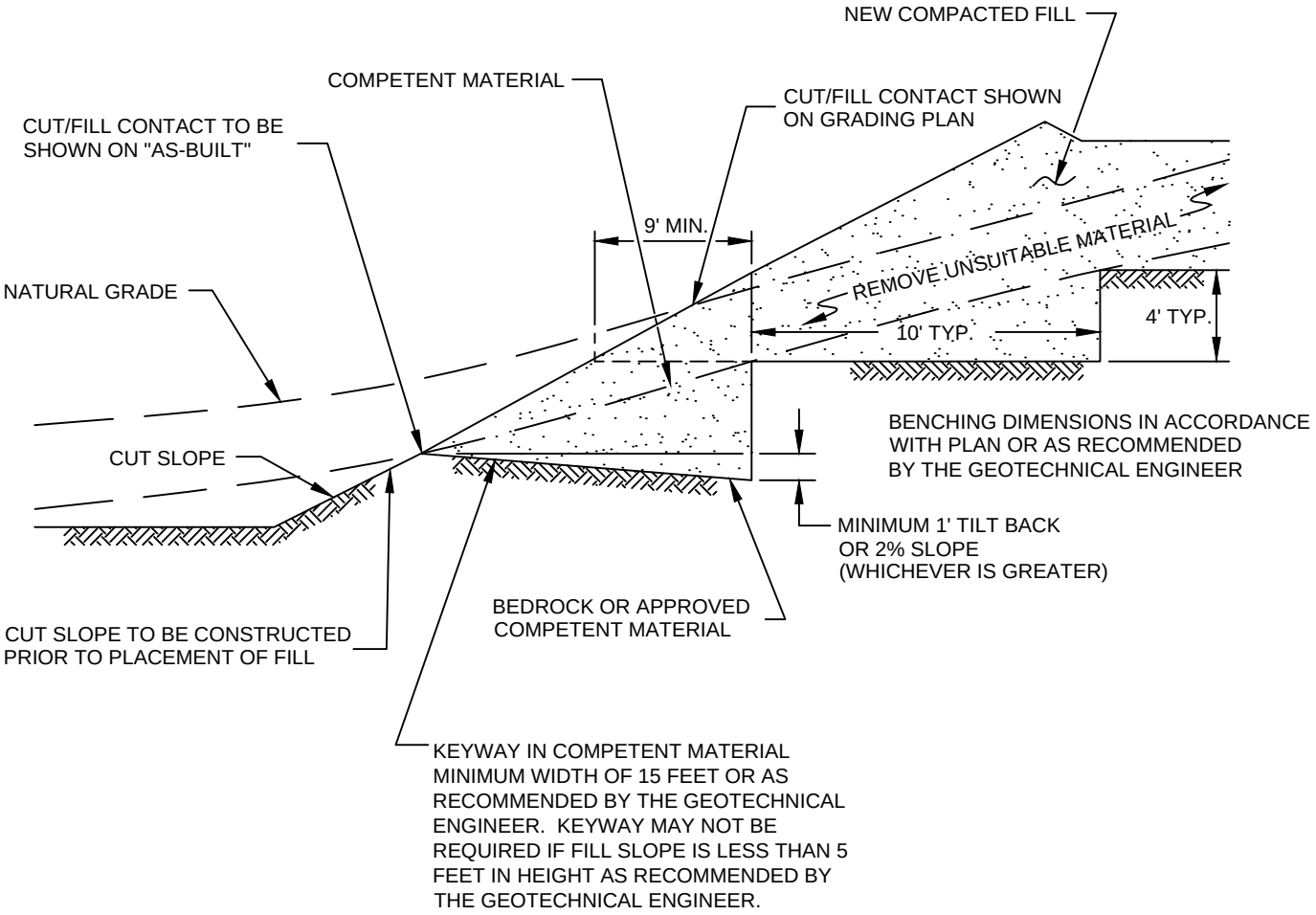
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

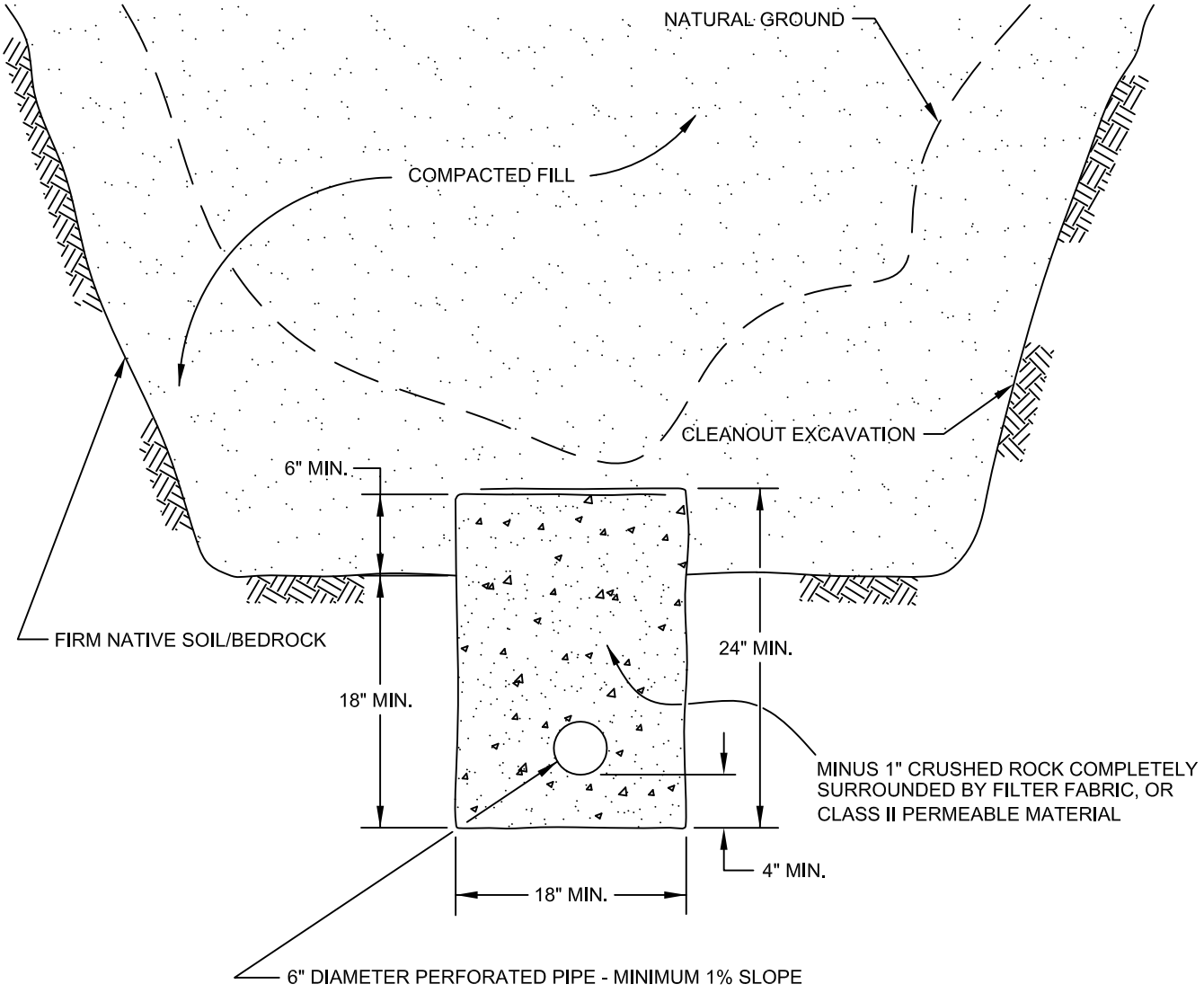
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

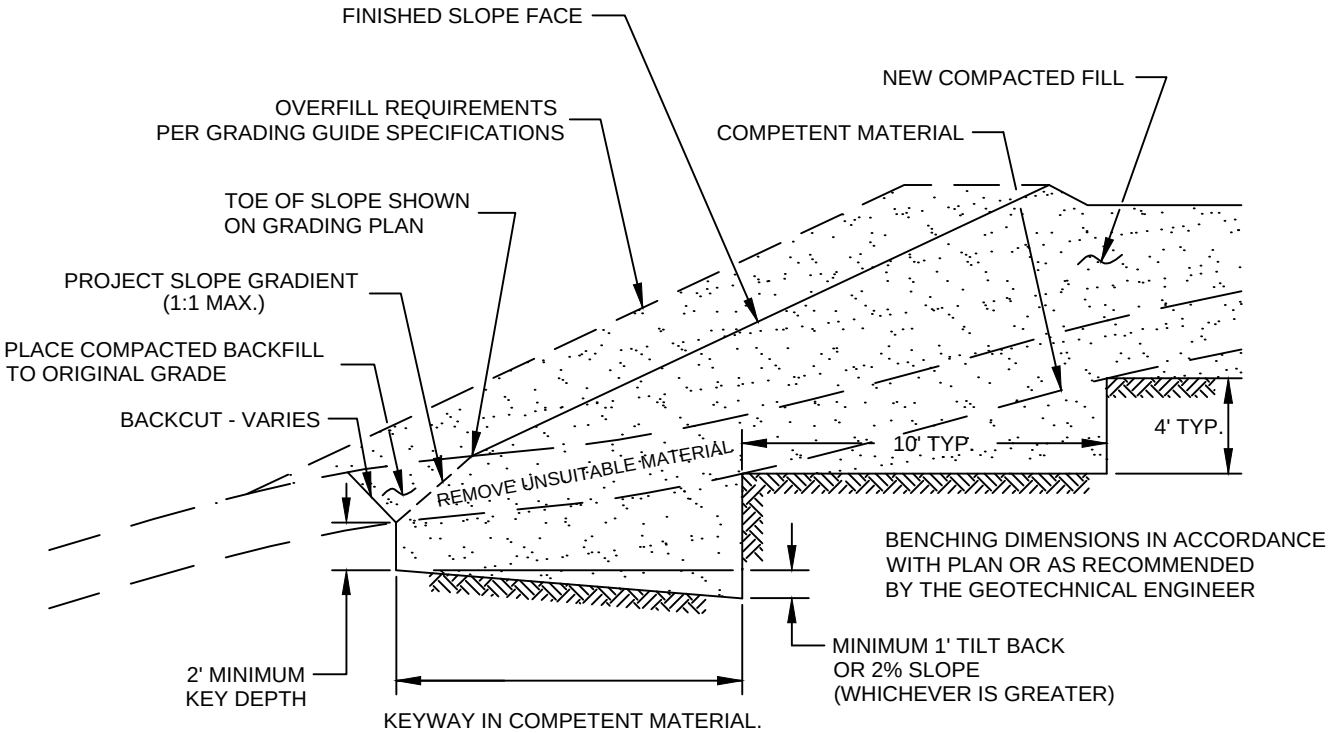
SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE
DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED WHEN NATURAL SLOPES ARE EQUAL TO OR STEEPER THAN 5:1 OR WHEN RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

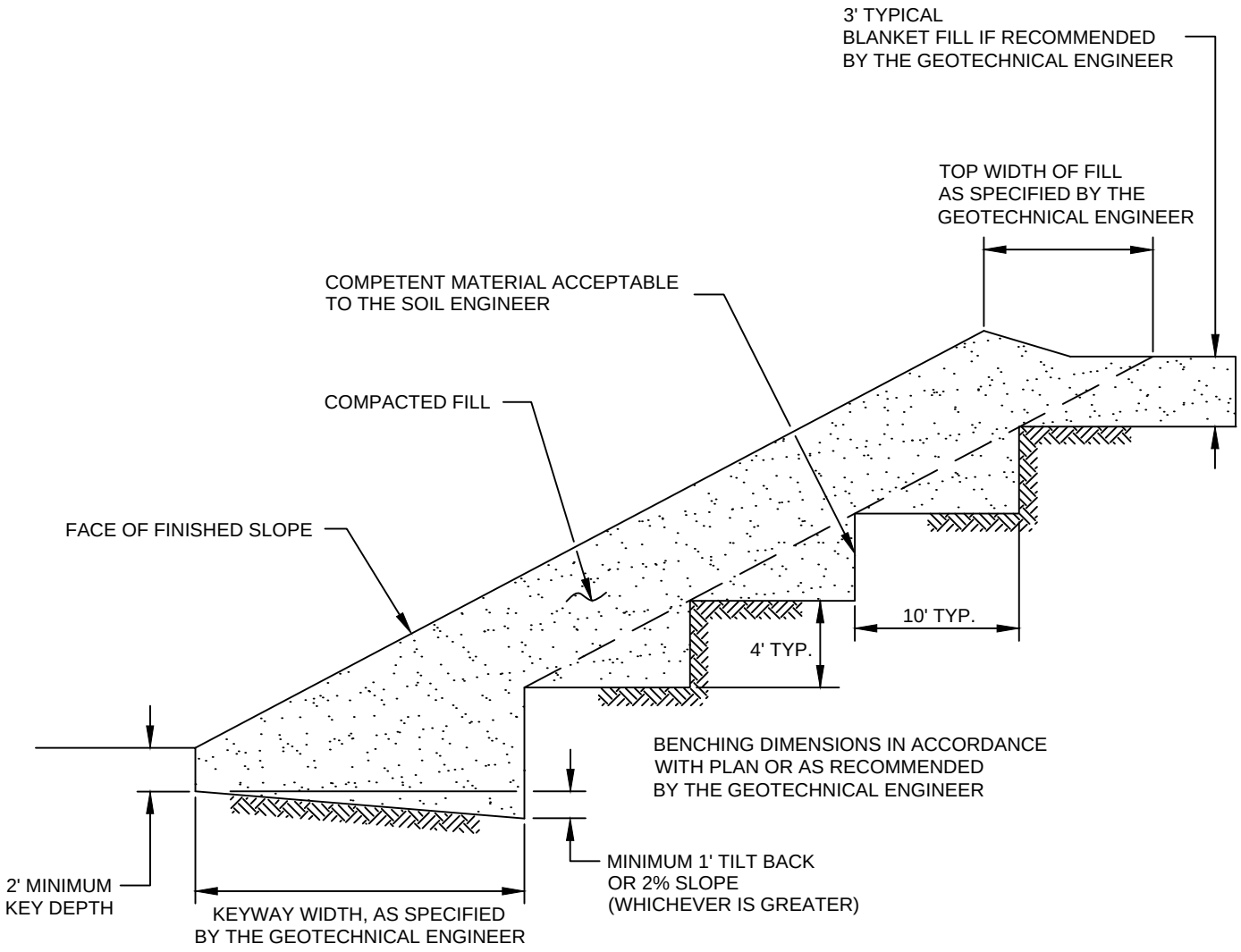
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

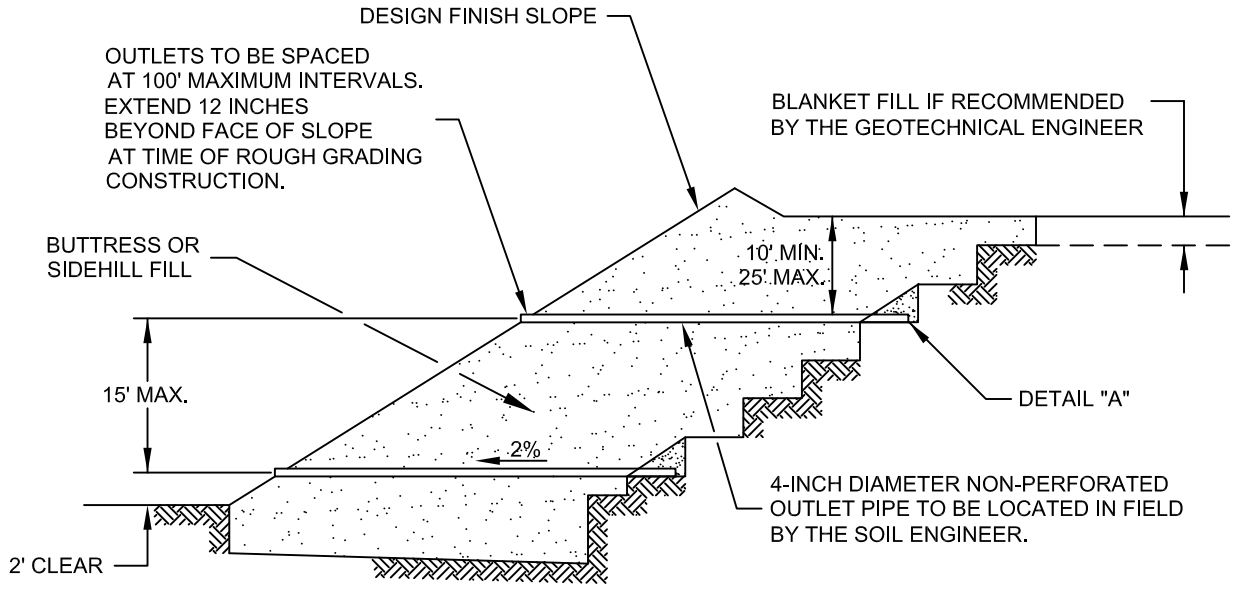
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



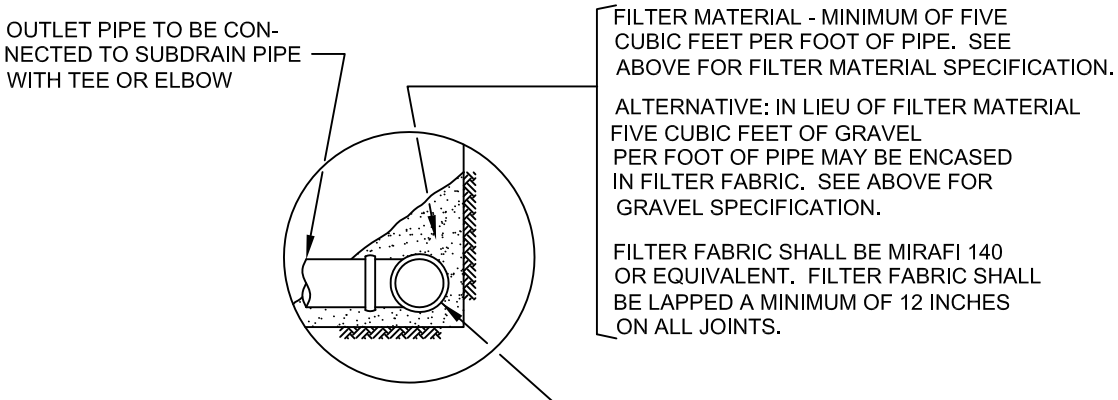
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

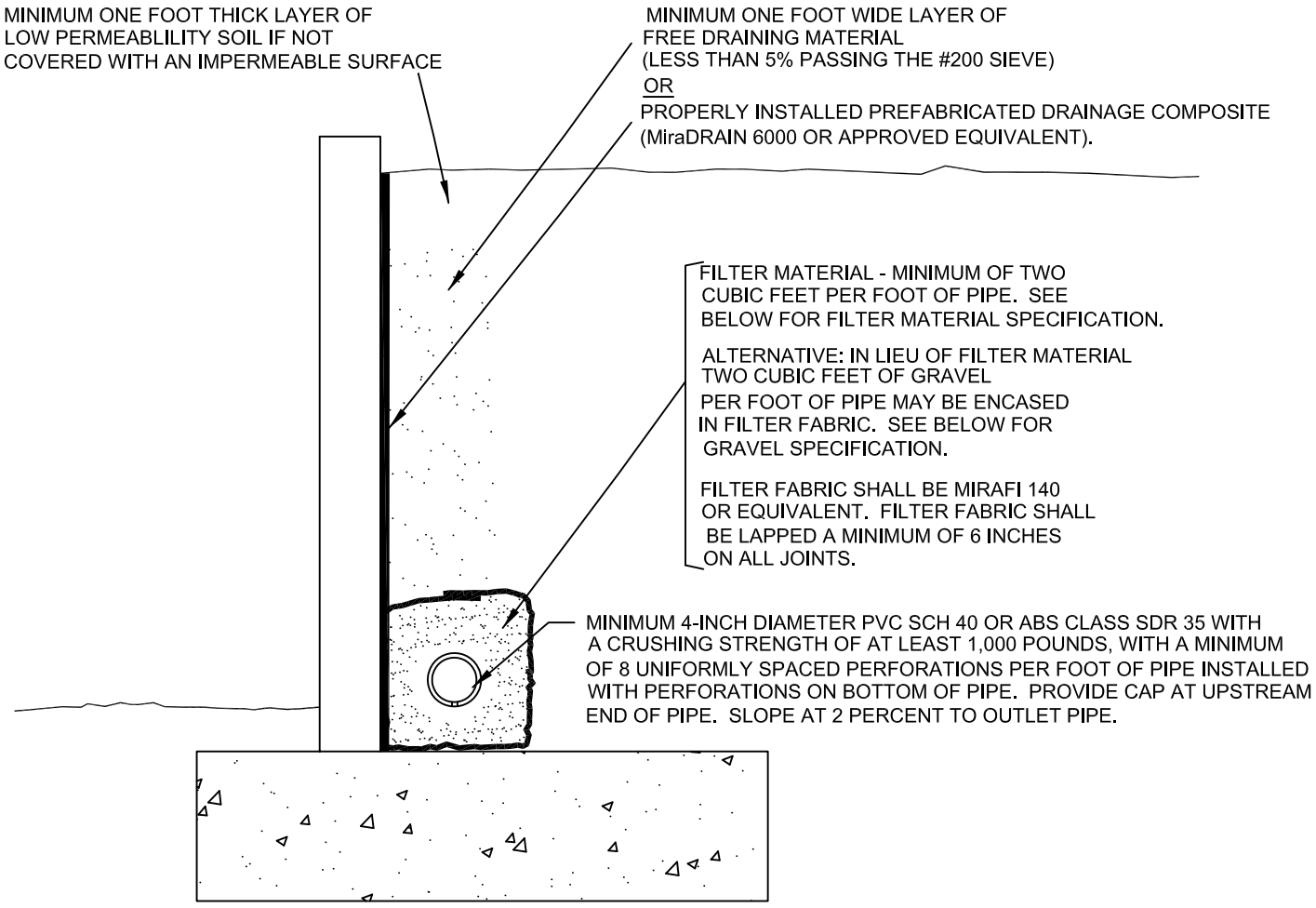
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

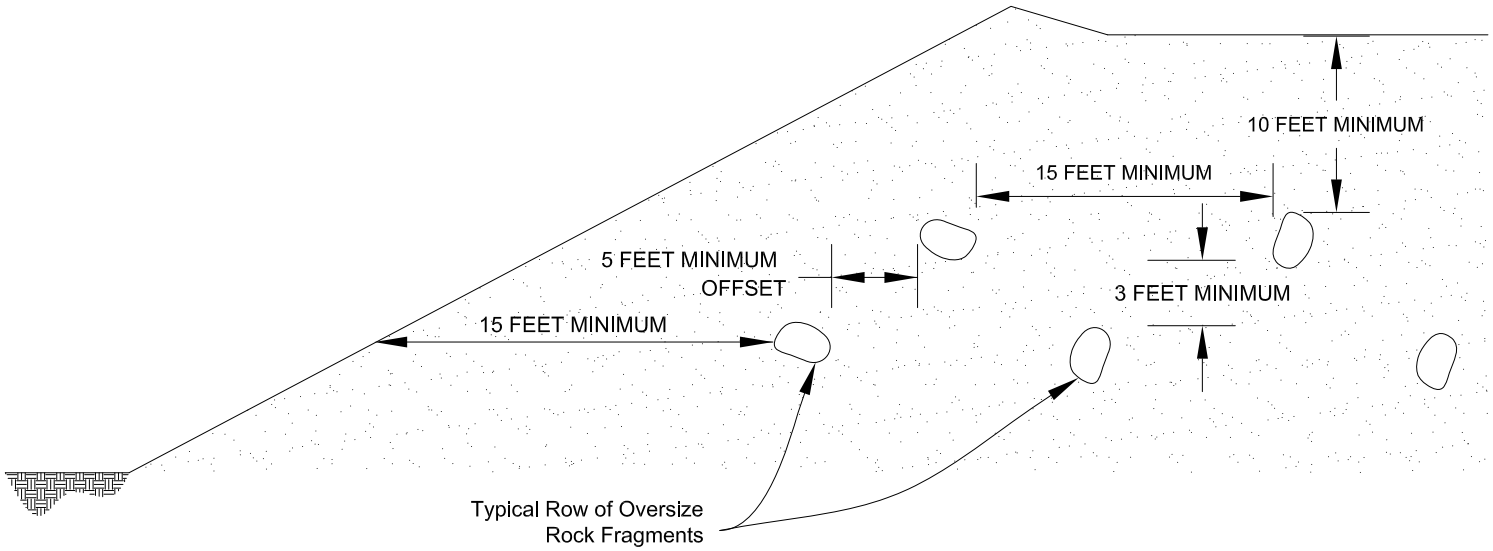
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

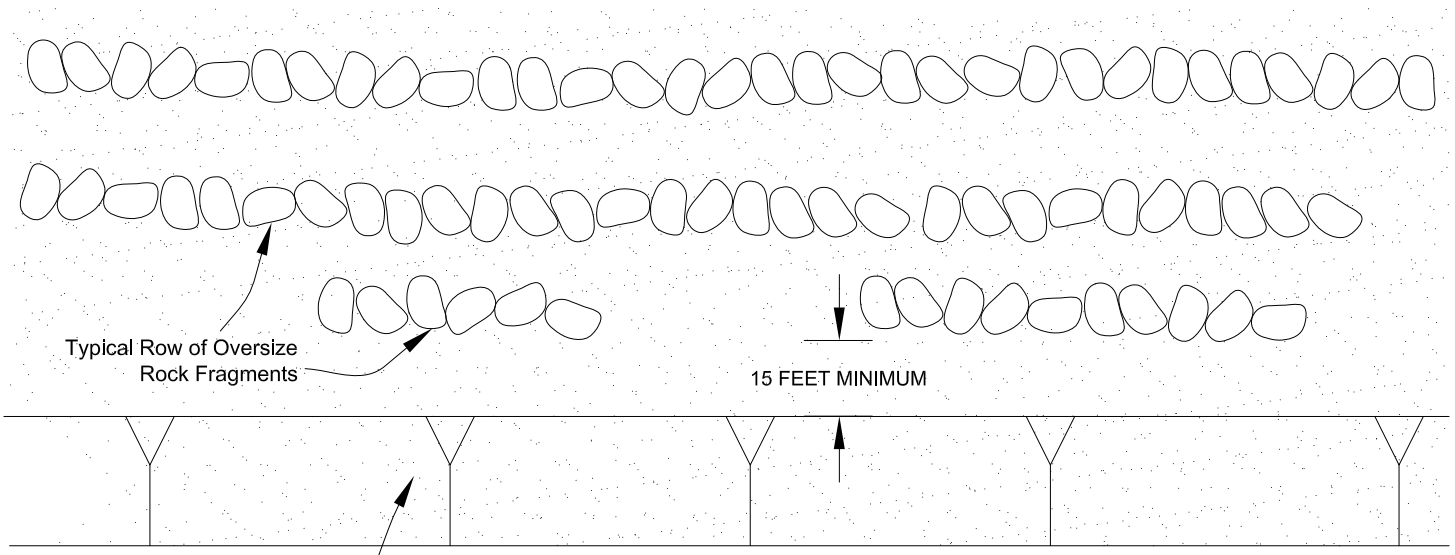
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

USGS Design Maps Summary Report

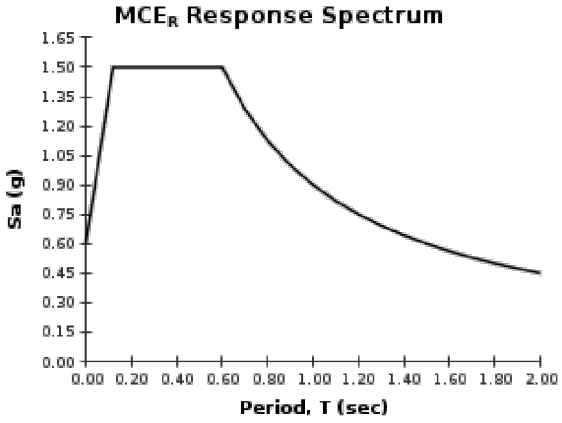
User–Specified Input

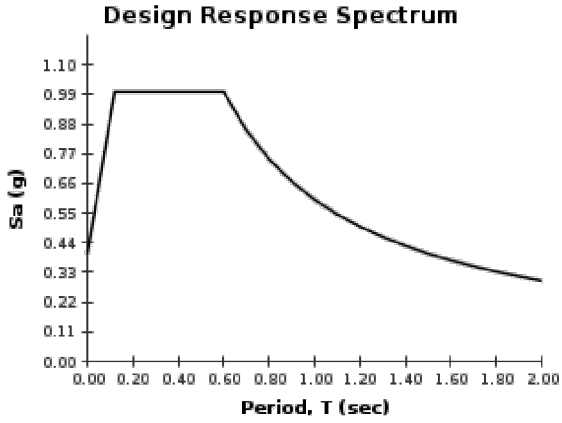
Report Title	D2 Air Cargo Compatible Development Wed November 18, 2015 23:19:47 UTC
Building Code Reference Document	ASCE 7-10 Standard (which utilizes USGS hazard data available in 2008)
Site Coordinates	33.87653°N, 117.26065°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

USGS–Provided Output

S_S =	1.500 g	S_{MS} =	1.500 g	S_{DS} =	1.000 g
S_1 =	0.600 g	S_{M1} =	0.900 g	S_{D1} =	0.600 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

SEISMIC DESIGN PARAMETERS
D2 AIR CARGO COMPATIBLE DEVELOPMENT
MORENO VALLEY, CALIFORNIA

DRAWN: MRM
CHKD: JAS
SCG PROJECT 15G204-1
PLATE E-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL

Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From Figure 22-7 [4] PGA = 0.500

Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.500 = 0.5$ g

Table 11.8–1: Site Coefficient F_{PGA}

Site Class	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of PGA

For Site Class = D and PGA = 0.500 g, F_{PGA} = 1.000

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

From Figure 22-17 [5] C_{RS} = 1.071

From Figure 22-18 [6] C_{R1} = 1.038

SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

MCE PEAK GROUND ACCELERATION
D2 AIR CARGO COMPATIBLE DEVELOPMENT
MORENO VALLEY, CALIFORNIA

DRAWN: MRM
CHKD: JAS
SCG PROJECT 15G204-1
PLATE E-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX F

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	23 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-1		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	9	120		1.3	1.05	1.15	1.43	0.75	15.1	15.1	1020	1020	1020	0.99	0.99	1.08	0.16	0.17	N/A	N/A	Above Water Table
19.5	17	22	19.5	17	120	18	1.3	1.05	1.27	0.96	0.95	27.0	31.1	2340	2184	2340	0.95	0.97	0.99	0.56	0.54	0.33	1.64	Non-Liquefiable
24.5	22	24.5	23.3	33	120		1.3	1.05	1.3	0.94	0.95	52.3	52.3	2790	2400	2774	0.94	0.97	0.96	2.00	1.86	0.35	5.24	Non-Liquefiable
24.5	24.5	27	25.8	33	120	33	1.3	1.05	1.3	0.94	0.95	52.1	57.6	3090	2544	2918	0.93	0.97	0.94	2.00	1.83	0.37	4.98	Non-Liquefiable
29.5	27	32	29.5	26	120		1.3	1.05	1.3	0.89	0.95	38.9	38.9	3540	2760	3134	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	35	120		1.3	1.05	1.3	0.90	1	56.2	56.2	4140	3048	3422	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	38	120		1.3	1.05	1.3	0.90	1	60.8	60.8	4740	3336	3710	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	41	120		1.3	1.05	1.3	0.90	1	65.6	65.6	5340	3624	3998	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	56	120		1.3	1.05	1.3	0.98	1	97.7	97.7	5820	3854	4229	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-1

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	15.1	0.0	15.1	N/A	0.27	0.75	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	27.0	4.1	31.1	1.64	0.04	-0.16	0.01	5.00		0.000		0.00	Non-Liquefiable
24.5	22	24.5	23.3	52.3	0.0	52.3	5.24	0.00	-1.78	0.00	2.50		0.000		0.00	Non-Liquefiable
24.5	24.5	27	25.8	52.1	5.5	57.6	4.98	0.00	-2.22	0.00	2.50		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	38.9	0.0	38.9	4.67	0.01	-0.72	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	56.2	0.0	56.2	4.36	0.00	-2.10	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	60.8	0.0	60.8	4.14	0.00	-2.49	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	65.6	0.0	65.6	3.98	0.00	-2.91	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	97.7	0.0	97.7	3.88	0.00	-5.85	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	23 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-4		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	9	120		1.3	1.05	1.15	1.43	0.75	15.1	15.1	1020	1020	1020	0.99	0.99	1.08	0.16	0.17	N/A	N/A	Above Water Table
19.5	17	22	19.5	26	120	25	1.3	1.05	1.3	0.97	0.95	42.7	47.8	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	19	120	14	1.3	1.05	1.29	0.90	0.95	28.5	31.4	2940	2472	2846	0.93	0.97	0.96	0.59	0.55	0.36	1.53	Non-Liquefiable
29.5	27	32	29.5	34	120		1.3	1.05	1.3	0.91	0.95	52.4	52.4	3540	2760	3134	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	52	120		1.3	1.05	1.3	0.97	1	89.8	89.8	4140	3048	3422	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	67	120		1.3	1.05	1.3	1.04	1	123.7	123.7	4740	3336	3710	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	47	120		1.3	1.05	1.3	0.93	1	78.0	78.0	5340	3624	3998	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	52	120		1.3	1.05	1.3	0.96	1	88.4	88.4	5820	3854	4229	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-4

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	15.1	0.0	15.1	N/A	0.27	0.75	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	42.7	5.1	47.8	5.77	0.00	-1.41	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	28.5	2.9	31.4	1.53	0.04	-0.18	0.01	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	52.4	0.0	52.4	4.67	0.00	-1.79	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	89.8	0.0	89.8	4.36	0.00	-5.10	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	123.7	0.0	123.7	4.14	0.00	-8.37	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	78.0	0.0	78.0	3.98	0.00	-4.01	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	88.4	0.0	88.4	3.88	0.00	-4.97	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	22 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-8		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	22	120		1.3	1.05	1.3	1.26	0.75	36.9	36.9	1020	1020	1020	0.99	0.97	1.1	1.71	1.82	N/A	N/A	Above Water Table
19.5	17	22	19.5	16	120	38	1.3	1.05	1.25	0.96	0.95	25.0	30.6	2340	2184	2340	0.95	0.97	0.99	0.52	0.50	0.33	1.52	Non-Liquefiable
24.5	22	27	24.5	22	120	13	1.3	1.05	1.3	0.92	0.95	34.0	36.5	2940	2472	2784	0.93	0.97	0.95	1.54	1.42	0.36	3.93	Non-Liquefiable
29.5	27	32	29.5	73	120		1.3	1.05	1.3	1.03	0.95	126.8	126.8	3540	2760	3072	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	41	120		1.3	1.05	1.3	0.93	1	67.8	67.8	4140	3048	3360	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	42	120		1.3	1.05	1.3	0.92	1	68.8	68.8	4740	3336	3648	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	29	120	19	1.3	1.05	1.3	0.86	1	44.1	48.4	5340	3624	3936	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	41	120		1.3	1.05	1.3	0.89	1	65.1	65.1	5820	3854	4166	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-8

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	36.9	0.0	36.9	N/A	0.02	-0.57	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	25.0	5.6	30.6	1.52	0.04	-0.13	0.01	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	34.0	2.5	36.5	3.93	0.02	-0.54	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	126.8	0.0	126.8	4.67	0.00	-8.69	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	67.8	0.0	67.8	4.36	0.00	-3.10	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	68.8	0.0	68.8	4.14	0.00	-3.19	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	44.1	4.3	48.4	3.98	0.00	-1.46	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	65.1	0.0	65.1	3.88	0.00	-2.86	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	36 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-9		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	33	120		1.3	1.05	1.3	1.18	0.75	52.0	52.0	1020	1020	1020	0.99	0.97	1.1	2.00	2.00	N/A	N/A	Above Water Table
19.5	17	22	19.5	24	120	17	1.3	1.05	1.3	0.97	0.95	39.3	43.2	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	24	120	23	1.3	1.05	1.3	0.91	0.95	36.8	41.7	2940	2472	2940	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	33	120		1.3	1.05	1.3	0.88	0.95	49.0	49.0	3540	2760	3540	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	47	120		1.3	1.05	1.3	0.93	1	77.6	77.6	4140	3048	4140	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	37	120		1.3	1.05	1.3	0.85	1	56.0	56.0	4740	3336	4522	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	47	120		1.3	1.05	1.3	0.91	1	75.9	75.9	5340	3624	4810	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	50	120		1.3	1.05	1.3	0.93	1	82.2	82.2	5820	3854	5040	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-9

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	52.0	0.0	52.0	N/A	0.00	-1.75	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	39.3	3.9	43.2	5.77	0.00	-1.05	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	36.8	4.9	41.7	5.10	0.01	-0.93	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	49.0	0.0	49.0	4.67	0.00	-1.51	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	77.6	0.0	77.6	4.36	0.00	-3.98	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	56.0	0.0	56.0	4.14	0.00	-2.09	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	75.9	0.0	75.9	3.98	0.00	-3.82	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	82.2	0.0	82.2	3.88	0.00	-4.40	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500	(g)
Project Location	Moreno Valley	Design Magnitude	7.58	
Project Number	15G204	Historic High Depth to Groundwater	17	(ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	23	(ft)
		Borehole Diameter	6	(in)
Boring No.	B-13			

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	22	120		1.3	1.05	1.3	1.26	0.75	36.9	36.9	1020	1020	1020	0.99	0.97	1.1	1.71	1.82	N/A	N/A	Above Water Table
19.5	17	22	19.5	18	120	18	1.3	1.05	1.291	0.97	0.95	29.1	33.2	2340	2184	2340	0.95	0.97	0.99	0.79	0.76	0.33	2.28	Non-Liquefiable
24.5	22	27	24.5	22	120	37	1.3	1.05	1.3	0.91	0.95	33.9	39.5	2940	2472	2846	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	19	120	27	1.3	1.05	1.274	0.87	0.95	27.4	32.6	3540	2760	3134	0.92	0.97	0.94	0.71	0.65	0.38	1.69	Non-Liquefiable
34.5	32	37	34.5	42	120		1.3	1.05	1.3	0.93	1	69.6	69.6	4140	3048	3422	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	50	120		1.3	1.05	1.3	0.96	1	85.0	85.0	4740	3336	3710	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	43	120		1.3	1.05	1.3	0.91	1	69.7	69.7	5340	3624	3998	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	79	120		1.3	1.05	1.3	1.14	1	159.4	159.4	5820	3854	4229	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-13

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	36.9	0.0	36.9	N/A	0.02	-0.57	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	29.1	4.1	33.2	2.28	0.03	-0.31	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	33.9	5.5	39.5	5.10	0.01	-0.76	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	27.4	5.2	32.6	1.69	0.03	-0.27	0.01	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	69.6	0.0	69.6	4.36	0.00	-3.26	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	85.0	0.0	85.0	4.14	0.00	-4.66	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	69.7	0.0	69.7	3.98	0.00	-3.27	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	159.4	0.0	159.4	3.88	0.00	-11.98	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	23 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-14		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	15	120		1.3	1.05	1.26	1.33	0.75	25.7	25.7	1020	1020	1020	0.99	0.98	1.1	0.31	0.33	N/A	N/A	Above Water Table
19.5	17	22	19.5	80	120		1.3	1.05	1.3	1.01	0.95	136.4	136.4	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	37	120	20	1.3	1.05	1.3	0.95	0.95	59.3	63.8	2940	2472	2846	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	59	120		1.3	1.05	1.3	0.99	0.95	98.6	98.6	3540	2760	3134	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	42	120		1.3	1.05	1.3	0.93	1	69.6	69.6	4140	3048	3422	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	47	120		1.3	1.05	1.3	0.94	1	78.7	78.7	4740	3336	3710	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	60	120		1.3	1.05	1.3	1.01	1	107.2	107.2	5340	3624	3998	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	68	120		1.3	1.05	1.3	1.06	1	128.0	128.0	5820	3854	4229	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-14

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	25.7	0.0	25.7	N/A	0.08	0.19	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	136.4	0.0	136.4	5.77	0.00	-9.64	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	59.3	4.5	63.8	5.10	0.00	-2.75	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	98.6	0.0	98.6	4.67	0.00	-5.94	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	69.6	0.0	69.6	4.36	0.00	-3.26	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	78.7	0.0	78.7	4.14	0.00	-4.08	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	107.2	0.0	107.2	3.98	0.00	-6.76	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	128.0	0.0	128.0	3.88	0.00	-8.80	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	31 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-17		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	18	120		1.3	1.05	1.3	1.30	0.75	31.1	31.1	1020	1020	1020	0.99	0.97	1.1	0.56	0.60	N/A	N/A	Above Water Table
19.5	17	22	19.5	84	120		1.3	1.05	1.3	1.01	0.95	143.6	143.6	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	31	120		1.3	1.05	1.3	0.92	0.95	48.1	48.1	2940	2472	2940	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	37	120		1.3	1.05	1.3	0.90	0.95	56.0	56.0	3540	2760	3540	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	47	120		1.3	1.05	1.3	0.94	1	78.2	78.2	4140	3048	3922	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	53	120		1.3	1.05	1.3	0.96	1	90.7	90.7	4740	3336	4210	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	37	120		1.3	1.05	1.3	0.85	1	56.1	56.1	5340	3624	4498	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	47	120		1.3	1.05	1.3	0.91	1	76.1	76.1	5820	3854	4728	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-17

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	31.1	0.0	31.1	N/A	0.04	-0.16	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	143.6	0.0	143.6	5.77	0.00	####	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	48.1	0.0	48.1	5.10	0.00	-1.44	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	56.0	0.0	56.0	4.67	0.00	-2.09	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	78.2	0.0	78.2	4.36	0.00	-4.03	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	90.7	0.0	90.7	4.14	0.00	-5.19	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	56.1	0.0	56.1	3.98	0.00	-2.09	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	76.1	0.0	76.1	3.88	0.00	-3.84	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	33 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-19		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	54	120		1.3	1.05	1.3	1.08	0.75	77.7	77.7	1020	1020	1020	0.99	0.97	1.1	2.00	2.00	N/A	N/A	Above Water Table
19.5	17	22	19.5	39	120		1.3	1.05	1.3	0.98	0.95	64.7	64.7	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	52	120		1.3	1.05	1.3	0.98	0.95	85.6	85.6	2940	2472	2940	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	47	120		1.3	1.05	1.3	0.94	0.95	74.4	74.4	3540	2760	3540	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	45	120		1.3	1.05	1.3	0.92	1	73.6	73.6	4140	3048	4046	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	39	120		1.3	1.05	1.3	0.87	1	60.5	60.5	4740	3336	4334	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	51	120		1.3	1.05	1.3	0.94	1	85.4	85.4	5340	3624	4622	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	65	120		1.3	1.05	1.3	1.05	1	121.5	121.5	5820	3854	4853	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-19

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	77.7	0.0	77.7	N/A	0.00	-3.99	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	64.7	0.0	64.7	5.77	0.00	-2.82	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	85.6	0.0	85.6	5.10	0.00	-4.71	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	74.4	0.0	74.4	4.67	0.00	-3.69	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	73.6	0.0	73.6	4.36	0.00	-3.62	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	60.5	0.0	60.5	4.14	0.00	-2.47	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	85.4	0.0	85.4	3.98	0.00	-4.69	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	121.5	0.0	121.5	3.88	0.00	-8.16	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

Appendix 4: Historical Site Conditions (N/A)

Phase I Environmental Site Assessment or Other Information on Past Site Use

Appendix 5: LID Infeasibility (N/A)

LID Technical Infeasibility Analysis

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

3.5 Bioretention Facility

Type of BMP	LID – Bioretention
Treatment Mechanisms	Infiltration, Evapotranspiration, Evaporation, Biofiltration
Maximum Drainage Area	This BMP is intended to be integrated into a project's landscaped area in a distributed manner. Typically, contributing drainage areas to Bioretention Facilities range from less than 1 acre to a maximum of around 10 acres.
Other Names	Rain Garden, Bioretention Cell, Bioretention Basin, Biofiltration Basin, Landscaped Filter Basin, Porous Landscape Detention

Description

Bioretention Facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff. This keeps the Best Management Practice (BMP) from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a Bioretention Facility is unlined, which also provides an opportunity for infiltration to the extent the underlying onsite soil can accommodate. When the infiltration rate of the underlying soil is exceeded, fully biotreated flows are discharged via underdrains. Bioretention Facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly biotreated) discharge to the storm drain system.

Siting Considerations

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, Bioretention Facilities can be used in smaller landscaped spaces on the site, such as:

- ✓ Parking islands
- ✓ Medians
- ✓ Site entrances

Landscaped areas on the site (such as may otherwise be required through minimum landscaping ordinances), can often be designed as Bioretention Facilities. This can be accomplished by:

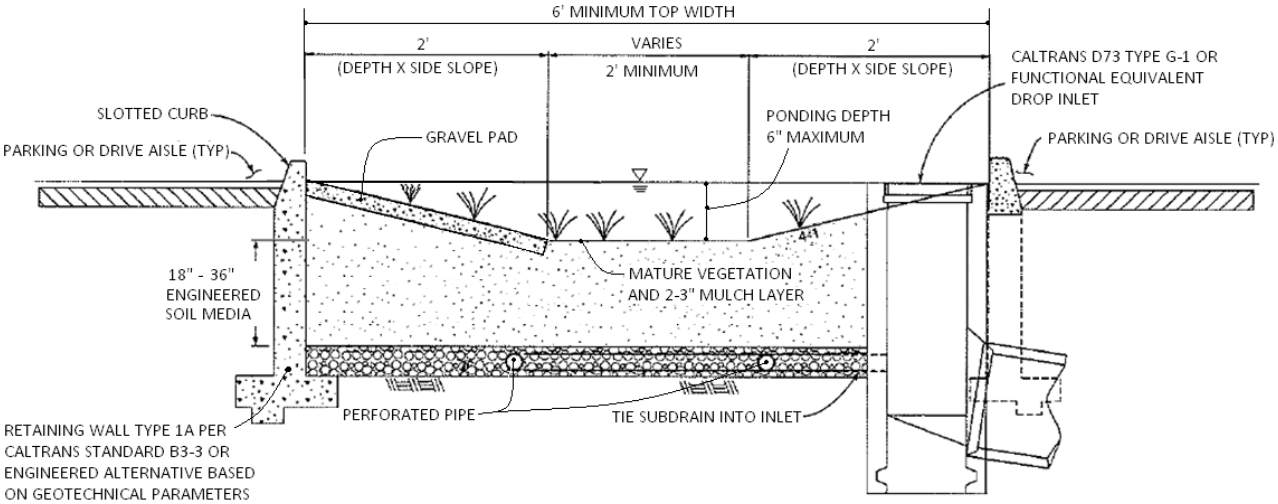
- *Depressing* landscaped areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces *into* the Bioretention Facility, rather than away from the landscaping
- Sizing and designing the depressed landscaped area as a Bioretention Facility as described in this Fact Sheet

Bioretention Facilities should however not be used downstream of areas where large amounts of sediment can clog the system. Placing a Bioretention Facility at the toe of a steep slope should also be avoided due to the potential for clogging the engineered soil media with erosion from the slope, as well as the potential for damaging the vegetation.

Design and Sizing Criteria

The recommended cross section necessary for a Bioretention Facility includes:

- Vegetated area
- 18' minimum depth of engineered soil media
- 12' minimum gravel layer depth with 6' perforated pipes (added flow control features such as orifice plates may be required to mitigate for HCOC conditions)



While the 18-inch minimum engineered soil media depth can be used in some cases, it is recommended to use 24 inches or a preferred 36 inches to provide an adequate root zone for the chosen plant palate. Such a design also provides for improved removal effectiveness for nutrients. The recommended ponding depth inside of a Bioretention Facility is 6 inches; measured from the flat bottom surface to the top of the water surface as shown in Figure 1.

Because this BMP is filled with an engineered soil media, pore space in the soil and gravel layer is assumed to provide storage volume. However, several considerations must be noted:

- Surcharge storage above the soil surface (6 inches) is important to assure that design flows do not bypass the BMP when runoff exceeds the soil's absorption rate.
- In cases where the Bioretention Facility contains engineered soil media deeper than 36 inches, the pore space within the engineered soil media can only be counted to the 36-inch depth.
- A maximum of 30 percent pore space can be used for the soil media whereas a maximum of 40 percent pore space can be use for the gravel layer.

Figure 1: Standard Layout for a Bioretention Facility

Engineered Soil Media Requirements

The engineered soil media shall be comprised of 85 percent mineral component and 15 percent organic component, by volume, drum mixed prior to placement. The mineral component shall be a Class A sandy loam topsoil that meets the range specified in Table 1 below. The organic component shall be nitrogen stabilized compost[1], such that nitrogen does not leach from the media.

Table 1: Mineral Component Range Requirements

Percent Range	Component
70-80	Sand
15-20	Silt
5-10	Clay

The trip ticket, or certificate of compliance, shall be made available to the inspector to prove the engineered mix meets this specification.

Vegetation Requirements

Vegetative cover is important to minimize erosion and ensure that treatment occurs in the Bioretention Facility. The area should be designed for at least 70 percent mature coverage throughout the Bioretention Facility. To prevent the BMP from being used as walkways, Bioretention Facilities shall be planted with a combination of small trees, densely planted shrubs, and natural grasses. Grasses shall be native or ornamental; preferably ones that do not need to be mowed. The application of fertilizers and pesticides should be minimal. To maintain oxygen levels for the vegetation and promote biodegradation, it is important that vegetation not be completely submerged for any extended period of time. Therefore, a maximum of 6 inches of ponded water shall be used in the design to ensure that plants within the Bioretention Facility remain healthy.

A 2 to 3-inch layer of standard shredded aged hardwood mulch shall be placed as the top layer inside the Bioretention Facility. The 6-inch ponding depth shown in Figure 1 above shall be measured from the top surface of the 2 to 3-inch mulch layer.

Curb Cuts

To allow water to flow into the Bioretention Facility, 1-foot-wide (minimum) curb cuts should be placed approximately every 10 feet around the perimeter of the Bioretention Facility. Figure 2 shows a curb cut in a Bioretention Facility. Curb cut flow lines must be at or above the V_{BMP} water surface level.

[1] For more information on compost, visit the US Composting Council website at: http://compostingcouncil.org/

Figure 2: Curb Cut located in a Bioretention Facility

To reduce erosion, a gravel pad shall be placed at each inlet point to the Bioretention Facility. The gravel should be 1- to 1.5-inch diameter in size. The gravel should overlap the curb cut opening a minimum of 6 inches. The gravel pad inside the Bioretention Facility should be flush with the finished surface at the curb cut and extend to the bottom of the slope.

In addition, place an apron of stone or concrete, a foot square or larger, inside each inlet to prevent vegetation from growing up and blocking the inlet. See Figure 3.

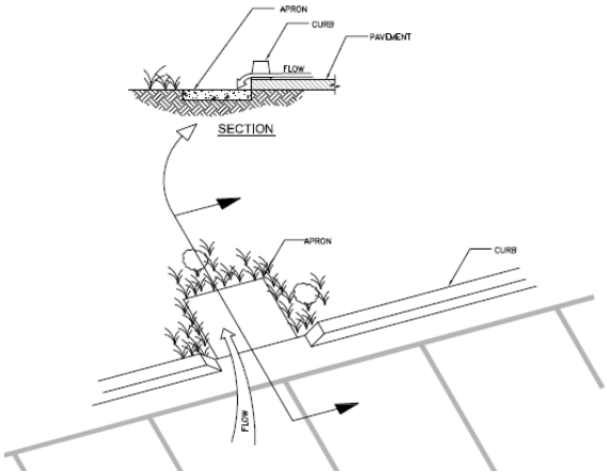


Figure 3: Apron located in a Bioretention Facility

Terracing the Landscaped Filter Basin

It is recommended that Bioretention Facilities be level. In the event the facility site slopes and lacks proper design, water would fill the lowest point of the BMP and then discharge from the basin without being treated. To ensure that the water will be held within the Bioretention Facility on sloped sites, the BMP must be terraced with nonporous check dams to provide the required storage and treatment capacity.

The terraced version of this BMP shall be used on non-flat sites with no more than a 3 percent slope. The surcharge depth cannot exceed 0.5 feet, and side slopes shall not exceed 4:1. Table 2 below shows the spacing of the check dams, and slopes shall be rounded up (i.e., 2.5 percent slope shall use 10' spacing for check dams).

Table 2: Check Dam Spacing

6" Check Dam Spacing	
Slope	**Spacing**
1%	*25'*
2%	*15'*
3%	*10'*

Roof Runoff

Roof downspouts may be directed towards Bioretention Facilities. However, the downspouts must discharge onto a concrete splash block to protect the Bioretention Facility from erosion.

Retaining Walls

It is recommended that Retaining Wall Type 1A, per Caltrans Standard B3-3 or equivalent, be constructed around the entire perimeter of the Bioretention Facility. This practice will protect the sides of the Bioretention Facility from collapsing during construction and maintenance or from high service loads adjacent to the BMP. Where such service loads would not exist adjacent to the BMP, an engineered alternative may be used if signed by a licensed civil engineer.

Side Slope Requirements

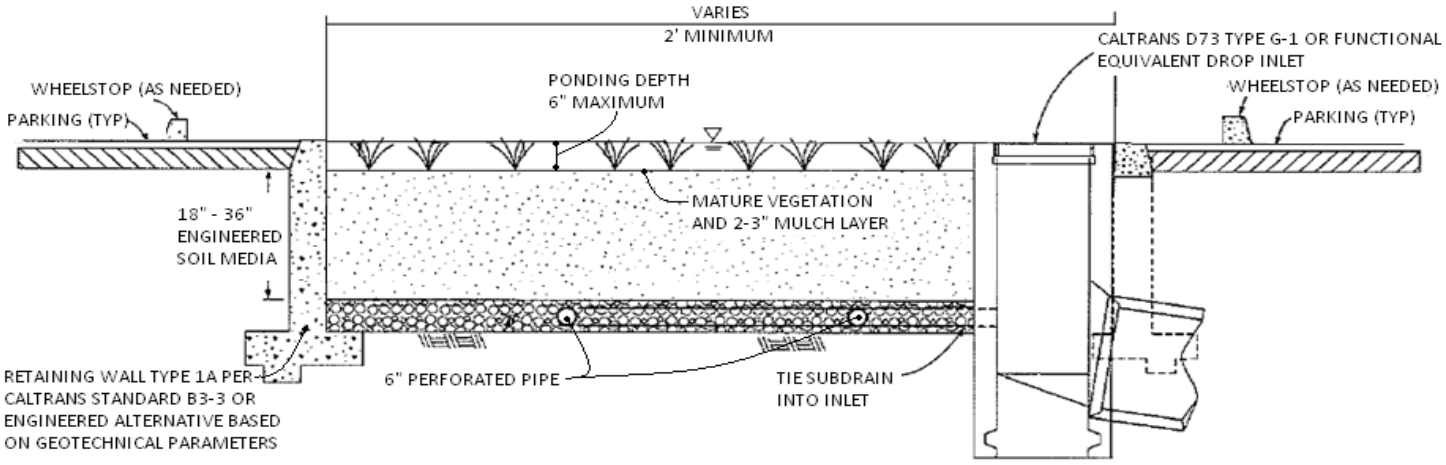
Bioretention Facilities Requiring Side Slopes

The design should assure that the Bioretention Facility does not present a tripping hazard. Bioretention Facilities proposed near pedestrian areas, such as areas parallel to parking spaces or along a walkway, must have a gentle slope to the bottom of the facility. Side slopes inside of a Bioretention Facility shall be 4:1. A typical cross section for the Bioretention Facility is shown in Figure 1.

Bioretention Facilities Not Requiring Side Slopes

Where cars park perpendicular to the Bioretention Facility, side slopes are not required. A 6-inch maximum drop may be used, and the Bioretention Facility must be planted with trees and shrubs to prevent pedestrian access. In this case, a curb is not placed around the Bioretention Facility,

but wheel stops shall be used to prevent vehicles from entering the Bioretention Facility, as shown in Figure 4.



Planter Boxes

Bioretention Facilities can also be placed above ground as planter boxes. Planter boxes must have a minimum width of 2 feet, a maximum surcharge depth of 6 inches, and no side slopes are necessary. Planter boxes must be constructed so as to ensure that the top surface of the engineered soil media will remain level. This option may be constructed of concrete, brick, stone or other stable materials that will not warp or bend. Chemically treated wood or galvanized steel, which has the ability to contaminate stormwater, should not be used. Planter boxes must be lined with an impermeable liner on all sides, including the bottom. Due to the impermeable liner, the inside bottom of the planter box shall be designed and constructed with a cross fall, directing treated flows within the subdrain layer toward the point where subdrain exits the planter box, and subdrains shall be oriented with drain holes oriented down. These provisions will help avoid excessive stagnant water within the gravel underdrain layer. Similar to the in-ground Bioretention Facility versions, this BMP benefits from healthy plants and biological activity in the root zone. Planter boxes should be planted with appropriately selected vegetation.

Figure 5: Planter Box
Source: LA Team Effort

Overflow

An overflow route is needed in the Bioretention Facility design to bypass stored runoff from storm events larger than V_{BMP} or in the event of facility or subdrain clogging. Overflow systems must connect to an acceptable discharge point, such as a downstream conveyance system as shown in Figure 1 and Figure 4. The inlet to the overflow structure shall be elevated inside the Bioretention Facility to be flush with the ponding surface for the design capture volume (V_{BMP}) as shown in Figure 4. This will allow the design capture volume to be fully treated by the Bioretention Facility, and for larger events to safely be conveyed to downstream systems. The overflow inlet shall **not** be located in the entrance of a Bioretention Facility, as shown in Figure 6.

Underdrain Gravel and Pipes

An underdrain gravel layer and pipes shall be provided in accordance with Appendix B – Underdrains.

Figure 6: Incorrect Placement of an Overflow Inlet.

Inspection and Maintenance Schedule

The Bioretention Facility area shall be inspected for erosion, dead vegetation, soggy soils, or standing water. The use of fertilizers and pesticides on the plants inside the Bioretention Facility should be minimized.

Schedule	Activity
Ongoing	• Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance activities. • Remove trash and debris • Replace damaged grass and/or plants • Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	• Inspect areas for ponding
Annually	• Inspect/clean inlets and outlets

Bioretention Facility Design Procedure

1) Enter the area tributary, A_T, to the Bioretention Facility.

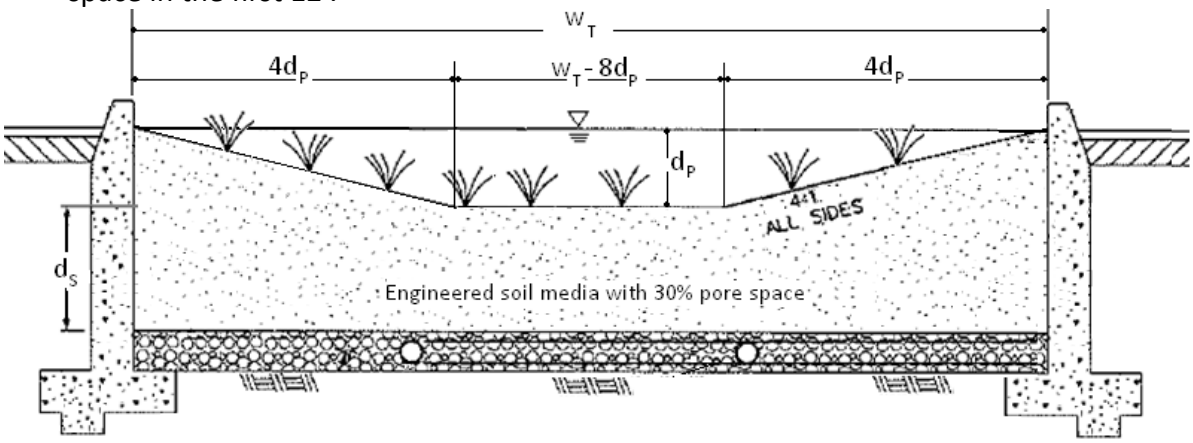
2) Enter the Design Volume, $V_{BMP,}$ determined from Section 2.1 of this Handbook.

3) Select the type of design used. There are two types of Bioretention Facility designs: the standard design used for most project sites that include side slopes, and the modified design used when the BMP is located perpendicular to the parking spaces or with planter boxes that do not use side slopes.

4) Enter the depth of the engineered soil media, d_S. The minimum depth for the engineered soil media can be 18' in limited cases, but it is recommended to use 24' or a preferred 36' to provide an adequate root zone for the chosen plant palette. Engineered soil media deeper than 36' will only get credit for the pore space in the first 36'.

5) Enter the top width of the Bioretention Facility.

6) Calculate the total effective depth, d_E, within the Bioretention Facility. The maximum allowable pore space of the soil media is 30% while the maximum allowable pore space for the gravel layer is 40%. Gravel layer deeper than 12' will only get credit for the pore space in the first 12'.



a. For the design with side slopes the following equation shall be used to determine the total effective depth. Where, d_P is the depth of ponding within the basin.

$$d_E(\text{ft}) = \frac{0.3 \times \left[\left(w_T(\text{ft}) \times d_S(\text{ft})\right) + 4\left(d_P(\text{ft})\right)^2\right] + 0.4 \times 1(\text{ft}) + d_P(\text{ft})\left[4d_P(\text{ft}) + \left(w_T(\text{ft}) - 8d_P(\text{ft})\right)\right]}{w_T(\text{ft})}$$

This above equation can be simplified if the maximum ponding depth of 0.5' is used. The equation below is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = (0.3 \times d_S(\text{ft}) + 0.4 \text{ x } 1(\text{ft})) - \left(\frac{0.7\ (\text{ft}^2)}{w_T(\text{ft})}\right) + 0.5(\text{ft})$$

b. For the design without side slopes the following equation shall be used to determine the total effective depth:

$$d_E(\text{ft}) = d_P(\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

The equation below, using the maximum ponding depth of 0.5', is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = 0.5\ (\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

7) Calculate the minimum surface area, A_M, required for the Bioretention Facility. This does not include the curb surrounding the Bioretention Facility or side slopes.

$$A_M(\text{ft}^2) = \frac{V_{BMP}(\text{ft}^3)}{d_E\ (\text{ft})}$$

8) Enter the proposed surface area. This area shall not be less than the minimum required surface area.

9) Verify that side slopes are no steeper than 4:1 in the standard design, and are not required in the modified design.

10) Provide the diameter, minimum 6 inches, of the perforated underdrain used in the Bioretention Facility. See Appendix B for specific information regarding perforated pipes.

11) Provide the slope of the site around the Bioretention Facility, if used. The maximum slope is 3 percent for a standard design.

12) Provide the check dam spacing, if the site around the Bioretention Facility is sloped.

13) Describe the vegetation used within the Bioretention Facility.

R 07 W | R 06 W | R 05 W | R 04 W | R 03 W | R 02 W | R 01 W | R 01 E | R 02 E | R 03 E | R 04 E | R 05 E

T 01 S
T 02 S
T 03 S
T 04 S
T 05 S
T 06 S
T 07 S
T 08 S

06	05	04	03	02	01
07	08	09	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

0.85 MiraLoma
0.61 RiversideNorth
0.54 RiversideSouth
0.88 PradoDam
0.50 LakeMathews
0.51 Woodcrest
0.68 PigeonPass
0.66 MorenoEast
0.68 PerrisReservoir
0.85 Beaumont
0.70 SanJacintoNWS
0.87 VistaGrandeGS
1.18 Idyllwild
0.90 HurkeyCreek
0.65 Anza
0.64 AguangaValley
0.58 SunCity
0.68 Winchester
0.70 ElsinoreNWS
1.11 ElCarisoStation
0.77 WildomarLaCresta
0.77 SantaRosaPlateau
0.52 SkinnerLake
1.00 TemeculaNWS

Project Site

Santa Ana River Watershed
Santa Margarita Watershed

JURUPA VALLEY | EASTVALE | NORCO | CORONA | RIVERSIDE | MORENO VALLEY | CALIMESA | BEAUMONT | SAN JACINTO | PERRIS | HEMET | CANYON LAKE | LAKE ELSINORE | MENIFEE | WILDOMAR | MURRIETA | TEMECULA

N

Rain Gage Locations

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Isohyetal Map for the 85th Percentile 24 hour Storm Event

July 2011

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Huitt-Zollars, Inc	Date	12/4/2019
Designed by	David White	Case No	
Company Project Number/Name	Hillwood - March JPA Industrial for DMA A		

BMP Identification

BMP NAME / ID: Biotreatment Basin 1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.61 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA A	*2,623,659*	*Mixed Surface Types*	*0.76*	*0.55*	*1454434.3*			
	2623659		***Total***		**1454434.3**	**0.61**	***73933.7***	***119,934***

Notes:

Bioretention Facility - Design Procedure	BMP ID	Legend:	Required Entries	
	Basin#1		Calculated Cells	

Company Name:	Huitt-Zollars, Inc	Date:	12/3/2019
Designed by:	David White	County/City Case No.:	

Design Volume

Enter the area tributary to this feature	A_T=	60.23	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	73,351	ft^3

Type of Bioretention Facility Design

- ○ Side slopes required (parallel to parking spaces or adjacent to walkways)
- ◉ No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer	d_S =	2.0	ft
Top Width of Bioretention Facility, excluding curb	w_T =	150.0	ft
Total Effective Depth, d_E			
$d_E = [(0.3) \times d_S + (0.4) \times 1] + 0.5$	d_E =	1.50	ft
Minimum Surface Area, A_m			
$A_M\ (ft^2) = \frac{V_{BMP}\ (ft^3)}{d_E\ (ft)}$	A_M =	48,901	ft^2
Proposed Surface Area	A=	70,202	ft^2
Minimum Required Length of Bioretention Facility, L	L =	326.0	ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =	4	:1
Diameter of Underdrain		6	inches
Longitudinal Slope of Site (3% maximum)		0	%
6" Check Dam Spacing		0	feet

Describe Vegetation: Natural Grasses

Notes:

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Huitt-Zollars, Inc	Date	12/4/2019
Designed by	David White	Case No	
Company Project Number/Name	Hillwood - March JPA Industrial for DMA B		

BMP Identification

BMP NAME / ID: Biotreatment Basin 2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.61 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA B	*1,268,481*	*Mixed Surface Types*	*0.78*	*0.58*	*731068.2*			

Bioretention Facility - Design Procedure	BMP ID: Basin #2	Legend:	Required Entries / Calculated Cells

Company Name: Huitt-Zollars, Inc — Date: 12/4/2019

Designed by: David White — County/City Case No.:

Design Volume

Enter the area tributary to this feature — A_T = 29.12 acres

Enter V_{BMP} determined from Section 2.1 of this Handbook — V_{BMP} = 37,399 ft^3

Type of Bioretention Facility Design

(●) Side slopes required (parallel to parking spaces or adjacent to walkways)

( ) No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer — d_S = 3.0 ft

Top Width of Bioretention Facility, excluding curb — w_T = 100.0 ft

Total Effective Depth, d_E

$d_E = (0.3) \times d_S + (0.4) \times 1 - (0.7/w_T) + 0.5$ — d_E = 1.79 ft

Minimum Surface Area, A_m

$$A_M\,(ft^2) = \frac{V_{BMP}\,(ft^3)}{d_E\,(ft)}$$

A_M = 20,859 ft^2

Proposed Surface Area — A= 36,518 ft^2

Bioretention Facility Properties

Side Slopes in Bioretention Facility — z = 4 :1

Diameter of Underdrain — 6 inches

Longitudinal Slope of Site (3% maximum) — 0 %

6" Check Dam Spacing — 0 feet

Describe Vegetation: Natural Grasses

Notes:

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Huitt-Zollars, Inc	Date	12/4/2019
Designed by	David White	Case No	
Company Project Number/Name	Hillwood - March JPA Industrial for DMA B		

BMP Identification

BMP NAME / ID: Biotreatment Basin 3

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.61 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA B	*1,627,595*	*Mixed Surface Types*	*0.78*	*0.58*	*938037.7*			

Bioretention Facility - Design Procedure	BMP ID: Basin #3	Legend:	Required Entries / Calculated Cells

Company Name:	Huitt-Zollars, Inc	Date:	12/4/2019
Designed by:	David White	County/City Case No.:	

Design Volume

Enter the area tributary to this feature — A_T = 37.37 acres

Enter V_{BMP} determined from Section 2.1 of this Handbook — V_{BMP} = 47,987 ft^3

Type of Bioretention Facility Design

(●) Side slopes required (parallel to parking spaces or adjacent to walkways)

( ) No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer — d_S = 3.0 ft

Top Width of Bioretention Facility, excluding curb — w_T = 100.0 ft

Total Effective Depth, d_E

$d_E = (0.3) \times d_S + (0.4) \times 1 - (0.7/w_T) + 0.5$ — d_E = 1.79 ft

Minimum Surface Area, A_m

$$A_M\ (ft^2) = \frac{V_{BMP}\ (ft^3)}{d_E\ (ft)}$$

A_M = 26,764 ft^2

Proposed Surface Area — A= 36,908 ft^2

Bioretention Facility Properties

Side Slopes in Bioretention Facility — z = 4 :1

Diameter of Underdrain — 6 inches

Longitudinal Slope of Site (3% maximum) — 0 %

6" Check Dam Spacing — 0 feet

Describe Vegetation: Natural Grasses

Notes:

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

AREA A - BASIN 1 (60.2 ac.)

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	5.08	7.36	11.96	17.45	22.05	30.79
EXISTING RUNOFF	0.94	1.29	1.72	11.50	16.01	28.28
REQUIRED MITIGATION:	**4.14**	**6.07**	**10.24**	**5.95**	**6.04**	**2.51**
DISCHARGE FROM BASIN AFTER ROUTING*	0.92	1.06	1.87	8.02	13.32	20.40
ALLOWABLE TOTAL DISCHARGE	**0.94**	**1.29**	**1.72**	**11.50**	**16.01**	**28.28**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)

AREA B - BASIN 2 (29.1 ac.)*

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	2.47	3.62	5.86	8.52	10.76	15.00
EXISTING RUNOFF	0.46	0.62	0.84	5.58	7.77	13.71
REQUIRED MITIGATION:	**2.01**	**3.00**	**5.02**	**2.94**	**2.99**	**1.29**
DISCHARGE FROM BASIN AFTER ROUTING*	0.46	0.51	0.82	1.92	6.41	11.11
ALLOWABLE TOTAL DISCHARGE	**0.46**	**0.62**	**0.84**	**5.58**	**7.77**	**13.71**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)
* 43.8% OF AREA B

AREA B - BASIN 3 (37.4 ac.)*

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	3.16	4.59	7.46	10.87	13.73	19.17
EXISTING RUNOFF	0.58	0.80	1.07	7.17	9.98	17.59
REQUIRED MITIGATION:	**2.58**	**3.79**	**6.39**	**3.70**	**3.75**	**1.58**
DISCHARGE FROM BASIN AFTER ROUTING*	0.51	0.63	1.04	6.37	9.47	15.24
ALLOWABLE TOTAL DISCHARGE	**0.58**	**0.80**	**1.07**	**7.17**	**9.98**	**17.59**

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)
* 56.2% OF AREA B

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 10/29/19

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2 YEAR FLOOD ROUTING
MJPA 304163
BUILDING 1
4163FR2.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP2242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 7.363 (CFS)
Total volume = 4.244 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.322	0.330	0.321	0.323
2.000	0.967	0.580	0.965	0.969
3.000	1.450	0.740	1.447	1.453
4.000	1.934	0.880	1.931	1.937
4.500	2.753	0.940	2.750	2.756
5.000	3.600	1.600	3.594	3.606
6.000	5.375	2.310	5.367	5.383
7.000	7.263	17.920	7.201	7.325
8.000	9.265	24.580	9.180	9.350
9.000	11.383	29.740	11.281	11.485
10.000	13.621	32.460	13.509	13.733

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.8	3.68	5.52	7.36 (Ft.)	Depth
0.083	0.08	0.00	0.000	O	|	|	|	|	0.00
0.167	0.37	0.00	0.002	OI	|	|	|	|	0.01
0.250	0.50	0.00	0.005	O I	|	|	|	|	0.01
0.333	0.59	0.01	0.008	O I	|	|	|	|	0.03
0.417	0.76	0.01	0.013	O I	|	|	|	|	0.04
0.500	0.85	0.02	0.018	O I	|	|	|	|	0.06
0.583	0.89	0.02	0.024	O I	|	|	|	|	0.08
0.667	0.91	0.03	0.030	O I	|	|	|	|	0.09
0.750	0.93	0.04	0.036	O I	|	|	|	|	0.11
0.833	0.99	0.04	0.043	O I	|	|	|	|	0.13
0.917	1.13	0.05	0.050	O I	|	|	|	|	0.15
1.000	1.20	0.06	0.057	O I	|	|	|	|	0.18
1.083	1.19	0.07	0.065	O I	|	|	|	|	0.20
1.167	1.06	0.07	0.072	O I	|	|	|	|	0.22
1.250	1.01	0.08	0.079	O I	|	|	|	|	0.25
1.333	0.99	0.09	0.085	O I	|	|	|	|	0.26
1.417	0.98	0.09	0.091	O I	|	|	|	|	0.28
1.500	0.97	0.10	0.097	O I	|	|	|	|	0.30
1.583	0.97	0.11	0.103	O I	|	|	|	|	0.32
1.667	0.96	0.11	0.109	O I	|	|	|	|	0.34
1.750	0.96	0.12	0.115	O I	|	|	|	|	0.36
1.833	1.00	0.12	0.121	O I	|	|	|	|	0.38
1.917	1.14	0.13	0.128	O I	|	|	|	|	0.40
2.000	1.20	0.14	0.135	O I	|	|	|	|	0.42
2.083	1.23	0.15	0.142	O I	|	|	|	|	0.44
2.167	1.25	0.15	0.150	O I	|	|	|	|	0.46
2.250	1.26	0.16	0.157	O I	|	|	|	|	0.49
2.333	1.26	0.17	0.165	O I	|	|	|	|	0.51
2.417	1.27	0.18	0.172	O I	|	|	|	|	0.53
2.500	1.27	0.18	0.180	O I	|	|	|	|	0.56
2.583	1.32	0.19	0.187	O I	|	|	|	|	0.58
2.667	1.46	0.20	0.196	O I	|	|	|	|	0.61
2.750	1.52	0.21	0.204	O I	|	|	|	|	0.63
2.833	1.55	0.22	0.213	O I	|	|	|	|	0.66

2.917	1.56	0.23	0.223	O	I	|	|	|	0.69
3.000	1.57	0.24	0.232	|O	I	|	|	|	0.72
3.083	1.58	0.25	0.241	|O	I	|	|	|	0.75
3.167	1.59	0.26	0.250	|O	I	|	|	|	0.78
3.250	1.59	0.27	0.259	|O	I	|	|	|	0.81
3.333	1.59	0.28	0.268	|O	I	|	|	|	0.83
3.417	1.59	0.28	0.278	|O	I	|	|	|	0.86
3.500	1.59	0.29	0.286	|O	I	|	|	|	0.89
3.583	1.59	0.30	0.295	|O	I	|	|	|	0.92
3.667	1.59	0.31	0.304	|O	I	|	|	|	0.94
3.750	1.59	0.32	0.313	|O	I	|	|	|	0.97
3.833	1.64	0.33	0.322	|O	I	|	|	|	1.00
3.917	1.78	0.33	0.331	|O	I	|	|	|	1.01
4.000	1.84	0.34	0.342	|O	I	|	|	|	1.03
4.083	1.87	0.34	0.352	|O	I	|	|	|	1.05
4.167	1.88	0.35	0.363	|O	I	|	|	|	1.06
4.250	1.89	0.35	0.373	|O	I	|	|	|	1.08
4.333	1.94	0.35	0.384	|O	I	|	|	|	1.10
4.417	2.09	0.36	0.395	|O	|I	|	|	|	1.11
4.500	2.16	0.36	0.407	|O	|I	|	|	|	1.13
4.583	2.19	0.37	0.420	|O	|I	|	|	|	1.15
4.667	2.20	0.37	0.432	|O	|I	|	|	|	1.17
4.750	2.21	0.38	0.445	|O	|I	|	|	|	1.19
4.833	2.26	0.38	0.458	|O	|I	|	|	|	1.21
4.917	2.41	0.39	0.471	|O	| I	|	|	|	1.23
5.000	2.47	0.39	0.485	|O	| I	|	|	|	1.25
5.083	2.42	0.40	0.500	|O	| I	|	|	|	1.28
5.167	2.15	0.40	0.512	|O	|I	|	|	|	1.30
5.250	2.03	0.41	0.524	|O	I	|	|	|	1.31
5.333	2.03	0.41	0.535	|O	I	|	|	|	1.33
5.417	2.15	0.42	0.547	|O	|I	|	|	|	1.35
5.500	2.19	0.42	0.559	|O	|I	|	|	|	1.37
5.583	2.25	0.43	0.571	|O	|I	|	|	|	1.39
5.667	2.40	0.43	0.584	|O	| I	|	|	|	1.41
5.750	2.47	0.44	0.598	|O	| I	|	|	|	1.43
5.833	2.49	0.44	0.612	|O	| I	|	|	|	1.45
5.917	2.51	0.45	0.626	|O	| I	|	|	|	1.47
6.000	2.53	0.45	0.641	|O	| I	|	|	|	1.49
6.083	2.58	0.46	0.655	|O	| I	|	|	|	1.52
6.167	2.73	0.46	0.670	| O	| I	|	|	|	1.54
6.250	2.79	0.47	0.686	| O	| I	|	|	|	1.56
6.333	2.82	0.48	0.702	| O	| I	|	|	|	1.59
6.417	2.84	0.48	0.718	| O	| I	|	|	|	1.61
6.500	2.85	0.49	0.734	| O	| I	|	|	|	1.64
6.583	2.90	0.50	0.751	| O	| I	|	|	|	1.66
6.667	3.04	0.50	0.768	| O	| I	|	|	|	1.69
6.750	3.11	0.51	0.785	| O	| I	|	|	|	1.72
6.833	3.14	0.52	0.803	| O	| I	|	|	|	1.75
6.917	3.16	0.52	0.822	| O	| I	|	|	|	1.77
7.000	3.17	0.53	0.840	| O	| I	|	|	|	1.80
7.083	3.17	0.54	0.858	| O	| I	|	|	|	1.83
7.167	3.18	0.54	0.876	| O	| I	|	|	|	1.86
7.250	3.18	0.55	0.894	| O	| I	|	|	|	1.89
7.333	3.23	0.56	0.912	| O	| I	|	|	|	1.92

7.417	3.37	0.57	0.931	O		I		1.94
7.500	3.43	0.57	0.951	O		I		1.97
7.583	3.50	0.58	0.971	O		I		2.01
7.667	3.66	0.59	0.991	O		I		2.05
7.750	3.73	0.60	1.013	O		I		2.09
7.833	3.81	0.60	1.035	O		I		2.14
7.917	3.97	0.61	1.057	O		I		2.19
8.000	4.05	0.62	1.081	O		I		2.24
8.083	4.17	0.63	1.105	O		I		2.28
8.167	4.47	0.63	1.130	O		I		2.34
8.250	4.61	0.64	1.157	O		I		2.39
8.333	4.68	0.65	1.184	O		I		2.45
8.417	4.71	0.66	1.212	O		I		2.51
8.500	4.74	0.67	1.240	O		I		2.57
8.583	4.80	0.68	1.268	O		I		2.62
8.667	4.95	0.69	1.297	O		I		2.68
8.750	5.02	0.70	1.327	O		I		2.74
8.833	5.10	0.71	1.357	O		I		2.81
8.917	5.25	0.72	1.388	O		I		2.87
9.000	5.33	0.73	1.419	O		I		2.94
9.083	4.64	0.74	1.448	O		I		3.00
9.167	2.26	0.74	1.467	O	I			3.03
9.250	1.22	0.75	1.474	O I				3.05
9.333	0.86	0.75	1.476	O				3.05
9.417	0.80	0.75	1.476	O				3.05
9.500	0.75	0.75	1.477	O				3.05
9.583	0.75	0.75	1.477	O				3.05
9.667	0.89	0.75	1.477	O				3.06
9.750	0.96	0.75	1.478	OI				3.06
9.833	1.02	0.75	1.480	OI				3.06
9.917	1.25	0.75	1.482	O I				3.07
10.000	1.38	0.75	1.486	O I				3.08
10.083	1.88	0.75	1.492	O	I			3.09
10.167	3.35	0.76	1.505	O		I		3.11
10.250	4.02	0.76	1.525	O		I		3.16
10.333	4.30	0.77	1.549	O		I		3.20
10.417	4.47	0.78	1.574	O		I		3.26
10.500	4.58	0.78	1.600	O		I		3.31
10.583	4.16	0.79	1.624	O		I		3.36
10.667	2.54	0.80	1.642	O	I			3.40
10.750	1.84	0.80	1.651	O	I			3.42
10.833	1.59	0.80	1.658	O I				3.43
10.917	1.43	0.80	1.663	O I				3.44
11.000	1.35	0.80	1.667	O I				3.45
11.083	1.24	0.80	1.670	O I				3.45
11.167	1.04	0.80	1.672	OI				3.46
11.250	0.96	0.80	1.674	OI				3.46
11.333	0.91	0.80	1.675	O				3.46
11.417	0.92	0.81	1.675	OI				3.47
11.500	0.94	0.81	1.676	OI				3.47
11.583	0.86	0.81	1.677	O				3.47
11.667	0.55	0.81	1.676	IO				3.47
11.750	0.42	0.80	1.674	I O				3.46
11.833	0.43	0.80	1.671	I O				3.46

11.917	0.60	0.80	1.669	IO				3.45
12.000	0.68	0.80	1.668	IO				3.45
12.083	1.09	0.80	1.669	OI				3.45
12.167	2.34	0.81	1.675	O	I			3.47
12.250	2.92	0.81	1.688	O	I			3.49
12.333	3.22	0.81	1.703	O	I			3.52
12.417	3.57	0.82	1.721	O	I			3.56
12.500	3.76	0.82	1.741	O	I			3.60
12.583	3.99	0.83	1.762	O	I			3.64
12.667	4.43	0.84	1.785	O	I			3.69
12.750	4.66	0.84	1.810	O	I			3.74
12.833	4.84	0.85	1.837	O	I			3.80
12.917	5.09	0.86	1.866	O	I			3.86
13.000	5.23	0.87	1.895	O	I			3.92
13.083	5.57	0.88	1.926	O	I			3.98
13.167	6.49	0.88	1.962	O	I			4.02
13.250	6.93	0.88	2.002	O	I			4.04
13.333	7.14	0.89	2.044	O	I			4.07
13.417	7.27	0.89	2.088	O	I			4.09
13.500	7.36	0.89	2.132	O	I			4.12
13.583	6.87	0.90	2.175	O	I			4.15
13.667	5.03	0.90	2.210	O	I			4.17
13.750	4.23	0.90	2.235	O	I			4.18
13.833	3.93	0.90	2.257	O	I			4.20
13.917	3.75	0.91	2.277	O	I			4.21
14.000	3.64	0.91	2.297	O	I			4.22
14.083	3.78	0.91	2.316	O	I			4.23
14.167	4.43	0.91	2.338	O	I			4.25
14.250	4.73	0.91	2.363	O	I			4.26
14.333	4.78	0.91	2.390	O	I			4.28
14.417	4.71	0.92	2.416	O	I			4.29
14.500	4.71	0.92	2.442	O	I			4.31
14.583	4.74	0.92	2.468	O	I			4.33
14.667	4.77	0.92	2.495	O	I			4.34
14.750	4.80	0.92	2.521	O	I			4.36
14.833	4.79	0.92	2.548	O	I			4.37
14.917	4.64	0.93	2.574	O	I			4.39
15.000	4.58	0.93	2.600	O	I			4.41
15.083	4.52	0.93	2.624	O	I			4.42
15.167	4.36	0.93	2.649	O	I			4.44
15.250	4.29	0.93	2.672	O	I			4.45
15.333	4.23	0.94	2.695	O	I			4.46
15.417	4.06	0.94	2.717	O	I			4.48
15.500	3.99	0.94	2.738	O	I			4.49
15.583	3.76	0.94	2.758	O	I			4.50
15.667	3.07	0.96	2.775	O	I			4.51
15.750	2.77	0.97	2.789	O	I			4.52
15.833	2.66	0.98	2.801	O	I			4.53
15.917	2.60	0.99	2.812	O	I			4.53
16.000	2.57	0.99	2.823	O	I			4.54
16.083	2.39	1.00	2.833	O	I			4.55
16.167	1.82	1.01	2.841	O	I			4.55
16.250	1.56	1.01	2.846	O	I			4.55
16.333	1.44	1.01	2.849	O	I			4.56

16.417	1.38	1.02	2.852	O I				4.56
16.500	1.35	1.02	2.854	OI				4.56
16.583	1.28	1.02	2.856	OI				4.56
16.667	1.12	1.02	2.857	O				4.56
16.750	1.04	1.02	2.858	O				4.56
16.833	1.00	1.02	2.858	O				4.56
16.917	0.98	1.02	2.858	O				4.56
17.000	0.98	1.02	2.857	O				4.56
17.083	1.05	1.02	2.857	O				4.56
17.167	1.33	1.02	2.858	OI				4.56
17.250	1.45	1.02	2.861	O I				4.56
17.333	1.50	1.03	2.864	O I				4.57
17.417	1.53	1.03	2.867	O I				4.57
17.500	1.55	1.03	2.871	O I				4.57
17.583	1.57	1.03	2.875	O I				4.57
17.667	1.58	1.04	2.878	O I				4.57
17.750	1.59	1.04	2.882	O I				4.58
17.833	1.55	1.04	2.886	O I				4.58
17.917	1.41	1.05	2.889	O I				4.58
18.000	1.35	1.05	2.891	OI				4.58
18.083	1.32	1.05	2.893	OI				4.58
18.167	1.30	1.05	2.895	OI				4.58
18.250	1.29	1.05	2.896	OI				4.58
18.333	1.29	1.05	2.898	OI				4.59
18.417	1.28	1.05	2.900	OI				4.59
18.500	1.28	1.06	2.901	OI				4.59
18.583	1.23	1.06	2.903	OI				4.59
18.667	1.09	1.06	2.903	O				4.59
18.750	1.03	1.06	2.903	O				4.59
18.833	0.96	1.06	2.903	O				4.59
18.917	0.80	1.06	2.902	IO				4.59
19.000	0.73	1.05	2.900	IO				4.59
19.083	0.74	1.05	2.897	IO				4.59
19.167	0.86	1.05	2.896	IO				4.58
19.250	0.91	1.05	2.895	IO				4.58
19.333	0.97	1.05	2.894	O				4.58
19.417	1.12	1.05	2.894	O				4.58
19.500	1.19	1.05	2.894	OI				4.58
19.583	1.18	1.05	2.895	OI				4.58
19.667	1.05	1.05	2.896	O				4.58
19.750	1.00	1.05	2.896	O				4.58
19.833	0.95	1.05	2.895	O				4.58
19.917	0.79	1.05	2.894	IO				4.58
20.000	0.72	1.05	2.892	IO				4.58
20.083	0.74	1.05	2.890	IO				4.58
20.167	0.86	1.05	2.888	IO				4.58
20.250	0.91	1.04	2.887	IO				4.58
20.333	0.92	1.04	2.886	O				4.58
20.417	0.93	1.04	2.885	O				4.58
20.500	0.94	1.04	2.884	O				4.58
20.583	0.94	1.04	2.884	O				4.58
20.667	0.95	1.04	2.883	O				4.58
20.750	0.95	1.04	2.882	O				4.58
20.833	0.91	1.04	2.882	IO				4.58

20.917	0.77	1.04	2.880	| IO	|	|	|	4.58
21.000	0.71	1.04	2.878	| IO	|	|	|	4.57
21.083	0.72	1.04	2.876	| IO	|	|	|	4.57
21.167	0.85	1.03	2.874	| IO	|	|	|	4.57
21.250	0.90	1.03	2.873	| IO	|	|	|	4.57
21.333	0.88	1.03	2.872	| IO	|	|	|	4.57
21.417	0.75	1.03	2.871	| IO	|	|	|	4.57
21.500	0.69	1.03	2.869	| IO	|	|	|	4.57
21.583	0.71	1.03	2.866	| IO	|	|	|	4.57
21.667	0.84	1.03	2.865	| IO	|	|	|	4.57
21.750	0.90	1.03	2.864	| IO	|	|	|	4.57
21.833	0.88	1.03	2.863	| IO	|	|	|	4.56
21.917	0.75	1.02	2.861	| IO	|	|	|	4.56
22.000	0.69	1.02	2.859	| IO	|	|	|	4.56
22.083	0.71	1.02	2.857	| IO	|	|	|	4.56
22.167	0.84	1.02	2.855	| IO	|	|	|	4.56
22.250	0.90	1.02	2.854	| IO	|	|	|	4.56
22.333	0.88	1.02	2.853	| IO	|	|	|	4.56
22.417	0.75	1.02	2.852	| IO	|	|	|	4.56
22.500	0.69	1.02	2.850	| IO	|	|	|	4.56
22.583	0.67	1.01	2.848	| I O	|	|	|	4.56
22.667	0.66	1.01	2.845	| I O	|	|	|	4.55
22.750	0.65	1.01	2.843	| I O	|	|	|	4.55
22.833	0.65	1.01	2.840	| I O	|	|	|	4.55
22.917	0.64	1.01	2.838	| I O	|	|	|	4.55
23.000	0.64	1.00	2.835	| I O	|	|	|	4.55
23.083	0.64	1.00	2.833	| I O	|	|	|	4.55
23.167	0.64	1.00	2.830	| I O	|	|	|	4.55
23.250	0.64	1.00	2.828	| I O	|	|	|	4.54
23.333	0.64	1.00	2.825	| I O	|	|	|	4.54
23.417	0.64	0.99	2.823	| I O	|	|	|	4.54
23.500	0.64	0.99	2.821	| I O	|	|	|	4.54
23.583	0.64	0.99	2.818	| I O	|	|	|	4.54
23.667	0.64	0.99	2.816	| I O	|	|	|	4.54
23.750	0.64	0.99	2.813	| I O	|	|	|	4.54
23.833	0.64	0.99	2.811	| I O	|	|	|	4.53
23.917	0.64	0.98	2.808	| I O	|	|	|	4.53
24.000	0.64	0.98	2.806	| I O	|	|	|	4.53
24.083	0.55	0.98	2.803	| I O	|	|	|	4.53
24.167	0.27	0.98	2.800	|I O	|	|	|	4.53
24.250	0.14	0.97	2.794	I O	|	|	|	4.52
24.333	0.09	0.97	2.788	I O	|	|	|	4.52
24.417	0.06	0.96	2.782	I O	|	|	|	4.52
24.500	0.04	0.96	2.776	I O	|	|	|	4.51
24.583	0.02	0.95	2.770	I O	|	|	|	4.51
24.667	0.01	0.95	2.763	I O	|	|	|	4.51
24.750	0.01	0.94	2.757	I O	|	|	|	4.50
24.833	0.00	0.94	2.750	I O	|	|	|	4.50
24.917	0.00	0.94	2.744	I O	|	|	|	4.49
25.000	0.00	0.94	2.737	I O	|	|	|	4.49
25.083	0.00	0.94	2.731	I O	|	|	|	4.49
25.167	0.00	0.94	2.724	I O	|	|	|	4.48
25.250	0.00	0.94	2.718	I O	|	|	|	4.48
25.333	0.00	0.94	2.711	I O	|	|	|	4.47

25.417	0.00	0.94	2.705	I	O	|	|	|	|	4.47
25.500	0.00	0.94	2.699	I	O	|	|	|	|	4.47
25.583	0.00	0.94	2.692	I	O	|	|	|	|	4.46
25.667	0.00	0.94	2.686	I	O	|	|	|	|	4.46
25.750	0.00	0.93	2.679	I	O	|	|	|	|	4.45
25.833	0.00	0.93	2.673	I	O	|	|	|	|	4.45
25.917	0.00	0.93	2.666	I	O	|	|	|	|	4.45
26.000	0.00	0.93	2.660	I	O	|	|	|	|	4.44
26.083	0.00	0.93	2.654	I	O	|	|	|	|	4.44
26.167	0.00	0.93	2.647	I	O	|	|	|	|	4.44
26.250	0.00	0.93	2.641	I	O	|	|	|	|	4.43
26.333	0.00	0.93	2.634	I	O	|	|	|	|	4.43
26.417	0.00	0.93	2.628	I	O	|	|	|	|	4.42
26.500	0.00	0.93	2.621	I	O	|	|	|	|	4.42
26.583	0.00	0.93	2.615	I	O	|	|	|	|	4.42
26.667	0.00	0.93	2.609	I	O	|	|	|	|	4.41
26.750	0.00	0.93	2.602	I	O	|	|	|	|	4.41
26.833	0.00	0.93	2.596	I	O	|	|	|	|	4.40
26.917	0.00	0.93	2.589	I	O	|	|	|	|	4.40
27.000	0.00	0.93	2.583	I	O	|	|	|	|	4.40
27.083	0.00	0.93	2.577	I	O	|	|	|	|	4.39
27.167	0.00	0.93	2.570	I	O	|	|	|	|	4.39
27.250	0.00	0.93	2.564	I	O	|	|	|	|	4.38
27.333	0.00	0.93	2.558	I	O	|	|	|	|	4.38
27.417	0.00	0.93	2.551	I	O	|	|	|	|	4.38
27.500	0.00	0.92	2.545	I	O	|	|	|	|	4.37
27.583	0.00	0.92	2.538	I	O	|	|	|	|	4.37
27.667	0.00	0.92	2.532	I	O	|	|	|	|	4.37
27.750	0.00	0.92	2.526	I	O	|	|	|	|	4.36
27.833	0.00	0.92	2.519	I	O	|	|	|	|	4.36
27.917	0.00	0.92	2.513	I	O	|	|	|	|	4.35
28.000	0.00	0.92	2.507	I	O	|	|	|	|	4.35
28.083	0.00	0.92	2.500	I	O	|	|	|	|	4.35
28.167	0.00	0.92	2.494	I	O	|	|	|	|	4.34
28.250	0.00	0.92	2.488	I	O	|	|	|	|	4.34
28.333	0.00	0.92	2.481	I	O	|	|	|	|	4.33
28.417	0.00	0.92	2.475	I	O	|	|	|	|	4.33
28.500	0.00	0.92	2.469	I	O	|	|	|	|	4.33
28.583	0.00	0.92	2.462	I	O	|	|	|	|	4.32
28.667	0.00	0.92	2.456	I	O	|	|	|	|	4.32
28.750	0.00	0.92	2.450	I	O	|	|	|	|	4.31
28.833	0.00	0.92	2.443	I	O	|	|	|	|	4.31
28.917	0.00	0.92	2.437	I	O	|	|	|	|	4.31
29.000	0.00	0.92	2.431	I	O	|	|	|	|	4.30
29.083	0.00	0.92	2.424	I	O	|	|	|	|	4.30
29.167	0.00	0.92	2.418	I	O	|	|	|	|	4.30
29.250	0.00	0.92	2.412	I	O	|	|	|	|	4.29
29.333	0.00	0.91	2.405	I	O	|	|	|	|	4.29
29.417	0.00	0.91	2.399	I	O	|	|	|	|	4.28
29.500	0.00	0.91	2.393	I	O	|	|	|	|	4.28
29.583	0.00	0.91	2.387	I	O	|	|	|	|	4.28
29.667	0.00	0.91	2.380	I	O	|	|	|	|	4.27
29.750	0.00	0.91	2.374	I	O	|	|	|	|	4.27
29.833	0.00	0.91	2.368	I	O	|	|	|	|	4.26

29.917	0.00	0.91	2.361	I	O	|	|	|	|	4.26
30.000	0.00	0.91	2.355	I	O	|	|	|	|	4.26
30.083	0.00	0.91	2.349	I	O	|	|	|	|	4.25
30.167	0.00	0.91	2.343	I	O	|	|	|	|	4.25
30.250	0.00	0.91	2.336	I	O	|	|	|	|	4.25
30.333	0.00	0.91	2.330	I	O	|	|	|	|	4.24
30.417	0.00	0.91	2.324	I	O	|	|	|	|	4.24
30.500	0.00	0.91	2.318	I	O	|	|	|	|	4.23
30.583	0.00	0.91	2.311	I	O	|	|	|	|	4.23
30.667	0.00	0.91	2.305	I	O	|	|	|	|	4.23
30.750	0.00	0.91	2.299	I	O	|	|	|	|	4.22
30.833	0.00	0.91	2.293	I	O	|	|	|	|	4.22
30.917	0.00	0.91	2.286	I	O	|	|	|	|	4.22
31.000	0.00	0.91	2.280	I	O	|	|	|	|	4.21
31.083	0.00	0.90	2.274	I	O	|	|	|	|	4.21
31.167	0.00	0.90	2.268	I	O	|	|	|	|	4.20
31.250	0.00	0.90	2.261	I	O	|	|	|	|	4.20
31.333	0.00	0.90	2.255	I	O	|	|	|	|	4.20
31.417	0.00	0.90	2.249	I	O	|	|	|	|	4.19
31.500	0.00	0.90	2.243	I	O	|	|	|	|	4.19
31.583	0.00	0.90	2.237	I	O	|	|	|	|	4.18
31.667	0.00	0.90	2.230	I	O	|	|	|	|	4.18
31.750	0.00	0.90	2.224	I	O	|	|	|	|	4.18
31.833	0.00	0.90	2.218	I	O	|	|	|	|	4.17
31.917	0.00	0.90	2.212	I	O	|	|	|	|	4.17
32.000	0.00	0.90	2.206	I	O	|	|	|	|	4.17
32.083	0.00	0.90	2.199	I	O	|	|	|	|	4.16
32.167	0.00	0.90	2.193	I	O	|	|	|	|	4.16
32.250	0.00	0.90	2.187	I	O	|	|	|	|	4.15
32.333	0.00	0.90	2.181	I	O	|	|	|	|	4.15
32.417	0.00	0.90	2.175	I	O	|	|	|	|	4.15
32.500	0.00	0.90	2.168	I	O	|	|	|	|	4.14
32.583	0.00	0.90	2.162	I	O	|	|	|	|	4.14
32.667	0.00	0.90	2.156	I	O	|	|	|	|	4.14
32.750	0.00	0.90	2.150	I	O	|	|	|	|	4.13
32.833	0.00	0.90	2.144	I	O	|	|	|	|	4.13
32.917	0.00	0.89	2.138	I	O	|	|	|	|	4.12
33.000	0.00	0.89	2.131	I	O	|	|	|	|	4.12
33.083	0.00	0.89	2.125	I	O	|	|	|	|	4.12
33.167	0.00	0.89	2.119	I	O	|	|	|	|	4.11
33.250	0.00	0.89	2.113	I	O	|	|	|	|	4.11
33.333	0.00	0.89	2.107	I	O	|	|	|	|	4.11
33.417	0.00	0.89	2.101	I	O	|	|	|	|	4.10
33.500	0.00	0.89	2.094	I	O	|	|	|	|	4.10
33.583	0.00	0.89	2.088	I	O	|	|	|	|	4.09
33.667	0.00	0.89	2.082	I	O	|	|	|	|	4.09
33.750	0.00	0.89	2.076	I	O	|	|	|	|	4.09
33.833	0.00	0.89	2.070	I	O	|	|	|	|	4.08
33.917	0.00	0.89	2.064	I	O	|	|	|	|	4.08
34.000	0.00	0.89	2.058	I	O	|	|	|	|	4.08
34.083	0.00	0.89	2.052	I	O	|	|	|	|	4.07
34.167	0.00	0.89	2.045	I	O	|	|	|	|	4.07
34.250	0.00	0.89	2.039	I	O	|	|	|	|	4.06
34.333	0.00	0.89	2.033	I	O	|	|	|	|	4.06

34.417	0.00	0.89	2.027	I	O	|	|	|	|	4.06
34.500	0.00	0.89	2.021	I	O	|	|	|	|	4.05
34.583	0.00	0.89	2.015	I	O	|	|	|	|	4.05
34.667	0.00	0.89	2.009	I	O	|	|	|	|	4.05
34.750	0.00	0.89	2.003	I	O	|	|	|	|	4.04
34.833	0.00	0.88	1.997	I	O	|	|	|	|	4.04
34.917	0.00	0.88	1.991	I	O	|	|	|	|	4.03
35.000	0.00	0.88	1.984	I	O	|	|	|	|	4.03
35.083	0.00	0.88	1.978	I	O	|	|	|	|	4.03
35.167	0.00	0.88	1.972	I	O	|	|	|	|	4.02
35.250	0.00	0.88	1.966	I	O	|	|	|	|	4.02
35.333	0.00	0.88	1.960	I	O	|	|	|	|	4.02
35.417	0.00	0.88	1.954	I	O	|	|	|	|	4.01
35.500	0.00	0.88	1.948	I	O	|	|	|	|	4.01
35.583	0.00	0.88	1.942	I	O	|	|	|	|	4.00
35.667	0.00	0.88	1.936	I	O	|	|	|	|	4.00
35.750	0.00	0.88	1.930	I	O	|	|	|	|	3.99
35.833	0.00	0.88	1.924	I	O	|	|	|	|	3.98
35.917	0.00	0.88	1.918	I	O	|	|	|	|	3.97
36.000	0.00	0.87	1.912	I	O	|	|	|	|	3.95
36.083	0.00	0.87	1.906	I	O	|	|	|	|	3.94
36.167	0.00	0.87	1.900	I	O	|	|	|	|	3.93
36.250	0.00	0.87	1.894	I	O	|	|	|	|	3.92
36.333	0.00	0.87	1.888	I	O	|	|	|	|	3.90
36.417	0.00	0.86	1.882	I	O	|	|	|	|	3.89
36.500	0.00	0.86	1.876	I	O	|	|	|	|	3.88
36.583	0.00	0.86	1.870	I	O	|	|	|	|	3.87
36.667	0.00	0.86	1.864	I	O	|	|	|	|	3.86
36.750	0.00	0.86	1.858	I	O	|	|	|	|	3.84
36.833	0.00	0.86	1.852	I	O	|	|	|	|	3.83
36.917	0.00	0.85	1.846	I	O	|	|	|	|	3.82
37.000	0.00	0.85	1.840	I	O	|	|	|	|	3.81
37.083	0.00	0.85	1.834	I	O	|	|	|	|	3.79
37.167	0.00	0.85	1.829	I	O	|	|	|	|	3.78
37.250	0.00	0.85	1.823	I	O	|	|	|	|	3.77
37.333	0.00	0.85	1.817	I	O	|	|	|	|	3.76
37.417	0.00	0.84	1.811	I	O	|	|	|	|	3.75
37.500	0.00	0.84	1.805	I	O	|	|	|	|	3.73
37.583	0.00	0.84	1.800	I	O	|	|	|	|	3.72
37.667	0.00	0.84	1.794	I	O	|	|	|	|	3.71
37.750	0.00	0.84	1.788	I	O	|	|	|	|	3.70
37.833	0.00	0.84	1.782	I	O	|	|	|	|	3.69
37.917	0.00	0.83	1.776	I	O	|	|	|	|	3.67
38.000	0.00	0.83	1.771	I	O	|	|	|	|	3.66
38.083	0.00	0.83	1.765	I	O	|	|	|	|	3.65
38.167	0.00	0.83	1.759	I	O	|	|	|	|	3.64
38.250	0.00	0.83	1.754	I	O	|	|	|	|	3.63
38.333	0.00	0.83	1.748	I	O	|	|	|	|	3.62
38.417	0.00	0.82	1.742	I	O	|	|	|	|	3.60
38.500	0.00	0.82	1.736	I	O	|	|	|	|	3.59
38.583	0.00	0.82	1.731	I	O	|	|	|	|	3.58
38.667	0.00	0.82	1.725	I	O	|	|	|	|	3.57
38.750	0.00	0.82	1.720	I	O	|	|	|	|	3.56
38.833	0.00	0.82	1.714	I	O	|	|	|	|	3.55

38.917	0.00	0.81	1.708	I	O	|	|	|	|	3.53
39.000	0.00	0.81	1.703	I	O	|	|	|	|	3.52
39.083	0.00	0.81	1.697	I	O	|	|	|	|	3.51
39.167	0.00	0.81	1.692	I	O	|	|	|	|	3.50
39.250	0.00	0.81	1.686	I	O	|	|	|	|	3.49
39.333	0.00	0.81	1.680	I	O	|	|	|	|	3.48
39.417	0.00	0.81	1.675	I	O	|	|	|	|	3.46
39.500	0.00	0.80	1.669	I	O	|	|	|	|	3.45
39.583	0.00	0.80	1.664	I	O	|	|	|	|	3.44
39.667	0.00	0.80	1.658	I	O	|	|	|	|	3.43
39.750	0.00	0.80	1.653	I	O	|	|	|	|	3.42
39.833	0.00	0.80	1.647	I	O	|	|	|	|	3.41
39.917	0.00	0.80	1.642	I	O	|	|	|	|	3.40
40.000	0.00	0.79	1.636	I	O	|	|	|	|	3.38
40.083	0.00	0.79	1.631	I	O	|	|	|	|	3.37
40.167	0.00	0.79	1.625	I	O	|	|	|	|	3.36
40.250	0.00	0.79	1.620	I	O	|	|	|	|	3.35
40.333	0.00	0.79	1.615	I	O	|	|	|	|	3.34
40.417	0.00	0.79	1.609	I	O	|	|	|	|	3.33
40.500	0.00	0.78	1.604	I	O	|	|	|	|	3.32
40.583	0.00	0.78	1.598	I	O	|	|	|	|	3.31
40.667	0.00	0.78	1.593	I	O	|	|	|	|	3.30
40.750	0.00	0.78	1.588	I	O	|	|	|	|	3.28
40.833	0.00	0.78	1.582	I	O	|	|	|	|	3.27
40.917	0.00	0.78	1.577	I	O	|	|	|	|	3.26
41.000	0.00	0.78	1.571	I	O	|	|	|	|	3.25
41.083	0.00	0.77	1.566	I	O	|	|	|	|	3.24
41.167	0.00	0.77	1.561	I	O	|	|	|	|	3.23
41.250	0.00	0.77	1.555	I	O	|	|	|	|	3.22
41.333	0.00	0.77	1.550	I	O	|	|	|	|	3.21
41.417	0.00	0.77	1.545	I	O	|	|	|	|	3.20
41.500	0.00	0.77	1.540	I	O	|	|	|	|	3.19
41.583	0.00	0.76	1.534	I	O	|	|	|	|	3.17
41.667	0.00	0.76	1.529	I	O	|	|	|	|	3.16
41.750	0.00	0.76	1.524	I	O	|	|	|	|	3.15
41.833	0.00	0.76	1.519	I	O	|	|	|	|	3.14
41.917	0.00	0.76	1.513	I	O	|	|	|	|	3.13
42.000	0.00	0.76	1.508	I	O	|	|	|	|	3.12
42.083	0.00	0.76	1.503	I	O	|	|	|	|	3.11
42.167	0.00	0.75	1.498	I	O	|	|	|	|	3.10
42.250	0.00	0.75	1.493	I	O	|	|	|	|	3.09
42.333	0.00	0.75	1.487	I	O	|	|	|	|	3.08
42.417	0.00	0.75	1.482	I	O	|	|	|	|	3.07
42.500	0.00	0.75	1.477	I	O	|	|	|	|	3.06
42.583	0.00	0.75	1.472	I	O	|	|	|	|	3.05
42.667	0.00	0.74	1.467	I	O	|	|	|	|	3.03
42.750	0.00	0.74	1.462	I	O	|	|	|	|	3.02
42.833	0.00	0.74	1.457	I	O	|	|	|	|	3.01
42.917	0.00	0.74	1.451	I	O	|	|	|	|	3.00
43.000	0.00	0.74	1.446	I	O	|	|	|	|	2.99
43.083	0.00	0.74	1.441	I	O	|	|	|	|	2.98
43.167	0.00	0.74	1.436	I	O	|	|	|	|	2.97
43.250	0.00	0.73	1.431	I	O	|	|	|	|	2.96
43.333	0.00	0.73	1.426	I	O	|	|	|	|	2.95

43.417	0.00	0.73	1.421	I	O	|	|	|	2.94
43.500	0.00	0.73	1.416	I	O	|	|	|	2.93
43.583	0.00	0.73	1.411	I	O	|	|	|	2.92
43.667	0.00	0.73	1.406	I	O	|	|	|	2.91
43.750	0.00	0.72	1.401	I	O	|	|	|	2.90
43.833	0.00	0.72	1.396	I	O	|	|	|	2.89
43.917	0.00	0.72	1.391	I	O	|	|	|	2.88
44.000	0.00	0.72	1.386	I	O	|	|	|	2.87
44.083	0.00	0.72	1.381	I	O	|	|	|	2.86
44.167	0.00	0.72	1.376	I	O	|	|	|	2.85
44.250	0.00	0.71	1.371	I	O	|	|	|	2.84
44.333	0.00	0.71	1.366	I	O	|	|	|	2.83
44.417	0.00	0.71	1.362	I	O	|	|	|	2.82
44.500	0.00	0.71	1.357	I	O	|	|	|	2.81
44.583	0.00	0.71	1.352	I	O	|	|	|	2.80
44.667	0.00	0.71	1.347	I	O	|	|	|	2.79
44.750	0.00	0.70	1.342	I	O	|	|	|	2.78
44.833	0.00	0.70	1.337	I	O	|	|	|	2.77
44.917	0.00	0.70	1.332	I	O	|	|	|	2.76
45.000	0.00	0.70	1.328	I	O	|	|	|	2.75
45.083	0.00	0.70	1.323	I	O	|	|	|	2.74
45.167	0.00	0.70	1.318	I	O	|	|	|	2.73
45.250	0.00	0.69	1.313	I	O	|	|	|	2.72
45.333	0.00	0.69	1.308	I	O	|	|	|	2.71
45.417	0.00	0.69	1.304	I	O	|	|	|	2.70
45.500	0.00	0.69	1.299	I	O	|	|	|	2.69
45.583	0.00	0.69	1.294	I	O	|	|	|	2.68
45.667	0.00	0.69	1.289	I	O	|	|	|	2.67
45.750	0.00	0.69	1.285	I	O	|	|	|	2.66
45.833	0.00	0.68	1.280	I	O	|	|	|	2.65
45.917	0.00	0.68	1.275	I	O	|	|	|	2.64
46.000	0.00	0.68	1.270	I	O	|	|	|	2.63
46.083	0.00	0.68	1.266	I	O	|	|	|	2.62
46.167	0.00	0.68	1.261	I	O	|	|	|	2.61
46.250	0.00	0.68	1.256	I	O	|	|	|	2.60
46.333	0.00	0.67	1.252	I	O	|	|	|	2.59
46.417	0.00	0.67	1.247	I	O	|	|	|	2.58
46.500	0.00	0.67	1.243	I	O	|	|	|	2.57
46.583	0.00	0.67	1.238	I	O	|	|	|	2.56
46.667	0.00	0.67	1.233	I	O	|	|	|	2.55
46.750	0.00	0.67	1.229	I	O	|	|	|	2.54
46.833	0.00	0.67	1.224	I	O	|	|	|	2.53
46.917	0.00	0.66	1.220	I	O	|	|	|	2.52
47.000	0.00	0.66	1.215	I	O	|	|	|	2.51
47.083	0.00	0.66	1.210	I	O	|	|	|	2.50
47.167	0.00	0.66	1.206	I	O	|	|	|	2.49
47.250	0.00	0.66	1.201	I	O	|	|	|	2.49
47.333	0.00	0.66	1.197	I	O	|	|	|	2.48
47.417	0.00	0.65	1.192	I	O	|	|	|	2.47
47.500	0.00	0.65	1.188	I	O	|	|	|	2.46
47.583	0.00	0.65	1.183	I	O	|	|	|	2.45
47.667	0.00	0.65	1.179	I	O	|	|	|	2.44
47.750	0.00	0.65	1.174	I	O	|	|	|	2.43
47.833	0.00	0.65	1.170	I	O	|	|	|	2.42

47.917	0.00	0.65	1.165	I O	|	|	|	2.41
48.000	0.00	0.64	1.161	I O	|	|	|	2.40
48.083	0.00	0.64	1.157	I O	|	|	|	2.39
48.167	0.00	0.64	1.152	I O	|	|	|	2.38
48.250	0.00	0.64	1.148	I O	|	|	|	2.37
48.333	0.00	0.64	1.143	I O	|	|	|	2.37
48.417	0.00	0.64	1.139	I O	|	|	|	2.36
48.500	0.00	0.64	1.135	I O	|	|	|	2.35
48.583	0.00	0.63	1.130	I O	|	|	|	2.34
48.667	0.00	0.63	1.126	I O	|	|	|	2.33
48.750	0.00	0.63	1.122	I O	|	|	|	2.32
48.833	0.00	0.63	1.117	I O	|	|	|	2.31
48.917	0.00	0.63	1.113	I O	|	|	|	2.30
49.000	0.00	0.63	1.109	I O	|	|	|	2.29
49.083	0.00	0.63	1.104	I O	|	|	|	2.28
49.167	0.00	0.62	1.100	I O	|	|	|	2.28
49.250	0.00	0.62	1.096	I O	|	|	|	2.27
49.333	0.00	0.62	1.091	I O	|	|	|	2.26
49.417	0.00	0.62	1.087	I O	|	|	|	2.25
49.500	0.00	0.62	1.083	I O	|	|	|	2.24
49.583	0.00	0.62	1.079	I O	|	|	|	2.23
49.667	0.00	0.62	1.074	I O	|	|	|	2.22
49.750	0.00	0.61	1.070	I O	|	|	|	2.21
49.833	0.00	0.61	1.066	I O	|	|	|	2.20
49.917	0.00	0.61	1.062	I O	|	|	|	2.20
50.000	0.00	0.61	1.057	I O	|	|	|	2.19
50.083	0.00	0.61	1.053	I O	|	|	|	2.18
50.167	0.00	0.61	1.049	I O	|	|	|	2.17
50.250	0.00	0.61	1.045	I O	|	|	|	2.16
50.333	0.00	0.60	1.041	I O	|	|	|	2.15
50.417	0.00	0.60	1.037	I O	|	|	|	2.14
50.500	0.00	0.60	1.032	I O	|	|	|	2.14
50.583	0.00	0.60	1.028	I O	|	|	|	2.13
50.667	0.00	0.60	1.024	I O	|	|	|	2.12
50.750	0.00	0.60	1.020	I O	|	|	|	2.11
50.833	0.00	0.60	1.016	I O	|	|	|	2.10
50.917	0.00	0.59	1.012	I O	|	|	|	2.09
51.000	0.00	0.59	1.008	I O	|	|	|	2.08
51.083	0.00	0.59	1.004	I O	|	|	|	2.08
51.167	0.00	0.59	1.000	I O	|	|	|	2.07
51.250	0.00	0.59	0.995	I O	|	|	|	2.06
51.333	0.00	0.59	0.991	I O	|	|	|	2.05
51.417	0.00	0.59	0.987	I O	|	|	|	2.04
51.500	0.00	0.59	0.983	I O	|	|	|	2.03
51.583	0.00	0.58	0.979	I O	|	|	|	2.03
51.667	0.00	0.58	0.975	I O	|	|	|	2.02
51.750	0.00	0.58	0.971	I O	|	|	|	2.01
51.833	0.00	0.58	0.967	I O	|	|	|	2.00
51.917	0.00	0.58	0.963	I O	|	|	|	1.99
52.000	0.00	0.58	0.959	I O	|	|	|	1.99
52.083	0.00	0.58	0.955	I O	|	|	|	1.98
52.167	0.00	0.57	0.951	I O	|	|	|	1.98
52.250	0.00	0.57	0.947	I O	|	|	|	1.97
52.333	0.00	0.57	0.943	I O	|	|	|	1.96

52.417	0.00	0.57	0.940	I	O	|	|	|	|	1.96
52.500	0.00	0.57	0.936	I	O	|	|	|	|	1.95
52.583	0.00	0.57	0.932	I	O	|	|	|	|	1.95
52.667	0.00	0.56	0.928	I	O	|	|	|	|	1.94
52.750	0.00	0.56	0.924	I	O	|	|	|	|	1.93
52.833	0.00	0.56	0.920	I	O	|	|	|	|	1.93
52.917	0.00	0.56	0.916	I	O	|	|	|	|	1.92
53.000	0.00	0.56	0.912	I	O	|	|	|	|	1.92
53.083	0.00	0.56	0.909	I	O	|	|	|	|	1.91
53.167	0.00	0.56	0.905	I	O	|	|	|	|	1.90
53.250	0.00	0.55	0.901	I	O	|	|	|	|	1.90
53.333	0.00	0.55	0.897	I	O	|	|	|	|	1.89
53.417	0.00	0.55	0.893	I	O	|	|	|	|	1.89
53.500	0.00	0.55	0.889	I	O	|	|	|	|	1.88
53.583	0.00	0.55	0.886	I	O	|	|	|	|	1.87
53.667	0.00	0.55	0.882	I	O	|	|	|	|	1.87
53.750	0.00	0.55	0.878	I	O	|	|	|	|	1.86
53.833	0.00	0.54	0.874	I	O	|	|	|	|	1.86
53.917	0.00	0.54	0.871	I	O	|	|	|	|	1.85
54.000	0.00	0.54	0.867	I	O	|	|	|	|	1.84
54.083	0.00	0.54	0.863	I	O	|	|	|	|	1.84
54.167	0.00	0.54	0.859	I	O	|	|	|	|	1.83
54.250	0.00	0.54	0.856	I	O	|	|	|	|	1.83
54.333	0.00	0.54	0.852	I	O	|	|	|	|	1.82
54.417	0.00	0.53	0.848	I	O	|	|	|	|	1.82
54.500	0.00	0.53	0.845	I	O	|	|	|	|	1.81
54.583	0.00	0.53	0.841	I	O	|	|	|	|	1.80
54.667	0.00	0.53	0.837	I	O	|	|	|	|	1.80
54.750	0.00	0.53	0.834	I	O	|	|	|	|	1.79
54.833	0.00	0.53	0.830	I	O	|	|	|	|	1.79
54.917	0.00	0.53	0.827	I	O	|	|	|	|	1.78
55.000	0.00	0.52	0.823	I	O	|	|	|	|	1.78
55.083	0.00	0.52	0.819	I	O	|	|	|	|	1.77
55.167	0.00	0.52	0.816	I	O	|	|	|	|	1.77
55.250	0.00	0.52	0.812	I	O	|	|	|	|	1.76
55.333	0.00	0.52	0.809	I	O	|	|	|	|	1.75
55.417	0.00	0.52	0.805	I	O	|	|	|	|	1.75
55.500	0.00	0.52	0.801	I	O	|	|	|	|	1.74
55.583	0.00	0.51	0.798	I	O	|	|	|	|	1.74
55.667	0.00	0.51	0.794	I	O	|	|	|	|	1.73
55.750	0.00	0.51	0.791	I	O	|	|	|	|	1.73
55.833	0.00	0.51	0.787	I	O	|	|	|	|	1.72
55.917	0.00	0.51	0.784	I	O	|	|	|	|	1.72
56.000	0.00	0.51	0.780	I	O	|	|	|	|	1.71
56.083	0.00	0.51	0.777	I	O	|	|	|	|	1.71
56.167	0.00	0.50	0.773	I	O	|	|	|	|	1.70
56.250	0.00	0.50	0.770	I	O	|	|	|	|	1.69
56.333	0.00	0.50	0.766	I	O	|	|	|	|	1.69
56.417	0.00	0.50	0.763	I	O	|	|	|	|	1.68
56.500	0.00	0.50	0.759	I	O	|	|	|	|	1.68
56.583	0.00	0.50	0.756	I	O	|	|	|	|	1.67
56.667	0.00	0.50	0.753	I	O	|	|	|	|	1.67
56.750	0.00	0.50	0.749	I	O	|	|	|	|	1.66
56.833	0.00	0.49	0.746	I	O	|	|	|	|	1.66

56.917	0.00	0.49	0.742	I O	|	|	|	1.65
57.000	0.00	0.49	0.739	I O	|	|	|	1.65
57.083	0.00	0.49	0.736	I O	|	|	|	1.64
57.167	0.00	0.49	0.732	I O	|	|	|	1.64
57.250	0.00	0.49	0.729	I O	|	|	|	1.63
57.333	0.00	0.49	0.726	I O	|	|	|	1.63
57.417	0.00	0.49	0.722	I O	|	|	|	1.62
57.500	0.00	0.48	0.719	I O	|	|	|	1.62
57.583	0.00	0.48	0.715	I O	|	|	|	1.61
57.667	0.00	0.48	0.712	I O	|	|	|	1.60
57.750	0.00	0.48	0.709	I O	|	|	|	1.60
57.833	0.00	0.48	0.706	I O	|	|	|	1.59
57.917	0.00	0.48	0.702	I O	|	|	|	1.59
58.000	0.00	0.48	0.699	I O	|	|	|	1.58
58.083	0.00	0.47	0.696	I O	|	|	|	1.58
58.167	0.00	0.47	0.692	I O	|	|	|	1.57
58.250	0.00	0.47	0.689	I O	|	|	|	1.57
58.333	0.00	0.47	0.686	I O	|	|	|	1.56
58.417	0.00	0.47	0.683	I O	|	|	|	1.56
58.500	0.00	0.47	0.679	I O	|	|	|	1.55
58.583	0.00	0.47	0.676	I O	|	|	|	1.55
58.667	0.00	0.47	0.673	I O	|	|	|	1.54
58.750	0.00	0.46	0.670	I O	|	|	|	1.54
58.833	0.00	0.46	0.667	I O	|	|	|	1.53
58.917	0.00	0.46	0.663	I O	|	|	|	1.53
59.000	0.00	0.46	0.660	I O	|	|	|	1.52
59.083	0.00	0.46	0.657	IO	|	|	|	1.52
59.167	0.00	0.46	0.654	IO	|	|	|	1.51
59.250	0.00	0.46	0.651	IO	|	|	|	1.51
59.333	0.00	0.46	0.648	IO	|	|	|	1.50
59.417	0.00	0.45	0.644	IO	|	|	|	1.50
59.500	0.00	0.45	0.641	IO	|	|	|	1.50
59.583	0.00	0.45	0.638	IO	|	|	|	1.49
59.667	0.00	0.45	0.635	IO	|	|	|	1.49
59.750	0.00	0.45	0.632	IO	|	|	|	1.48
59.833	0.00	0.45	0.629	IO	|	|	|	1.48
59.917	0.00	0.45	0.626	IO	|	|	|	1.47
60.000	0.00	0.45	0.623	IO	|	|	|	1.47
60.083	0.00	0.45	0.620	IO	|	|	|	1.46
60.167	0.00	0.44	0.617	IO	|	|	|	1.46
60.250	0.00	0.44	0.614	IO	|	|	|	1.45
60.333	0.00	0.44	0.611	IO	|	|	|	1.45
60.417	0.00	0.44	0.607	IO	|	|	|	1.44
60.500	0.00	0.44	0.604	IO	|	|	|	1.44
60.583	0.00	0.44	0.601	IO	|	|	|	1.43
60.667	0.00	0.44	0.598	IO	|	|	|	1.43
60.750	0.00	0.44	0.595	IO	|	|	|	1.42
60.833	0.00	0.43	0.592	IO	|	|	|	1.42
60.917	0.00	0.43	0.589	IO	|	|	|	1.41
61.000	0.00	0.43	0.586	IO	|	|	|	1.41
61.083	0.00	0.43	0.583	IO	|	|	|	1.41
61.167	0.00	0.43	0.581	IO	|	|	|	1.40
61.250	0.00	0.43	0.578	IO	|	|	|	1.40
61.333	0.00	0.43	0.575	IO	|	|	|	1.39

61.417	0.00	0.43	0.572	IO				1.39
61.500	0.00	0.43	0.569	IO				1.38
61.583	0.00	0.42	0.566	IO				1.38
61.667	0.00	0.42	0.563	IO				1.37
61.750	0.00	0.42	0.560	IO				1.37
61.833	0.00	0.42	0.557	IO				1.36
61.917	0.00	0.42	0.554	IO				1.36
62.000	0.00	0.42	0.551	IO				1.36
62.083	0.00	0.42	0.548	IO				1.35
62.167	0.00	0.42	0.546	IO				1.35
62.250	0.00	0.42	0.543	IO				1.34
62.333	0.00	0.41	0.540	IO				1.34
62.417	0.00	0.41	0.537	IO				1.33
62.500	0.00	0.41	0.534	IO				1.33
62.583	0.00	0.41	0.531	IO				1.32
62.667	0.00	0.41	0.528	IO				1.32
62.750	0.00	0.41	0.526	IO				1.32
62.833	0.00	0.41	0.523	IO				1.31
62.917	0.00	0.41	0.520	IO				1.31
63.000	0.00	0.41	0.517	IO				1.30
63.083	0.00	0.40	0.514	IO				1.30
63.167	0.00	0.40	0.512	IO				1.29
63.250	0.00	0.40	0.509	IO				1.29
63.333	0.00	0.40	0.506	IO				1.29
63.417	0.00	0.40	0.503	IO				1.28
63.500	0.00	0.40	0.501	IO				1.28
63.583	0.00	0.40	0.498	IO				1.27
63.667	0.00	0.40	0.495	IO				1.27
63.750	0.00	0.40	0.492	IO				1.26
63.833	0.00	0.39	0.490	IO				1.26
63.917	0.00	0.39	0.487	IO				1.26
64.000	0.00	0.39	0.484	IO				1.25
64.083	0.00	0.39	0.482	IO				1.25
64.167	0.00	0.39	0.479	IO				1.24
64.250	0.00	0.39	0.476	IO				1.24
64.333	0.00	0.39	0.473	IO				1.23
64.417	0.00	0.39	0.471	IO				1.23
64.500	0.00	0.39	0.468	IO				1.23
64.583	0.00	0.39	0.465	IO				1.22
64.667	0.00	0.38	0.463	IO				1.22
64.750	0.00	0.38	0.460	IO				1.21
64.833	0.00	0.38	0.458	IO				1.21
64.917	0.00	0.38	0.455	IO				1.21
65.000	0.00	0.38	0.452	IO				1.20
65.083	0.00	0.38	0.450	IO				1.20
65.167	0.00	0.38	0.447	IO				1.19
65.250	0.00	0.38	0.444	IO				1.19
65.333	0.00	0.38	0.442	IO				1.19
65.417	0.00	0.38	0.439	IO				1.18
65.500	0.00	0.37	0.437	IO				1.18
65.583	0.00	0.37	0.434	IO				1.17
65.667	0.00	0.37	0.432	IO				1.17
65.750	0.00	0.37	0.429	IO				1.17
65.833	0.00	0.37	0.426	IO				1.16

65.917	0.00	0.37	0.424	IO				1.16
66.000	0.00	0.37	0.421	IO				1.15
66.083	0.00	0.37	0.419	IO				1.15
66.167	0.00	0.37	0.416	IO				1.15
66.250	0.00	0.37	0.414	IO				1.14
66.333	0.00	0.36	0.411	IO				1.14
66.417	0.00	0.36	0.409	IO				1.13
66.500	0.00	0.36	0.406	IO				1.13
66.583	0.00	0.36	0.404	IO				1.13
66.667	0.00	0.36	0.401	IO				1.12
66.750	0.00	0.36	0.399	IO				1.12
66.833	0.00	0.36	0.396	IO				1.12
66.917	0.00	0.36	0.394	IO				1.11
67.000	0.00	0.36	0.391	IO				1.11
67.083	0.00	0.36	0.389	IO				1.10
67.167	0.00	0.35	0.386	IO				1.10
67.250	0.00	0.35	0.384	IO				1.10
67.333	0.00	0.35	0.382	IO				1.09
67.417	0.00	0.35	0.379	IO				1.09
67.500	0.00	0.35	0.377	IO				1.08
67.583	0.00	0.35	0.374	IO				1.08
67.667	0.00	0.35	0.372	IO				1.08
67.750	0.00	0.35	0.369	IO				1.07
67.833	0.00	0.35	0.367	IO				1.07
67.917	0.00	0.35	0.365	IO				1.07
68.000	0.00	0.35	0.362	IO				1.06
68.083	0.00	0.34	0.360	IO				1.06
68.167	0.00	0.34	0.358	IO				1.06
68.250	0.00	0.34	0.355	IO				1.05
68.333	0.00	0.34	0.353	IO				1.05
68.417	0.00	0.34	0.350	IO				1.04
68.500	0.00	0.34	0.348	IO				1.04
68.583	0.00	0.34	0.346	IO				1.04
68.667	0.00	0.34	0.343	IO				1.03
68.750	0.00	0.34	0.341	IO				1.03
68.833	0.00	0.34	0.339	IO				1.03
68.917	0.00	0.34	0.337	IO				1.02
69.000	0.00	0.33	0.334	IO				1.02
69.083	0.00	0.33	0.332	IO				1.02
69.167	0.00	0.33	0.330	IO				1.01
69.250	0.00	0.33	0.327	IO				1.01
69.333	0.00	0.33	0.325	IO				1.00
69.417	0.00	0.33	0.323	IO				1.00
69.500	0.00	0.33	0.320	IO				1.00
69.583	0.00	0.33	0.318	IO				0.99
69.667	0.00	0.32	0.316	IO				0.98
69.750	0.00	0.32	0.314	IO				0.97
69.833	0.00	0.32	0.312	IO				0.97
69.917	0.00	0.32	0.309	IO				0.96
70.000	0.00	0.31	0.307	IO				0.95
70.083	0.00	0.31	0.305	IO				0.95
70.167	0.00	0.31	0.303	IO				0.94
70.250	0.00	0.31	0.301	IO				0.93
70.333	0.00	0.31	0.299	IO				0.93

70.417	0.00	0.30	0.297	IO				0.92
70.500	0.00	0.30	0.294	IO				0.91
70.583	0.00	0.30	0.292	IO				0.91
70.667	0.00	0.30	0.290	IO				0.90
70.750	0.00	0.30	0.288	IO				0.90
70.833	0.00	0.29	0.286	IO				0.89
70.917	0.00	0.29	0.284	IO				0.88
71.000	0.00	0.29	0.282	IO				0.88
71.083	0.00	0.29	0.280	IO				0.87
71.167	0.00	0.29	0.278	IO				0.86
71.250	0.00	0.28	0.276	IO				0.86
71.333	0.00	0.28	0.274	IO				0.85
71.417	0.00	0.28	0.272	IO				0.85
71.500	0.00	0.28	0.271	IO				0.84
71.583	0.00	0.28	0.269	IO				0.83
71.667	0.00	0.27	0.267	IO				0.83
71.750	0.00	0.27	0.265	IO				0.82
71.833	0.00	0.27	0.263	IO				0.82
71.917	0.00	0.27	0.261	IO				0.81
72.000	0.00	0.27	0.259	IO				0.81
72.083	0.00	0.26	0.257	IO				0.80
72.167	0.00	0.26	0.256	IO				0.79
72.250	0.00	0.26	0.254	IO				0.79
72.333	0.00	0.26	0.252	IO				0.78
72.417	0.00	0.26	0.250	IO				0.78
72.500	0.00	0.25	0.249	IO				0.77
72.583	0.00	0.25	0.247	IO				0.77
72.667	0.00	0.25	0.245	IO				0.76
72.750	0.00	0.25	0.243	IO				0.76
72.833	0.00	0.25	0.242	IO				0.75
72.917	0.00	0.25	0.240	IO				0.75
73.000	0.00	0.24	0.238	IO				0.74
73.083	0.00	0.24	0.237	IO				0.73
73.167	0.00	0.24	0.235	IO				0.73
73.250	0.00	0.24	0.233	IO				0.72
73.333	0.00	0.24	0.232	IO				0.72
73.417	0.00	0.24	0.230	IO				0.71
73.500	0.00	0.23	0.228	IO				0.71
73.583	0.00	0.23	0.227	IO				0.70
73.667	0.00	0.23	0.225	IO				0.70
73.750	0.00	0.23	0.224	O				0.69
73.833	0.00	0.23	0.222	O				0.69
73.917	0.00	0.23	0.220	O				0.68
74.000	0.00	0.22	0.219	O				0.68
74.083	0.00	0.22	0.217	O				0.68
74.167	0.00	0.22	0.216	O				0.67
74.250	0.00	0.22	0.214	O				0.67
74.333	0.00	0.22	0.213	O				0.66
74.417	0.00	0.22	0.211	O				0.66
74.500	0.00	0.22	0.210	O				0.65
74.583	0.00	0.21	0.208	O				0.65
74.667	0.00	0.21	0.207	O				0.64
74.750	0.00	0.21	0.205	O				0.64
74.833	0.00	0.21	0.204	O				0.63

74.917	0.00	0.21	0.203	O	|	|	|	0.63
75.000	0.00	0.21	0.201	O	|	|	|	0.62
75.083	0.00	0.20	0.200	O	|	|	|	0.62
75.167	0.00	0.20	0.198	O	|	|	|	0.62
75.250	0.00	0.20	0.197	O	|	|	|	0.61
75.333	0.00	0.20	0.196	O	|	|	|	0.61
75.417	0.00	0.20	0.194	O	|	|	|	0.60
75.500	0.00	0.20	0.193	O	|	|	|	0.60
75.583	0.00	0.20	0.191	O	|	|	|	0.59
75.667	0.00	0.19	0.190	O	|	|	|	0.59
75.750	0.00	0.19	0.189	O	|	|	|	0.59
75.833	0.00	0.19	0.187	O	|	|	|	0.58
75.917	0.00	0.19	0.186	O	|	|	|	0.58
76.000	0.00	0.19	0.185	O	|	|	|	0.57
76.083	0.00	0.19	0.183	O	|	|	|	0.57
76.167	0.00	0.19	0.182	O	|	|	|	0.57
76.250	0.00	0.19	0.181	O	|	|	|	0.56
76.333	0.00	0.18	0.180	O	|	|	|	0.56
76.417	0.00	0.18	0.178	O	|	|	|	0.55
76.500	0.00	0.18	0.177	O	|	|	|	0.55
76.583	0.00	0.18	0.176	O	|	|	|	0.55
76.667	0.00	0.18	0.175	O	|	|	|	0.54
76.750	0.00	0.18	0.173	O	|	|	|	0.54
76.833	0.00	0.18	0.172	O	|	|	|	0.53
76.917	0.00	0.18	0.171	O	|	|	|	0.53
77.000	0.00	0.17	0.170	O	|	|	|	0.53
77.083	0.00	0.17	0.169	O	|	|	|	0.52
77.167	0.00	0.17	0.167	O	|	|	|	0.52
77.250	0.00	0.17	0.166	O	|	|	|	0.52
77.333	0.00	0.17	0.165	O	|	|	|	0.51
77.417	0.00	0.17	0.164	O	|	|	|	0.51
77.500	0.00	0.17	0.163	O	|	|	|	0.51
77.583	0.00	0.17	0.162	O	|	|	|	0.50
77.667	0.00	0.16	0.160	O	|	|	|	0.50
77.750	0.00	0.16	0.159	O	|	|	|	0.49
77.833	0.00	0.16	0.158	O	|	|	|	0.49
77.917	0.00	0.16	0.157	O	|	|	|	0.49
78.000	0.00	0.16	0.156	O	|	|	|	0.48
78.083	0.00	0.16	0.155	O	|	|	|	0.48
78.167	0.00	0.16	0.154	O	|	|	|	0.48
78.250	0.00	0.16	0.153	O	|	|	|	0.47
78.333	0.00	0.16	0.152	O	|	|	|	0.47
78.417	0.00	0.15	0.151	O	|	|	|	0.47
78.500	0.00	0.15	0.150	O	|	|	|	0.46
78.583	0.00	0.15	0.148	O	|	|	|	0.46
78.667	0.00	0.15	0.147	O	|	|	|	0.46
78.750	0.00	0.15	0.146	O	|	|	|	0.45
78.833	0.00	0.15	0.145	O	|	|	|	0.45
78.917	0.00	0.15	0.144	O	|	|	|	0.45
79.000	0.00	0.15	0.143	O	|	|	|	0.45
79.083	0.00	0.15	0.142	O	|	|	|	0.44
79.167	0.00	0.14	0.141	O	|	|	|	0.44
79.250	0.00	0.14	0.140	O	|	|	|	0.44
79.333	0.00	0.14	0.139	O	|	|	|	0.43

79.417	0.00	0.14	0.138	O	|	|	|	|	0.43
79.500	0.00	0.14	0.137	O	|	|	|	|	0.43
79.583	0.00	0.14	0.136	O	|	|	|	|	0.42
79.667	0.00	0.14	0.135	O	|	|	|	|	0.42
79.750	0.00	0.14	0.135	O	|	|	|	|	0.42
79.833	0.00	0.14	0.134	O	|	|	|	|	0.41
79.917	0.00	0.14	0.133	O	|	|	|	|	0.41
80.000	0.00	0.13	0.132	O	|	|	|	|	0.41
80.083	0.00	0.13	0.131	O	|	|	|	|	0.41
80.167	0.00	0.13	0.130	O	|	|	|	|	0.40
80.250	0.00	0.13	0.129	O	|	|	|	|	0.40
80.333	0.00	0.13	0.128	O	|	|	|	|	0.40
80.417	0.00	0.13	0.127	O	|	|	|	|	0.39
80.500	0.00	0.13	0.126	O	|	|	|	|	0.39
80.583	0.00	0.13	0.125	O	|	|	|	|	0.39
80.667	0.00	0.13	0.124	O	|	|	|	|	0.39
80.750	0.00	0.13	0.124	O	|	|	|	|	0.38
80.833	0.00	0.13	0.123	O	|	|	|	|	0.38
80.917	0.00	0.12	0.122	O	|	|	|	|	0.38
81.000	0.00	0.12	0.121	O	|	|	|	|	0.38
81.083	0.00	0.12	0.120	O	|	|	|	|	0.37
81.167	0.00	0.12	0.119	O	|	|	|	|	0.37
81.250	0.00	0.12	0.118	O	|	|	|	|	0.37
81.333	0.00	0.12	0.118	O	|	|	|	|	0.37
81.417	0.00	0.12	0.117	O	|	|	|	|	0.36
81.500	0.00	0.12	0.116	O	|	|	|	|	0.36
81.583	0.00	0.12	0.115	O	|	|	|	|	0.36
81.667	0.00	0.12	0.114	O	|	|	|	|	0.36
81.750	0.00	0.12	0.114	O	|	|	|	|	0.35
81.833	0.00	0.12	0.113	O	|	|	|	|	0.35
81.917	0.00	0.11	0.112	O	|	|	|	|	0.35
82.000	0.00	0.11	0.111	O	|	|	|	|	0.35
82.083	0.00	0.11	0.110	O	|	|	|	|	0.34
82.167	0.00	0.11	0.110	O	|	|	|	|	0.34
82.250	0.00	0.11	0.109	O	|	|	|	|	0.34
82.333	0.00	0.11	0.108	O	|	|	|	|	0.34
82.417	0.00	0.11	0.107	O	|	|	|	|	0.33
82.500	0.00	0.11	0.107	O	|	|	|	|	0.33
82.583	0.00	0.11	0.106	O	|	|	|	|	0.33
82.667	0.00	0.11	0.105	O	|	|	|	|	0.33
82.750	0.00	0.11	0.104	O	|	|	|	|	0.32
82.833	0.00	0.11	0.104	O	|	|	|	|	0.32
82.917	0.00	0.11	0.103	O	|	|	|	|	0.32
83.000	0.00	0.10	0.102	O	|	|	|	|	0.32
83.083	0.00	0.10	0.101	O	|	|	|	|	0.31
83.167	0.00	0.10	0.101	O	|	|	|	|	0.31
83.250	0.00	0.10	0.100	O	|	|	|	|	0.31
83.333	0.00	0.10	0.099	O	|	|	|	|	0.31
83.417	0.00	0.10	0.099	O	|	|	|	|	0.31
83.500	0.00	0.10	0.098	O	|	|	|	|	0.30
83.583	0.00	0.10	0.097	O	|	|	|	|	0.30
83.667	0.00	0.10	0.097	O	|	|	|	|	0.30
83.750	0.00	0.10	0.096	O	|	|	|	|	0.30
83.833	0.00	0.10	0.095	O	|	|	|	|	0.30

83.917	0.00	0.10	0.095	O					0.29
84.000	0.00	0.10	0.094	O					0.29
84.083	0.00	0.10	0.093	O					0.29
84.167	0.00	0.09	0.093	O					0.29
84.250	0.00	0.09	0.092	O					0.29
84.333	0.00	0.09	0.091	O					0.28
84.417	0.00	0.09	0.091	O					0.28
84.500	0.00	0.09	0.090	O					0.28
84.583	0.00	0.09	0.089	O					0.28
84.667	0.00	0.09	0.089	O					0.28
84.750	0.00	0.09	0.088	O					0.27
84.833	0.00	0.09	0.087	O					0.27
84.917	0.00	0.09	0.087	O					0.27
85.000	0.00	0.09	0.086	O					0.27
85.083	0.00	0.09	0.086	O					0.27
85.167	0.00	0.09	0.085	O					0.26
85.250	0.00	0.09	0.084	O					0.26
85.333	0.00	0.09	0.084	O					0.26
85.417	0.00	0.09	0.083	O					0.26
85.500	0.00	0.08	0.083	O					0.26
85.583	0.00	0.08	0.082	O					0.25
85.667	0.00	0.08	0.081	O					0.25
85.750	0.00	0.08	0.081	O					0.25
85.833	0.00	0.08	0.080	O					0.25
85.917	0.00	0.08	0.080	O					0.25
86.000	0.00	0.08	0.079	O					0.25
86.083	0.00	0.08	0.079	O					0.24
86.167	0.00	0.08	0.078	O					0.24
86.250	0.00	0.08	0.078	O					0.24
86.333	0.00	0.08	0.077	O					0.24
86.417	0.00	0.08	0.076	O					0.24
86.500	0.00	0.08	0.076	O					0.24
86.583	0.00	0.08	0.075	O					0.23
86.667	0.00	0.08	0.075	O					0.23
86.750	0.00	0.08	0.074	O					0.23
86.833	0.00	0.08	0.074	O					0.23
86.917	0.00	0.08	0.073	O					0.23
87.000	0.00	0.07	0.073	O					0.23
87.083	0.00	0.07	0.072	O					0.22
87.167	0.00	0.07	0.072	O					0.22
87.250	0.00	0.07	0.071	O					0.22
87.333	0.00	0.07	0.071	O					0.22
87.417	0.00	0.07	0.070	O					0.22
87.500	0.00	0.07	0.070	O					0.22
87.583	0.00	0.07	0.069	O					0.22
87.667	0.00	0.07	0.069	O					0.21
87.750	0.00	0.07	0.068	O					0.21
87.833	0.00	0.07	0.068	O					0.21
87.917	0.00	0.07	0.067	O					0.21
88.000	0.00	0.07	0.067	O					0.21
88.083	0.00	0.07	0.066	O					0.21
88.167	0.00	0.07	0.066	O					0.20
88.250	0.00	0.07	0.065	O					0.20
88.333	0.00	0.07	0.065	O					0.20

88.417	0.00	0.07	0.065	O	|	|	|	|	0.20
88.500	0.00	0.07	0.064	O	|	|	|	|	0.20
88.583	0.00	0.07	0.064	O	|	|	|	|	0.20
88.667	0.00	0.06	0.063	O	|	|	|	|	0.20
88.750	0.00	0.06	0.063	O	|	|	|	|	0.19
88.833	0.00	0.06	0.062	O	|	|	|	|	0.19
88.917	0.00	0.06	0.062	O	|	|	|	|	0.19
89.000	0.00	0.06	0.061	O	|	|	|	|	0.19
89.083	0.00	0.06	0.061	O	|	|	|	|	0.19
89.167	0.00	0.06	0.061	O	|	|	|	|	0.19
89.250	0.00	0.06	0.060	O	|	|	|	|	0.19
89.333	0.00	0.06	0.060	O	|	|	|	|	0.19
89.417	0.00	0.06	0.059	O	|	|	|	|	0.18
89.500	0.00	0.06	0.059	O	|	|	|	|	0.18
89.583	0.00	0.06	0.058	O	|	|	|	|	0.18
89.667	0.00	0.06	0.058	O	|	|	|	|	0.18
89.750	0.00	0.06	0.058	O	|	|	|	|	0.18
89.833	0.00	0.06	0.057	O	|	|	|	|	0.18
89.917	0.00	0.06	0.057	O	|	|	|	|	0.18
90.000	0.00	0.06	0.056	O	|	|	|	|	0.18
90.083	0.00	0.06	0.056	O	|	|	|	|	0.17
90.167	0.00	0.06	0.056	O	|	|	|	|	0.17
90.250	0.00	0.06	0.055	O	|	|	|	|	0.17
90.333	0.00	0.06	0.055	O	|	|	|	|	0.17
90.417	0.00	0.06	0.054	O	|	|	|	|	0.17
90.500	0.00	0.06	0.054	O	|	|	|	|	0.17
90.583	0.00	0.06	0.054	O	|	|	|	|	0.17
90.667	0.00	0.05	0.053	O	|	|	|	|	0.17
90.750	0.00	0.05	0.053	O	|	|	|	|	0.16
90.833	0.00	0.05	0.053	O	|	|	|	|	0.16
90.917	0.00	0.05	0.052	O	|	|	|	|	0.16
91.000	0.00	0.05	0.052	O	|	|	|	|	0.16
91.083	0.00	0.05	0.052	O	|	|	|	|	0.16
91.167	0.00	0.05	0.051	O	|	|	|	|	0.16
91.250	0.00	0.05	0.051	O	|	|	|	|	0.16
91.333	0.00	0.05	0.050	O	|	|	|	|	0.16
91.417	0.00	0.05	0.050	O	|	|	|	|	0.16
91.500	0.00	0.05	0.050	O	|	|	|	|	0.15
91.583	0.00	0.05	0.049	O	|	|	|	|	0.15
91.667	0.00	0.05	0.049	O	|	|	|	|	0.15
91.750	0.00	0.05	0.049	O	|	|	|	|	0.15
91.833	0.00	0.05	0.048	O	|	|	|	|	0.15
91.917	0.00	0.05	0.048	O	|	|	|	|	0.15
92.000	0.00	0.05	0.048	O	|	|	|	|	0.15
92.083	0.00	0.05	0.047	O	|	|	|	|	0.15
92.167	0.00	0.05	0.047	O	|	|	|	|	0.15
92.250	0.00	0.05	0.047	O	|	|	|	|	0.14
92.333	0.00	0.05	0.046	O	|	|	|	|	0.14
92.417	0.00	0.05	0.046	O	|	|	|	|	0.14
92.500	0.00	0.05	0.046	O	|	|	|	|	0.14
92.583	0.00	0.05	0.045	O	|	|	|	|	0.14
92.667	0.00	0.05	0.045	O	|	|	|	|	0.14
92.750	0.00	0.05	0.045	O	|	|	|	|	0.14
92.833	0.00	0.05	0.044	O	|	|	|	|	0.14

92.917	0.00	0.05	0.044	O					0.14
93.000	0.00	0.04	0.044	O					0.14
93.083	0.00	0.04	0.043	O					0.14
93.167	0.00	0.04	0.043	O					0.13
93.250	0.00	0.04	0.043	O					0.13
93.333	0.00	0.04	0.043	O					0.13
93.417	0.00	0.04	0.042	O					0.13
93.500	0.00	0.04	0.042	O					0.13
93.583	0.00	0.04	0.042	O					0.13
93.667	0.00	0.04	0.041	O					0.13
93.750	0.00	0.04	0.041	O					0.13
93.833	0.00	0.04	0.041	O					0.13
93.917	0.00	0.04	0.041	O					0.13
94.000	0.00	0.04	0.040	O					0.12
94.083	0.00	0.04	0.040	O					0.12
94.167	0.00	0.04	0.040	O					0.12
94.250	0.00	0.04	0.039	O					0.12
94.333	0.00	0.04	0.039	O					0.12
94.417	0.00	0.04	0.039	O					0.12
94.500	0.00	0.04	0.039	O					0.12
94.583	0.00	0.04	0.038	O					0.12
94.667	0.00	0.04	0.038	O					0.12
94.750	0.00	0.04	0.038	O					0.12
94.833	0.00	0.04	0.037	O					0.12
94.917	0.00	0.04	0.037	O					0.12
95.000	0.00	0.04	0.037	O					0.11
95.083	0.00	0.04	0.037	O					0.11
95.167	0.00	0.04	0.036	O					0.11
95.250	0.00	0.04	0.036	O					0.11
95.333	0.00	0.04	0.036	O					0.11
95.417	0.00	0.04	0.036	O					0.11
95.500	0.00	0.04	0.035	O					0.11
95.583	0.00	0.04	0.035	O					0.11
95.667	0.00	0.04	0.035	O					0.11
95.750	0.00	0.04	0.035	O					0.11
95.833	0.00	0.04	0.034	O					0.11
95.917	0.00	0.04	0.034	O					0.11
96.000	0.00	0.03	0.034	O					0.11
96.083	0.00	0.03	0.034	O					0.10
96.167	0.00	0.03	0.033	O					0.10
96.250	0.00	0.03	0.033	O					0.10
96.333	0.00	0.03	0.033	O					0.10
96.417	0.00	0.03	0.033	O					0.10
96.500	0.00	0.03	0.033	O					0.10
96.583	0.00	0.03	0.032	O					0.10
96.667	0.00	0.03	0.032	O					0.10
96.750	0.00	0.03	0.032	O					0.10
96.833	0.00	0.03	0.032	O					0.10
96.917	0.00	0.03	0.031	O					0.10
97.000	0.00	0.03	0.031	O					0.10
97.083	0.00	0.03	0.031	O					0.10
97.167	0.00	0.03	0.031	O					0.10
97.250	0.00	0.03	0.031	O					0.09
97.333	0.00	0.03	0.030	O					0.09

97.417	0.00	0.03	0.030	O	|	|	|	|	0.09
97.500	0.00	0.03	0.030	O	|	|	|	|	0.09
97.583	0.00	0.03	0.030	O	|	|	|	|	0.09
97.667	0.00	0.03	0.029	O	|	|	|	|	0.09
97.750	0.00	0.03	0.029	O	|	|	|	|	0.09
97.833	0.00	0.03	0.029	O	|	|	|	|	0.09
97.917	0.00	0.03	0.029	O	|	|	|	|	0.09
98.000	0.00	0.03	0.029	O	|	|	|	|	0.09
98.083	0.00	0.03	0.028	O	|	|	|	|	0.09
98.167	0.00	0.03	0.028	O	|	|	|	|	0.09
98.250	0.00	0.03	0.028	O	|	|	|	|	0.09
98.333	0.00	0.03	0.028	O	|	|	|	|	0.09
98.417	0.00	0.03	0.028	O	|	|	|	|	0.09
98.500	0.00	0.03	0.027	O	|	|	|	|	0.09
98.583	0.00	0.03	0.027	O	|	|	|	|	0.08
98.667	0.00	0.03	0.027	O	|	|	|	|	0.08
98.750	0.00	0.03	0.027	O	|	|	|	|	0.08
98.833	0.00	0.03	0.027	O	|	|	|	|	0.08
98.917	0.00	0.03	0.027	O	|	|	|	|	0.08
99.000	0.00	0.03	0.026	O	|	|	|	|	0.08
99.083	0.00	0.03	0.026	O	|	|	|	|	0.08
99.167	0.00	0.03	0.026	O	|	|	|	|	0.08
99.250	0.00	0.03	0.026	O	|	|	|	|	0.08
99.333	0.00	0.03	0.026	O	|	|	|	|	0.08
99.417	0.00	0.03	0.025	O	|	|	|	|	0.08
99.500	0.00	0.03	0.025	O	|	|	|	|	0.08
99.583	0.00	0.03	0.025	O	|	|	|	|	0.08
99.667	0.00	0.03	0.025	O	|	|	|	|	0.08
99.750	0.00	0.03	0.025	O	|	|	|	|	0.08
99.833	0.00	0.03	0.025	O	|	|	|	|	0.08
99.917	0.00	0.02	0.024	O	|	|	|	|	0.08
100.000	0.00	0.02	0.024	O	|	|	|	|	0.08
100.083	0.00	0.02	0.024	O	|	|	|	|	0.07
100.167	0.00	0.02	0.024	O	|	|	|	|	0.07
100.250	0.00	0.02	0.024	O	|	|	|	|	0.07
100.333	0.00	0.02	0.024	O	|	|	|	|	0.07
100.417	0.00	0.02	0.023	O	|	|	|	|	0.07
100.500	0.00	0.02	0.023	O	|	|	|	|	0.07
100.583	0.00	0.02	0.023	O	|	|	|	|	0.07
100.667	0.00	0.02	0.023	O	|	|	|	|	0.07
100.750	0.00	0.02	0.023	O	|	|	|	|	0.07
100.833	0.00	0.02	0.023	O	|	|	|	|	0.07
100.917	0.00	0.02	0.022	O	|	|	|	|	0.07
101.000	0.00	0.02	0.022	O	|	|	|	|	0.07
101.083	0.00	0.02	0.022	O	|	|	|	|	0.07
101.167	0.00	0.02	0.022	O	|	|	|	|	0.07
101.250	0.00	0.02	0.022	O	|	|	|	|	0.07
101.333	0.00	0.02	0.022	O	|	|	|	|	0.07
101.417	0.00	0.02	0.021	O	|	|	|	|	0.07
101.500	0.00	0.02	0.021	O	|	|	|	|	0.07
101.583	0.00	0.02	0.021	O	|	|	|	|	0.07
101.667	0.00	0.02	0.021	O	|	|	|	|	0.07
101.750	0.00	0.02	0.021	O	|	|	|	|	0.06
101.833	0.00	0.02	0.021	O	|	|	|	|	0.06

101.917	0.00	0.02	0.021	O	|	|	|	|	0.06
102.000	0.00	0.02	0.020	O	|	|	|	|	0.06
102.083	0.00	0.02	0.020	O	|	|	|	|	0.06
102.167	0.00	0.02	0.020	O	|	|	|	|	0.06
102.250	0.00	0.02	0.020	O	|	|	|	|	0.06
102.333	0.00	0.02	0.020	O	|	|	|	|	0.06
102.417	0.00	0.02	0.020	O	|	|	|	|	0.06
102.500	0.00	0.02	0.020	O	|	|	|	|	0.06
102.583	0.00	0.02	0.019	O	|	|	|	|	0.06
102.667	0.00	0.02	0.019	O	|	|	|	|	0.06
102.750	0.00	0.02	0.019	O	|	|	|	|	0.06
102.833	0.00	0.02	0.019	O	|	|	|	|	0.06
102.917	0.00	0.02	0.019	O	|	|	|	|	0.06
103.000	0.00	0.02	0.019	O	|	|	|	|	0.06
103.083	0.00	0.02	0.019	O	|	|	|	|	0.06
103.167	0.00	0.02	0.019	O	|	|	|	|	0.06
103.250	0.00	0.02	0.018	O	|	|	|	|	0.06
103.333	0.00	0.02	0.018	O	|	|	|	|	0.06
103.417	0.00	0.02	0.018	O	|	|	|	|	0.06
103.500	0.00	0.02	0.018	O	|	|	|	|	0.06
103.583	0.00	0.02	0.018	O	|	|	|	|	0.06
103.667	0.00	0.02	0.018	O	|	|	|	|	0.06
103.750	0.00	0.02	0.018	O	|	|	|	|	0.05
103.833	0.00	0.02	0.017	O	|	|	|	|	0.05
103.917	0.00	0.02	0.017	O	|	|	|	|	0.05
104.000	0.00	0.02	0.017	O	|	|	|	|	0.05
104.083	0.00	0.02	0.017	O	|	|	|	|	0.05
104.167	0.00	0.02	0.017	O	|	|	|	|	0.05
104.250	0.00	0.02	0.017	O	|	|	|	|	0.05
104.333	0.00	0.02	0.017	O	|	|	|	|	0.05
104.417	0.00	0.02	0.017	O	|	|	|	|	0.05
104.500	0.00	0.02	0.017	O	|	|	|	|	0.05
104.583	0.00	0.02	0.016	O	|	|	|	|	0.05
104.667	0.00	0.02	0.016	O	|	|	|	|	0.05
104.750	0.00	0.02	0.016	O	|	|	|	|	0.05
104.833	0.00	0.02	0.016	O	|	|	|	|	0.05
104.917	0.00	0.02	0.016	O	|	|	|	|	0.05
105.000	0.00	0.02	0.016	O	|	|	|	|	0.05
105.083	0.00	0.02	0.016	O	|	|	|	|	0.05
105.167	0.00	0.02	0.016	O	|	|	|	|	0.05
105.250	0.00	0.02	0.016	O	|	|	|	|	0.05
105.333	0.00	0.02	0.015	O	|	|	|	|	0.05
105.417	0.00	0.02	0.015	O	|	|	|	|	0.05
105.500	0.00	0.02	0.015	O	|	|	|	|	0.05
105.583	0.00	0.02	0.015	O	|	|	|	|	0.05
105.667	0.00	0.02	0.015	O	|	|	|	|	0.05
105.750	0.00	0.02	0.015	O	|	|	|	|	0.05
105.833	0.00	0.02	0.015	O	|	|	|	|	0.05
105.917	0.00	0.02	0.015	O	|	|	|	|	0.05
106.000	0.00	0.01	0.015	O	|	|	|	|	0.05
106.083	0.00	0.01	0.014	O	|	|	|	|	0.04
106.167	0.00	0.01	0.014	O	|	|	|	|	0.04
106.250	0.00	0.01	0.014	O	|	|	|	|	0.04
106.333	0.00	0.01	0.014	O	|	|	|	|	0.04

106.417	0.00	0.01	0.014	O					0.04
106.500	0.00	0.01	0.014	O					0.04
106.583	0.00	0.01	0.014	O					0.04
106.667	0.00	0.01	0.014	O					0.04
106.750	0.00	0.01	0.014	O					0.04
106.833	0.00	0.01	0.014	O					0.04
106.917	0.00	0.01	0.013	O					0.04
107.000	0.00	0.01	0.013	O					0.04
107.083	0.00	0.01	0.013	O					0.04
107.167	0.00	0.01	0.013	O					0.04
107.250	0.00	0.01	0.013	O					0.04
107.333	0.00	0.01	0.013	O					0.04
107.417	0.00	0.01	0.013	O					0.04
107.500	0.00	0.01	0.013	O					0.04
107.583	0.00	0.01	0.013	O					0.04
107.667	0.00	0.01	0.013	O					0.04
107.750	0.00	0.01	0.013	O					0.04
107.833	0.00	0.01	0.012	O					0.04
107.917	0.00	0.01	0.012	O					0.04
108.000	0.00	0.01	0.012	O					0.04
108.083	0.00	0.01	0.012	O					0.04
108.167	0.00	0.01	0.012	O					0.04
108.250	0.00	0.01	0.012	O					0.04
108.333	0.00	0.01	0.012	O					0.04
108.417	0.00	0.01	0.012	O					0.04
108.500	0.00	0.01	0.012	O					0.04
108.583	0.00	0.01	0.012	O					0.04
108.667	0.00	0.01	0.012	O					0.04
108.750	0.00	0.01	0.012	O					0.04
108.833	0.00	0.01	0.011	O					0.04
108.917	0.00	0.01	0.011	O					0.04
109.000	0.00	0.01	0.011	O					0.04
109.083	0.00	0.01	0.011	O					0.03
109.167	0.00	0.01	0.011	O					0.03
109.250	0.00	0.01	0.011	O					0.03
109.333	0.00	0.01	0.011	O					0.03
109.417	0.00	0.01	0.011	O					0.03
109.500	0.00	0.01	0.011	O					0.03
109.583	0.00	0.01	0.011	O					0.03
109.667	0.00	0.01	0.011	O					0.03
109.750	0.00	0.01	0.011	O					0.03
109.833	0.00	0.01	0.011	O					0.03
109.917	0.00	0.01	0.010	O					0.03
110.000	0.00	0.01	0.010	O					0.03
110.083	0.00	0.01	0.010	O					0.03
110.167	0.00	0.01	0.010	O					0.03
110.250	0.00	0.01	0.010	O					0.03
110.333	0.00	0.01	0.010	O					0.03
110.417	0.00	0.01	0.010	O					0.03
110.500	0.00	0.01	0.010	O					0.03
110.583	0.00	0.01	0.010	O					0.03
110.667	0.00	0.01	0.010	O					0.03
110.750	0.00	0.01	0.010	O					0.03
110.833	0.00	0.01	0.010	O					0.03

110.917	0.00	0.01	0.010	O	|	|	|	|	0.03
111.000	0.00	0.01	0.010	O	|	|	|	|	0.03
111.083	0.00	0.01	0.009	O	|	|	|	|	0.03
111.167	0.00	0.01	0.009	O	|	|	|	|	0.03
111.250	0.00	0.01	0.009	O	|	|	|	|	0.03
111.333	0.00	0.01	0.009	O	|	|	|	|	0.03
111.417	0.00	0.01	0.009	O	|	|	|	|	0.03
111.500	0.00	0.01	0.009	O	|	|	|	|	0.03
111.583	0.00	0.01	0.009	O	|	|	|	|	0.03
111.667	0.00	0.01	0.009	O	|	|	|	|	0.03
111.750	0.00	0.01	0.009	O	|	|	|	|	0.03
111.833	0.00	0.01	0.009	O	|	|	|	|	0.03
111.917	0.00	0.01	0.009	O	|	|	|	|	0.03
112.000	0.00	0.01	0.009	O	|	|	|	|	0.03
112.083	0.00	0.01	0.009	O	|	|	|	|	0.03
112.167	0.00	0.01	0.009	O	|	|	|	|	0.03
112.250	0.00	0.01	0.009	O	|	|	|	|	0.03
112.333	0.00	0.01	0.009	O	|	|	|	|	0.03
112.417	0.00	0.01	0.008	O	|	|	|	|	0.03
112.500	0.00	0.01	0.008	O	|	|	|	|	0.03
112.583	0.00	0.01	0.008	O	|	|	|	|	0.03
112.667	0.00	0.01	0.008	O	|	|	|	|	0.03
112.750	0.00	0.01	0.008	O	|	|	|	|	0.03
112.833	0.00	0.01	0.008	O	|	|	|	|	0.03
112.917	0.00	0.01	0.008	O	|	|	|	|	0.03
113.000	0.00	0.01	0.008	O	|	|	|	|	0.02
113.083	0.00	0.01	0.008	O	|	|	|	|	0.02
113.167	0.00	0.01	0.008	O	|	|	|	|	0.02
113.250	0.00	0.01	0.008	O	|	|	|	|	0.02
113.333	0.00	0.01	0.008	O	|	|	|	|	0.02
113.417	0.00	0.01	0.008	O	|	|	|	|	0.02
113.500	0.00	0.01	0.008	O	|	|	|	|	0.02
113.583	0.00	0.01	0.008	O	|	|	|	|	0.02
113.667	0.00	0.01	0.008	O	|	|	|	|	0.02
113.750	0.00	0.01	0.008	O	|	|	|	|	0.02
113.833	0.00	0.01	0.007	O	|	|	|	|	0.02
113.917	0.00	0.01	0.007	O	|	|	|	|	0.02
114.000	0.00	0.01	0.007	O	|	|	|	|	0.02
114.083	0.00	0.01	0.007	O	|	|	|	|	0.02
114.167	0.00	0.01	0.007	O	|	|	|	|	0.02
114.250	0.00	0.01	0.007	O	|	|	|	|	0.02
114.333	0.00	0.01	0.007	O	|	|	|	|	0.02
114.417	0.00	0.01	0.007	O	|	|	|	|	0.02
114.500	0.00	0.01	0.007	O	|	|	|	|	0.02
114.583	0.00	0.01	0.007	O	|	|	|	|	0.02
114.667	0.00	0.01	0.007	O	|	|	|	|	0.02
114.750	0.00	0.01	0.007	O	|	|	|	|	0.02
114.833	0.00	0.01	0.007	O	|	|	|	|	0.02
114.917	0.00	0.01	0.007	O	|	|	|	|	0.02
115.000	0.00	0.01	0.007	O	|	|	|	|	0.02
115.083	0.00	0.01	0.007	O	|	|	|	|	0.02
115.167	0.00	0.01	0.007	O	|	|	|	|	0.02
115.250	0.00	0.01	0.007	O	|	|	|	|	0.02
115.333	0.00	0.01	0.007	O	|	|	|	|	0.02

115.417	0.00	0.01	0.007	O	|	|	|	|	0.02
115.500	0.00	0.01	0.007	O	|	|	|	|	0.02
115.583	0.00	0.01	0.006	O	|	|	|	|	0.02
115.667	0.00	0.01	0.006	O	|	|	|	|	0.02
115.750	0.00	0.01	0.006	O	|	|	|	|	0.02
115.833	0.00	0.01	0.006	O	|	|	|	|	0.02
115.917	0.00	0.01	0.006	O	|	|	|	|	0.02
116.000	0.00	0.01	0.006	O	|	|	|	|	0.02
116.083	0.00	0.01	0.006	O	|	|	|	|	0.02
116.167	0.00	0.01	0.006	O	|	|	|	|	0.02
116.250	0.00	0.01	0.006	O	|	|	|	|	0.02
116.333	0.00	0.01	0.006	O	|	|	|	|	0.02
116.417	0.00	0.01	0.006	O	|	|	|	|	0.02
116.500	0.00	0.01	0.006	O	|	|	|	|	0.02
116.583	0.00	0.01	0.006	O	|	|	|	|	0.02
116.667	0.00	0.01	0.006	O	|	|	|	|	0.02
116.750	0.00	0.01	0.006	O	|	|	|	|	0.02
116.833	0.00	0.01	0.006	O	|	|	|	|	0.02
116.917	0.00	0.01	0.006	O	|	|	|	|	0.02
117.000	0.00	0.01	0.006	O	|	|	|	|	0.02
117.083	0.00	0.01	0.006	O	|	|	|	|	0.02
117.167	0.00	0.01	0.006	O	|	|	|	|	0.02
117.250	0.00	0.01	0.006	O	|	|	|	|	0.02
117.333	0.00	0.01	0.006	O	|	|	|	|	0.02
117.417	0.00	0.01	0.006	O	|	|	|	|	0.02
117.500	0.00	0.01	0.005	O	|	|	|	|	0.02
117.583	0.00	0.01	0.005	O	|	|	|	|	0.02
117.667	0.00	0.01	0.005	O	|	|	|	|	0.02
117.750	0.00	0.01	0.005	O	|	|	|	|	0.02
117.833	0.00	0.01	0.005	O	|	|	|	|	0.02
117.917	0.00	0.01	0.005	O	|	|	|	|	0.02
118.000	0.00	0.01	0.005	O	|	|	|	|	0.02
118.083	0.00	0.01	0.005	O	|	|	|	|	0.02
118.167	0.00	0.01	0.005	O	|	|	|	|	0.02
118.250	0.00	0.01	0.005	O	|	|	|	|	0.02
118.333	0.00	0.01	0.005	O	|	|	|	|	0.02
118.417	0.00	0.01	0.005	O	|	|	|	|	0.02
118.500	0.00	0.01	0.005	O	|	|	|	|	0.02
118.583	0.00	0.01	0.005	O	|	|	|	|	0.02
118.667	0.00	0.01	0.005	O	|	|	|	|	0.02
118.750	0.00	0.01	0.005	O	|	|	|	|	0.02
118.833	0.00	0.01	0.005	O	|	|	|	|	0.02
118.917	0.00	0.00	0.005	O	|	|	|	|	0.02
119.000	0.00	0.00	0.005	O	|	|	|	|	0.02
119.083	0.00	0.00	0.005	O	|	|	|	|	0.01
119.167	0.00	0.00	0.005	O	|	|	|	|	0.01
119.250	0.00	0.00	0.005	O	|	|	|	|	0.01
119.333	0.00	0.00	0.005	O	|	|	|	|	0.01
119.417	0.00	0.00	0.005	O	|	|	|	|	0.01
119.500	0.00	0.00	0.005	O	|	|	|	|	0.01
119.583	0.00	0.00	0.005	O	|	|	|	|	0.01
119.667	0.00	0.00	0.005	O	|	|	|	|	0.01
119.750	0.00	0.00	0.005	O	|	|	|	|	0.01
119.833	0.00	0.00	0.005	O	|	|	|	|	0.01

119.917	0.00	0.00	0.004	O	|	|	|	|	0.01
120.000	0.00	0.00	0.004	O	|	|	|	|	0.01
120.083	0.00	0.00	0.004	O	|	|	|	|	0.01
120.167	0.00	0.00	0.004	O	|	|	|	|	0.01
120.250	0.00	0.00	0.004	O	|	|	|	|	0.01
120.333	0.00	0.00	0.004	O	|	|	|	|	0.01
120.417	0.00	0.00	0.004	O	|	|	|	|	0.01
120.500	0.00	0.00	0.004	O	|	|	|	|	0.01
120.583	0.00	0.00	0.004	O	|	|	|	|	0.01
120.667	0.00	0.00	0.004	O	|	|	|	|	0.01
120.750	0.00	0.00	0.004	O	|	|	|	|	0.01
120.833	0.00	0.00	0.004	O	|	|	|	|	0.01
120.917	0.00	0.00	0.004	O	|	|	|	|	0.01
121.000	0.00	0.00	0.004	O	|	|	|	|	0.01
121.083	0.00	0.00	0.004	O	|	|	|	|	0.01
121.167	0.00	0.00	0.004	O	|	|	|	|	0.01
121.250	0.00	0.00	0.004	O	|	|	|	|	0.01
121.333	0.00	0.00	0.004	O	|	|	|	|	0.01
121.417	0.00	0.00	0.004	O	|	|	|	|	0.01
121.500	0.00	0.00	0.004	O	|	|	|	|	0.01
121.583	0.00	0.00	0.004	O	|	|	|	|	0.01
121.667	0.00	0.00	0.004	O	|	|	|	|	0.01
121.750	0.00	0.00	0.004	O	|	|	|	|	0.01
121.833	0.00	0.00	0.004	O	|	|	|	|	0.01
121.917	0.00	0.00	0.004	O	|	|	|	|	0.01
122.000	0.00	0.00	0.004	O	|	|	|	|	0.01
122.083	0.00	0.00	0.004	O	|	|	|	|	0.01
122.167	0.00	0.00	0.004	O	|	|	|	|	0.01
122.250	0.00	0.00	0.004	O	|	|	|	|	0.01
122.333	0.00	0.00	0.004	O	|	|	|	|	0.01
122.417	0.00	0.00	0.004	O	|	|	|	|	0.01
122.500	0.00	0.00	0.004	O	|	|	|	|	0.01
122.583	0.00	0.00	0.004	O	|	|	|	|	0.01
122.667	0.00	0.00	0.004	O	|	|	|	|	0.01
122.750	0.00	0.00	0.004	O	|	|	|	|	0.01
122.833	0.00	0.00	0.003	O	|	|	|	|	0.01
122.917	0.00	0.00	0.003	O	|	|	|	|	0.01
123.000	0.00	0.00	0.003	O	|	|	|	|	0.01
123.083	0.00	0.00	0.003	O	|	|	|	|	0.01
123.167	0.00	0.00	0.003	O	|	|	|	|	0.01
123.250	0.00	0.00	0.003	O	|	|	|	|	0.01
123.333	0.00	0.00	0.003	O	|	|	|	|	0.01
123.417	0.00	0.00	0.003	O	|	|	|	|	0.01
123.500	0.00	0.00	0.003	O	|	|	|	|	0.01
123.583	0.00	0.00	0.003	O	|	|	|	|	0.01
123.667	0.00	0.00	0.003	O	|	|	|	|	0.01
123.750	0.00	0.00	0.003	O	|	|	|	|	0.01
123.833	0.00	0.00	0.003	O	|	|	|	|	0.01
123.917	0.00	0.00	0.003	O	|	|	|	|	0.01
124.000	0.00	0.00	0.003	O	|	|	|	|	0.01
124.083	0.00	0.00	0.003	O	|	|	|	|	0.01
124.167	0.00	0.00	0.003	O	|	|	|	|	0.01
124.250	0.00	0.00	0.003	O	|	|	|	|	0.01
124.333	0.00	0.00	0.003	O	|	|	|	|	0.01

124.417	0.00	0.00	0.003	O	|	|	|	|	0.01
124.500	0.00	0.00	0.003	O	|	|	|	|	0.01
124.583	0.00	0.00	0.003	O	|	|	|	|	0.01
124.667	0.00	0.00	0.003	O	|	|	|	|	0.01
124.750	0.00	0.00	0.003	O	|	|	|	|	0.01
124.833	0.00	0.00	0.003	O	|	|	|	|	0.01
124.917	0.00	0.00	0.003	O	|	|	|	|	0.01
125.000	0.00	0.00	0.003	O	|	|	|	|	0.01
125.083	0.00	0.00	0.003	O	|	|	|	|	0.01
125.167	0.00	0.00	0.003	O	|	|	|	|	0.01
125.250	0.00	0.00	0.003	O	|	|	|	|	0.01
125.333	0.00	0.00	0.003	O	|	|	|	|	0.01
125.417	0.00	0.00	0.003	O	|	|	|	|	0.01
125.500	0.00	0.00	0.003	O	|	|	|	|	0.01
125.583	0.00	0.00	0.003	O	|	|	|	|	0.01
125.667	0.00	0.00	0.003	O	|	|	|	|	0.01
125.750	0.00	0.00	0.003	O	|	|	|	|	0.01
125.833	0.00	0.00	0.003	O	|	|	|	|	0.01
125.917	0.00	0.00	0.003	O	|	|	|	|	0.01
126.000	0.00	0.00	0.003	O	|	|	|	|	0.01
126.083	0.00	0.00	0.003	O	|	|	|	|	0.01
126.167	0.00	0.00	0.003	O	|	|	|	|	0.01
126.250	0.00	0.00	0.003	O	|	|	|	|	0.01
126.333	0.00	0.00	0.003	O	|	|	|	|	0.01
126.417	0.00	0.00	0.003	O	|	|	|	|	0.01
126.500	0.00	0.00	0.003	O	|	|	|	|	0.01
126.583	0.00	0.00	0.003	O	|	|	|	|	0.01
126.667	0.00	0.00	0.003	O	|	|	|	|	0.01
126.750	0.00	0.00	0.003	O	|	|	|	|	0.01
126.833	0.00	0.00	0.002	O	|	|	|	|	0.01
126.917	0.00	0.00	0.002	O	|	|	|	|	0.01
127.000	0.00	0.00	0.002	O	|	|	|	|	0.01
127.083	0.00	0.00	0.002	O	|	|	|	|	0.01
127.167	0.00	0.00	0.002	O	|	|	|	|	0.01
127.250	0.00	0.00	0.002	O	|	|	|	|	0.01
127.333	0.00	0.00	0.002	O	|	|	|	|	0.01
127.417	0.00	0.00	0.002	O	|	|	|	|	0.01
127.500	0.00	0.00	0.002	O	|	|	|	|	0.01
127.583	0.00	0.00	0.002	O	|	|	|	|	0.01
127.667	0.00	0.00	0.002	O	|	|	|	|	0.01
127.750	0.00	0.00	0.002	O	|	|	|	|	0.01
127.833	0.00	0.00	0.002	O	|	|	|	|	0.01
127.917	0.00	0.00	0.002	O	|	|	|	|	0.01
128.000	0.00	0.00	0.002	O	|	|	|	|	0.01
128.083	0.00	0.00	0.002	O	|	|	|	|	0.01
128.167	0.00	0.00	0.002	O	|	|	|	|	0.01
128.250	0.00	0.00	0.002	O	|	|	|	|	0.01
128.333	0.00	0.00	0.002	O	|	|	|	|	0.01
128.417	0.00	0.00	0.002	O	|	|	|	|	0.01
128.500	0.00	0.00	0.002	O	|	|	|	|	0.01
128.583	0.00	0.00	0.002	O	|	|	|	|	0.01
128.667	0.00	0.00	0.002	O	|	|	|	|	0.01
128.750	0.00	0.00	0.002	O	|	|	|	|	0.01
128.833	0.00	0.00	0.002	O	|	|	|	|	0.01

128.917	0.00	0.00	0.002	O	|	|	|	|	0.01
129.000	0.00	0.00	0.002	O	|	|	|	|	0.01
129.083	0.00	0.00	0.002	O	|	|	|	|	0.01
129.167	0.00	0.00	0.002	O	|	|	|	|	0.01
129.250	0.00	0.00	0.002	O	|	|	|	|	0.01
129.333	0.00	0.00	0.002	O	|	|	|	|	0.01
129.417	0.00	0.00	0.002	O	|	|	|	|	0.01
129.500	0.00	0.00	0.002	O	|	|	|	|	0.01
129.583	0.00	0.00	0.002	O	|	|	|	|	0.01
129.667	0.00	0.00	0.002	O	|	|	|	|	0.01
129.750	0.00	0.00	0.002	O	|	|	|	|	0.01
129.833	0.00	0.00	0.002	O	|	|	|	|	0.01
129.917	0.00	0.00	0.002	O	|	|	|	|	0.01
130.000	0.00	0.00	0.002	O	|	|	|	|	0.01
130.083	0.00	0.00	0.002	O	|	|	|	|	0.01
130.167	0.00	0.00	0.002	O	|	|	|	|	0.01
130.250	0.00	0.00	0.002	O	|	|	|	|	0.01
130.333	0.00	0.00	0.002	O	|	|	|	|	0.01
130.417	0.00	0.00	0.002	O	|	|	|	|	0.01
130.500	0.00	0.00	0.002	O	|	|	|	|	0.01
130.583	0.00	0.00	0.002	O	|	|	|	|	0.01
130.667	0.00	0.00	0.002	O	|	|	|	|	0.01
130.750	0.00	0.00	0.002	O	|	|	|	|	0.01
130.833	0.00	0.00	0.002	O	|	|	|	|	0.01
130.917	0.00	0.00	0.002	O	|	|	|	|	0.01
131.000	0.00	0.00	0.002	O	|	|	|	|	0.01
131.083	0.00	0.00	0.002	O	|	|	|	|	0.01
131.167	0.00	0.00	0.002	O	|	|	|	|	0.01
131.250	0.00	0.00	0.002	O	|	|	|	|	0.01
131.333	0.00	0.00	0.002	O	|	|	|	|	0.01
131.417	0.00	0.00	0.002	O	|	|	|	|	0.01
131.500	0.00	0.00	0.002	O	|	|	|	|	0.01
131.583	0.00	0.00	0.002	O	|	|	|	|	0.01
131.667	0.00	0.00	0.002	O	|	|	|	|	0.01
131.750	0.00	0.00	0.002	O	|	|	|	|	0.01
131.833	0.00	0.00	0.002	O	|	|	|	|	0.01
131.917	0.00	0.00	0.002	O	|	|	|	|	0.01
132.000	0.00	0.00	0.002	O	|	|	|	|	0.00
132.083	0.00	0.00	0.002	O	|	|	|	|	0.00
132.167	0.00	0.00	0.002	O	|	|	|	|	0.00
132.250	0.00	0.00	0.002	O	|	|	|	|	0.00
132.333	0.00	0.00	0.002	O	|	|	|	|	0.00
132.417	0.00	0.00	0.002	O	|	|	|	|	0.00
132.500	0.00	0.00	0.002	O	|	|	|	|	0.00
132.583	0.00	0.00	0.002	O	|	|	|	|	0.00
132.667	0.00	0.00	0.002	O	|	|	|	|	0.00
132.750	0.00	0.00	0.002	O	|	|	|	|	0.00
132.833	0.00	0.00	0.002	O	|	|	|	|	0.00
132.917	0.00	0.00	0.001	O	|	|	|	|	0.00
133.000	0.00	0.00	0.001	O	|	|	|	|	0.00
133.083	0.00	0.00	0.001	O	|	|	|	|	0.00
133.167	0.00	0.00	0.001	O	|	|	|	|	0.00
133.250	0.00	0.00	0.001	O	|	|	|	|	0.00
133.333	0.00	0.00	0.001	O	|	|	|	|	0.00

133.417	0.00	0.00	0.001	O	|	|	|	|	0.00
133.500	0.00	0.00	0.001	O	|	|	|	|	0.00
133.583	0.00	0.00	0.001	O	|	|	|	|	0.00
133.667	0.00	0.00	0.001	O	|	|	|	|	0.00
133.750	0.00	0.00	0.001	O	|	|	|	|	0.00
133.833	0.00	0.00	0.001	O	|	|	|	|	0.00
133.917	0.00	0.00	0.001	O	|	|	|	|	0.00
134.000	0.00	0.00	0.001	O	|	|	|	|	0.00
134.083	0.00	0.00	0.001	O	|	|	|	|	0.00
134.167	0.00	0.00	0.001	O	|	|	|	|	0.00
134.250	0.00	0.00	0.001	O	|	|	|	|	0.00
134.333	0.00	0.00	0.001	O	|	|	|	|	0.00
134.417	0.00	0.00	0.001	O	|	|	|	|	0.00
134.500	0.00	0.00	0.001	O	|	|	|	|	0.00
134.583	0.00	0.00	0.001	O	|	|	|	|	0.00
134.667	0.00	0.00	0.001	O	|	|	|	|	0.00
134.750	0.00	0.00	0.001	O	|	|	|	|	0.00
134.833	0.00	0.00	0.001	O	|	|	|	|	0.00
134.917	0.00	0.00	0.001	O	|	|	|	|	0.00
135.000	0.00	0.00	0.001	O	|	|	|	|	0.00
135.083	0.00	0.00	0.001	O	|	|	|	|	0.00
135.167	0.00	0.00	0.001	O	|	|	|	|	0.00
135.250	0.00	0.00	0.001	O	|	|	|	|	0.00
135.333	0.00	0.00	0.001	O	|	|	|	|	0.00
135.417	0.00	0.00	0.001	O	|	|	|	|	0.00
135.500	0.00	0.00	0.001	O	|	|	|	|	0.00
135.583	0.00	0.00	0.001	O	|	|	|	|	0.00
135.667	0.00	0.00	0.001	O	|	|	|	|	0.00
135.750	0.00	0.00	0.001	O	|	|	|	|	0.00
135.833	0.00	0.00	0.001	O	|	|	|	|	0.00
135.917	0.00	0.00	0.001	O	|	|	|	|	0.00
136.000	0.00	0.00	0.001	O	|	|	|	|	0.00
136.083	0.00	0.00	0.001	O	|	|	|	|	0.00
136.167	0.00	0.00	0.001	O	|	|	|	|	0.00
136.250	0.00	0.00	0.001	O	|	|	|	|	0.00
136.333	0.00	0.00	0.001	O	|	|	|	|	0.00
136.417	0.00	0.00	0.001	O	|	|	|	|	0.00
136.500	0.00	0.00	0.001	O	|	|	|	|	0.00
136.583	0.00	0.00	0.001	O	|	|	|	|	0.00
136.667	0.00	0.00	0.001	O	|	|	|	|	0.00
136.750	0.00	0.00	0.001	O	|	|	|	|	0.00
136.833	0.00	0.00	0.001	O	|	|	|	|	0.00
136.917	0.00	0.00	0.001	O	|	|	|	|	0.00
137.000	0.00	0.00	0.001	O	|	|	|	|	0.00
137.083	0.00	0.00	0.001	O	|	|	|	|	0.00
137.167	0.00	0.00	0.001	O	|	|	|	|	0.00
137.250	0.00	0.00	0.001	O	|	|	|	|	0.00
137.333	0.00	0.00	0.001	O	|	|	|	|	0.00
137.417	0.00	0.00	0.001	O	|	|	|	|	0.00
137.500	0.00	0.00	0.001	O	|	|	|	|	0.00
137.583	0.00	0.00	0.001	O	|	|	|	|	0.00
137.667	0.00	0.00	0.001	O	|	|	|	|	0.00
137.750	0.00	0.00	0.001	O	|	|	|	|	0.00
137.833	0.00	0.00	0.001	O	|	|	|	|	0.00

```
137.917    0.00    0.00      0.001  O       |       |       |       |     0.00

     ****************************HYDROGRAPH DATA****************************
               Number of intervals =  1655
               Time interval =    5.0 (Min.)
               Maximum/Peak flow rate =        1.057 (CFS)
               Total volume =       4.243 (Ac.Ft)
          Status of hydrographs being held in storage
                     Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
          Peak (CFS)      0.000     0.000     0.000     0.000     0.000
          Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
     ***********************************************************************

     ---------------------------------------------------------------------
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1.06 CFS IS LESS THAN ALLOWABLE 1.29 CFS

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 11/13/19

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2 YEAR FLOOD ROUTING
BASIN 2
MJPA 304163
4163FR2.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP2242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 294
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.618 (CFS)
Total volume = 2.051 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

++

Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 294
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.168	0.170	0.167	0.169
2.000	0.503	0.290	0.502	0.504
3.000	0.755	0.370	0.754	0.756
4.000	1.006	0.440	1.004	1.008
5.000	1.258	0.500	1.256	1.260
5.500	1.691	0.530	1.689	1.693
6.000	2.151	1.150	2.147	2.155
7.000	3.158	1.810	3.152	3.164
8.000	4.279	17.360	4.219	4.339
8.500	4.884	20.950	4.812	4.956

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	0.9	1.81	2.71	3.62	Depth (Ft.)
0.083	0.08	0.00	0.000	O	|	|	|	|	0.00
0.167	0.23	0.00	0.001	O I	|	|	|	|	0.01
0.250	0.27	0.00	0.003	O I	|	|	|	|	0.02
0.333	0.33	0.01	0.005	O I	|	|	|	|	0.03
0.417	0.42	0.01	0.008	O I	|	|	|	|	0.05
0.500	0.44	0.01	0.011	O I	|	|	|	|	0.06
0.583	0.45	0.01	0.014	O I	|	|	|	|	0.08
0.667	0.46	0.02	0.017	O I	|	|	|	|	0.10
0.750	0.46	0.02	0.020	O I	|	|	|	|	0.12
0.833	0.50	0.02	0.023	O I	|	|	|	|	0.14
0.917	0.58	0.03	0.026	O I	|	|	|	|	0.16
1.000	0.60	0.03	0.030	O I	|	|	|	|	0.18
1.083	0.56	0.03	0.034	O I	|	|	|	|	0.20
1.167	0.50	0.04	0.037	O I	|	|	|	|	0.22
1.250	0.48	0.04	0.040	O I	|	|	|	|	0.24
1.333	0.47	0.04	0.043	O I	|	|	|	|	0.26
1.417	0.47	0.05	0.046	O I	|	|	|	|	0.28
1.500	0.46	0.05	0.049	O I	|	|	|	|	0.29
1.583	0.46	0.05	0.052	O I	|	|	|	|	0.31
1.667	0.46	0.06	0.055	O I	|	|	|	|	0.33
1.750	0.46	0.06	0.058	O I	|	|	|	|	0.34
1.833	0.50	0.06	0.061	O I	|	|	|	|	0.36
1.917	0.58	0.06	0.064	O I	|	|	|	|	0.38
2.000	0.60	0.07	0.067	O I	|	|	|	|	0.40
2.083	0.61	0.07	0.071	O I	|	|	|	|	0.42
2.167	0.61	0.08	0.075	O I	|	|	|	|	0.45
2.250	0.61	0.08	0.079	O I	|	|	|	|	0.47
2.333	0.62	0.08	0.082	O I	|	|	|	|	0.49
2.417	0.62	0.09	0.086	O I	|	|	|	|	0.51
2.500	0.62	0.09	0.089	O I	|	|	|	|	0.53
2.583	0.66	0.09	0.093	O I	|	|	|	|	0.55
2.667	0.73	0.10	0.097	O I	|	|	|	|	0.58
2.750	0.75	0.10	0.102	O I	|	|	|	|	0.61
2.833	0.76	0.11	0.106	O I	|	|	|	|	0.63
2.917	0.77	0.11	0.111	O I	|	|	|	|	0.66

3.000	0.77	0.12	0.115	O	I			0.69
3.083	0.77	0.12	0.120	O	I			0.71
3.167	0.77	0.13	0.124	O	I			0.74
3.250	0.77	0.13	0.129	O	I			0.77
3.333	0.77	0.13	0.133	O	I			0.79
3.417	0.77	0.14	0.137	O	I			0.82
3.500	0.77	0.14	0.142	O	I			0.84
3.583	0.77	0.15	0.146	O	I			0.87
3.667	0.77	0.15	0.150	O	I			0.89
3.750	0.77	0.16	0.154	O	I			0.92
3.833	0.81	0.16	0.159	O	I			0.95
3.917	0.89	0.17	0.164	O	I			0.97
4.000	0.91	0.17	0.169	O	I			1.00
4.083	0.91	0.17	0.174	O	I			1.02
4.167	0.92	0.17	0.179	O	I			1.03
4.250	0.92	0.18	0.184	O	I			1.05
4.333	0.97	0.18	0.189	O	I			1.06
4.417	1.04	0.18	0.195	O	I			1.08
4.500	1.06	0.18	0.201	O	I			1.10
4.583	1.07	0.18	0.207	O	I			1.12
4.667	1.07	0.19	0.213	O	I			1.13
4.750	1.08	0.19	0.219	O	I			1.15
4.833	1.12	0.19	0.225	O	I			1.17
4.917	1.19	0.19	0.232	O	I			1.19
5.000	1.21	0.20	0.239	O	I			1.21
5.083	1.14	0.20	0.246	O	I			1.23
5.167	0.99	0.20	0.252	O	I			1.25
5.250	0.96	0.20	0.257	O	I			1.27
5.333	0.98	0.20	0.262	O	I			1.28
5.417	1.05	0.21	0.268	O	I			1.30
5.500	1.06	0.21	0.274	O	I			1.32
5.583	1.11	0.21	0.280	O	I			1.33
5.667	1.19	0.21	0.286	O	I			1.35
5.750	1.21	0.21	0.293	O	I			1.37
5.833	1.22	0.22	0.300	O	I			1.39
5.917	1.23	0.22	0.307	O	I			1.41
6.000	1.23	0.22	0.314	O	I			1.44
6.083	1.27	0.22	0.321	O	I			1.46
6.167	1.35	0.23	0.328	O	I			1.48
6.250	1.37	0.23	0.336	O	I			1.50
6.333	1.38	0.23	0.344	O	I			1.53
6.417	1.38	0.24	0.352	O	I			1.55
6.500	1.38	0.24	0.360	O	I			1.57
6.583	1.43	0.24	0.368	O	I			1.60
6.667	1.50	0.24	0.376	O	I			1.62
6.750	1.52	0.25	0.385	O	I			1.65
6.833	1.53	0.25	0.394	O	I			1.67
6.917	1.54	0.25	0.403	O	I			1.70
7.000	1.54	0.26	0.411	O	I			1.73
7.083	1.54	0.26	0.420	O	I			1.75
7.167	1.54	0.26	0.429	O	I			1.78
7.250	1.54	0.27	0.438	O	I			1.81
7.333	1.58	0.27	0.447	O	I			1.83
7.417	1.66	0.27	0.456	O	I			1.86

7.500	1.68	0.28	0.466	O		I		1.89
7.583	1.73	0.28	0.475	O		I		1.92
7.667	1.81	0.28	0.486	O		I		1.95
7.750	1.83	0.29	0.496	O		I		1.98
7.833	1.88	0.29	0.507	O		I		2.02
7.917	1.96	0.29	0.518	O		I		2.06
8.000	1.98	0.30	0.530	O		I		2.11
8.083	2.08	0.30	0.542	O		I		2.15
8.167	2.23	0.31	0.554	O		I		2.20
8.250	2.27	0.31	0.568	O		I		2.26
8.333	2.29	0.31	0.581	O		I		2.31
8.417	2.30	0.32	0.595	O		I		2.36
8.500	2.31	0.32	0.609	O		I		2.42
8.583	2.35	0.33	0.622	O		I		2.47
8.667	2.43	0.33	0.637	O		I		2.53
8.750	2.45	0.34	0.651	O		I		2.59
8.833	2.50	0.34	0.666	O		I		2.65
8.917	2.58	0.35	0.681	O		I		2.71
9.000	2.60	0.35	0.696	O		I		2.77
9.083	1.90	0.36	0.709	O		I		2.82
9.167	0.64	0.36	0.716	O I				2.84
9.250	0.32	0.36	0.716	IO				2.85
9.333	0.24	0.36	0.716	IO				2.84
9.417	0.27	0.36	0.715	IO				2.84
9.500	0.26	0.36	0.715	IO				2.84
9.583	0.31	0.36	0.714	IO				2.84
9.667	0.43	0.36	0.714	O				2.84
9.750	0.47	0.36	0.715	OI				2.84
9.833	0.55	0.36	0.716	OI				2.84
9.917	0.67	0.36	0.718	O I				2.85
10.000	0.71	0.36	0.720	O I				2.86
10.083	1.16	0.36	0.724	O	I			2.88
10.167	1.92	0.36	0.732	O		I		2.91
10.250	2.13	0.37	0.743	O		I		2.95
10.333	2.22	0.37	0.756	O		I		3.00
10.417	2.27	0.37	0.769	O		I		3.05
10.500	2.29	0.38	0.782	O		I		3.11
10.583	1.81	0.38	0.793	O		I		3.15
10.667	0.94	0.38	0.800	O	I			3.18
10.750	0.72	0.38	0.803	O I				3.19
10.833	0.63	0.38	0.805	O I				3.20
10.917	0.59	0.38	0.807	O I				3.21
11.000	0.57	0.38	0.808	O I				3.21
11.083	0.52	0.39	0.809	OI				3.22
11.167	0.44	0.39	0.810	O				3.22
11.250	0.43	0.39	0.810	O				3.22
11.333	0.44	0.39	0.811	O				3.22
11.417	0.45	0.39	0.811	O				3.22
11.500	0.46	0.39	0.811	OI				3.22
11.583	0.37	0.39	0.812	O				3.23
11.667	0.20	0.39	0.811	I O				3.22
11.750	0.17	0.39	0.809	I O				3.22
11.833	0.22	0.38	0.808	I O				3.21
11.917	0.31	0.38	0.807	IO				3.21

12.000	0.34	0.38	0.807	O					3.21
12.083	0.72	0.38	0.808	O	I				3.21
12.167	1.38	0.39	0.813	O		I			3.23
12.250	1.57	0.39	0.820	O		I			3.26
12.333	1.71	0.39	0.829	O		I			3.29
12.417	1.86	0.39	0.838	O		I			3.33
12.500	1.92	0.40	0.848	O		I			3.37
12.583	2.06	0.40	0.859	O		I			3.42
12.667	2.26	0.40	0.871	O		I			3.46
12.750	2.33	0.41	0.884	O		I			3.52
12.833	2.42	0.41	0.898	O		I			3.57
12.917	2.53	0.41	0.912	O		I			3.63
13.000	2.58	0.42	0.927	O		I			3.69
13.083	2.86	0.42	0.943	O		I			3.75
13.167	3.34	0.43	0.961	O		I			3.82
13.250	3.47	0.43	0.982	O		I			3.90
13.333	3.54	0.44	1.003	O		I			3.99
13.417	3.59	0.44	1.024	O		I			4.07
13.500	3.62	0.45	1.046	O		I			4.16
13.583	3.08	0.45	1.066	O		I			4.24
13.667	2.09	0.46	1.081	O		I			4.30
13.750	1.84	0.46	1.091	O		I			4.34
13.833	1.74	0.46	1.100	O		I			4.37
13.917	1.69	0.46	1.109	O		I			4.41
14.000	1.67	0.47	1.117	O		I			4.44
14.083	1.86	0.47	1.126	O		I			4.48
14.167	2.24	0.47	1.137	O		I			4.52
14.250	2.35	0.47	1.150	O		I			4.57
14.333	2.35	0.48	1.162	O		I			4.62
14.417	2.30	0.48	1.175	O		I			4.67
14.500	2.30	0.48	1.188	O		I			4.72
14.583	2.31	0.49	1.200	O		I			4.77
14.667	2.32	0.49	1.213	O		I			4.82
14.750	2.33	0.49	1.226	O		I			4.87
14.833	2.29	0.50	1.238	O		I			4.92
14.917	2.21	0.50	1.250	O		I			4.97
15.000	2.20	0.50	1.262	O		I			5.00
15.083	2.15	0.50	1.273	O		I			5.02
15.167	2.07	0.50	1.285	O		I			5.03
15.250	2.05	0.50	1.295	O		I			5.04
15.333	2.00	0.50	1.306	O		I			5.06
15.417	1.92	0.50	1.316	O		I			5.07
15.500	1.90	0.50	1.326	O		I			5.08
15.583	1.70	0.51	1.334	O		I			5.09
15.667	1.34	0.51	1.341	O	I				5.10
15.750	1.26	0.51	1.347	O	I				5.10
15.833	1.22	0.51	1.352	O	I				5.11
15.917	1.21	0.51	1.357	O	I				5.11
16.000	1.21	0.51	1.362	O	I				5.12
16.083	1.05	0.51	1.366	O	I				5.12
16.167	0.76	0.51	1.369	O	I				5.13
16.250	0.68	0.51	1.370	O	I				5.13
16.333	0.65	0.51	1.371	OI					5.13
16.417	0.63	0.51	1.372	OI					5.13

16.500	0.62	0.51	1.373	OI				5.13
16.583	0.57	0.51	1.374	OI				5.13
16.667	0.50	0.51	1.374	O				5.13
16.750	0.48	0.51	1.374	O				5.13
16.833	0.47	0.51	1.374	O				5.13
16.917	0.47	0.51	1.373	O				5.13
17.000	0.46	0.51	1.373	O				5.13
17.083	0.55	0.51	1.373	O				5.13
17.167	0.69	0.51	1.374	O I				5.13
17.250	0.73	0.51	1.375	O I				5.14
17.333	0.75	0.51	1.377	O I				5.14
17.417	0.76	0.51	1.378	O I				5.14
17.500	0.77	0.51	1.380	O I				5.14
17.583	0.77	0.51	1.382	O I				5.14
17.667	0.77	0.51	1.384	O I				5.15
17.750	0.77	0.51	1.386	O I				5.15
17.833	0.73	0.51	1.387	O I				5.15
17.917	0.65	0.51	1.389	OI				5.15
18.000	0.63	0.51	1.389	OI				5.15
18.083	0.63	0.51	1.390	OI				5.15
18.167	0.62	0.51	1.391	OI				5.15
18.250	0.62	0.51	1.392	OI				5.15
18.333	0.62	0.51	1.393	OI				5.16
18.417	0.62	0.51	1.393	OI				5.16
18.500	0.62	0.51	1.394	OI				5.16
18.583	0.57	0.51	1.395	OI				5.16
18.667	0.50	0.51	1.395	O				5.16
18.750	0.48	0.51	1.395	O				5.16
18.833	0.43	0.51	1.394	IO				5.16
18.917	0.35	0.51	1.393	IO				5.16
19.000	0.33	0.51	1.392	I O				5.16
19.083	0.36	0.51	1.391	IO				5.15
19.167	0.43	0.51	1.390	IO				5.15
19.250	0.45	0.51	1.390	IO				5.15
19.333	0.49	0.51	1.390	O				5.15
19.417	0.57	0.51	1.390	OI				5.15
19.500	0.60	0.51	1.390	OI				5.15
19.583	0.56	0.51	1.391	O				5.15
19.667	0.50	0.51	1.391	O				5.15
19.750	0.48	0.51	1.391	O				5.15
19.833	0.43	0.51	1.390	IO				5.15
19.917	0.35	0.51	1.390	IO				5.15
20.000	0.33	0.51	1.388	I O				5.15
20.083	0.36	0.51	1.387	IO				5.15
20.167	0.43	0.51	1.386	IO				5.15
20.250	0.45	0.51	1.386	IO				5.15
20.333	0.45	0.51	1.386	O				5.15
20.417	0.46	0.51	1.385	O				5.15
20.500	0.46	0.51	1.385	O				5.15
20.583	0.46	0.51	1.385	O				5.15
20.667	0.46	0.51	1.384	O				5.15
20.750	0.46	0.51	1.384	O				5.15
20.833	0.42	0.51	1.383	IO				5.14
20.917	0.35	0.51	1.383	IO				5.14

21.000	0.33	0.51	1.381	I O				5.14
21.083	0.36	0.51	1.380	IO				5.14
21.167	0.43	0.51	1.379	IO				5.14
21.250	0.45	0.51	1.379	IO				5.14
21.333	0.41	0.51	1.378	IO				5.14
21.417	0.34	0.51	1.377	IO				5.14
21.500	0.32	0.51	1.376	I O				5.14
21.583	0.36	0.51	1.375	IO				5.14
21.667	0.43	0.51	1.374	IO				5.13
21.750	0.45	0.51	1.374	IO				5.13
21.833	0.41	0.51	1.373	IO				5.13
21.917	0.34	0.51	1.372	IO				5.13
22.000	0.32	0.51	1.371	I O				5.13
22.083	0.36	0.51	1.370	IO				5.13
22.167	0.43	0.51	1.369	IO				5.13
22.250	0.45	0.51	1.369	IO				5.13
22.333	0.41	0.51	1.368	IO				5.13
22.417	0.34	0.51	1.367	IO				5.13
22.500	0.32	0.51	1.366	I O				5.12
22.583	0.32	0.51	1.365	I O				5.12
22.667	0.31	0.51	1.363	I O				5.12
22.750	0.31	0.51	1.362	I O				5.12
22.833	0.31	0.51	1.361	I O				5.12
22.917	0.31	0.51	1.359	I O				5.12
23.000	0.31	0.51	1.358	I O				5.12
23.083	0.31	0.51	1.357	I O				5.11
23.167	0.31	0.51	1.355	I O				5.11
23.250	0.31	0.51	1.354	I O				5.11
23.333	0.31	0.51	1.353	I O				5.11
23.417	0.31	0.51	1.351	I O				5.11
23.500	0.31	0.51	1.350	I O				5.11
23.583	0.31	0.51	1.348	I O				5.10
23.667	0.31	0.51	1.347	I O				5.10
23.750	0.31	0.51	1.346	I O				5.10
23.833	0.31	0.51	1.344	I O				5.10
23.917	0.31	0.51	1.343	I O				5.10
24.000	0.31	0.51	1.342	I O				5.10
24.083	0.22	0.51	1.340	I O				5.09
24.167	0.07	0.51	1.338	I O				5.09
24.250	0.04	0.51	1.334	I O				5.09
24.333	0.02	0.51	1.331	I O				5.08
24.417	0.01	0.50	1.328	I O				5.08
24.500	0.00	0.50	1.324	I O				5.08
24.583	0.00	0.50	1.321	I O				5.07
24.667	0.00	0.50	1.317	I O				5.07
24.750	0.00	0.50	1.314	I O				5.06
24.833	0.00	0.50	1.310	I O				5.06
24.917	0.00	0.50	1.307	I O				5.06
25.000	0.00	0.50	1.303	I O				5.05
25.083	0.00	0.50	1.300	I O				5.05
25.167	0.00	0.50	1.297	I O				5.04
25.250	0.00	0.50	1.293	I O				5.04
25.333	0.00	0.50	1.290	I O				5.04
25.417	0.00	0.50	1.286	I O				5.03

25.500	0.00	0.50	1.283	I	O	|	|	|	|	5.03
25.583	0.00	0.50	1.279	I	O	|	|	|	|	5.02
25.667	0.00	0.50	1.276	I	O	|	|	|	|	5.02
25.750	0.00	0.50	1.272	I	O	|	|	|	|	5.02
25.833	0.00	0.50	1.269	I	O	|	|	|	|	5.01
25.917	0.00	0.50	1.265	I	O	|	|	|	|	5.01
26.000	0.00	0.50	1.262	I	O	|	|	|	|	5.00
26.083	0.00	0.50	1.259	I	O	|	|	|	|	5.00
26.167	0.00	0.50	1.255	I	O	|	|	|	|	4.99
26.250	0.00	0.50	1.252	I	O	|	|	|	|	4.98
26.333	0.00	0.50	1.248	I	O	|	|	|	|	4.96
26.417	0.00	0.50	1.245	I	O	|	|	|	|	4.95
26.500	0.00	0.50	1.241	I	O	|	|	|	|	4.93
26.583	0.00	0.50	1.238	I	O	|	|	|	|	4.92
26.667	0.00	0.49	1.235	I	O	|	|	|	|	4.91
26.750	0.00	0.49	1.231	I	O	|	|	|	|	4.89
26.833	0.00	0.49	1.228	I	O	|	|	|	|	4.88
26.917	0.00	0.49	1.224	I	O	|	|	|	|	4.87
27.000	0.00	0.49	1.221	I	O	|	|	|	|	4.85
27.083	0.00	0.49	1.218	I	O	|	|	|	|	4.84
27.167	0.00	0.49	1.214	I	O	|	|	|	|	4.83
27.250	0.00	0.49	1.211	I	O	|	|	|	|	4.81
27.333	0.00	0.49	1.208	I	O	|	|	|	|	4.80
27.417	0.00	0.49	1.204	I	O	|	|	|	|	4.79
27.500	0.00	0.49	1.201	I	O	|	|	|	|	4.77
27.583	0.00	0.49	1.197	I	O	|	|	|	|	4.76
27.667	0.00	0.48	1.194	I	O	|	|	|	|	4.75
27.750	0.00	0.48	1.191	I	O	|	|	|	|	4.73
27.833	0.00	0.48	1.187	I	O	|	|	|	|	4.72
27.917	0.00	0.48	1.184	I	O	|	|	|	|	4.71
28.000	0.00	0.48	1.181	I	O	|	|	|	|	4.69
28.083	0.00	0.48	1.178	I	O	|	|	|	|	4.68
28.167	0.00	0.48	1.174	I	O	|	|	|	|	4.67
28.250	0.00	0.48	1.171	I	O	|	|	|	|	4.65
28.333	0.00	0.48	1.168	I	O	|	|	|	|	4.64
28.417	0.00	0.48	1.164	I	O	|	|	|	|	4.63
28.500	0.00	0.48	1.161	I	O	|	|	|	|	4.62
28.583	0.00	0.48	1.158	I	O	|	|	|	|	4.60
28.667	0.00	0.48	1.154	I	O	|	|	|	|	4.59
28.750	0.00	0.47	1.151	I	O	|	|	|	|	4.58
28.833	0.00	0.47	1.148	I	O	|	|	|	|	4.56
28.917	0.00	0.47	1.145	I	O	|	|	|	|	4.55
29.000	0.00	0.47	1.141	I	O	|	|	|	|	4.54
29.083	0.00	0.47	1.138	I	O	|	|	|	|	4.52
29.167	0.00	0.47	1.135	I	O	|	|	|	|	4.51
29.250	0.00	0.47	1.132	I	O	|	|	|	|	4.50
29.333	0.00	0.47	1.128	I	O	|	|	|	|	4.49
29.417	0.00	0.47	1.125	I	O	|	|	|	|	4.47
29.500	0.00	0.47	1.122	I	O	|	|	|	|	4.46
29.583	0.00	0.47	1.119	I	O	|	|	|	|	4.45
29.667	0.00	0.47	1.116	I	O	|	|	|	|	4.43
29.750	0.00	0.47	1.112	I	O	|	|	|	|	4.42
29.833	0.00	0.46	1.109	I	O	|	|	|	|	4.41
29.917	0.00	0.46	1.106	I	O	|	|	|	|	4.40

30.000	0.00	0.46	1.103	I	O	|	|	|	4.38
30.083	0.00	0.46	1.100	I	O	|	|	|	4.37
30.167	0.00	0.46	1.096	I	O	|	|	|	4.36
30.250	0.00	0.46	1.093	I	O	|	|	|	4.35
30.333	0.00	0.46	1.090	I	O	|	|	|	4.33
30.417	0.00	0.46	1.087	I	O	|	|	|	4.32
30.500	0.00	0.46	1.084	I	O	|	|	|	4.31
30.583	0.00	0.46	1.081	I	O	|	|	|	4.30
30.667	0.00	0.46	1.077	I	O	|	|	|	4.28
30.750	0.00	0.46	1.074	I	O	|	|	|	4.27
30.833	0.00	0.46	1.071	I	O	|	|	|	4.26
30.917	0.00	0.45	1.068	I	O	|	|	|	4.25
31.000	0.00	0.45	1.065	I	O	|	|	|	4.23
31.083	0.00	0.45	1.062	I	O	|	|	|	4.22
31.167	0.00	0.45	1.059	I	O	|	|	|	4.21
31.250	0.00	0.45	1.056	I	O	|	|	|	4.20
31.333	0.00	0.45	1.052	I	O	|	|	|	4.18
31.417	0.00	0.45	1.049	I	O	|	|	|	4.17
31.500	0.00	0.45	1.046	I	O	|	|	|	4.16
31.583	0.00	0.45	1.043	I	O	|	|	|	4.15
31.667	0.00	0.45	1.040	I	O	|	|	|	4.14
31.750	0.00	0.45	1.037	I	O	|	|	|	4.12
31.833	0.00	0.45	1.034	I	O	|	|	|	4.11
31.917	0.00	0.45	1.031	I	O	|	|	|	4.10
32.000	0.00	0.45	1.028	I	O	|	|	|	4.09
32.083	0.00	0.44	1.025	I	O	|	|	|	4.07
32.167	0.00	0.44	1.022	I	O	|	|	|	4.06
32.250	0.00	0.44	1.019	I	O	|	|	|	4.05
32.333	0.00	0.44	1.015	I	O	|	|	|	4.04
32.417	0.00	0.44	1.012	I	O	|	|	|	4.03
32.500	0.00	0.44	1.009	I	O	|	|	|	4.01
32.583	0.00	0.44	1.006	I	O	|	|	|	4.00
32.667	0.00	0.44	1.003	I	O	|	|	|	3.99
32.750	0.00	0.44	1.000	I	O	|	|	|	3.98
32.833	0.00	0.44	0.997	I	O	|	|	|	3.97
32.917	0.00	0.44	0.994	I	O	|	|	|	3.95
33.000	0.00	0.44	0.991	I	O	|	|	|	3.94
33.083	0.00	0.44	0.988	I	O	|	|	|	3.93
33.167	0.00	0.43	0.985	I	O	|	|	|	3.92
33.250	0.00	0.43	0.982	I	O	|	|	|	3.91
33.333	0.00	0.43	0.979	I	O	|	|	|	3.89
33.417	0.00	0.43	0.976	I	O	|	|	|	3.88
33.500	0.00	0.43	0.973	I	O	|	|	|	3.87
33.583	0.00	0.43	0.970	I	O	|	|	|	3.86
33.667	0.00	0.43	0.967	I	O	|	|	|	3.85
33.750	0.00	0.43	0.965	I	O	|	|	|	3.83
33.833	0.00	0.43	0.962	I	O	|	|	|	3.82
33.917	0.00	0.43	0.959	I	O	|	|	|	3.81
34.000	0.00	0.43	0.956	I	O	|	|	|	3.80
34.083	0.00	0.43	0.953	I	O	|	|	|	3.79
34.167	0.00	0.42	0.950	I	O	|	|	|	3.78
34.250	0.00	0.42	0.947	I	O	|	|	|	3.76
34.333	0.00	0.42	0.944	I	O	|	|	|	3.75
34.417	0.00	0.42	0.941	I	O	|	|	|	3.74

34.500	0.00	0.42	0.938	I	O	|	|	|	|	3.73
34.583	0.00	0.42	0.935	I	O	|	|	|	|	3.72
34.667	0.00	0.42	0.932	I	O	|	|	|	|	3.71
34.750	0.00	0.42	0.930	I	O	|	|	|	|	3.70
34.833	0.00	0.42	0.927	I	O	|	|	|	|	3.68
34.917	0.00	0.42	0.924	I	O	|	|	|	|	3.67
35.000	0.00	0.42	0.921	I	O	|	|	|	|	3.66
35.083	0.00	0.42	0.918	I	O	|	|	|	|	3.65
35.167	0.00	0.41	0.915	I	O	|	|	|	|	3.64
35.250	0.00	0.41	0.912	I	O	|	|	|	|	3.63
35.333	0.00	0.41	0.909	I	O	|	|	|	|	3.62
35.417	0.00	0.41	0.907	I	O	|	|	|	|	3.60
35.500	0.00	0.41	0.904	I	O	|	|	|	|	3.59
35.583	0.00	0.41	0.901	I	O	|	|	|	|	3.58
35.667	0.00	0.41	0.898	I	O	|	|	|	|	3.57
35.750	0.00	0.41	0.895	I	O	|	|	|	|	3.56
35.833	0.00	0.41	0.892	I	O	|	|	|	|	3.55
35.917	0.00	0.41	0.890	I	O	|	|	|	|	3.54
36.000	0.00	0.41	0.887	I	O	|	|	|	|	3.53
36.083	0.00	0.41	0.884	I	O	|	|	|	|	3.51
36.167	0.00	0.41	0.881	I	O	|	|	|	|	3.50
36.250	0.00	0.40	0.878	I	O	|	|	|	|	3.49
36.333	0.00	0.40	0.876	I	O	|	|	|	|	3.48
36.417	0.00	0.40	0.873	I	O	|	|	|	|	3.47
36.500	0.00	0.40	0.870	I	O	|	|	|	|	3.46
36.583	0.00	0.40	0.867	I	O	|	|	|	|	3.45
36.667	0.00	0.40	0.865	I	O	|	|	|	|	3.44
36.750	0.00	0.40	0.862	I	O	|	|	|	|	3.43
36.833	0.00	0.40	0.859	I	O	|	|	|	|	3.41
36.917	0.00	0.40	0.856	I	O	|	|	|	|	3.40
37.000	0.00	0.40	0.854	I	O	|	|	|	|	3.39
37.083	0.00	0.40	0.851	I	O	|	|	|	|	3.38
37.167	0.00	0.40	0.848	I	O	|	|	|	|	3.37
37.250	0.00	0.40	0.845	I	O	|	|	|	|	3.36
37.333	0.00	0.39	0.843	I	O	|	|	|	|	3.35
37.417	0.00	0.39	0.840	I	O	|	|	|	|	3.34
37.500	0.00	0.39	0.837	I	O	|	|	|	|	3.33
37.583	0.00	0.39	0.835	I	O	|	|	|	|	3.32
37.667	0.00	0.39	0.832	I	O	|	|	|	|	3.31
37.750	0.00	0.39	0.829	I	O	|	|	|	|	3.30
37.833	0.00	0.39	0.827	I	O	|	|	|	|	3.28
37.917	0.00	0.39	0.824	I	O	|	|	|	|	3.27
38.000	0.00	0.39	0.821	I	O	|	|	|	|	3.26
38.083	0.00	0.39	0.818	I	O	|	|	|	|	3.25
38.167	0.00	0.39	0.816	I	O	|	|	|	|	3.24
38.250	0.00	0.39	0.813	I	O	|	|	|	|	3.23
38.333	0.00	0.39	0.811	I	O	|	|	|	|	3.22
38.417	0.00	0.38	0.808	I	O	|	|	|	|	3.21
38.500	0.00	0.38	0.805	I	O	|	|	|	|	3.20
38.583	0.00	0.38	0.803	I	O	|	|	|	|	3.19
38.667	0.00	0.38	0.800	I	O	|	|	|	|	3.18
38.750	0.00	0.38	0.797	I	O	|	|	|	|	3.17
38.833	0.00	0.38	0.795	I	O	|	|	|	|	3.16
38.917	0.00	0.38	0.792	I	O	|	|	|	|	3.15

39.000	0.00	0.38	0.789	I	O	|	|	|	|	3.14
39.083	0.00	0.38	0.787	I	O	|	|	|	|	3.13
39.167	0.00	0.38	0.784	I	O	|	|	|	|	3.12
39.250	0.00	0.38	0.782	I	O	|	|	|	|	3.11
39.333	0.00	0.38	0.779	I	O	|	|	|	|	3.10
39.417	0.00	0.38	0.776	I	O	|	|	|	|	3.09
39.500	0.00	0.38	0.774	I	O	|	|	|	|	3.08
39.583	0.00	0.37	0.771	I	O	|	|	|	|	3.06
39.667	0.00	0.37	0.769	I	O	|	|	|	|	3.05
39.750	0.00	0.37	0.766	I	O	|	|	|	|	3.04
39.833	0.00	0.37	0.764	I	O	|	|	|	|	3.03
39.917	0.00	0.37	0.761	I	O	|	|	|	|	3.02
40.000	0.00	0.37	0.758	I	O	|	|	|	|	3.01
40.083	0.00	0.37	0.756	I	O	|	|	|	|	3.00
40.167	0.00	0.37	0.753	I	O	|	|	|	|	2.99
40.250	0.00	0.37	0.751	I	O	|	|	|	|	2.98
40.333	0.00	0.37	0.748	I	O	|	|	|	|	2.97
40.417	0.00	0.37	0.746	I	O	|	|	|	|	2.96
40.500	0.00	0.37	0.743	I	O	|	|	|	|	2.95
40.583	0.00	0.37	0.741	I	O	|	|	|	|	2.94
40.667	0.00	0.36	0.738	I	O	|	|	|	|	2.93
40.750	0.00	0.36	0.736	I	O	|	|	|	|	2.92
40.833	0.00	0.36	0.733	I	O	|	|	|	|	2.91
40.917	0.00	0.36	0.731	I	O	|	|	|	|	2.90
41.000	0.00	0.36	0.728	I	O	|	|	|	|	2.89
41.083	0.00	0.36	0.726	I	O	|	|	|	|	2.88
41.167	0.00	0.36	0.723	I	O	|	|	|	|	2.87
41.250	0.00	0.36	0.721	I	O	|	|	|	|	2.86
41.333	0.00	0.36	0.718	I	O	|	|	|	|	2.85
41.417	0.00	0.36	0.716	I	O	|	|	|	|	2.84
41.500	0.00	0.36	0.713	I	O	|	|	|	|	2.83
41.583	0.00	0.36	0.711	I	O	|	|	|	|	2.82
41.667	0.00	0.36	0.708	I	O	|	|	|	|	2.82
41.750	0.00	0.35	0.706	I	O	|	|	|	|	2.81
41.833	0.00	0.35	0.704	I	O	|	|	|	|	2.80
41.917	0.00	0.35	0.701	I	O	|	|	|	|	2.79
42.000	0.00	0.35	0.699	I	O	|	|	|	|	2.78
42.083	0.00	0.35	0.696	I	O	|	|	|	|	2.77
42.167	0.00	0.35	0.694	I	O	|	|	|	|	2.76
42.250	0.00	0.35	0.691	I	O	|	|	|	|	2.75
42.333	0.00	0.35	0.689	I	O	|	|	|	|	2.74
42.417	0.00	0.35	0.687	I	O	|	|	|	|	2.73
42.500	0.00	0.35	0.684	I	O	|	|	|	|	2.72
42.583	0.00	0.35	0.682	I	O	|	|	|	|	2.71
42.667	0.00	0.35	0.679	I	O	|	|	|	|	2.70
42.750	0.00	0.35	0.677	I	O	|	|	|	|	2.69
42.833	0.00	0.34	0.675	I	O	|	|	|	|	2.68
42.917	0.00	0.34	0.672	I	O	|	|	|	|	2.67
43.000	0.00	0.34	0.670	I	O	|	|	|	|	2.66
43.083	0.00	0.34	0.668	I	O	|	|	|	|	2.65
43.167	0.00	0.34	0.665	I	O	|	|	|	|	2.64
43.250	0.00	0.34	0.663	I	O	|	|	|	|	2.63
43.333	0.00	0.34	0.661	I	O	|	|	|	|	2.63
43.417	0.00	0.34	0.658	I	O	|	|	|	|	2.62

43.500	0.00	0.34	0.656	I	O	|	|	|	2.61
43.583	0.00	0.34	0.654	I	O	|	|	|	2.60
43.667	0.00	0.34	0.651	I	O	|	|	|	2.59
43.750	0.00	0.34	0.649	I	O	|	|	|	2.58
43.833	0.00	0.34	0.647	I	O	|	|	|	2.57
43.917	0.00	0.33	0.644	I	O	|	|	|	2.56
44.000	0.00	0.33	0.642	I	O	|	|	|	2.55
44.083	0.00	0.33	0.640	I	O	|	|	|	2.54
44.167	0.00	0.33	0.637	I	O	|	|	|	2.53
44.250	0.00	0.33	0.635	I	O	|	|	|	2.52
44.333	0.00	0.33	0.633	I	O	|	|	|	2.52
44.417	0.00	0.33	0.631	I	O	|	|	|	2.51
44.500	0.00	0.33	0.628	I	O	|	|	|	2.50
44.583	0.00	0.33	0.626	I	O	|	|	|	2.49
44.667	0.00	0.33	0.624	I	O	|	|	|	2.48
44.750	0.00	0.33	0.621	I	O	|	|	|	2.47
44.833	0.00	0.33	0.619	I	O	|	|	|	2.46
44.917	0.00	0.33	0.617	I	O	|	|	|	2.45
45.000	0.00	0.33	0.615	I	O	|	|	|	2.44
45.083	0.00	0.32	0.612	I	O	|	|	|	2.43
45.167	0.00	0.32	0.610	I	O	|	|	|	2.43
45.250	0.00	0.32	0.608	I	O	|	|	|	2.42
45.333	0.00	0.32	0.606	I	O	|	|	|	2.41
45.417	0.00	0.32	0.604	I	O	|	|	|	2.40
45.500	0.00	0.32	0.601	I	O	|	|	|	2.39
45.583	0.00	0.32	0.599	I	O	|	|	|	2.38
45.667	0.00	0.32	0.597	I	O	|	|	|	2.37
45.750	0.00	0.32	0.595	I	O	|	|	|	2.36
45.833	0.00	0.32	0.593	I	O	|	|	|	2.36
45.917	0.00	0.32	0.590	I	O	|	|	|	2.35
46.000	0.00	0.32	0.588	I	O	|	|	|	2.34
46.083	0.00	0.32	0.586	I	O	|	|	|	2.33
46.167	0.00	0.32	0.584	I	O	|	|	|	2.32
46.250	0.00	0.31	0.582	I	O	|	|	|	2.31
46.333	0.00	0.31	0.579	I	O	|	|	|	2.30
46.417	0.00	0.31	0.577	I	O	|	|	|	2.29
46.500	0.00	0.31	0.575	I	O	|	|	|	2.29
46.583	0.00	0.31	0.573	I	O	|	|	|	2.28
46.667	0.00	0.31	0.571	I	O	|	|	|	2.27
46.750	0.00	0.31	0.569	I	O	|	|	|	2.26
46.833	0.00	0.31	0.567	I	O	|	|	|	2.25
46.917	0.00	0.31	0.564	I	O	|	|	|	2.24
47.000	0.00	0.31	0.562	I	O	|	|	|	2.24
47.083	0.00	0.31	0.560	I	O	|	|	|	2.23
47.167	0.00	0.31	0.558	I	O	|	|	|	2.22
47.250	0.00	0.31	0.556	I	O	|	|	|	2.21
47.333	0.00	0.31	0.554	I	O	|	|	|	2.20
47.417	0.00	0.31	0.552	I	O	|	|	|	2.19
47.500	0.00	0.30	0.550	I	O	|	|	|	2.19
47.583	0.00	0.30	0.548	I	O	|	|	|	2.18
47.667	0.00	0.30	0.545	I	O	|	|	|	2.17
47.750	0.00	0.30	0.543	I	O	|	|	|	2.16
47.833	0.00	0.30	0.541	I	O	|	|	|	2.15
47.917	0.00	0.30	0.539	I	O	|	|	|	2.14

48.000	0.00	0.30	0.537	I	O	|	|	|	|	2.14
48.083	0.00	0.30	0.535	I	O	|	|	|	|	2.13
48.167	0.00	0.30	0.533	I	O	|	|	|	|	2.12
48.250	0.00	0.30	0.531	I	O	|	|	|	|	2.11
48.333	0.00	0.30	0.529	I	O	|	|	|	|	2.10
48.417	0.00	0.30	0.527	I	O	|	|	|	|	2.09
48.500	0.00	0.30	0.525	I	O	|	|	|	|	2.09
48.583	0.00	0.30	0.523	I	O	|	|	|	|	2.08
48.667	0.00	0.30	0.521	I	O	|	|	|	|	2.07
48.750	0.00	0.29	0.519	I	O	|	|	|	|	2.06
48.833	0.00	0.29	0.517	I	O	|	|	|	|	2.05
48.917	0.00	0.29	0.515	I	O	|	|	|	|	2.05
49.000	0.00	0.29	0.513	I	O	|	|	|	|	2.04
49.083	0.00	0.29	0.511	I	O	|	|	|	|	2.03
49.167	0.00	0.29	0.509	I	O	|	|	|	|	2.02
49.250	0.00	0.29	0.507	I	O	|	|	|	|	2.01
49.333	0.00	0.29	0.505	I	O	|	|	|	|	2.01
49.417	0.00	0.29	0.503	I	O	|	|	|	|	2.00
49.500	0.00	0.29	0.501	I	O	|	|	|	|	1.99
49.583	0.00	0.29	0.499	I	O	|	|	|	|	1.99
49.667	0.00	0.29	0.497	I	O	|	|	|	|	1.98
49.750	0.00	0.29	0.495	I	O	|	|	|	|	1.97
49.833	0.00	0.29	0.493	I	O	|	|	|	|	1.97
49.917	0.00	0.29	0.491	I	O	|	|	|	|	1.96
50.000	0.00	0.28	0.489	I	O	|	|	|	|	1.96
50.083	0.00	0.28	0.487	I	O	|	|	|	|	1.95
50.167	0.00	0.28	0.485	I	O	|	|	|	|	1.95
50.250	0.00	0.28	0.483	I	O	|	|	|	|	1.94
50.333	0.00	0.28	0.481	I	O	|	|	|	|	1.93
50.417	0.00	0.28	0.479	I	O	|	|	|	|	1.93
50.500	0.00	0.28	0.477	I	O	|	|	|	|	1.92
50.583	0.00	0.28	0.475	I	O	|	|	|	|	1.92
50.667	0.00	0.28	0.473	I	O	|	|	|	|	1.91
50.750	0.00	0.28	0.471	I	O	|	|	|	|	1.91
50.833	0.00	0.28	0.469	I	O	|	|	|	|	1.90
50.917	0.00	0.28	0.467	I	O	|	|	|	|	1.89
51.000	0.00	0.28	0.465	I	O	|	|	|	|	1.89
51.083	0.00	0.28	0.464	I	O	|	|	|	|	1.88
51.167	0.00	0.28	0.462	I	O	|	|	|	|	1.88
51.250	0.00	0.27	0.460	I	O	|	|	|	|	1.87
51.333	0.00	0.27	0.458	I	O	|	|	|	|	1.87
51.417	0.00	0.27	0.456	I	O	|	|	|	|	1.86
51.500	0.00	0.27	0.454	I	O	|	|	|	|	1.85
51.583	0.00	0.27	0.452	I	O	|	|	|	|	1.85
51.667	0.00	0.27	0.450	I	O	|	|	|	|	1.84
51.750	0.00	0.27	0.449	I	O	|	|	|	|	1.84
51.833	0.00	0.27	0.447	I	O	|	|	|	|	1.83
51.917	0.00	0.27	0.445	I	O	|	|	|	|	1.83
52.000	0.00	0.27	0.443	I	O	|	|	|	|	1.82
52.083	0.00	0.27	0.441	I	O	|	|	|	|	1.82
52.167	0.00	0.27	0.439	I	O	|	|	|	|	1.81
52.250	0.00	0.27	0.437	I	O	|	|	|	|	1.80
52.333	0.00	0.27	0.436	I	O	|	|	|	|	1.80
52.417	0.00	0.27	0.434	I	O	|	|	|	|	1.79

52.500	0.00	0.26	0.432	I	O	|	|	|	1.79
52.583	0.00	0.26	0.430	I	O	|	|	|	1.78
52.667	0.00	0.26	0.428	I	O	|	|	|	1.78
52.750	0.00	0.26	0.427	I	O	|	|	|	1.77
52.833	0.00	0.26	0.425	I	O	|	|	|	1.77
52.917	0.00	0.26	0.423	I	O	|	|	|	1.76
53.000	0.00	0.26	0.421	I	O	|	|	|	1.76
53.083	0.00	0.26	0.419	I	O	|	|	|	1.75
53.167	0.00	0.26	0.418	I	O	|	|	|	1.74
53.250	0.00	0.26	0.416	I	O	|	|	|	1.74
53.333	0.00	0.26	0.414	I	O	|	|	|	1.73
53.417	0.00	0.26	0.412	I	O	|	|	|	1.73
53.500	0.00	0.26	0.410	I	O	|	|	|	1.72
53.583	0.00	0.26	0.409	I	O	|	|	|	1.72
53.667	0.00	0.26	0.407	I	O	|	|	|	1.71
53.750	0.00	0.25	0.405	I	O	|	|	|	1.71
53.833	0.00	0.25	0.403	I	O	|	|	|	1.70
53.917	0.00	0.25	0.402	I	O	|	|	|	1.70
54.000	0.00	0.25	0.400	I	O	|	|	|	1.69
54.083	0.00	0.25	0.398	I	O	|	|	|	1.69
54.167	0.00	0.25	0.396	I	O	|	|	|	1.68
54.250	0.00	0.25	0.395	I	O	|	|	|	1.68
54.333	0.00	0.25	0.393	I	O	|	|	|	1.67
54.417	0.00	0.25	0.391	I	O	|	|	|	1.67
54.500	0.00	0.25	0.389	I	O	|	|	|	1.66
54.583	0.00	0.25	0.388	I	O	|	|	|	1.66
54.667	0.00	0.25	0.386	I	O	|	|	|	1.65
54.750	0.00	0.25	0.384	I	O	|	|	|	1.65
54.833	0.00	0.25	0.383	I	O	|	|	|	1.64
54.917	0.00	0.25	0.381	I	O	|	|	|	1.64
55.000	0.00	0.25	0.379	I	O	|	|	|	1.63
55.083	0.00	0.25	0.378	I	O	|	|	|	1.63
55.167	0.00	0.24	0.376	I	O	|	|	|	1.62
55.250	0.00	0.24	0.374	I	O	|	|	|	1.62
55.333	0.00	0.24	0.373	I	O	|	|	|	1.61
55.417	0.00	0.24	0.371	I	O	|	|	|	1.61
55.500	0.00	0.24	0.369	I	O	|	|	|	1.60
55.583	0.00	0.24	0.368	I	O	|	|	|	1.60
55.667	0.00	0.24	0.366	I	O	|	|	|	1.59
55.750	0.00	0.24	0.364	I	O	|	|	|	1.59
55.833	0.00	0.24	0.363	I	O	|	|	|	1.58
55.917	0.00	0.24	0.361	I	O	|	|	|	1.58
56.000	0.00	0.24	0.359	I	O	|	|	|	1.57
56.083	0.00	0.24	0.358	I	O	|	|	|	1.57
56.167	0.00	0.24	0.356	I	O	|	|	|	1.56
56.250	0.00	0.24	0.354	I	O	|	|	|	1.56
56.333	0.00	0.24	0.353	I	O	|	|	|	1.55
56.417	0.00	0.24	0.351	I	O	|	|	|	1.55
56.500	0.00	0.24	0.349	I	O	|	|	|	1.54
56.583	0.00	0.23	0.348	I	O	|	|	|	1.54
56.667	0.00	0.23	0.346	I	O	|	|	|	1.53
56.750	0.00	0.23	0.345	I	O	|	|	|	1.53
56.833	0.00	0.23	0.343	I	O	|	|	|	1.52
56.917	0.00	0.23	0.341	I	O	|	|	|	1.52

57.000	0.00	0.23	0.340	I O	|	|	|	1.51
57.083	0.00	0.23	0.338	I O	|	|	|	1.51
57.167	0.00	0.23	0.337	I O	|	|	|	1.50
57.250	0.00	0.23	0.335	I O	|	|	|	1.50
57.333	0.00	0.23	0.333	I O	|	|	|	1.49
57.417	0.00	0.23	0.332	I O	|	|	|	1.49
57.500	0.00	0.23	0.330	I O	|	|	|	1.48
57.583	0.00	0.23	0.329	I O	|	|	|	1.48
57.667	0.00	0.23	0.327	I O	|	|	|	1.48
57.750	0.00	0.23	0.326	I O	|	|	|	1.47
57.833	0.00	0.23	0.324	IO	|	|	|	1.47
57.917	0.00	0.23	0.323	IO	|	|	|	1.46
58.000	0.00	0.22	0.321	IO	|	|	|	1.46
58.083	0.00	0.22	0.319	IO	|	|	|	1.45
58.167	0.00	0.22	0.318	IO	|	|	|	1.45
58.250	0.00	0.22	0.316	IO	|	|	|	1.44
58.333	0.00	0.22	0.315	IO	|	|	|	1.44
58.417	0.00	0.22	0.313	IO	|	|	|	1.43
58.500	0.00	0.22	0.312	IO	|	|	|	1.43
58.583	0.00	0.22	0.310	IO	|	|	|	1.42
58.667	0.00	0.22	0.309	IO	|	|	|	1.42
58.750	0.00	0.22	0.307	IO	|	|	|	1.42
58.833	0.00	0.22	0.306	IO	|	|	|	1.41
58.917	0.00	0.22	0.304	IO	|	|	|	1.41
59.000	0.00	0.22	0.303	IO	|	|	|	1.40
59.083	0.00	0.22	0.301	IO	|	|	|	1.40
59.167	0.00	0.22	0.300	IO	|	|	|	1.39
59.250	0.00	0.22	0.298	IO	|	|	|	1.39
59.333	0.00	0.22	0.297	IO	|	|	|	1.38
59.417	0.00	0.22	0.295	IO	|	|	|	1.38
59.500	0.00	0.22	0.294	IO	|	|	|	1.38
59.583	0.00	0.21	0.292	IO	|	|	|	1.37
59.667	0.00	0.21	0.291	IO	|	|	|	1.37
59.750	0.00	0.21	0.289	IO	|	|	|	1.36
59.833	0.00	0.21	0.288	IO	|	|	|	1.36
59.917	0.00	0.21	0.286	IO	|	|	|	1.35
60.000	0.00	0.21	0.285	IO	|	|	|	1.35
60.083	0.00	0.21	0.283	IO	|	|	|	1.34
60.167	0.00	0.21	0.282	IO	|	|	|	1.34
60.250	0.00	0.21	0.281	IO	|	|	|	1.34
60.333	0.00	0.21	0.279	IO	|	|	|	1.33
60.417	0.00	0.21	0.278	IO	|	|	|	1.33
60.500	0.00	0.21	0.276	IO	|	|	|	1.32
60.583	0.00	0.21	0.275	IO	|	|	|	1.32
60.667	0.00	0.21	0.273	IO	|	|	|	1.31
60.750	0.00	0.21	0.272	IO	|	|	|	1.31
60.833	0.00	0.21	0.270	IO	|	|	|	1.31
60.917	0.00	0.21	0.269	IO	|	|	|	1.30
61.000	0.00	0.21	0.268	IO	|	|	|	1.30
61.083	0.00	0.21	0.266	IO	|	|	|	1.29
61.167	0.00	0.20	0.265	IO	|	|	|	1.29
61.250	0.00	0.20	0.263	IO	|	|	|	1.28
61.333	0.00	0.20	0.262	IO	|	|	|	1.28
61.417	0.00	0.20	0.261	IO	|	|	|	1.28

61.500	0.00	0.20	0.259	IO				1.27
61.583	0.00	0.20	0.258	IO				1.27
61.667	0.00	0.20	0.256	IO				1.26
61.750	0.00	0.20	0.255	IO				1.26
61.833	0.00	0.20	0.254	IO				1.26
61.917	0.00	0.20	0.252	IO				1.25
62.000	0.00	0.20	0.251	IO				1.25
62.083	0.00	0.20	0.250	IO				1.24
62.167	0.00	0.20	0.248	IO				1.24
62.250	0.00	0.20	0.247	IO				1.24
62.333	0.00	0.20	0.245	IO				1.23
62.417	0.00	0.20	0.244	IO				1.23
62.500	0.00	0.20	0.243	IO				1.22
62.583	0.00	0.20	0.241	IO				1.22
62.667	0.00	0.20	0.240	IO				1.21
62.750	0.00	0.20	0.239	IO				1.21
62.833	0.00	0.19	0.237	IO				1.21
62.917	0.00	0.19	0.236	IO				1.20
63.000	0.00	0.19	0.235	IO				1.20
63.083	0.00	0.19	0.233	IO				1.19
63.167	0.00	0.19	0.232	IO				1.19
63.250	0.00	0.19	0.231	IO				1.19
63.333	0.00	0.19	0.229	IO				1.18
63.417	0.00	0.19	0.228	IO				1.18
63.500	0.00	0.19	0.227	IO				1.18
63.583	0.00	0.19	0.225	IO				1.17
63.667	0.00	0.19	0.224	IO				1.17
63.750	0.00	0.19	0.223	IO				1.16
63.833	0.00	0.19	0.221	IO				1.16
63.917	0.00	0.19	0.220	IO				1.16
64.000	0.00	0.19	0.219	IO				1.15
64.083	0.00	0.19	0.218	IO				1.15
64.167	0.00	0.19	0.216	IO				1.14
64.250	0.00	0.19	0.215	IO				1.14
64.333	0.00	0.19	0.214	IO				1.14
64.417	0.00	0.19	0.212	IO				1.13
64.500	0.00	0.19	0.211	IO				1.13
64.583	0.00	0.18	0.210	IO				1.12
64.667	0.00	0.18	0.209	IO				1.12
64.750	0.00	0.18	0.207	IO				1.12
64.833	0.00	0.18	0.206	IO				1.11
64.917	0.00	0.18	0.205	IO				1.11
65.000	0.00	0.18	0.204	IO				1.11
65.083	0.00	0.18	0.202	IO				1.10
65.167	0.00	0.18	0.201	IO				1.10
65.250	0.00	0.18	0.200	IO				1.09
65.333	0.00	0.18	0.199	IO				1.09
65.417	0.00	0.18	0.197	IO				1.09
65.500	0.00	0.18	0.196	IO				1.08
65.583	0.00	0.18	0.195	IO				1.08
65.667	0.00	0.18	0.194	IO				1.08
65.750	0.00	0.18	0.192	IO				1.07
65.833	0.00	0.18	0.191	IO				1.07
65.917	0.00	0.18	0.190	IO				1.07

66.000	0.00	0.18	0.189	IO				1.06
66.083	0.00	0.18	0.187	IO				1.06
66.167	0.00	0.18	0.186	IO				1.05
66.250	0.00	0.18	0.185	IO				1.05
66.333	0.00	0.18	0.184	IO				1.05
66.417	0.00	0.18	0.183	IO				1.04
66.500	0.00	0.17	0.181	IO				1.04
66.583	0.00	0.17	0.180	IO				1.04
66.667	0.00	0.17	0.179	IO				1.03
66.750	0.00	0.17	0.178	IO				1.03
66.833	0.00	0.17	0.177	IO				1.03
66.917	0.00	0.17	0.175	IO				1.02
67.000	0.00	0.17	0.174	IO				1.02
67.083	0.00	0.17	0.173	IO				1.01
67.167	0.00	0.17	0.172	IO				1.01
67.250	0.00	0.17	0.171	IO				1.01
67.333	0.00	0.17	0.169	IO				1.00
67.417	0.00	0.17	0.168	IO				1.00
67.500	0.00	0.17	0.167	IO				0.99
67.583	0.00	0.17	0.166	IO				0.99
67.667	0.00	0.17	0.165	IO				0.98
67.750	0.00	0.17	0.164	IO				0.97
67.833	0.00	0.16	0.163	IO				0.97
67.917	0.00	0.16	0.161	IO				0.96
68.000	0.00	0.16	0.160	IO				0.95
68.083	0.00	0.16	0.159	IO				0.95
68.167	0.00	0.16	0.158	IO				0.94
68.250	0.00	0.16	0.157	IO				0.93
68.333	0.00	0.16	0.156	IO				0.93
68.417	0.00	0.16	0.155	IO				0.92
68.500	0.00	0.16	0.154	IO				0.92
68.583	0.00	0.15	0.153	IO				0.91
68.667	0.00	0.15	0.152	IO				0.90
68.750	0.00	0.15	0.151	IO				0.90
68.833	0.00	0.15	0.149	IO				0.89
68.917	0.00	0.15	0.148	IO				0.88
69.000	0.00	0.15	0.147	IO				0.88
69.083	0.00	0.15	0.146	IO				0.87
69.167	0.00	0.15	0.145	IO				0.87
69.250	0.00	0.15	0.144	IO				0.86
69.333	0.00	0.15	0.143	IO				0.85
69.417	0.00	0.14	0.142	IO				0.85
69.500	0.00	0.14	0.141	IO				0.84
69.583	0.00	0.14	0.140	IO				0.84
69.667	0.00	0.14	0.139	IO				0.83
69.750	0.00	0.14	0.138	IO				0.82
69.833	0.00	0.14	0.138	IO				0.82
69.917	0.00	0.14	0.137	IO				0.81
70.000	0.00	0.14	0.136	IO				0.81
70.083	0.00	0.14	0.135	IO				0.80
70.167	0.00	0.14	0.134	IO				0.80
70.250	0.00	0.13	0.133	IO				0.79
70.333	0.00	0.13	0.132	IO				0.78
70.417	0.00	0.13	0.131	IO				0.78

70.500	0.00	0.13	0.130	IO					0.77
70.583	0.00	0.13	0.129	IO					0.77
70.667	0.00	0.13	0.128	IO					0.76
70.750	0.00	0.13	0.127	IO					0.76
70.833	0.00	0.13	0.126	IO					0.75
70.917	0.00	0.13	0.126	IO					0.75
71.000	0.00	0.13	0.125	IO					0.74
71.083	0.00	0.13	0.124	IO					0.74
71.167	0.00	0.12	0.123	IO					0.73
71.250	0.00	0.12	0.122	IO					0.73
71.333	0.00	0.12	0.121	IO					0.72
71.417	0.00	0.12	0.120	IO					0.72
71.500	0.00	0.12	0.120	IO					0.71
71.583	0.00	0.12	0.119	IO					0.71
71.667	0.00	0.12	0.118	IO					0.70
71.750	0.00	0.12	0.117	IO					0.70
71.833	0.00	0.12	0.116	IO					0.69
71.917	0.00	0.12	0.116	IO					0.69
72.000	0.00	0.12	0.115	IO					0.68
72.083	0.00	0.12	0.114	IO					0.68
72.167	0.00	0.11	0.113	IO					0.67
72.250	0.00	0.11	0.112	IO					0.67
72.333	0.00	0.11	0.112	O					0.66
72.417	0.00	0.11	0.111	O					0.66
72.500	0.00	0.11	0.110	O					0.65
72.583	0.00	0.11	0.109	O					0.65
72.667	0.00	0.11	0.108	O					0.65
72.750	0.00	0.11	0.108	O					0.64
72.833	0.00	0.11	0.107	O					0.64
72.917	0.00	0.11	0.106	O					0.63
73.000	0.00	0.11	0.106	O					0.63
73.083	0.00	0.11	0.105	O					0.62
73.167	0.00	0.11	0.104	O					0.62
73.250	0.00	0.10	0.103	O					0.62
73.333	0.00	0.10	0.103	O					0.61
73.417	0.00	0.10	0.102	O					0.61
73.500	0.00	0.10	0.101	O					0.60
73.583	0.00	0.10	0.100	O					0.60
73.667	0.00	0.10	0.100	O					0.59
73.750	0.00	0.10	0.099	O					0.59
73.833	0.00	0.10	0.098	O					0.59
73.917	0.00	0.10	0.098	O					0.58
74.000	0.00	0.10	0.097	O					0.58
74.083	0.00	0.10	0.096	O					0.57
74.167	0.00	0.10	0.096	O					0.57
74.250	0.00	0.10	0.095	O					0.57
74.333	0.00	0.10	0.094	O					0.56
74.417	0.00	0.09	0.094	O					0.56
74.500	0.00	0.09	0.093	O					0.55
74.583	0.00	0.09	0.092	O					0.55
74.667	0.00	0.09	0.092	O					0.55
74.750	0.00	0.09	0.091	O					0.54
74.833	0.00	0.09	0.091	O					0.54
74.917	0.00	0.09	0.090	O					0.54

75.000	0.00	0.09	0.089	O					0.53
75.083	0.00	0.09	0.089	O					0.53
75.167	0.00	0.09	0.088	O					0.52
75.250	0.00	0.09	0.087	O					0.52
75.333	0.00	0.09	0.087	O					0.52
75.417	0.00	0.09	0.086	O					0.51
75.500	0.00	0.09	0.086	O					0.51
75.583	0.00	0.09	0.085	O					0.51
75.667	0.00	0.09	0.084	O					0.50
75.750	0.00	0.08	0.084	O					0.50
75.833	0.00	0.08	0.083	O					0.50
75.917	0.00	0.08	0.083	O					0.49
76.000	0.00	0.08	0.082	O					0.49
76.083	0.00	0.08	0.082	O					0.49
76.167	0.00	0.08	0.081	O					0.48
76.250	0.00	0.08	0.080	O					0.48
76.333	0.00	0.08	0.080	O					0.48
76.417	0.00	0.08	0.079	O					0.47
76.500	0.00	0.08	0.079	O					0.47
76.583	0.00	0.08	0.078	O					0.47
76.667	0.00	0.08	0.078	O					0.46
76.750	0.00	0.08	0.077	O					0.46
76.833	0.00	0.08	0.077	O					0.46
76.917	0.00	0.08	0.076	O					0.45
77.000	0.00	0.08	0.076	O					0.45
77.083	0.00	0.08	0.075	O					0.45
77.167	0.00	0.08	0.074	O					0.44
77.250	0.00	0.07	0.074	O					0.44
77.333	0.00	0.07	0.073	O					0.44
77.417	0.00	0.07	0.073	O					0.43
77.500	0.00	0.07	0.072	O					0.43
77.583	0.00	0.07	0.072	O					0.43
77.667	0.00	0.07	0.071	O					0.43
77.750	0.00	0.07	0.071	O					0.42
77.833	0.00	0.07	0.070	O					0.42
77.917	0.00	0.07	0.070	O					0.42
78.000	0.00	0.07	0.069	O					0.41
78.083	0.00	0.07	0.069	O					0.41
78.167	0.00	0.07	0.068	O					0.41
78.250	0.00	0.07	0.068	O					0.40
78.333	0.00	0.07	0.068	O					0.40
78.417	0.00	0.07	0.067	O					0.40
78.500	0.00	0.07	0.067	O					0.40
78.583	0.00	0.07	0.066	O					0.39
78.667	0.00	0.07	0.066	O					0.39
78.750	0.00	0.07	0.065	O					0.39
78.833	0.00	0.07	0.065	O					0.39
78.917	0.00	0.07	0.064	O					0.38
79.000	0.00	0.06	0.064	O					0.38
79.083	0.00	0.06	0.063	O					0.38
79.167	0.00	0.06	0.063	O					0.37
79.250	0.00	0.06	0.063	O					0.37
79.333	0.00	0.06	0.062	O					0.37
79.417	0.00	0.06	0.062	O					0.37

79.500	0.00	0.06	0.061	O	|	|	|	0.36
79.583	0.00	0.06	0.061	O	|	|	|	0.36
79.667	0.00	0.06	0.060	O	|	|	|	0.36
79.750	0.00	0.06	0.060	O	|	|	|	0.36
79.833	0.00	0.06	0.060	O	|	|	|	0.35
79.917	0.00	0.06	0.059	O	|	|	|	0.35
80.000	0.00	0.06	0.059	O	|	|	|	0.35
80.083	0.00	0.06	0.058	O	|	|	|	0.35
80.167	0.00	0.06	0.058	O	|	|	|	0.34
80.250	0.00	0.06	0.058	O	|	|	|	0.34
80.333	0.00	0.06	0.057	O	|	|	|	0.34
80.417	0.00	0.06	0.057	O	|	|	|	0.34
80.500	0.00	0.06	0.056	O	|	|	|	0.34
80.583	0.00	0.06	0.056	O	|	|	|	0.33
80.667	0.00	0.06	0.056	O	|	|	|	0.33
80.750	0.00	0.06	0.055	O	|	|	|	0.33
80.833	0.00	0.06	0.055	O	|	|	|	0.33
80.917	0.00	0.06	0.054	O	|	|	|	0.32
81.000	0.00	0.05	0.054	O	|	|	|	0.32
81.083	0.00	0.05	0.054	O	|	|	|	0.32
81.167	0.00	0.05	0.053	O	|	|	|	0.32
81.250	0.00	0.05	0.053	O	|	|	|	0.32
81.333	0.00	0.05	0.053	O	|	|	|	0.31
81.417	0.00	0.05	0.052	O	|	|	|	0.31
81.500	0.00	0.05	0.052	O	|	|	|	0.31
81.583	0.00	0.05	0.051	O	|	|	|	0.31
81.667	0.00	0.05	0.051	O	|	|	|	0.30
81.750	0.00	0.05	0.051	O	|	|	|	0.30
81.833	0.00	0.05	0.050	O	|	|	|	0.30
81.917	0.00	0.05	0.050	O	|	|	|	0.30
82.000	0.00	0.05	0.050	O	|	|	|	0.30
82.083	0.00	0.05	0.049	O	|	|	|	0.29
82.167	0.00	0.05	0.049	O	|	|	|	0.29
82.250	0.00	0.05	0.049	O	|	|	|	0.29
82.333	0.00	0.05	0.048	O	|	|	|	0.29
82.417	0.00	0.05	0.048	O	|	|	|	0.29
82.500	0.00	0.05	0.048	O	|	|	|	0.28
82.583	0.00	0.05	0.047	O	|	|	|	0.28
82.667	0.00	0.05	0.047	O	|	|	|	0.28
82.750	0.00	0.05	0.047	O	|	|	|	0.28
82.833	0.00	0.05	0.046	O	|	|	|	0.28
82.917	0.00	0.05	0.046	O	|	|	|	0.27
83.000	0.00	0.05	0.046	O	|	|	|	0.27
83.083	0.00	0.05	0.045	O	|	|	|	0.27
83.167	0.00	0.05	0.045	O	|	|	|	0.27
83.250	0.00	0.05	0.045	O	|	|	|	0.27
83.333	0.00	0.04	0.044	O	|	|	|	0.26
83.417	0.00	0.04	0.044	O	|	|	|	0.26
83.500	0.00	0.04	0.044	O	|	|	|	0.26
83.583	0.00	0.04	0.044	O	|	|	|	0.26
83.667	0.00	0.04	0.043	O	|	|	|	0.26
83.750	0.00	0.04	0.043	O	|	|	|	0.26
83.833	0.00	0.04	0.043	O	|	|	|	0.25
83.917	0.00	0.04	0.042	O	|	|	|	0.25

84.000	0.00	0.04	0.042	O					0.25
84.083	0.00	0.04	0.042	O					0.25
84.167	0.00	0.04	0.041	O					0.25
84.250	0.00	0.04	0.041	O					0.25
84.333	0.00	0.04	0.041	O					0.24
84.417	0.00	0.04	0.041	O					0.24
84.500	0.00	0.04	0.040	O					0.24
84.583	0.00	0.04	0.040	O					0.24
84.667	0.00	0.04	0.040	O					0.24
84.750	0.00	0.04	0.039	O					0.24
84.833	0.00	0.04	0.039	O					0.23
84.917	0.00	0.04	0.039	O					0.23
85.000	0.00	0.04	0.039	O					0.23
85.083	0.00	0.04	0.038	O					0.23
85.167	0.00	0.04	0.038	O					0.23
85.250	0.00	0.04	0.038	O					0.23
85.333	0.00	0.04	0.038	O					0.22
85.417	0.00	0.04	0.037	O					0.22
85.500	0.00	0.04	0.037	O					0.22
85.583	0.00	0.04	0.037	O					0.22
85.667	0.00	0.04	0.037	O					0.22
85.750	0.00	0.04	0.036	O					0.22
85.833	0.00	0.04	0.036	O					0.21
85.917	0.00	0.04	0.036	O					0.21
86.000	0.00	0.04	0.036	O					0.21
86.083	0.00	0.04	0.035	O					0.21
86.167	0.00	0.04	0.035	O					0.21
86.250	0.00	0.04	0.035	O					0.21
86.333	0.00	0.04	0.035	O					0.21
86.417	0.00	0.03	0.034	O					0.20
86.500	0.00	0.03	0.034	O					0.20
86.583	0.00	0.03	0.034	O					0.20
86.667	0.00	0.03	0.034	O					0.20
86.750	0.00	0.03	0.033	O					0.20
86.833	0.00	0.03	0.033	O					0.20
86.917	0.00	0.03	0.033	O					0.20
87.000	0.00	0.03	0.033	O					0.19
87.083	0.00	0.03	0.032	O					0.19
87.167	0.00	0.03	0.032	O					0.19
87.250	0.00	0.03	0.032	O					0.19
87.333	0.00	0.03	0.032	O					0.19
87.417	0.00	0.03	0.032	O					0.19
87.500	0.00	0.03	0.031	O					0.19
87.583	0.00	0.03	0.031	O					0.19
87.667	0.00	0.03	0.031	O					0.18
87.750	0.00	0.03	0.031	O					0.18
87.833	0.00	0.03	0.031	O					0.18
87.917	0.00	0.03	0.030	O					0.18
88.000	0.00	0.03	0.030	O					0.18
88.083	0.00	0.03	0.030	O					0.18
88.167	0.00	0.03	0.030	O					0.18
88.250	0.00	0.03	0.029	O					0.18
88.333	0.00	0.03	0.029	O					0.17
88.417	0.00	0.03	0.029	O					0.17

88.500	0.00	0.03	0.029	O					0.17
88.583	0.00	0.03	0.029	O					0.17
88.667	0.00	0.03	0.028	O					0.17
88.750	0.00	0.03	0.028	O					0.17
88.833	0.00	0.03	0.028	O					0.17
88.917	0.00	0.03	0.028	O					0.17
89.000	0.00	0.03	0.028	O					0.16
89.083	0.00	0.03	0.027	O					0.16
89.167	0.00	0.03	0.027	O					0.16
89.250	0.00	0.03	0.027	O					0.16
89.333	0.00	0.03	0.027	O					0.16
89.417	0.00	0.03	0.027	O					0.16
89.500	0.00	0.03	0.027	O					0.16
89.583	0.00	0.03	0.026	O					0.16
89.667	0.00	0.03	0.026	O					0.16
89.750	0.00	0.03	0.026	O					0.15
89.833	0.00	0.03	0.026	O					0.15
89.917	0.00	0.03	0.026	O					0.15
90.000	0.00	0.03	0.025	O					0.15
90.083	0.00	0.03	0.025	O					0.15
90.167	0.00	0.03	0.025	O					0.15
90.250	0.00	0.03	0.025	O					0.15
90.333	0.00	0.03	0.025	O					0.15
90.417	0.00	0.02	0.025	O					0.15
90.500	0.00	0.02	0.024	O					0.15
90.583	0.00	0.02	0.024	O					0.14
90.667	0.00	0.02	0.024	O					0.14
90.750	0.00	0.02	0.024	O					0.14
90.833	0.00	0.02	0.024	O					0.14
90.917	0.00	0.02	0.024	O					0.14
91.000	0.00	0.02	0.023	O					0.14
91.083	0.00	0.02	0.023	O					0.14
91.167	0.00	0.02	0.023	O					0.14
91.250	0.00	0.02	0.023	O					0.14
91.333	0.00	0.02	0.023	O					0.14
91.417	0.00	0.02	0.023	O					0.13
91.500	0.00	0.02	0.022	O					0.13
91.583	0.00	0.02	0.022	O					0.13
91.667	0.00	0.02	0.022	O					0.13
91.750	0.00	0.02	0.022	O					0.13
91.833	0.00	0.02	0.022	O					0.13
91.917	0.00	0.02	0.022	O					0.13
92.000	0.00	0.02	0.022	O					0.13
92.083	0.00	0.02	0.021	O					0.13
92.167	0.00	0.02	0.021	O					0.13
92.250	0.00	0.02	0.021	O					0.13
92.333	0.00	0.02	0.021	O					0.12
92.417	0.00	0.02	0.021	O					0.12
92.500	0.00	0.02	0.021	O					0.12
92.583	0.00	0.02	0.021	O					0.12
92.667	0.00	0.02	0.020	O					0.12
92.750	0.00	0.02	0.020	O					0.12
92.833	0.00	0.02	0.020	O					0.12
92.917	0.00	0.02	0.020	O					0.12

93.000	0.00	0.02	0.020	O					0.12
93.083	0.00	0.02	0.020	O					0.12
93.167	0.00	0.02	0.020	O					0.12
93.250	0.00	0.02	0.019	O					0.12
93.333	0.00	0.02	0.019	O					0.11
93.417	0.00	0.02	0.019	O					0.11
93.500	0.00	0.02	0.019	O					0.11
93.583	0.00	0.02	0.019	O					0.11
93.667	0.00	0.02	0.019	O					0.11
93.750	0.00	0.02	0.019	O					0.11
93.833	0.00	0.02	0.018	O					0.11
93.917	0.00	0.02	0.018	O					0.11
94.000	0.00	0.02	0.018	O					0.11
94.083	0.00	0.02	0.018	O					0.11
94.167	0.00	0.02	0.018	O					0.11
94.250	0.00	0.02	0.018	O					0.11
94.333	0.00	0.02	0.018	O					0.11
94.417	0.00	0.02	0.018	O					0.10
94.500	0.00	0.02	0.017	O					0.10
94.583	0.00	0.02	0.017	O					0.10
94.667	0.00	0.02	0.017	O					0.10
94.750	0.00	0.02	0.017	O					0.10
94.833	0.00	0.02	0.017	O					0.10
94.917	0.00	0.02	0.017	O					0.10
95.000	0.00	0.02	0.017	O					0.10
95.083	0.00	0.02	0.017	O					0.10
95.167	0.00	0.02	0.017	O					0.10
95.250	0.00	0.02	0.016	O					0.10
95.333	0.00	0.02	0.016	O					0.10
95.417	0.00	0.02	0.016	O					0.10
95.500	0.00	0.02	0.016	O					0.10
95.583	0.00	0.02	0.016	O					0.10
95.667	0.00	0.02	0.016	O					0.09
95.750	0.00	0.02	0.016	O					0.09
95.833	0.00	0.02	0.016	O					0.09
95.917	0.00	0.02	0.016	O					0.09
96.000	0.00	0.02	0.015	O					0.09
96.083	0.00	0.02	0.015	O					0.09
96.167	0.00	0.02	0.015	O					0.09
96.250	0.00	0.02	0.015	O					0.09
96.333	0.00	0.02	0.015	O					0.09
96.417	0.00	0.02	0.015	O					0.09
96.500	0.00	0.01	0.015	O					0.09
96.583	0.00	0.01	0.015	O					0.09
96.667	0.00	0.01	0.015	O					0.09
96.750	0.00	0.01	0.014	O					0.09
96.833	0.00	0.01	0.014	O					0.09
96.917	0.00	0.01	0.014	O					0.08
97.000	0.00	0.01	0.014	O					0.08
97.083	0.00	0.01	0.014	O					0.08
97.167	0.00	0.01	0.014	O					0.08
97.250	0.00	0.01	0.014	O					0.08
97.333	0.00	0.01	0.014	O					0.08
97.417	0.00	0.01	0.014	O					0.08

97.500	0.00	0.01	0.014	O	|	|	|	|	0.08
97.583	0.00	0.01	0.014	O	|	|	|	|	0.08
97.667	0.00	0.01	0.013	O	|	|	|	|	0.08
97.750	0.00	0.01	0.013	O	|	|	|	|	0.08
97.833	0.00	0.01	0.013	O	|	|	|	|	0.08
97.917	0.00	0.01	0.013	O	|	|	|	|	0.08
98.000	0.00	0.01	0.013	O	|	|	|	|	0.08
98.083	0.00	0.01	0.013	O	|	|	|	|	0.08
98.167	0.00	0.01	0.013	O	|	|	|	|	0.08
98.250	0.00	0.01	0.013	O	|	|	|	|	0.08
98.333	0.00	0.01	0.013	O	|	|	|	|	0.08
98.417	0.00	0.01	0.013	O	|	|	|	|	0.07
98.500	0.00	0.01	0.013	O	|	|	|	|	0.07
98.583	0.00	0.01	0.012	O	|	|	|	|	0.07
98.667	0.00	0.01	0.012	O	|	|	|	|	0.07
98.750	0.00	0.01	0.012	O	|	|	|	|	0.07
98.833	0.00	0.01	0.012	O	|	|	|	|	0.07
98.917	0.00	0.01	0.012	O	|	|	|	|	0.07
99.000	0.00	0.01	0.012	O	|	|	|	|	0.07
99.083	0.00	0.01	0.012	O	|	|	|	|	0.07
99.167	0.00	0.01	0.012	O	|	|	|	|	0.07
99.250	0.00	0.01	0.012	O	|	|	|	|	0.07
99.333	0.00	0.01	0.012	O	|	|	|	|	0.07
99.417	0.00	0.01	0.012	O	|	|	|	|	0.07
99.500	0.00	0.01	0.012	O	|	|	|	|	0.07
99.583	0.00	0.01	0.011	O	|	|	|	|	0.07
99.667	0.00	0.01	0.011	O	|	|	|	|	0.07
99.750	0.00	0.01	0.011	O	|	|	|	|	0.07
99.833	0.00	0.01	0.011	O	|	|	|	|	0.07
99.917	0.00	0.01	0.011	O	|	|	|	|	0.07
100.000	0.00	0.01	0.011	O	|	|	|	|	0.07
100.083	0.00	0.01	0.011	O	|	|	|	|	0.07
100.167	0.00	0.01	0.011	O	|	|	|	|	0.06
100.250	0.00	0.01	0.011	O	|	|	|	|	0.06
100.333	0.00	0.01	0.011	O	|	|	|	|	0.06
100.417	0.00	0.01	0.011	O	|	|	|	|	0.06
100.500	0.00	0.01	0.011	O	|	|	|	|	0.06
100.583	0.00	0.01	0.011	O	|	|	|	|	0.06
100.667	0.00	0.01	0.010	O	|	|	|	|	0.06
100.750	0.00	0.01	0.010	O	|	|	|	|	0.06
100.833	0.00	0.01	0.010	O	|	|	|	|	0.06
100.917	0.00	0.01	0.010	O	|	|	|	|	0.06
101.000	0.00	0.01	0.010	O	|	|	|	|	0.06
101.083	0.00	0.01	0.010	O	|	|	|	|	0.06
101.167	0.00	0.01	0.010	O	|	|	|	|	0.06
101.250	0.00	0.01	0.010	O	|	|	|	|	0.06
101.333	0.00	0.01	0.010	O	|	|	|	|	0.06
101.417	0.00	0.01	0.010	O	|	|	|	|	0.06
101.500	0.00	0.01	0.010	O	|	|	|	|	0.06
101.583	0.00	0.01	0.010	O	|	|	|	|	0.06
101.667	0.00	0.01	0.010	O	|	|	|	|	0.06
101.750	0.00	0.01	0.010	O	|	|	|	|	0.06
101.833	0.00	0.01	0.009	O	|	|	|	|	0.06
101.917	0.00	0.01	0.009	O	|	|	|	|	0.06

102.000	0.00	0.01	0.009	O	|	|	|	0.06
102.083	0.00	0.01	0.009	O	|	|	|	0.06
102.167	0.00	0.01	0.009	O	|	|	|	0.05
102.250	0.00	0.01	0.009	O	|	|	|	0.05
102.333	0.00	0.01	0.009	O	|	|	|	0.05
102.417	0.00	0.01	0.009	O	|	|	|	0.05
102.500	0.00	0.01	0.009	O	|	|	|	0.05
102.583	0.00	0.01	0.009	O	|	|	|	0.05
102.667	0.00	0.01	0.009	O	|	|	|	0.05
102.750	0.00	0.01	0.009	O	|	|	|	0.05
102.833	0.00	0.01	0.009	O	|	|	|	0.05
102.917	0.00	0.01	0.009	O	|	|	|	0.05
103.000	0.00	0.01	0.009	O	|	|	|	0.05
103.083	0.00	0.01	0.009	O	|	|	|	0.05
103.167	0.00	0.01	0.008	O	|	|	|	0.05
103.250	0.00	0.01	0.008	O	|	|	|	0.05
103.333	0.00	0.01	0.008	O	|	|	|	0.05
103.417	0.00	0.01	0.008	O	|	|	|	0.05
103.500	0.00	0.01	0.008	O	|	|	|	0.05
103.583	0.00	0.01	0.008	O	|	|	|	0.05
103.667	0.00	0.01	0.008	O	|	|	|	0.05
103.750	0.00	0.01	0.008	O	|	|	|	0.05
103.833	0.00	0.01	0.008	O	|	|	|	0.05
103.917	0.00	0.01	0.008	O	|	|	|	0.05
104.000	0.00	0.01	0.008	O	|	|	|	0.05
104.083	0.00	0.01	0.008	O	|	|	|	0.05
104.167	0.00	0.01	0.008	O	|	|	|	0.05
104.250	0.00	0.01	0.008	O	|	|	|	0.05
104.333	0.00	0.01	0.008	O	|	|	|	0.05
104.417	0.00	0.01	0.008	O	|	|	|	0.05
104.500	0.00	0.01	0.008	O	|	|	|	0.05
104.583	0.00	0.01	0.008	O	|	|	|	0.04
104.667	0.00	0.01	0.007	O	|	|	|	0.04
104.750	0.00	0.01	0.007	O	|	|	|	0.04
104.833	0.00	0.01	0.007	O	|	|	|	0.04
104.917	0.00	0.01	0.007	O	|	|	|	0.04
105.000	0.00	0.01	0.007	O	|	|	|	0.04
105.083	0.00	0.01	0.007	O	|	|	|	0.04
105.167	0.00	0.01	0.007	O	|	|	|	0.04
105.250	0.00	0.01	0.007	O	|	|	|	0.04
105.333	0.00	0.01	0.007	O	|	|	|	0.04
105.417	0.00	0.01	0.007	O	|	|	|	0.04
105.500	0.00	0.01	0.007	O	|	|	|	0.04
105.583	0.00	0.01	0.007	O	|	|	|	0.04
105.667	0.00	0.01	0.007	O	|	|	|	0.04
105.750	0.00	0.01	0.007	O	|	|	|	0.04
105.833	0.00	0.01	0.007	O	|	|	|	0.04
105.917	0.00	0.01	0.007	O	|	|	|	0.04
106.000	0.00	0.01	0.007	O	|	|	|	0.04
106.083	0.00	0.01	0.007	O	|	|	|	0.04
106.167	0.00	0.01	0.007	O	|	|	|	0.04
106.250	0.00	0.01	0.007	O	|	|	|	0.04
106.333	0.00	0.01	0.006	O	|	|	|	0.04
106.417	0.00	0.01	0.006	O	|	|	|	0.04

106.500	0.00	0.01	0.006	O	|	|	|	0.04
106.583	0.00	0.01	0.006	O	|	|	|	0.04
106.667	0.00	0.01	0.006	O	|	|	|	0.04
106.750	0.00	0.01	0.006	O	|	|	|	0.04
106.833	0.00	0.01	0.006	O	|	|	|	0.04
106.917	0.00	0.01	0.006	O	|	|	|	0.04
107.000	0.00	0.01	0.006	O	|	|	|	0.04
107.083	0.00	0.01	0.006	O	|	|	|	0.04
107.167	0.00	0.01	0.006	O	|	|	|	0.04
107.250	0.00	0.01	0.006	O	|	|	|	0.04
107.333	0.00	0.01	0.006	O	|	|	|	0.04
107.417	0.00	0.01	0.006	O	|	|	|	0.04
107.500	0.00	0.01	0.006	O	|	|	|	0.04
107.583	0.00	0.01	0.006	O	|	|	|	0.03
107.667	0.00	0.01	0.006	O	|	|	|	0.03
107.750	0.00	0.01	0.006	O	|	|	|	0.03
107.833	0.00	0.01	0.006	O	|	|	|	0.03
107.917	0.00	0.01	0.006	O	|	|	|	0.03
108.000	0.00	0.01	0.006	O	|	|	|	0.03
108.083	0.00	0.01	0.006	O	|	|	|	0.03
108.167	0.00	0.01	0.006	O	|	|	|	0.03
108.250	0.00	0.01	0.006	O	|	|	|	0.03
108.333	0.00	0.01	0.005	O	|	|	|	0.03
108.417	0.00	0.01	0.005	O	|	|	|	0.03
108.500	0.00	0.01	0.005	O	|	|	|	0.03
108.583	0.00	0.01	0.005	O	|	|	|	0.03
108.667	0.00	0.01	0.005	O	|	|	|	0.03
108.750	0.00	0.01	0.005	O	|	|	|	0.03
108.833	0.00	0.01	0.005	O	|	|	|	0.03
108.917	0.00	0.01	0.005	O	|	|	|	0.03
109.000	0.00	0.01	0.005	O	|	|	|	0.03
109.083	0.00	0.01	0.005	O	|	|	|	0.03
109.167	0.00	0.01	0.005	O	|	|	|	0.03
109.250	0.00	0.01	0.005	O	|	|	|	0.03
109.333	0.00	0.01	0.005	O	|	|	|	0.03
109.417	0.00	0.01	0.005	O	|	|	|	0.03
109.500	0.00	0.01	0.005	O	|	|	|	0.03
109.583	0.00	0.01	0.005	O	|	|	|	0.03
109.667	0.00	0.00	0.005	O	|	|	|	0.03
109.750	0.00	0.00	0.005	O	|	|	|	0.03
109.833	0.00	0.00	0.005	O	|	|	|	0.03
109.917	0.00	0.00	0.005	O	|	|	|	0.03
110.000	0.00	0.00	0.005	O	|	|	|	0.03
110.083	0.00	0.00	0.005	O	|	|	|	0.03
110.167	0.00	0.00	0.005	O	|	|	|	0.03
110.250	0.00	0.00	0.005	O	|	|	|	0.03
110.333	0.00	0.00	0.005	O	|	|	|	0.03
110.417	0.00	0.00	0.005	O	|	|	|	0.03
110.500	0.00	0.00	0.005	O	|	|	|	0.03
110.583	0.00	0.00	0.005	O	|	|	|	0.03
110.667	0.00	0.00	0.005	O	|	|	|	0.03
110.750	0.00	0.00	0.004	O	|	|	|	0.03
110.833	0.00	0.00	0.004	O	|	|	|	0.03
110.917	0.00	0.00	0.004	O	|	|	|	0.03

111.000	0.00	0.00	0.004	O					0.03
111.083	0.00	0.00	0.004	O					0.03
111.167	0.00	0.00	0.004	O					0.03
111.250	0.00	0.00	0.004	O					0.03
111.333	0.00	0.00	0.004	O					0.03
111.417	0.00	0.00	0.004	O					0.03
111.500	0.00	0.00	0.004	O					0.03
111.583	0.00	0.00	0.004	O					0.02
111.667	0.00	0.00	0.004	O					0.02
111.750	0.00	0.00	0.004	O					0.02
111.833	0.00	0.00	0.004	O					0.02
111.917	0.00	0.00	0.004	O					0.02
112.000	0.00	0.00	0.004	O					0.02
112.083	0.00	0.00	0.004	O					0.02
112.167	0.00	0.00	0.004	O					0.02
112.250	0.00	0.00	0.004	O					0.02
112.333	0.00	0.00	0.004	O					0.02
112.417	0.00	0.00	0.004	O					0.02
112.500	0.00	0.00	0.004	O					0.02
112.583	0.00	0.00	0.004	O					0.02
112.667	0.00	0.00	0.004	O					0.02
112.750	0.00	0.00	0.004	O					0.02
112.833	0.00	0.00	0.004	O					0.02
112.917	0.00	0.00	0.004	O					0.02
113.000	0.00	0.00	0.004	O					0.02
113.083	0.00	0.00	0.004	O					0.02
113.167	0.00	0.00	0.004	O					0.02
113.250	0.00	0.00	0.004	O					0.02
113.333	0.00	0.00	0.004	O					0.02
113.417	0.00	0.00	0.004	O					0.02
113.500	0.00	0.00	0.004	O					0.02
113.583	0.00	0.00	0.004	O					0.02
113.667	0.00	0.00	0.004	O					0.02
113.750	0.00	0.00	0.003	O					0.02
113.833	0.00	0.00	0.003	O					0.02
113.917	0.00	0.00	0.003	O					0.02
114.000	0.00	0.00	0.003	O					0.02
114.083	0.00	0.00	0.003	O					0.02
114.167	0.00	0.00	0.003	O					0.02
114.250	0.00	0.00	0.003	O					0.02
114.333	0.00	0.00	0.003	O					0.02
114.417	0.00	0.00	0.003	O					0.02
114.500	0.00	0.00	0.003	O					0.02
114.583	0.00	0.00	0.003	O					0.02
114.667	0.00	0.00	0.003	O					0.02
114.750	0.00	0.00	0.003	O					0.02
114.833	0.00	0.00	0.003	O					0.02
114.917	0.00	0.00	0.003	O					0.02
115.000	0.00	0.00	0.003	O					0.02
115.083	0.00	0.00	0.003	O					0.02
115.167	0.00	0.00	0.003	O					0.02
115.250	0.00	0.00	0.003	O					0.02
115.333	0.00	0.00	0.003	O					0.02
115.417	0.00	0.00	0.003	O					0.02

115.500	0.00	0.00	0.003	O					0.02
115.583	0.00	0.00	0.003	O					0.02
115.667	0.00	0.00	0.003	O					0.02
115.750	0.00	0.00	0.003	O					0.02
115.833	0.00	0.00	0.003	O					0.02
115.917	0.00	0.00	0.003	O					0.02
116.000	0.00	0.00	0.003	O					0.02
116.083	0.00	0.00	0.003	O					0.02
116.167	0.00	0.00	0.003	O					0.02
116.250	0.00	0.00	0.003	O					0.02
116.333	0.00	0.00	0.003	O					0.02
116.417	0.00	0.00	0.003	O					0.02
116.500	0.00	0.00	0.003	O					0.02
116.583	0.00	0.00	0.003	O					0.02
116.667	0.00	0.00	0.003	O					0.02
116.750	0.00	0.00	0.003	O					0.02
116.833	0.00	0.00	0.003	O					0.02
116.917	0.00	0.00	0.003	O					0.02
117.000	0.00	0.00	0.003	O					0.02
117.083	0.00	0.00	0.003	O					0.02
117.167	0.00	0.00	0.003	O					0.02
117.250	0.00	0.00	0.003	O					0.02
117.333	0.00	0.00	0.003	O					0.02
117.417	0.00	0.00	0.003	O					0.02
117.500	0.00	0.00	0.003	O					0.02
117.583	0.00	0.00	0.003	O					0.02
117.667	0.00	0.00	0.003	O					0.01
117.750	0.00	0.00	0.003	O					0.01
117.833	0.00	0.00	0.002	O					0.01
117.917	0.00	0.00	0.002	O					0.01
118.000	0.00	0.00	0.002	O					0.01
118.083	0.00	0.00	0.002	O					0.01
118.167	0.00	0.00	0.002	O					0.01
118.250	0.00	0.00	0.002	O					0.01
118.333	0.00	0.00	0.002	O					0.01
118.417	0.00	0.00	0.002	O					0.01
118.500	0.00	0.00	0.002	O					0.01
118.583	0.00	0.00	0.002	O					0.01
118.667	0.00	0.00	0.002	O					0.01
118.750	0.00	0.00	0.002	O					0.01
118.833	0.00	0.00	0.002	O					0.01
118.917	0.00	0.00	0.002	O					0.01
119.000	0.00	0.00	0.002	O					0.01
119.083	0.00	0.00	0.002	O					0.01
119.167	0.00	0.00	0.002	O					0.01
119.250	0.00	0.00	0.002	O					0.01
119.333	0.00	0.00	0.002	O					0.01
119.417	0.00	0.00	0.002	O					0.01
119.500	0.00	0.00	0.002	O					0.01
119.583	0.00	0.00	0.002	O					0.01
119.667	0.00	0.00	0.002	O					0.01
119.750	0.00	0.00	0.002	O					0.01
119.833	0.00	0.00	0.002	O					0.01
119.917	0.00	0.00	0.002	O					0.01

120.000	0.00	0.00	0.002	O					0.01
120.083	0.00	0.00	0.002	O					0.01
120.167	0.00	0.00	0.002	O					0.01
120.250	0.00	0.00	0.002	O					0.01
120.333	0.00	0.00	0.002	O					0.01
120.417	0.00	0.00	0.002	O					0.01
120.500	0.00	0.00	0.002	O					0.01
120.583	0.00	0.00	0.002	O					0.01
120.667	0.00	0.00	0.002	O					0.01
120.750	0.00	0.00	0.002	O					0.01
120.833	0.00	0.00	0.002	O					0.01
120.917	0.00	0.00	0.002	O					0.01
121.000	0.00	0.00	0.002	O					0.01
121.083	0.00	0.00	0.002	O					0.01
121.167	0.00	0.00	0.002	O					0.01
121.250	0.00	0.00	0.002	O					0.01
121.333	0.00	0.00	0.002	O					0.01
121.417	0.00	0.00	0.002	O					0.01
121.500	0.00	0.00	0.002	O					0.01
121.583	0.00	0.00	0.002	O					0.01
121.667	0.00	0.00	0.002	O					0.01
121.750	0.00	0.00	0.002	O					0.01
121.833	0.00	0.00	0.002	O					0.01
121.917	0.00	0.00	0.002	O					0.01
122.000	0.00	0.00	0.002	O					0.01
122.083	0.00	0.00	0.002	O					0.01
122.167	0.00	0.00	0.002	O					0.01
122.250	0.00	0.00	0.002	O					0.01
122.333	0.00	0.00	0.002	O					0.01
122.417	0.00	0.00	0.002	O					0.01
122.500	0.00	0.00	0.002	O					0.01
122.583	0.00	0.00	0.002	O					0.01
122.667	0.00	0.00	0.002	O					0.01
122.750	0.00	0.00	0.002	O					0.01
122.833	0.00	0.00	0.002	O					0.01
122.917	0.00	0.00	0.002	O					0.01
123.000	0.00	0.00	0.002	O					0.01
123.083	0.00	0.00	0.002	O					0.01
123.167	0.00	0.00	0.002	O					0.01
123.250	0.00	0.00	0.002	O					0.01
123.333	0.00	0.00	0.002	O					0.01
123.417	0.00	0.00	0.002	O					0.01
123.500	0.00	0.00	0.002	O					0.01
123.583	0.00	0.00	0.002	O					0.01
123.667	0.00	0.00	0.002	O					0.01
123.750	0.00	0.00	0.002	O					0.01
123.833	0.00	0.00	0.002	O					0.01
123.917	0.00	0.00	0.001	O					0.01
124.000	0.00	0.00	0.001	O					0.01
124.083	0.00	0.00	0.001	O					0.01
124.167	0.00	0.00	0.001	O					0.01
124.250	0.00	0.00	0.001	O					0.01
124.333	0.00	0.00	0.001	O					0.01
124.417	0.00	0.00	0.001	O					0.01

124.500	0.00	0.00	0.001	O					0.01
124.583	0.00	0.00	0.001	O					0.01
124.667	0.00	0.00	0.001	O					0.01
124.750	0.00	0.00	0.001	O					0.01
124.833	0.00	0.00	0.001	O					0.01
124.917	0.00	0.00	0.001	O					0.01
125.000	0.00	0.00	0.001	O					0.01
125.083	0.00	0.00	0.001	O					0.01
125.167	0.00	0.00	0.001	O					0.01
125.250	0.00	0.00	0.001	O					0.01
125.333	0.00	0.00	0.001	O					0.01
125.417	0.00	0.00	0.001	O					0.01
125.500	0.00	0.00	0.001	O					0.01
125.583	0.00	0.00	0.001	O					0.01
125.667	0.00	0.00	0.001	O					0.01
125.750	0.00	0.00	0.001	O					0.01
125.833	0.00	0.00	0.001	O					0.01
125.917	0.00	0.00	0.001	O					0.01
126.000	0.00	0.00	0.001	O					0.01
126.083	0.00	0.00	0.001	O					0.01
126.167	0.00	0.00	0.001	O					0.01
126.250	0.00	0.00	0.001	O					0.01
126.333	0.00	0.00	0.001	O					0.01
126.417	0.00	0.00	0.001	O					0.01
126.500	0.00	0.00	0.001	O					0.01
126.583	0.00	0.00	0.001	O					0.01
126.667	0.00	0.00	0.001	O					0.01
126.750	0.00	0.00	0.001	O					0.01
126.833	0.00	0.00	0.001	O					0.01
126.917	0.00	0.00	0.001	O					0.01
127.000	0.00	0.00	0.001	O					0.01
127.083	0.00	0.00	0.001	O					0.01
127.167	0.00	0.00	0.001	O					0.01
127.250	0.00	0.00	0.001	O					0.01
127.333	0.00	0.00	0.001	O					0.01
127.417	0.00	0.00	0.001	O					0.01
127.500	0.00	0.00	0.001	O					0.01
127.583	0.00	0.00	0.001	O					0.01
127.667	0.00	0.00	0.001	O					0.01
127.750	0.00	0.00	0.001	O					0.01
127.833	0.00	0.00	0.001	O					0.01
127.917	0.00	0.00	0.001	O					0.01
128.000	0.00	0.00	0.001	O					0.01
128.083	0.00	0.00	0.001	O					0.01
128.167	0.00	0.00	0.001	O					0.01
128.250	0.00	0.00	0.001	O					0.01
128.333	0.00	0.00	0.001	O					0.01
128.417	0.00	0.00	0.001	O					0.01
128.500	0.00	0.00	0.001	O					0.01
128.583	0.00	0.00	0.001	O					0.01
128.667	0.00	0.00	0.001	O					0.01
128.750	0.00	0.00	0.001	O					0.01
128.833	0.00	0.00	0.001	O					0.01
128.917	0.00	0.00	0.001	O					0.01

```
**************************HYDROGRAPH DATA**************************
           Number of intervals =  1547
           Time interval =    5.0 (Min.)
           Maximum/Peak flow rate =        0.509 (CFS)
           Total volume =       2.050 (Ac.Ft)
      Status of hydrographs being held in storage
                 Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
      Peak (CFS)      0.000     0.000     0.000     0.000     0.000
      Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
*******************************************************************
```

0.51 CFS IS LESS THAN ALLOWABLE 0.62 CFS

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 11/18/19

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2 YEAR FLOOD ROUTING
BASIN 3
MJPA 304163
4163FR2.HYD

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 4163UHP2242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 297
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 4.593 (CFS)
Total volume = 2.636 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

++

Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 297
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.169	0.170	0.168	0.170
2.000	0.508	0.290	0.507	0.509
3.000	0.763	0.370	0.762	0.764
4.000	1.017	0.440	1.015	1.019
5.000	1.271	0.500	1.269	1.273
5.500	1.708	0.530	1.706	1.710
6.000	2.173	0.850	2.170	2.176
7.000	3.187	1.200	3.183	3.191
8.000	4.314	16.560	4.257	4.371
9.000	5.557	23.020	5.478	5.636

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.1	2.30	3.44	4.59	Depth (Ft.)
0.083	0.06	0.00	0.000	O	|	|	|	|	0.00
0.167	0.25	0.00	0.001	OI	|	|	|	|	0.01
0.250	0.32	0.00	0.003	O I	|	|	|	|	0.02
0.333	0.38	0.01	0.006	O I	|	|	|	|	0.03
0.417	0.49	0.01	0.008	O I	|	|	|	|	0.05
0.500	0.54	0.01	0.012	O I	|	|	|	|	0.07
0.583	0.56	0.02	0.016	O I	|	|	|	|	0.09
0.667	0.57	0.02	0.019	O I	|	|	|	|	0.11
0.750	0.58	0.02	0.023	O I	|	|	|	|	0.14
0.833	0.62	0.03	0.027	O I	|	|	|	|	0.16
0.917	0.71	0.03	0.032	O I	|	|	|	|	0.19
1.000	0.75	0.04	0.036	O I	|	|	|	|	0.22
1.083	0.74	0.04	0.041	O I	|	|	|	|	0.24
1.167	0.65	0.05	0.046	O I	|	|	|	|	0.27
1.250	0.62	0.05	0.050	O I	|	|	|	|	0.29
1.333	0.61	0.05	0.054	O I	|	|	|	|	0.32
1.417	0.61	0.06	0.057	O I	|	|	|	|	0.34
1.500	0.60	0.06	0.061	O I	|	|	|	|	0.36
1.583	0.60	0.07	0.065	O I	|	|	|	|	0.38
1.667	0.60	0.07	0.069	O I	|	|	|	|	0.41
1.750	0.59	0.07	0.072	O I	|	|	|	|	0.43
1.833	0.62	0.08	0.076	O I	|	|	|	|	0.45
1.917	0.72	0.08	0.080	O I	|	|	|	|	0.47
2.000	0.75	0.08	0.084	O I	|	|	|	|	0.50
2.083	0.77	0.09	0.089	O I	|	|	|	|	0.53
2.167	0.78	0.09	0.094	O I	|	|	|	|	0.55
2.250	0.78	0.10	0.098	O I	|	|	|	|	0.58
2.333	0.79	0.10	0.103	O I	|	|	|	|	0.61
2.417	0.79	0.11	0.108	O I	|	|	|	|	0.64
2.500	0.79	0.11	0.113	O I	|	|	|	|	0.67
2.583	0.82	0.12	0.117	O I	|	|	|	|	0.69
2.667	0.91	0.12	0.122	O I	|	|	|	|	0.72
2.750	0.95	0.13	0.128	O I	|	|	|	|	0.76
2.833	0.97	0.13	0.134	O I	|	|	|	|	0.79
2.917	0.97	0.14	0.139	O I	|	|	|	|	0.82

3.000	0.98	0.15	0.145	O	I			0.86
3.083	0.98	0.15	0.151	O	I			0.89
3.167	0.99	0.16	0.157	O	I			0.93
3.250	0.99	0.16	0.162	O	I			0.96
3.333	0.99	0.17	0.168	O	I			0.99
3.417	0.99	0.17	0.174	O	I			1.01
3.500	0.99	0.17	0.179	O	I			1.03
3.583	0.99	0.18	0.185	O	I			1.05
3.667	0.99	0.18	0.190	O	I			1.06
3.750	0.99	0.18	0.196	O	I			1.08
3.833	1.02	0.18	0.202	O	I			1.10
3.917	1.11	0.18	0.208	O	I			1.11
4.000	1.15	0.19	0.214	O	I			1.13
4.083	1.16	0.19	0.221	O	I			1.15
4.167	1.17	0.19	0.228	O	I			1.17
4.250	1.18	0.19	0.234	O	I			1.19
4.333	1.21	0.20	0.241	O	I			1.21
4.417	1.31	0.20	0.249	O	I			1.24
4.500	1.34	0.20	0.256	O	I			1.26
4.583	1.36	0.20	0.264	O	I			1.28
4.667	1.37	0.21	0.272	O	I			1.30
4.750	1.38	0.21	0.280	O	I			1.33
4.833	1.41	0.21	0.289	O	I			1.35
4.917	1.51	0.22	0.297	O	I			1.38
5.000	1.54	0.22	0.306	O	I			1.40
5.083	1.50	0.22	0.315	O	I			1.43
5.167	1.32	0.22	0.323	O	I			1.45
5.250	1.26	0.23	0.331	O	I			1.48
5.333	1.26	0.23	0.338	O	I			1.50
5.417	1.34	0.23	0.345	O	I			1.52
5.500	1.36	0.24	0.353	O	I			1.54
5.583	1.40	0.24	0.361	O	I			1.57
5.667	1.50	0.24	0.369	O	I			1.59
5.750	1.54	0.24	0.378	O	I			1.62
5.833	1.55	0.25	0.387	O	I			1.64
5.917	1.57	0.25	0.396	O	I			1.67
6.000	1.57	0.25	0.405	O	I			1.70
6.083	1.61	0.26	0.414	O	I			1.72
6.167	1.70	0.26	0.424	O	I			1.75
6.250	1.74	0.26	0.434	O	I			1.78
6.333	1.76	0.27	0.444	O	I			1.81
6.417	1.77	0.27	0.454	O	I			1.84
6.500	1.77	0.27	0.464	O	I			1.87
6.583	1.81	0.28	0.475	O	I			1.90
6.667	1.90	0.28	0.486	O	I			1.93
6.750	1.94	0.29	0.497	O	I			1.97
6.833	1.95	0.29	0.508	O	I			2.00
6.917	1.96	0.29	0.520	O	I			2.05
7.000	1.97	0.30	0.531	O	I			2.09
7.083	1.97	0.30	0.543	O	I			2.14
7.167	1.98	0.30	0.554	O	I			2.18
7.250	1.98	0.31	0.566	O	I			2.23
7.333	2.01	0.31	0.578	O	I			2.27
7.417	2.10	0.32	0.590	O	I			2.32

7.500	2.14	0.32	0.602	O	I			2.37
7.583	2.18	0.32	0.615	O	I			2.42
7.667	2.28	0.33	0.628	O	I			2.47
7.750	2.33	0.33	0.641	O	I			2.52
7.833	2.38	0.34	0.655	O	I			2.58
7.917	2.48	0.34	0.670	O	I			2.63
8.000	2.52	0.35	0.684	O	I			2.69
8.083	2.60	0.35	0.700	O	I			2.75
8.167	2.80	0.36	0.716	O	I			2.82
8.250	2.88	0.36	0.733	O	I			2.88
8.333	2.91	0.37	0.750	O	I			2.95
8.417	2.94	0.37	0.768	O	I			3.02
8.500	2.95	0.38	0.786	O	I			3.09
8.583	2.99	0.38	0.804	O	I			3.16
8.667	3.09	0.39	0.822	O	I			3.23
8.750	3.12	0.39	0.841	O	I			3.31
8.833	3.17	0.40	0.860	O	I			3.38
8.917	3.27	0.40	0.879	O	I			3.46
9.000	3.32	0.41	0.899	O	I			3.54
9.083	2.81	0.41	0.917	O	I			3.61
9.167	1.27	0.42	0.928	O	I			3.65
9.250	0.68	0.42	0.932	O I				3.67
9.333	0.48	0.42	0.933	OI				3.67
9.417	0.46	0.42	0.934	OI				3.67
9.500	0.43	0.42	0.934	OI				3.67
9.583	0.44	0.42	0.934	OI				3.67
9.667	0.54	0.42	0.935	OI				3.68
9.750	0.58	0.42	0.936	O I				3.68
9.833	0.65	0.42	0.937	O I				3.69
9.917	0.80	0.42	0.939	O I				3.69
10.000	0.87	0.42	0.942	O I				3.70
10.083	1.22	0.42	0.946	O	I			3.72
10.167	2.18	0.42	0.955	O	I			3.76
10.250	2.55	0.43	0.968	O	I			3.81
10.333	2.71	0.43	0.984	O	I			3.87
10.417	2.81	0.44	1.000	O	I			3.93
10.500	2.87	0.44	1.016	O	I			4.00
10.583	2.55	0.44	1.032	O	I			4.06
10.667	1.49	0.45	1.043	O	I			4.10
10.750	1.10	0.45	1.048	O	I			4.12
10.833	0.95	0.45	1.052	O	I			4.14
10.917	0.86	0.45	1.056	O I				4.15
11.000	0.81	0.45	1.058	O I				4.16
11.083	0.74	0.45	1.060	O I				4.17
11.167	0.62	0.45	1.062	OI				4.18
11.250	0.58	0.45	1.063	OI				4.18
11.333	0.57	0.45	1.064	O				4.18
11.417	0.57	0.45	1.065	OI				4.19
11.500	0.59	0.45	1.066	OI				4.19
11.583	0.53	0.45	1.066	O				4.19
11.667	0.32	0.45	1.066	IO				4.19
11.750	0.25	0.45	1.065	I O				4.19
11.833	0.27	0.45	1.064	I O				4.18
11.917	0.38	0.45	1.063	IO				4.18

12.000	0.43	0.45	1.063	IO				4.18
12.083	0.72	0.45	1.063	OI				4.18
12.167	1.53	0.45	1.068	O	I			4.20
12.250	1.85	0.45	1.076	O	I			4.23
12.333	2.04	0.46	1.087	O	I			4.27
12.417	2.26	0.46	1.098	O	I			4.32
12.500	2.37	0.46	1.111	O	I			4.37
12.583	2.52	0.47	1.125	O	I			4.42
12.667	2.79	0.47	1.140	O	I			4.48
12.750	2.92	0.47	1.156	O	I			4.55
12.833	3.03	0.48	1.174	O	I			4.62
12.917	3.18	0.48	1.192	O	I			4.69
13.000	3.26	0.49	1.210	O	I			4.76
13.083	3.50	0.49	1.230	O	I			4.84
13.167	4.10	0.50	1.253	O	I			4.93
13.250	4.34	0.50	1.279	O	I			5.01
13.333	4.46	0.50	1.306	O	I			5.04
13.417	4.54	0.50	1.333	O	I			5.07
13.500	4.59	0.51	1.361	O	I			5.10
13.583	4.23	0.51	1.388	O	I			5.13
13.667	3.02	0.51	1.409	O	I			5.16
13.750	2.57	0.51	1.425	O	I			5.18
13.833	2.39	0.51	1.439	O	I			5.19
13.917	2.29	0.51	1.451	O	I			5.21
14.000	2.23	0.51	1.463	O	I			5.22
14.083	2.34	0.51	1.476	O	I			5.23
14.167	2.78	0.52	1.490	O	I			5.25
14.250	2.94	0.52	1.506	O	I			5.27
14.333	2.98	0.52	1.523	O	I			5.29
14.417	2.93	0.52	1.540	O	I			5.31
14.500	2.93	0.52	1.556	O	I			5.33
14.583	2.95	0.52	1.573	O	I			5.35
14.667	2.97	0.52	1.590	O	I			5.36
14.750	2.99	0.52	1.607	O	I			5.38
14.833	2.97	0.52	1.624	O	I			5.40
14.917	2.87	0.53	1.640	O	I			5.42
15.000	2.84	0.53	1.656	O	I			5.44
15.083	2.80	0.53	1.672	O	I			5.46
15.167	2.69	0.53	1.687	O	I			5.48
15.250	2.66	0.53	1.702	O	I			5.49
15.333	2.62	0.54	1.716	O	I			5.51
15.417	2.51	0.55	1.730	O	I			5.52
15.500	2.47	0.55	1.744	O	I			5.54
15.583	2.31	0.56	1.756	O	I			5.55
15.667	1.86	0.57	1.767	O	I			5.56
15.750	1.70	0.58	1.775	O	I			5.57
15.833	1.63	0.58	1.783	O	I			5.58
15.917	1.60	0.59	1.790	O	I			5.59
16.000	1.59	0.59	1.797	O	I			5.60
16.083	1.46	0.60	1.803	O	I			5.60
16.167	1.09	0.60	1.808	O	I			5.61
16.250	0.95	0.60	1.811	O	I			5.61
16.333	0.88	0.60	1.813	O	I			5.61
16.417	0.85	0.60	1.815	OI				5.61

16.500	0.83	0.60	1.816	OI				5.62
16.583	0.78	0.61	1.818	OI				5.62
16.667	0.68	0.61	1.818	O				5.62
16.750	0.64	0.61	1.819	O				5.62
16.833	0.62	0.61	1.819	O				5.62
16.917	0.61	0.61	1.819	O				5.62
17.000	0.60	0.61	1.819	O				5.62
17.083	0.66	0.61	1.819	O				5.62
17.167	0.84	0.61	1.820	OI				5.62
17.250	0.91	0.61	1.822	O I				5.62
17.333	0.94	0.61	1.824	O I				5.62
17.417	0.96	0.61	1.827	O I				5.63
17.500	0.97	0.61	1.829	O I				5.63
17.583	0.98	0.61	1.831	O I				5.63
17.667	0.98	0.62	1.834	O I				5.64
17.750	0.99	0.62	1.836	O I				5.64
17.833	0.96	0.62	1.839	O I				5.64
17.917	0.87	0.62	1.841	O I				5.64
18.000	0.83	0.62	1.842	OI				5.64
18.083	0.82	0.62	1.844	OI				5.65
18.167	0.81	0.62	1.845	OI				5.65
18.250	0.80	0.63	1.846	OI				5.65
18.333	0.80	0.63	1.848	OI				5.65
18.417	0.79	0.63	1.849	OI				5.65
18.500	0.79	0.63	1.850	OI				5.65
18.583	0.76	0.63	1.851	OI				5.65
18.667	0.67	0.63	1.852	O				5.65
18.750	0.63	0.63	1.852	O				5.65
18.833	0.59	0.63	1.852	O				5.65
18.917	0.49	0.63	1.851	IO				5.65
19.000	0.44	0.63	1.850	IO				5.65
19.083	0.46	0.63	1.849	IO				5.65
19.167	0.54	0.63	1.848	IO				5.65
19.250	0.56	0.63	1.847	IO				5.65
19.333	0.61	0.63	1.847	O				5.65
19.417	0.70	0.63	1.847	O				5.65
19.500	0.74	0.63	1.848	OI				5.65
19.583	0.73	0.63	1.849	OI				5.65
19.667	0.65	0.63	1.849	O				5.65
19.750	0.62	0.63	1.849	O				5.65
19.833	0.58	0.63	1.849	O				5.65
19.917	0.48	0.63	1.848	IO				5.65
20.000	0.44	0.63	1.847	IO				5.65
20.083	0.46	0.62	1.846	IO				5.65
20.167	0.54	0.62	1.845	IO				5.65
20.250	0.56	0.62	1.844	IO				5.65
20.333	0.58	0.62	1.844	O				5.65
20.417	0.58	0.62	1.844	O				5.65
20.500	0.59	0.62	1.844	O				5.65
20.583	0.59	0.62	1.843	O				5.65
20.667	0.59	0.62	1.843	O				5.65
20.750	0.59	0.62	1.843	O				5.64
20.833	0.56	0.62	1.843	IO				5.64
20.917	0.47	0.62	1.842	IO				5.64

21.000	0.44	0.62	1.841	| IO	|	|	|	5.64
21.083	0.45	0.62	1.839	| IO	|	|	|	5.64
21.167	0.53	0.62	1.839	| IO	|	|	|	5.64
21.250	0.56	0.62	1.838	| IO	|	|	|	5.64
21.333	0.54	0.62	1.838	| IO	|	|	|	5.64
21.417	0.46	0.62	1.837	| IO	|	|	|	5.64
21.500	0.43	0.62	1.836	| I O	|	|	|	5.64
21.583	0.45	0.62	1.834	| IO	|	|	|	5.64
21.667	0.53	0.62	1.833	| IO	|	|	|	5.63
21.750	0.56	0.62	1.833	| IO	|	|	|	5.63
21.833	0.54	0.62	1.833	| IO	|	|	|	5.63
21.917	0.46	0.62	1.832	| IO	|	|	|	5.63
22.000	0.43	0.61	1.831	| I O	|	|	|	5.63
22.083	0.45	0.61	1.829	| IO	|	|	|	5.63
22.167	0.53	0.61	1.828	| IO	|	|	|	5.63
22.250	0.56	0.61	1.828	| IO	|	|	|	5.63
22.333	0.54	0.61	1.828	| IO	|	|	|	5.63
22.417	0.46	0.61	1.827	| IO	|	|	|	5.63
22.500	0.43	0.61	1.826	| I O	|	|	|	5.63
22.583	0.41	0.61	1.824	| I O	|	|	|	5.63
22.667	0.41	0.61	1.823	| I O	|	|	|	5.62
22.750	0.40	0.61	1.822	| I O	|	|	|	5.62
22.833	0.40	0.61	1.820	| I O	|	|	|	5.62
22.917	0.40	0.61	1.819	| I O	|	|	|	5.62
23.000	0.40	0.61	1.817	| I O	|	|	|	5.62
23.083	0.40	0.60	1.816	| I O	|	|	|	5.62
23.167	0.40	0.60	1.814	| I O	|	|	|	5.61
23.250	0.40	0.60	1.813	| I O	|	|	|	5.61
23.333	0.40	0.60	1.812	| I O	|	|	|	5.61
23.417	0.40	0.60	1.810	| I O	|	|	|	5.61
23.500	0.40	0.60	1.809	| I O	|	|	|	5.61
23.583	0.40	0.60	1.807	| I O	|	|	|	5.61
23.667	0.40	0.60	1.806	| I O	|	|	|	5.61
23.750	0.40	0.60	1.805	| I O	|	|	|	5.60
23.833	0.40	0.60	1.803	| I O	|	|	|	5.60
23.917	0.40	0.59	1.802	| I O	|	|	|	5.60
24.000	0.40	0.59	1.801	| I O	|	|	|	5.60
24.083	0.33	0.59	1.799	| I O	|	|	|	5.60
24.167	0.15	0.59	1.797	|I O	|	|	|	5.60
24.250	0.08	0.59	1.793	I O	|	|	|	5.59
24.333	0.05	0.59	1.790	I O	|	|	|	5.59
24.417	0.03	0.58	1.786	I O	|	|	|	5.58
24.500	0.02	0.58	1.782	I O	|	|	|	5.58
24.583	0.01	0.58	1.778	I O	|	|	|	5.58
24.667	0.01	0.58	1.774	I O	|	|	|	5.57
24.750	0.00	0.57	1.770	I O	|	|	|	5.57
24.833	0.00	0.57	1.766	I O	|	|	|	5.56
24.917	0.00	0.57	1.763	I O	|	|	|	5.56
25.000	0.00	0.56	1.759	I O	|	|	|	5.55
25.083	0.00	0.56	1.755	I O	|	|	|	5.55
25.167	0.00	0.56	1.751	I O	|	|	|	5.55
25.250	0.00	0.56	1.747	I O	|	|	|	5.54
25.333	0.00	0.55	1.743	I O	|	|	|	5.54
25.417	0.00	0.55	1.739	I O	|	|	|	5.53

25.500	0.00	0.55	1.736	I	O	|	|	|	|	5.53
25.583	0.00	0.55	1.732	I	O	|	|	|	|	5.53
25.667	0.00	0.54	1.728	I	O	|	|	|	|	5.52
25.750	0.00	0.54	1.724	I	O	|	|	|	|	5.52
25.833	0.00	0.54	1.721	I	O	|	|	|	|	5.51
25.917	0.00	0.54	1.717	I	O	|	|	|	|	5.51
26.000	0.00	0.53	1.713	I	O	|	|	|	|	5.51
26.083	0.00	0.53	1.710	I	O	|	|	|	|	5.50
26.167	0.00	0.53	1.706	I	O	|	|	|	|	5.50
26.250	0.00	0.53	1.702	I	O	|	|	|	|	5.49
26.333	0.00	0.53	1.699	I	O	|	|	|	|	5.49
26.417	0.00	0.53	1.695	I	O	|	|	|	|	5.49
26.500	0.00	0.53	1.691	I	O	|	|	|	|	5.48
26.583	0.00	0.53	1.688	I	O	|	|	|	|	5.48
26.667	0.00	0.53	1.684	I	O	|	|	|	|	5.47
26.750	0.00	0.53	1.680	I	O	|	|	|	|	5.47
26.833	0.00	0.53	1.677	I	O	|	|	|	|	5.46
26.917	0.00	0.53	1.673	I	O	|	|	|	|	5.46
27.000	0.00	0.53	1.670	I	O	|	|	|	|	5.46
27.083	0.00	0.53	1.666	I	O	|	|	|	|	5.45
27.167	0.00	0.53	1.662	I	O	|	|	|	|	5.45
27.250	0.00	0.53	1.659	I	O	|	|	|	|	5.44
27.333	0.00	0.53	1.655	I	O	|	|	|	|	5.44
27.417	0.00	0.53	1.651	I	O	|	|	|	|	5.44
27.500	0.00	0.53	1.648	I	O	|	|	|	|	5.43
27.583	0.00	0.53	1.644	I	O	|	|	|	|	5.43
27.667	0.00	0.53	1.641	I	O	|	|	|	|	5.42
27.750	0.00	0.53	1.637	I	O	|	|	|	|	5.42
27.833	0.00	0.52	1.633	I	O	|	|	|	|	5.41
27.917	0.00	0.52	1.630	I	O	|	|	|	|	5.41
28.000	0.00	0.52	1.626	I	O	|	|	|	|	5.41
28.083	0.00	0.52	1.622	I	O	|	|	|	|	5.40
28.167	0.00	0.52	1.619	I	O	|	|	|	|	5.40
28.250	0.00	0.52	1.615	I	O	|	|	|	|	5.39
28.333	0.00	0.52	1.612	I	O	|	|	|	|	5.39
28.417	0.00	0.52	1.608	I	O	|	|	|	|	5.39
28.500	0.00	0.52	1.604	I	O	|	|	|	|	5.38
28.583	0.00	0.52	1.601	I	O	|	|	|	|	5.38
28.667	0.00	0.52	1.597	I	O	|	|	|	|	5.37
28.750	0.00	0.52	1.594	I	O	|	|	|	|	5.37
28.833	0.00	0.52	1.590	I	O	|	|	|	|	5.37
28.917	0.00	0.52	1.586	I	O	|	|	|	|	5.36
29.000	0.00	0.52	1.583	I	O	|	|	|	|	5.36
29.083	0.00	0.52	1.579	I	O	|	|	|	|	5.35
29.167	0.00	0.52	1.576	I	O	|	|	|	|	5.35
29.250	0.00	0.52	1.572	I	O	|	|	|	|	5.34
29.333	0.00	0.52	1.568	I	O	|	|	|	|	5.34
29.417	0.00	0.52	1.565	I	O	|	|	|	|	5.34
29.500	0.00	0.52	1.561	I	O	|	|	|	|	5.33
29.583	0.00	0.52	1.558	I	O	|	|	|	|	5.33
29.667	0.00	0.52	1.554	I	O	|	|	|	|	5.32
29.750	0.00	0.52	1.551	I	O	|	|	|	|	5.32
29.833	0.00	0.52	1.547	I	O	|	|	|	|	5.32
29.917	0.00	0.52	1.543	I	O	|	|	|	|	5.31

30.000	0.00	0.52	1.540	I	O	|	|	|	|	5.31
30.083	0.00	0.52	1.536	I	O	|	|	|	|	5.30
30.167	0.00	0.52	1.533	I	O	|	|	|	|	5.30
30.250	0.00	0.52	1.529	I	O	|	|	|	|	5.30
30.333	0.00	0.52	1.526	I	O	|	|	|	|	5.29
30.417	0.00	0.52	1.522	I	O	|	|	|	|	5.29
30.500	0.00	0.52	1.518	I	O	|	|	|	|	5.28
30.583	0.00	0.52	1.515	I	O	|	|	|	|	5.28
30.667	0.00	0.52	1.511	I	O	|	|	|	|	5.27
30.750	0.00	0.52	1.508	I	O	|	|	|	|	5.27
30.833	0.00	0.52	1.504	I	O	|	|	|	|	5.27
30.917	0.00	0.52	1.501	I	O	|	|	|	|	5.26
31.000	0.00	0.52	1.497	I	O	|	|	|	|	5.26
31.083	0.00	0.52	1.494	I	O	|	|	|	|	5.25
31.167	0.00	0.52	1.490	I	O	|	|	|	|	5.25
31.250	0.00	0.51	1.486	I	O	|	|	|	|	5.25
31.333	0.00	0.51	1.483	I	O	|	|	|	|	5.24
31.417	0.00	0.51	1.479	I	O	|	|	|	|	5.24
31.500	0.00	0.51	1.476	I	O	|	|	|	|	5.23
31.583	0.00	0.51	1.472	I	O	|	|	|	|	5.23
31.667	0.00	0.51	1.469	I	O	|	|	|	|	5.23
31.750	0.00	0.51	1.465	I	O	|	|	|	|	5.22
31.833	0.00	0.51	1.462	I	O	|	|	|	|	5.22
31.917	0.00	0.51	1.458	I	O	|	|	|	|	5.21
32.000	0.00	0.51	1.455	I	O	|	|	|	|	5.21
32.083	0.00	0.51	1.451	I	O	|	|	|	|	5.21
32.167	0.00	0.51	1.448	I	O	|	|	|	|	5.20
32.250	0.00	0.51	1.444	I	O	|	|	|	|	5.20
32.333	0.00	0.51	1.441	I	O	|	|	|	|	5.19
32.417	0.00	0.51	1.437	I	O	|	|	|	|	5.19
32.500	0.00	0.51	1.433	I	O	|	|	|	|	5.19
32.583	0.00	0.51	1.430	I	O	|	|	|	|	5.18
32.667	0.00	0.51	1.426	I	O	|	|	|	|	5.18
32.750	0.00	0.51	1.423	I	O	|	|	|	|	5.17
32.833	0.00	0.51	1.419	I	O	|	|	|	|	5.17
32.917	0.00	0.51	1.416	I	O	|	|	|	|	5.17
33.000	0.00	0.51	1.412	I	O	|	|	|	|	5.16
33.083	0.00	0.51	1.409	I	O	|	|	|	|	5.16
33.167	0.00	0.51	1.405	I	O	|	|	|	|	5.15
33.250	0.00	0.51	1.402	I	O	|	|	|	|	5.15
33.333	0.00	0.51	1.398	I	O	|	|	|	|	5.15
33.417	0.00	0.51	1.395	I	O	|	|	|	|	5.14
33.500	0.00	0.51	1.391	I	O	|	|	|	|	5.14
33.583	0.00	0.51	1.388	I	O	|	|	|	|	5.13
33.667	0.00	0.51	1.384	I	O	|	|	|	|	5.13
33.750	0.00	0.51	1.381	I	O	|	|	|	|	5.13
33.833	0.00	0.51	1.377	I	O	|	|	|	|	5.12
33.917	0.00	0.51	1.374	I	O	|	|	|	|	5.12
34.000	0.00	0.51	1.370	I	O	|	|	|	|	5.11
34.083	0.00	0.51	1.367	I	O	|	|	|	|	5.11
34.167	0.00	0.51	1.363	I	O	|	|	|	|	5.11
34.250	0.00	0.51	1.360	I	O	|	|	|	|	5.10
34.333	0.00	0.51	1.356	I	O	|	|	|	|	5.10
34.417	0.00	0.51	1.353	I	O	|	|	|	|	5.09

34.500	0.00	0.51	1.349	I	O	|	|	|	|	5.09
34.583	0.00	0.51	1.346	I	O	|	|	|	|	5.09
34.667	0.00	0.50	1.343	I	O	|	|	|	|	5.08
34.750	0.00	0.50	1.339	I	O	|	|	|	|	5.08
34.833	0.00	0.50	1.336	I	O	|	|	|	|	5.07
34.917	0.00	0.50	1.332	I	O	|	|	|	|	5.07
35.000	0.00	0.50	1.329	I	O	|	|	|	|	5.07
35.083	0.00	0.50	1.325	I	O	|	|	|	|	5.06
35.167	0.00	0.50	1.322	I	O	|	|	|	|	5.06
35.250	0.00	0.50	1.318	I	O	|	|	|	|	5.05
35.333	0.00	0.50	1.315	I	O	|	|	|	|	5.05
35.417	0.00	0.50	1.311	I	O	|	|	|	|	5.05
35.500	0.00	0.50	1.308	I	O	|	|	|	|	5.04
35.583	0.00	0.50	1.304	I	O	|	|	|	|	5.04
35.667	0.00	0.50	1.301	I	O	|	|	|	|	5.03
35.750	0.00	0.50	1.297	I	O	|	|	|	|	5.03
35.833	0.00	0.50	1.294	I	O	|	|	|	|	5.03
35.917	0.00	0.50	1.291	I	O	|	|	|	|	5.02
36.000	0.00	0.50	1.287	I	O	|	|	|	|	5.02
36.083	0.00	0.50	1.284	I	O	|	|	|	|	5.01
36.167	0.00	0.50	1.280	I	O	|	|	|	|	5.01
36.250	0.00	0.50	1.277	I	O	|	|	|	|	5.01
36.333	0.00	0.50	1.273	I	O	|	|	|	|	5.00
36.417	0.00	0.50	1.270	I	O	|	|	|	|	5.00
36.500	0.00	0.50	1.266	I	O	|	|	|	|	4.98
36.583	0.00	0.50	1.263	I	O	|	|	|	|	4.97
36.667	0.00	0.50	1.260	I	O	|	|	|	|	4.95
36.750	0.00	0.50	1.256	I	O	|	|	|	|	4.94
36.833	0.00	0.50	1.253	I	O	|	|	|	|	4.93
36.917	0.00	0.49	1.249	I	O	|	|	|	|	4.91
37.000	0.00	0.49	1.246	I	O	|	|	|	|	4.90
37.083	0.00	0.49	1.243	I	O	|	|	|	|	4.89
37.167	0.00	0.49	1.239	I	O	|	|	|	|	4.87
37.250	0.00	0.49	1.236	I	O	|	|	|	|	4.86
37.333	0.00	0.49	1.232	I	O	|	|	|	|	4.85
37.417	0.00	0.49	1.229	I	O	|	|	|	|	4.83
37.500	0.00	0.49	1.226	I	O	|	|	|	|	4.82
37.583	0.00	0.49	1.222	I	O	|	|	|	|	4.81
37.667	0.00	0.49	1.219	I	O	|	|	|	|	4.79
37.750	0.00	0.49	1.216	I	O	|	|	|	|	4.78
37.833	0.00	0.49	1.212	I	O	|	|	|	|	4.77
37.917	0.00	0.49	1.209	I	O	|	|	|	|	4.76
38.000	0.00	0.48	1.205	I	O	|	|	|	|	4.74
38.083	0.00	0.48	1.202	I	O	|	|	|	|	4.73
38.167	0.00	0.48	1.199	I	O	|	|	|	|	4.72
38.250	0.00	0.48	1.195	I	O	|	|	|	|	4.70
38.333	0.00	0.48	1.192	I	O	|	|	|	|	4.69
38.417	0.00	0.48	1.189	I	O	|	|	|	|	4.68
38.500	0.00	0.48	1.186	I	O	|	|	|	|	4.66
38.583	0.00	0.48	1.182	I	O	|	|	|	|	4.65
38.667	0.00	0.48	1.179	I	O	|	|	|	|	4.64
38.750	0.00	0.48	1.176	I	O	|	|	|	|	4.62
38.833	0.00	0.48	1.172	I	O	|	|	|	|	4.61
38.917	0.00	0.48	1.169	I	O	|	|	|	|	4.60

39.000	0.00	0.48	1.166	I	O	|	|	|	|	4.59
39.083	0.00	0.47	1.163	I	O	|	|	|	|	4.57
39.167	0.00	0.47	1.159	I	O	|	|	|	|	4.56
39.250	0.00	0.47	1.156	I	O	|	|	|	|	4.55
39.333	0.00	0.47	1.153	I	O	|	|	|	|	4.53
39.417	0.00	0.47	1.150	I	O	|	|	|	|	4.52
39.500	0.00	0.47	1.146	I	O	|	|	|	|	4.51
39.583	0.00	0.47	1.143	I	O	|	|	|	|	4.50
39.667	0.00	0.47	1.140	I	O	|	|	|	|	4.48
39.750	0.00	0.47	1.137	I	O	|	|	|	|	4.47
39.833	0.00	0.47	1.133	I	O	|	|	|	|	4.46
39.917	0.00	0.47	1.130	I	O	|	|	|	|	4.45
40.000	0.00	0.47	1.127	I	O	|	|	|	|	4.43
40.083	0.00	0.47	1.124	I	O	|	|	|	|	4.42
40.167	0.00	0.46	1.121	I	O	|	|	|	|	4.41
40.250	0.00	0.46	1.117	I	O	|	|	|	|	4.39
40.333	0.00	0.46	1.114	I	O	|	|	|	|	4.38
40.417	0.00	0.46	1.111	I	O	|	|	|	|	4.37
40.500	0.00	0.46	1.108	I	O	|	|	|	|	4.36
40.583	0.00	0.46	1.105	I	O	|	|	|	|	4.34
40.667	0.00	0.46	1.101	I	O	|	|	|	|	4.33
40.750	0.00	0.46	1.098	I	O	|	|	|	|	4.32
40.833	0.00	0.46	1.095	I	O	|	|	|	|	4.31
40.917	0.00	0.46	1.092	I	O	|	|	|	|	4.30
41.000	0.00	0.46	1.089	I	O	|	|	|	|	4.28
41.083	0.00	0.46	1.086	I	O	|	|	|	|	4.27
41.167	0.00	0.46	1.083	I	O	|	|	|	|	4.26
41.250	0.00	0.45	1.079	I	O	|	|	|	|	4.25
41.333	0.00	0.45	1.076	I	O	|	|	|	|	4.23
41.417	0.00	0.45	1.073	I	O	|	|	|	|	4.22
41.500	0.00	0.45	1.070	I	O	|	|	|	|	4.21
41.583	0.00	0.45	1.067	I	O	|	|	|	|	4.20
41.667	0.00	0.45	1.064	I	O	|	|	|	|	4.18
41.750	0.00	0.45	1.061	I	O	|	|	|	|	4.17
41.833	0.00	0.45	1.058	I	O	|	|	|	|	4.16
41.917	0.00	0.45	1.054	I	O	|	|	|	|	4.15
42.000	0.00	0.45	1.051	I	O	|	|	|	|	4.14
42.083	0.00	0.45	1.048	I	O	|	|	|	|	4.12
42.167	0.00	0.45	1.045	I	O	|	|	|	|	4.11
42.250	0.00	0.45	1.042	I	O	|	|	|	|	4.10
42.333	0.00	0.45	1.039	I	O	|	|	|	|	4.09
42.417	0.00	0.44	1.036	I	O	|	|	|	|	4.07
42.500	0.00	0.44	1.033	I	O	|	|	|	|	4.06
42.583	0.00	0.44	1.030	I	O	|	|	|	|	4.05
42.667	0.00	0.44	1.027	I	O	|	|	|	|	4.04
42.750	0.00	0.44	1.024	I	O	|	|	|	|	4.03
42.833	0.00	0.44	1.021	I	O	|	|	|	|	4.01
42.917	0.00	0.44	1.018	I	O	|	|	|	|	4.00
43.000	0.00	0.44	1.015	I	O	|	|	|	|	3.99
43.083	0.00	0.44	1.012	I	O	|	|	|	|	3.98
43.167	0.00	0.44	1.009	I	O	|	|	|	|	3.97
43.250	0.00	0.44	1.006	I	O	|	|	|	|	3.96
43.333	0.00	0.44	1.003	I	O	|	|	|	|	3.94
43.417	0.00	0.44	1.000	I	O	|	|	|	|	3.93

43.500	0.00	0.43	0.997	I O	|	|	|	3.92
43.583	0.00	0.43	0.994	I O	|	|	|	3.91
43.667	0.00	0.43	0.991	I O	|	|	|	3.90
43.750	0.00	0.43	0.988	I O	|	|	|	3.88
43.833	0.00	0.43	0.985	I O	|	|	|	3.87
43.917	0.00	0.43	0.982	I O	|	|	|	3.86
44.000	0.00	0.43	0.979	I O	|	|	|	3.85
44.083	0.00	0.43	0.976	I O	|	|	|	3.84
44.167	0.00	0.43	0.973	I O	|	|	|	3.83
44.250	0.00	0.43	0.970	I O	|	|	|	3.81
44.333	0.00	0.43	0.967	I O	|	|	|	3.80
44.417	0.00	0.43	0.964	I O	|	|	|	3.79
44.500	0.00	0.42	0.961	I O	|	|	|	3.78
44.583	0.00	0.42	0.958	I O	|	|	|	3.77
44.667	0.00	0.42	0.955	I O	|	|	|	3.76
44.750	0.00	0.42	0.952	I O	|	|	|	3.75
44.833	0.00	0.42	0.950	I O	|	|	|	3.73
44.917	0.00	0.42	0.947	I O	|	|	|	3.72
45.000	0.00	0.42	0.944	I O	|	|	|	3.71
45.083	0.00	0.42	0.941	I O	|	|	|	3.70
45.167	0.00	0.42	0.938	I O	|	|	|	3.69
45.250	0.00	0.42	0.935	I O	|	|	|	3.68
45.333	0.00	0.42	0.932	I O	|	|	|	3.67
45.417	0.00	0.42	0.929	I O	|	|	|	3.65
45.500	0.00	0.42	0.926	I O	|	|	|	3.64
45.583	0.00	0.41	0.924	I O	|	|	|	3.63
45.667	0.00	0.41	0.921	I O	|	|	|	3.62
45.750	0.00	0.41	0.918	I O	|	|	|	3.61
45.833	0.00	0.41	0.915	I O	|	|	|	3.60
45.917	0.00	0.41	0.912	I O	|	|	|	3.59
46.000	0.00	0.41	0.909	I O	|	|	|	3.58
46.083	0.00	0.41	0.907	I O	|	|	|	3.57
46.167	0.00	0.41	0.904	I O	|	|	|	3.55
46.250	0.00	0.41	0.901	I O	|	|	|	3.54
46.333	0.00	0.41	0.898	I O	|	|	|	3.53
46.417	0.00	0.41	0.895	I O	|	|	|	3.52
46.500	0.00	0.41	0.893	I O	|	|	|	3.51
46.583	0.00	0.40	0.890	I O	|	|	|	3.50
46.667	0.00	0.40	0.887	I O	|	|	|	3.49
46.750	0.00	0.40	0.884	I O	|	|	|	3.48
46.833	0.00	0.40	0.881	I O	|	|	|	3.47
46.917	0.00	0.40	0.879	I O	|	|	|	3.46
47.000	0.00	0.40	0.876	I O	|	|	|	3.44
47.083	0.00	0.40	0.873	I O	|	|	|	3.43
47.167	0.00	0.40	0.870	I O	|	|	|	3.42
47.250	0.00	0.40	0.868	I O	|	|	|	3.41
47.333	0.00	0.40	0.865	I O	|	|	|	3.40
47.417	0.00	0.40	0.862	I O	|	|	|	3.39
47.500	0.00	0.40	0.859	I O	|	|	|	3.38
47.583	0.00	0.40	0.857	I O	|	|	|	3.37
47.667	0.00	0.40	0.854	I O	|	|	|	3.36
47.750	0.00	0.39	0.851	I O	|	|	|	3.35
47.833	0.00	0.39	0.849	I O	|	|	|	3.34
47.917	0.00	0.39	0.846	I O	|	|	|	3.33

48.000	0.00	0.39	0.843	I O	|	|	|	3.32
48.083	0.00	0.39	0.840	I O	|	|	|	3.30
48.167	0.00	0.39	0.838	I O	|	|	|	3.29
48.250	0.00	0.39	0.835	I O	|	|	|	3.28
48.333	0.00	0.39	0.832	I O	|	|	|	3.27
48.417	0.00	0.39	0.830	I O	|	|	|	3.26
48.500	0.00	0.39	0.827	I O	|	|	|	3.25
48.583	0.00	0.39	0.824	I O	|	|	|	3.24
48.667	0.00	0.39	0.822	I O	|	|	|	3.23
48.750	0.00	0.39	0.819	I O	|	|	|	3.22
48.833	0.00	0.38	0.816	I O	|	|	|	3.21
48.917	0.00	0.38	0.814	I O	|	|	|	3.20
49.000	0.00	0.38	0.811	I O	|	|	|	3.19
49.083	0.00	0.38	0.808	I O	|	|	|	3.18
49.167	0.00	0.38	0.806	I O	|	|	|	3.17
49.250	0.00	0.38	0.803	I O	|	|	|	3.16
49.333	0.00	0.38	0.801	I O	|	|	|	3.15
49.417	0.00	0.38	0.798	I O	|	|	|	3.14
49.500	0.00	0.38	0.795	I O	|	|	|	3.13
49.583	0.00	0.38	0.793	I O	|	|	|	3.12
49.667	0.00	0.38	0.790	I O	|	|	|	3.11
49.750	0.00	0.38	0.788	I O	|	|	|	3.10
49.833	0.00	0.38	0.785	I O	|	|	|	3.09
49.917	0.00	0.38	0.782	I O	|	|	|	3.08
50.000	0.00	0.37	0.780	I O	|	|	|	3.07
50.083	0.00	0.37	0.777	I O	|	|	|	3.06
50.167	0.00	0.37	0.775	I O	|	|	|	3.05
50.250	0.00	0.37	0.772	I O	|	|	|	3.04
50.333	0.00	0.37	0.769	I O	|	|	|	3.03
50.417	0.00	0.37	0.767	I O	|	|	|	3.02
50.500	0.00	0.37	0.764	I O	|	|	|	3.01
50.583	0.00	0.37	0.762	I O	|	|	|	3.00
50.667	0.00	0.37	0.759	I O	|	|	|	2.99
50.750	0.00	0.37	0.757	I O	|	|	|	2.98
50.833	0.00	0.37	0.754	I O	|	|	|	2.97
50.917	0.00	0.37	0.752	I O	|	|	|	2.96
51.000	0.00	0.37	0.749	I O	|	|	|	2.95
51.083	0.00	0.36	0.747	I O	|	|	|	2.94
51.167	0.00	0.36	0.744	I O	|	|	|	2.93
51.250	0.00	0.36	0.742	I O	|	|	|	2.92
51.333	0.00	0.36	0.739	I O	|	|	|	2.91
51.417	0.00	0.36	0.737	I O	|	|	|	2.90
51.500	0.00	0.36	0.734	I O	|	|	|	2.89
51.583	0.00	0.36	0.732	I O	|	|	|	2.88
51.667	0.00	0.36	0.729	I O	|	|	|	2.87
51.750	0.00	0.36	0.727	I O	|	|	|	2.86
51.833	0.00	0.36	0.724	I O	|	|	|	2.85
51.917	0.00	0.36	0.722	I O	|	|	|	2.84
52.000	0.00	0.36	0.719	I O	|	|	|	2.83
52.083	0.00	0.36	0.717	I O	|	|	|	2.82
52.167	0.00	0.35	0.714	I O	|	|	|	2.81
52.250	0.00	0.35	0.712	I O	|	|	|	2.80
52.333	0.00	0.35	0.710	I O	|	|	|	2.79
52.417	0.00	0.35	0.707	I O	|	|	|	2.78

52.500	0.00	0.35	0.705	I O	|	|	|	|	2.77
52.583	0.00	0.35	0.702	I O	|	|	|	|	2.76
52.667	0.00	0.35	0.700	I O	|	|	|	|	2.75
52.750	0.00	0.35	0.697	I O	|	|	|	|	2.74
52.833	0.00	0.35	0.695	I O	|	|	|	|	2.73
52.917	0.00	0.35	0.693	I O	|	|	|	|	2.72
53.000	0.00	0.35	0.690	I O	|	|	|	|	2.71
53.083	0.00	0.35	0.688	I O	|	|	|	|	2.71
53.167	0.00	0.35	0.685	I O	|	|	|	|	2.70
53.250	0.00	0.34	0.683	I O	|	|	|	|	2.69
53.333	0.00	0.34	0.681	I O	|	|	|	|	2.68
53.417	0.00	0.34	0.678	I O	|	|	|	|	2.67
53.500	0.00	0.34	0.676	I O	|	|	|	|	2.66
53.583	0.00	0.34	0.674	I O	|	|	|	|	2.65
53.667	0.00	0.34	0.671	I O	|	|	|	|	2.64
53.750	0.00	0.34	0.669	I O	|	|	|	|	2.63
53.833	0.00	0.34	0.667	I O	|	|	|	|	2.62
53.917	0.00	0.34	0.664	I O	|	|	|	|	2.61
54.000	0.00	0.34	0.662	I O	|	|	|	|	2.60
54.083	0.00	0.34	0.660	I O	|	|	|	|	2.59
54.167	0.00	0.34	0.657	I O	|	|	|	|	2.59
54.250	0.00	0.34	0.655	I O	|	|	|	|	2.58
54.333	0.00	0.34	0.653	I O	|	|	|	|	2.57
54.417	0.00	0.33	0.650	I O	|	|	|	|	2.56
54.500	0.00	0.33	0.648	I O	|	|	|	|	2.55
54.583	0.00	0.33	0.646	I O	|	|	|	|	2.54
54.667	0.00	0.33	0.643	I O	|	|	|	|	2.53
54.750	0.00	0.33	0.641	I O	|	|	|	|	2.52
54.833	0.00	0.33	0.639	I O	|	|	|	|	2.51
54.917	0.00	0.33	0.637	I O	|	|	|	|	2.50
55.000	0.00	0.33	0.634	I O	|	|	|	|	2.50
55.083	0.00	0.33	0.632	I O	|	|	|	|	2.49
55.167	0.00	0.33	0.630	I O	|	|	|	|	2.48
55.250	0.00	0.33	0.628	I O	|	|	|	|	2.47
55.333	0.00	0.33	0.625	I O	|	|	|	|	2.46
55.417	0.00	0.33	0.623	I O	|	|	|	|	2.45
55.500	0.00	0.33	0.621	I O	|	|	|	|	2.44
55.583	0.00	0.32	0.619	I O	|	|	|	|	2.43
55.667	0.00	0.32	0.616	I O	|	|	|	|	2.42
55.750	0.00	0.32	0.614	I O	|	|	|	|	2.42
55.833	0.00	0.32	0.612	I O	|	|	|	|	2.41
55.917	0.00	0.32	0.610	I O	|	|	|	|	2.40
56.000	0.00	0.32	0.607	I O	|	|	|	|	2.39
56.083	0.00	0.32	0.605	I O	|	|	|	|	2.38
56.167	0.00	0.32	0.603	I O	|	|	|	|	2.37
56.250	0.00	0.32	0.601	I O	|	|	|	|	2.36
56.333	0.00	0.32	0.599	I O	|	|	|	|	2.36
56.417	0.00	0.32	0.596	I O	|	|	|	|	2.35
56.500	0.00	0.32	0.594	I O	|	|	|	|	2.34
56.583	0.00	0.32	0.592	I O	|	|	|	|	2.33
56.667	0.00	0.32	0.590	I O	|	|	|	|	2.32
56.750	0.00	0.32	0.588	I O	|	|	|	|	2.31
56.833	0.00	0.31	0.586	I O	|	|	|	|	2.30
56.917	0.00	0.31	0.583	I O	|	|	|	|	2.30

57.000	0.00	0.31	0.581	I O	|	|	|	2.29
57.083	0.00	0.31	0.579	I O	|	|	|	2.28
57.167	0.00	0.31	0.577	I O	|	|	|	2.27
57.250	0.00	0.31	0.575	I O	|	|	|	2.26
57.333	0.00	0.31	0.573	I O	|	|	|	2.25
57.417	0.00	0.31	0.571	I O	|	|	|	2.25
57.500	0.00	0.31	0.568	I O	|	|	|	2.24
57.583	0.00	0.31	0.566	I O	|	|	|	2.23
57.667	0.00	0.31	0.564	I O	|	|	|	2.22
57.750	0.00	0.31	0.562	I O	|	|	|	2.21
57.833	0.00	0.31	0.560	I O	|	|	|	2.20
57.917	0.00	0.31	0.558	I O	|	|	|	2.20
58.000	0.00	0.30	0.556	I O	|	|	|	2.19
58.083	0.00	0.30	0.554	I O	|	|	|	2.18
58.167	0.00	0.30	0.552	I O	|	|	|	2.17
58.250	0.00	0.30	0.549	I O	|	|	|	2.16
58.333	0.00	0.30	0.547	I O	|	|	|	2.15
58.417	0.00	0.30	0.545	I O	|	|	|	2.15
58.500	0.00	0.30	0.543	I O	|	|	|	2.14
58.583	0.00	0.30	0.541	I O	|	|	|	2.13
58.667	0.00	0.30	0.539	I O	|	|	|	2.12
58.750	0.00	0.30	0.537	I O	|	|	|	2.11
58.833	0.00	0.30	0.535	I O	|	|	|	2.11
58.917	0.00	0.30	0.533	I O	|	|	|	2.10
59.000	0.00	0.30	0.531	I O	|	|	|	2.09
59.083	0.00	0.30	0.529	I O	|	|	|	2.08
59.167	0.00	0.30	0.527	I O	|	|	|	2.07
59.250	0.00	0.30	0.525	I O	|	|	|	2.07
59.333	0.00	0.29	0.523	I O	|	|	|	2.06
59.417	0.00	0.29	0.521	I O	|	|	|	2.05
59.500	0.00	0.29	0.519	I O	|	|	|	2.04
59.583	0.00	0.29	0.517	I O	|	|	|	2.03
59.667	0.00	0.29	0.515	I O	|	|	|	2.03
59.750	0.00	0.29	0.513	I O	|	|	|	2.02
59.833	0.00	0.29	0.511	I O	|	|	|	2.01
59.917	0.00	0.29	0.509	I O	|	|	|	2.00
60.000	0.00	0.29	0.507	I O	|	|	|	2.00
60.083	0.00	0.29	0.505	I O	|	|	|	1.99
60.167	0.00	0.29	0.503	I O	|	|	|	1.98
60.250	0.00	0.29	0.501	I O	|	|	|	1.98
60.333	0.00	0.29	0.499	IO	|	|	|	1.97
60.417	0.00	0.29	0.497	IO	|	|	|	1.97
60.500	0.00	0.29	0.495	IO	|	|	|	1.96
60.583	0.00	0.28	0.493	IO	|	|	|	1.96
60.667	0.00	0.28	0.491	IO	|	|	|	1.95
60.750	0.00	0.28	0.489	IO	|	|	|	1.94
60.833	0.00	0.28	0.487	IO	|	|	|	1.94
60.917	0.00	0.28	0.485	IO	|	|	|	1.93
61.000	0.00	0.28	0.483	IO	|	|	|	1.93
61.083	0.00	0.28	0.481	IO	|	|	|	1.92
61.167	0.00	0.28	0.479	IO	|	|	|	1.91
61.250	0.00	0.28	0.477	IO	|	|	|	1.91
61.333	0.00	0.28	0.475	IO	|	|	|	1.90
61.417	0.00	0.28	0.473	IO	|	|	|	1.90

61.500	0.00	0.28	0.471	IO				1.89
61.583	0.00	0.28	0.470	IO				1.89
61.667	0.00	0.28	0.468	IO				1.88
61.750	0.00	0.28	0.466	IO				1.88
61.833	0.00	0.27	0.464	IO				1.87
61.917	0.00	0.27	0.462	IO				1.86
62.000	0.00	0.27	0.460	IO				1.86
62.083	0.00	0.27	0.458	IO				1.85
62.167	0.00	0.27	0.456	IO				1.85
62.250	0.00	0.27	0.454	IO				1.84
62.333	0.00	0.27	0.453	IO				1.84
62.417	0.00	0.27	0.451	IO				1.83
62.500	0.00	0.27	0.449	IO				1.83
62.583	0.00	0.27	0.447	IO				1.82
62.667	0.00	0.27	0.445	IO				1.81
62.750	0.00	0.27	0.443	IO				1.81
62.833	0.00	0.27	0.442	IO				1.80
62.917	0.00	0.27	0.440	IO				1.80
63.000	0.00	0.27	0.438	IO				1.79
63.083	0.00	0.26	0.436	IO				1.79
63.167	0.00	0.26	0.434	IO				1.78
63.250	0.00	0.26	0.432	IO				1.78
63.333	0.00	0.26	0.431	IO				1.77
63.417	0.00	0.26	0.429	IO				1.77
63.500	0.00	0.26	0.427	IO				1.76
63.583	0.00	0.26	0.425	IO				1.76
63.667	0.00	0.26	0.423	IO				1.75
63.750	0.00	0.26	0.422	IO				1.75
63.833	0.00	0.26	0.420	IO				1.74
63.917	0.00	0.26	0.418	IO				1.73
64.000	0.00	0.26	0.416	IO				1.73
64.083	0.00	0.26	0.415	IO				1.72
64.167	0.00	0.26	0.413	IO				1.72
64.250	0.00	0.26	0.411	IO				1.71
64.333	0.00	0.26	0.409	IO				1.71
64.417	0.00	0.25	0.407	IO				1.70
64.500	0.00	0.25	0.406	IO				1.70
64.583	0.00	0.25	0.404	IO				1.69
64.667	0.00	0.25	0.402	IO				1.69
64.750	0.00	0.25	0.400	IO				1.68
64.833	0.00	0.25	0.399	IO				1.68
64.917	0.00	0.25	0.397	IO				1.67
65.000	0.00	0.25	0.395	IO				1.67
65.083	0.00	0.25	0.394	IO				1.66
65.167	0.00	0.25	0.392	IO				1.66
65.250	0.00	0.25	0.390	IO				1.65
65.333	0.00	0.25	0.388	IO				1.65
65.417	0.00	0.25	0.387	IO				1.64
65.500	0.00	0.25	0.385	IO				1.64
65.583	0.00	0.25	0.383	IO				1.63
65.667	0.00	0.25	0.382	IO				1.63
65.750	0.00	0.24	0.380	IO				1.62
65.833	0.00	0.24	0.378	IO				1.62
65.917	0.00	0.24	0.377	IO				1.61

66.000	0.00	0.24	0.375	IO				1.61
66.083	0.00	0.24	0.373	IO				1.60
66.167	0.00	0.24	0.372	IO				1.60
66.250	0.00	0.24	0.370	IO				1.59
66.333	0.00	0.24	0.368	IO				1.59
66.417	0.00	0.24	0.367	IO				1.58
66.500	0.00	0.24	0.365	IO				1.58
66.583	0.00	0.24	0.363	IO				1.57
66.667	0.00	0.24	0.362	IO				1.57
66.750	0.00	0.24	0.360	IO				1.56
66.833	0.00	0.24	0.358	IO				1.56
66.917	0.00	0.24	0.357	IO				1.55
67.000	0.00	0.24	0.355	IO				1.55
67.083	0.00	0.24	0.354	IO				1.54
67.167	0.00	0.23	0.352	IO				1.54
67.250	0.00	0.23	0.350	IO				1.53
67.333	0.00	0.23	0.349	IO				1.53
67.417	0.00	0.23	0.347	IO				1.53
67.500	0.00	0.23	0.345	IO				1.52
67.583	0.00	0.23	0.344	IO				1.52
67.667	0.00	0.23	0.342	IO				1.51
67.750	0.00	0.23	0.341	IO				1.51
67.833	0.00	0.23	0.339	IO				1.50
67.917	0.00	0.23	0.338	IO				1.50
68.000	0.00	0.23	0.336	IO				1.49
68.083	0.00	0.23	0.334	IO				1.49
68.167	0.00	0.23	0.333	IO				1.48
68.250	0.00	0.23	0.331	IO				1.48
68.333	0.00	0.23	0.330	IO				1.47
68.417	0.00	0.23	0.328	IO				1.47
68.500	0.00	0.23	0.327	IO				1.46
68.583	0.00	0.23	0.325	IO				1.46
68.667	0.00	0.22	0.323	IO				1.46
68.750	0.00	0.22	0.322	IO				1.45
68.833	0.00	0.22	0.320	IO				1.45
68.917	0.00	0.22	0.319	IO				1.44
69.000	0.00	0.22	0.317	IO				1.44
69.083	0.00	0.22	0.316	IO				1.43
69.167	0.00	0.22	0.314	IO				1.43
69.250	0.00	0.22	0.313	IO				1.42
69.333	0.00	0.22	0.311	IO				1.42
69.417	0.00	0.22	0.310	IO				1.41
69.500	0.00	0.22	0.308	IO				1.41
69.583	0.00	0.22	0.307	IO				1.41
69.667	0.00	0.22	0.305	IO				1.40
69.750	0.00	0.22	0.304	IO				1.40
69.833	0.00	0.22	0.302	IO				1.39
69.917	0.00	0.22	0.301	IO				1.39
70.000	0.00	0.22	0.299	IO				1.38
70.083	0.00	0.22	0.298	IO				1.38
70.167	0.00	0.22	0.296	IO				1.38
70.250	0.00	0.21	0.295	IO				1.37
70.333	0.00	0.21	0.293	IO				1.37
70.417	0.00	0.21	0.292	IO				1.36

70.500	0.00	0.21	0.290	IO				1.36
70.583	0.00	0.21	0.289	IO				1.35
70.667	0.00	0.21	0.287	IO				1.35
70.750	0.00	0.21	0.286	IO				1.34
70.833	0.00	0.21	0.284	IO				1.34
70.917	0.00	0.21	0.283	IO				1.34
71.000	0.00	0.21	0.282	IO				1.33
71.083	0.00	0.21	0.280	IO				1.33
71.167	0.00	0.21	0.279	IO				1.32
71.250	0.00	0.21	0.277	IO				1.32
71.333	0.00	0.21	0.276	IO				1.32
71.417	0.00	0.21	0.274	IO				1.31
71.500	0.00	0.21	0.273	IO				1.31
71.583	0.00	0.21	0.272	IO				1.30
71.667	0.00	0.21	0.270	IO				1.30
71.750	0.00	0.21	0.269	IO				1.29
71.833	0.00	0.20	0.267	IO				1.29
71.917	0.00	0.20	0.266	IO				1.29
72.000	0.00	0.20	0.264	IO				1.28
72.083	0.00	0.20	0.263	IO				1.28
72.167	0.00	0.20	0.262	IO				1.27
72.250	0.00	0.20	0.260	IO				1.27
72.333	0.00	0.20	0.259	IO				1.27
72.417	0.00	0.20	0.257	IO				1.26
72.500	0.00	0.20	0.256	IO				1.26
72.583	0.00	0.20	0.255	IO				1.25
72.667	0.00	0.20	0.253	IO				1.25
72.750	0.00	0.20	0.252	IO				1.24
72.833	0.00	0.20	0.251	IO				1.24
72.917	0.00	0.20	0.249	IO				1.24
73.000	0.00	0.20	0.248	IO				1.23
73.083	0.00	0.20	0.247	IO				1.23
73.167	0.00	0.20	0.245	IO				1.22
73.250	0.00	0.20	0.244	IO				1.22
73.333	0.00	0.20	0.242	IO				1.22
73.417	0.00	0.20	0.241	IO				1.21
73.500	0.00	0.20	0.240	IO				1.21
73.583	0.00	0.19	0.238	IO				1.20
73.667	0.00	0.19	0.237	IO				1.20
73.750	0.00	0.19	0.236	IO				1.20
73.833	0.00	0.19	0.234	IO				1.19
73.917	0.00	0.19	0.233	IO				1.19
74.000	0.00	0.19	0.232	IO				1.19
74.083	0.00	0.19	0.230	IO				1.18
74.167	0.00	0.19	0.229	IO				1.18
74.250	0.00	0.19	0.228	IO				1.17
74.333	0.00	0.19	0.226	IO				1.17
74.417	0.00	0.19	0.225	IO				1.17
74.500	0.00	0.19	0.224	IO				1.16
74.583	0.00	0.19	0.223	IO				1.16
74.667	0.00	0.19	0.221	IO				1.15
74.750	0.00	0.19	0.220	IO				1.15
74.833	0.00	0.19	0.219	IO				1.15
74.917	0.00	0.19	0.217	IO				1.14

75.000	0.00	0.19	0.216	IO				1.14
75.083	0.00	0.19	0.215	IO				1.14
75.167	0.00	0.19	0.214	IO				1.13
75.250	0.00	0.19	0.212	IO				1.13
75.333	0.00	0.18	0.211	IO				1.12
75.417	0.00	0.18	0.210	IO				1.12
75.500	0.00	0.18	0.208	IO				1.12
75.583	0.00	0.18	0.207	IO				1.11
75.667	0.00	0.18	0.206	IO				1.11
75.750	0.00	0.18	0.205	IO				1.11
75.833	0.00	0.18	0.203	IO				1.10
75.917	0.00	0.18	0.202	IO				1.10
76.000	0.00	0.18	0.201	IO				1.09
76.083	0.00	0.18	0.200	IO				1.09
76.167	0.00	0.18	0.198	IO				1.09
76.250	0.00	0.18	0.197	IO				1.08
76.333	0.00	0.18	0.196	IO				1.08
76.417	0.00	0.18	0.195	IO				1.08
76.500	0.00	0.18	0.193	IO				1.07
76.583	0.00	0.18	0.192	IO				1.07
76.667	0.00	0.18	0.191	IO				1.06
76.750	0.00	0.18	0.190	IO				1.06
76.833	0.00	0.18	0.189	IO				1.06
76.917	0.00	0.18	0.187	IO				1.05
77.000	0.00	0.18	0.186	IO				1.05
77.083	0.00	0.18	0.185	IO				1.05
77.167	0.00	0.18	0.184	IO				1.04
77.250	0.00	0.17	0.182	IO				1.04
77.333	0.00	0.17	0.181	IO				1.04
77.417	0.00	0.17	0.180	IO				1.03
77.500	0.00	0.17	0.179	IO				1.03
77.583	0.00	0.17	0.178	IO				1.03
77.667	0.00	0.17	0.177	IO				1.02
77.750	0.00	0.17	0.175	IO				1.02
77.833	0.00	0.17	0.174	IO				1.02
77.917	0.00	0.17	0.173	IO				1.01
78.000	0.00	0.17	0.172	IO				1.01
78.083	0.00	0.17	0.171	IO				1.00
78.167	0.00	0.17	0.169	IO				1.00
78.250	0.00	0.17	0.168	IO				1.00
78.333	0.00	0.17	0.167	IO				0.99
78.417	0.00	0.17	0.166	IO				0.98
78.500	0.00	0.17	0.165	IO				0.98
78.583	0.00	0.16	0.164	IO				0.97
78.667	0.00	0.16	0.163	IO				0.96
78.750	0.00	0.16	0.161	IO				0.96
78.833	0.00	0.16	0.160	IO				0.95
78.917	0.00	0.16	0.159	IO				0.94
79.000	0.00	0.16	0.158	IO				0.94
79.083	0.00	0.16	0.157	IO				0.93
79.167	0.00	0.16	0.156	IO				0.92
79.250	0.00	0.16	0.155	IO				0.92
79.333	0.00	0.15	0.154	IO				0.91
79.417	0.00	0.15	0.153	IO				0.90

79.500	0.00	0.15	0.152	IO				0.90
79.583	0.00	0.15	0.151	IO				0.89
79.667	0.00	0.15	0.150	IO				0.89
79.750	0.00	0.15	0.149	IO				0.88
79.833	0.00	0.15	0.148	IO				0.87
79.917	0.00	0.15	0.146	IO				0.87
80.000	0.00	0.15	0.145	IO				0.86
80.083	0.00	0.15	0.144	IO				0.85
80.167	0.00	0.14	0.143	IO				0.85
80.250	0.00	0.14	0.142	O				0.84
80.333	0.00	0.14	0.142	O				0.84
80.417	0.00	0.14	0.141	O				0.83
80.500	0.00	0.14	0.140	O				0.83
80.583	0.00	0.14	0.139	O				0.82
80.667	0.00	0.14	0.138	O				0.81
80.750	0.00	0.14	0.137	O				0.81
80.833	0.00	0.14	0.136	O				0.80
80.917	0.00	0.14	0.135	O				0.80
81.000	0.00	0.13	0.134	O				0.79
81.083	0.00	0.13	0.133	O				0.79
81.167	0.00	0.13	0.132	O				0.78
81.250	0.00	0.13	0.131	O				0.78
81.333	0.00	0.13	0.130	O				0.77
81.417	0.00	0.13	0.129	O				0.77
81.500	0.00	0.13	0.128	O				0.76
81.583	0.00	0.13	0.128	O				0.75
81.667	0.00	0.13	0.127	O				0.75
81.750	0.00	0.13	0.126	O				0.74
81.833	0.00	0.13	0.125	O				0.74
81.917	0.00	0.12	0.124	O				0.73
82.000	0.00	0.12	0.123	O				0.73
82.083	0.00	0.12	0.122	O				0.72
82.167	0.00	0.12	0.121	O				0.72
82.250	0.00	0.12	0.121	O				0.71
82.333	0.00	0.12	0.120	O				0.71
82.417	0.00	0.12	0.119	O				0.70
82.500	0.00	0.12	0.118	O				0.70
82.583	0.00	0.12	0.117	O				0.69
82.667	0.00	0.12	0.117	O				0.69
82.750	0.00	0.12	0.116	O				0.68
82.833	0.00	0.12	0.115	O				0.68
82.917	0.00	0.11	0.114	O				0.68
83.000	0.00	0.11	0.113	O				0.67
83.083	0.00	0.11	0.113	O				0.67
83.167	0.00	0.11	0.112	O				0.66
83.250	0.00	0.11	0.111	O				0.66
83.333	0.00	0.11	0.110	O				0.65
83.417	0.00	0.11	0.110	O				0.65
83.500	0.00	0.11	0.109	O				0.64
83.583	0.00	0.11	0.108	O				0.64
83.667	0.00	0.11	0.107	O				0.63
83.750	0.00	0.11	0.107	O				0.63
83.833	0.00	0.11	0.106	O				0.63
83.917	0.00	0.11	0.105	O				0.62

84.000	0.00	0.10	0.104	O					0.62
84.083	0.00	0.10	0.104	O					0.61
84.167	0.00	0.10	0.103	O					0.61
84.250	0.00	0.10	0.102	O					0.60
84.333	0.00	0.10	0.101	O					0.60
84.417	0.00	0.10	0.101	O					0.60
84.500	0.00	0.10	0.100	O					0.59
84.583	0.00	0.10	0.099	O					0.59
84.667	0.00	0.10	0.099	O					0.58
84.750	0.00	0.10	0.098	O					0.58
84.833	0.00	0.10	0.097	O					0.58
84.917	0.00	0.10	0.097	O					0.57
85.000	0.00	0.10	0.096	O					0.57
85.083	0.00	0.10	0.095	O					0.56
85.167	0.00	0.10	0.095	O					0.56
85.250	0.00	0.09	0.094	O					0.56
85.333	0.00	0.09	0.093	O					0.55
85.417	0.00	0.09	0.093	O					0.55
85.500	0.00	0.09	0.092	O					0.54
85.583	0.00	0.09	0.091	O					0.54
85.667	0.00	0.09	0.091	O					0.54
85.750	0.00	0.09	0.090	O					0.53
85.833	0.00	0.09	0.090	O					0.53
85.917	0.00	0.09	0.089	O					0.53
86.000	0.00	0.09	0.088	O					0.52
86.083	0.00	0.09	0.088	O					0.52
86.167	0.00	0.09	0.087	O					0.52
86.250	0.00	0.09	0.087	O					0.51
86.333	0.00	0.09	0.086	O					0.51
86.417	0.00	0.09	0.085	O					0.50
86.500	0.00	0.09	0.085	O					0.50
86.583	0.00	0.08	0.084	O					0.50
86.667	0.00	0.08	0.084	O					0.49
86.750	0.00	0.08	0.083	O					0.49
86.833	0.00	0.08	0.082	O					0.49
86.917	0.00	0.08	0.082	O					0.48
87.000	0.00	0.08	0.081	O					0.48
87.083	0.00	0.08	0.081	O					0.48
87.167	0.00	0.08	0.080	O					0.47
87.250	0.00	0.08	0.080	O					0.47
87.333	0.00	0.08	0.079	O					0.47
87.417	0.00	0.08	0.079	O					0.46
87.500	0.00	0.08	0.078	O					0.46
87.583	0.00	0.08	0.077	O					0.46
87.667	0.00	0.08	0.077	O					0.46
87.750	0.00	0.08	0.076	O					0.45
87.833	0.00	0.08	0.076	O					0.45
87.917	0.00	0.08	0.075	O					0.45
88.000	0.00	0.08	0.075	O					0.44
88.083	0.00	0.07	0.074	O					0.44
88.167	0.00	0.07	0.074	O					0.44
88.250	0.00	0.07	0.073	O					0.43
88.333	0.00	0.07	0.073	O					0.43
88.417	0.00	0.07	0.072	O					0.43

88.500	0.00	0.07	0.072	O	|	|	|	0.42
88.583	0.00	0.07	0.071	O	|	|	|	0.42
88.667	0.00	0.07	0.071	O	|	|	|	0.42
88.750	0.00	0.07	0.070	O	|	|	|	0.42
88.833	0.00	0.07	0.070	O	|	|	|	0.41
88.917	0.00	0.07	0.069	O	|	|	|	0.41
89.000	0.00	0.07	0.069	O	|	|	|	0.41
89.083	0.00	0.07	0.068	O	|	|	|	0.40
89.167	0.00	0.07	0.068	O	|	|	|	0.40
89.250	0.00	0.07	0.067	O	|	|	|	0.40
89.333	0.00	0.07	0.067	O	|	|	|	0.40
89.417	0.00	0.07	0.066	O	|	|	|	0.39
89.500	0.00	0.07	0.066	O	|	|	|	0.39
89.583	0.00	0.07	0.066	O	|	|	|	0.39
89.667	0.00	0.07	0.065	O	|	|	|	0.39
89.750	0.00	0.07	0.065	O	|	|	|	0.38
89.833	0.00	0.06	0.064	O	|	|	|	0.38
89.917	0.00	0.06	0.064	O	|	|	|	0.38
90.000	0.00	0.06	0.063	O	|	|	|	0.37
90.083	0.00	0.06	0.063	O	|	|	|	0.37
90.167	0.00	0.06	0.062	O	|	|	|	0.37
90.250	0.00	0.06	0.062	O	|	|	|	0.37
90.333	0.00	0.06	0.062	O	|	|	|	0.36
90.417	0.00	0.06	0.061	O	|	|	|	0.36
90.500	0.00	0.06	0.061	O	|	|	|	0.36
90.583	0.00	0.06	0.060	O	|	|	|	0.36
90.667	0.00	0.06	0.060	O	|	|	|	0.35
90.750	0.00	0.06	0.060	O	|	|	|	0.35
90.833	0.00	0.06	0.059	O	|	|	|	0.35
90.917	0.00	0.06	0.059	O	|	|	|	0.35
91.000	0.00	0.06	0.058	O	|	|	|	0.34
91.083	0.00	0.06	0.058	O	|	|	|	0.34
91.167	0.00	0.06	0.057	O	|	|	|	0.34
91.250	0.00	0.06	0.057	O	|	|	|	0.34
91.333	0.00	0.06	0.057	O	|	|	|	0.34
91.417	0.00	0.06	0.056	O	|	|	|	0.33
91.500	0.00	0.06	0.056	O	|	|	|	0.33
91.583	0.00	0.06	0.056	O	|	|	|	0.33
91.667	0.00	0.06	0.055	O	|	|	|	0.33
91.750	0.00	0.06	0.055	O	|	|	|	0.32
91.833	0.00	0.05	0.054	O	|	|	|	0.32
91.917	0.00	0.05	0.054	O	|	|	|	0.32
92.000	0.00	0.05	0.054	O	|	|	|	0.32
92.083	0.00	0.05	0.053	O	|	|	|	0.32
92.167	0.00	0.05	0.053	O	|	|	|	0.31
92.250	0.00	0.05	0.053	O	|	|	|	0.31
92.333	0.00	0.05	0.052	O	|	|	|	0.31
92.417	0.00	0.05	0.052	O	|	|	|	0.31
92.500	0.00	0.05	0.051	O	|	|	|	0.30
92.583	0.00	0.05	0.051	O	|	|	|	0.30
92.667	0.00	0.05	0.051	O	|	|	|	0.30
92.750	0.00	0.05	0.050	O	|	|	|	0.30
92.833	0.00	0.05	0.050	O	|	|	|	0.30
92.917	0.00	0.05	0.050	O	|	|	|	0.29

93.000	0.00	0.05	0.049	O	|	|	|	0.29
93.083	0.00	0.05	0.049	O	|	|	|	0.29
93.167	0.00	0.05	0.049	O	|	|	|	0.29
93.250	0.00	0.05	0.048	O	|	|	|	0.29
93.333	0.00	0.05	0.048	O	|	|	|	0.28
93.417	0.00	0.05	0.048	O	|	|	|	0.28
93.500	0.00	0.05	0.047	O	|	|	|	0.28
93.583	0.00	0.05	0.047	O	|	|	|	0.28
93.667	0.00	0.05	0.047	O	|	|	|	0.28
93.750	0.00	0.05	0.046	O	|	|	|	0.27
93.833	0.00	0.05	0.046	O	|	|	|	0.27
93.917	0.00	0.05	0.046	O	|	|	|	0.27
94.000	0.00	0.05	0.045	O	|	|	|	0.27
94.083	0.00	0.05	0.045	O	|	|	|	0.27
94.167	0.00	0.05	0.045	O	|	|	|	0.27
94.250	0.00	0.04	0.044	O	|	|	|	0.26
94.333	0.00	0.04	0.044	O	|	|	|	0.26
94.417	0.00	0.04	0.044	O	|	|	|	0.26
94.500	0.00	0.04	0.044	O	|	|	|	0.26
94.583	0.00	0.04	0.043	O	|	|	|	0.26
94.667	0.00	0.04	0.043	O	|	|	|	0.25
94.750	0.00	0.04	0.043	O	|	|	|	0.25
94.833	0.00	0.04	0.042	O	|	|	|	0.25
94.917	0.00	0.04	0.042	O	|	|	|	0.25
95.000	0.00	0.04	0.042	O	|	|	|	0.25
95.083	0.00	0.04	0.042	O	|	|	|	0.25
95.167	0.00	0.04	0.041	O	|	|	|	0.24
95.250	0.00	0.04	0.041	O	|	|	|	0.24
95.333	0.00	0.04	0.041	O	|	|	|	0.24
95.417	0.00	0.04	0.040	O	|	|	|	0.24
95.500	0.00	0.04	0.040	O	|	|	|	0.24
95.583	0.00	0.04	0.040	O	|	|	|	0.24
95.667	0.00	0.04	0.040	O	|	|	|	0.23
95.750	0.00	0.04	0.039	O	|	|	|	0.23
95.833	0.00	0.04	0.039	O	|	|	|	0.23
95.917	0.00	0.04	0.039	O	|	|	|	0.23
96.000	0.00	0.04	0.038	O	|	|	|	0.23
96.083	0.00	0.04	0.038	O	|	|	|	0.23
96.167	0.00	0.04	0.038	O	|	|	|	0.22
96.250	0.00	0.04	0.038	O	|	|	|	0.22
96.333	0.00	0.04	0.037	O	|	|	|	0.22
96.417	0.00	0.04	0.037	O	|	|	|	0.22
96.500	0.00	0.04	0.037	O	|	|	|	0.22
96.583	0.00	0.04	0.037	O	|	|	|	0.22
96.667	0.00	0.04	0.036	O	|	|	|	0.22
96.750	0.00	0.04	0.036	O	|	|	|	0.21
96.833	0.00	0.04	0.036	O	|	|	|	0.21
96.917	0.00	0.04	0.036	O	|	|	|	0.21
97.000	0.00	0.04	0.035	O	|	|	|	0.21
97.083	0.00	0.04	0.035	O	|	|	|	0.21
97.167	0.00	0.04	0.035	O	|	|	|	0.21
97.250	0.00	0.03	0.035	O	|	|	|	0.21
97.333	0.00	0.03	0.034	O	|	|	|	0.20
97.417	0.00	0.03	0.034	O	|	|	|	0.20

97.500	0.00	0.03	0.034	O	|	|	|	0.20
97.583	0.00	0.03	0.034	O	|	|	|	0.20
97.667	0.00	0.03	0.033	O	|	|	|	0.20
97.750	0.00	0.03	0.033	O	|	|	|	0.20
97.833	0.00	0.03	0.033	O	|	|	|	0.20
97.917	0.00	0.03	0.033	O	|	|	|	0.19
98.000	0.00	0.03	0.033	O	|	|	|	0.19
98.083	0.00	0.03	0.032	O	|	|	|	0.19
98.167	0.00	0.03	0.032	O	|	|	|	0.19
98.250	0.00	0.03	0.032	O	|	|	|	0.19
98.333	0.00	0.03	0.032	O	|	|	|	0.19
98.417	0.00	0.03	0.031	O	|	|	|	0.19
98.500	0.00	0.03	0.031	O	|	|	|	0.18
98.583	0.00	0.03	0.031	O	|	|	|	0.18
98.667	0.00	0.03	0.031	O	|	|	|	0.18
98.750	0.00	0.03	0.031	O	|	|	|	0.18
98.833	0.00	0.03	0.030	O	|	|	|	0.18
98.917	0.00	0.03	0.030	O	|	|	|	0.18
99.000	0.00	0.03	0.030	O	|	|	|	0.18
99.083	0.00	0.03	0.030	O	|	|	|	0.18
99.167	0.00	0.03	0.030	O	|	|	|	0.17
99.250	0.00	0.03	0.029	O	|	|	|	0.17
99.333	0.00	0.03	0.029	O	|	|	|	0.17
99.417	0.00	0.03	0.029	O	|	|	|	0.17
99.500	0.00	0.03	0.029	O	|	|	|	0.17
99.583	0.00	0.03	0.029	O	|	|	|	0.17
99.667	0.00	0.03	0.028	O	|	|	|	0.17
99.750	0.00	0.03	0.028	O	|	|	|	0.17
99.833	0.00	0.03	0.028	O	|	|	|	0.17
99.917	0.00	0.03	0.028	O	|	|	|	0.16
100.000	0.00	0.03	0.028	O	|	|	|	0.16
100.083	0.00	0.03	0.027	O	|	|	|	0.16
100.167	0.00	0.03	0.027	O	|	|	|	0.16
100.250	0.00	0.03	0.027	O	|	|	|	0.16
100.333	0.00	0.03	0.027	O	|	|	|	0.16
100.417	0.00	0.03	0.027	O	|	|	|	0.16
100.500	0.00	0.03	0.026	O	|	|	|	0.16
100.583	0.00	0.03	0.026	O	|	|	|	0.16
100.667	0.00	0.03	0.026	O	|	|	|	0.15
100.750	0.00	0.03	0.026	O	|	|	|	0.15
100.833	0.00	0.03	0.026	O	|	|	|	0.15
100.917	0.00	0.03	0.026	O	|	|	|	0.15
101.000	0.00	0.03	0.025	O	|	|	|	0.15
101.083	0.00	0.03	0.025	O	|	|	|	0.15
101.167	0.00	0.03	0.025	O	|	|	|	0.15
101.250	0.00	0.03	0.025	O	|	|	|	0.15
101.333	0.00	0.02	0.025	O	|	|	|	0.15
101.417	0.00	0.02	0.025	O	|	|	|	0.15
101.500	0.00	0.02	0.024	O	|	|	|	0.14
101.583	0.00	0.02	0.024	O	|	|	|	0.14
101.667	0.00	0.02	0.024	O	|	|	|	0.14
101.750	0.00	0.02	0.024	O	|	|	|	0.14
101.833	0.00	0.02	0.024	O	|	|	|	0.14
101.917	0.00	0.02	0.024	O	|	|	|	0.14

102.000	0.00	0.02	0.023	O					0.14
102.083	0.00	0.02	0.023	O					0.14
102.167	0.00	0.02	0.023	O					0.14
102.250	0.00	0.02	0.023	O					0.14
102.333	0.00	0.02	0.023	O					0.13
102.417	0.00	0.02	0.023	O					0.13
102.500	0.00	0.02	0.022	O					0.13
102.583	0.00	0.02	0.022	O					0.13
102.667	0.00	0.02	0.022	O					0.13
102.750	0.00	0.02	0.022	O					0.13
102.833	0.00	0.02	0.022	O					0.13
102.917	0.00	0.02	0.022	O					0.13
103.000	0.00	0.02	0.021	O					0.13
103.083	0.00	0.02	0.021	O					0.13
103.167	0.00	0.02	0.021	O					0.13
103.250	0.00	0.02	0.021	O					0.12
103.333	0.00	0.02	0.021	O					0.12
103.417	0.00	0.02	0.021	O					0.12
103.500	0.00	0.02	0.021	O					0.12
103.583	0.00	0.02	0.020	O					0.12
103.667	0.00	0.02	0.020	O					0.12
103.750	0.00	0.02	0.020	O					0.12
103.833	0.00	0.02	0.020	O					0.12
103.917	0.00	0.02	0.020	O					0.12
104.000	0.00	0.02	0.020	O					0.12
104.083	0.00	0.02	0.020	O					0.12
104.167	0.00	0.02	0.020	O					0.12
104.250	0.00	0.02	0.019	O					0.11
104.333	0.00	0.02	0.019	O					0.11
104.417	0.00	0.02	0.019	O					0.11
104.500	0.00	0.02	0.019	O					0.11
104.583	0.00	0.02	0.019	O					0.11
104.667	0.00	0.02	0.019	O					0.11
104.750	0.00	0.02	0.019	O					0.11
104.833	0.00	0.02	0.018	O					0.11
104.917	0.00	0.02	0.018	O					0.11
105.000	0.00	0.02	0.018	O					0.11
105.083	0.00	0.02	0.018	O					0.11
105.167	0.00	0.02	0.018	O					0.11
105.250	0.00	0.02	0.018	O					0.11
105.333	0.00	0.02	0.018	O					0.10
105.417	0.00	0.02	0.018	O					0.10
105.500	0.00	0.02	0.017	O					0.10
105.583	0.00	0.02	0.017	O					0.10
105.667	0.00	0.02	0.017	O					0.10
105.750	0.00	0.02	0.017	O					0.10
105.833	0.00	0.02	0.017	O					0.10
105.917	0.00	0.02	0.017	O					0.10
106.000	0.00	0.02	0.017	O					0.10
106.083	0.00	0.02	0.017	O					0.10
106.167	0.00	0.02	0.017	O					0.10
106.250	0.00	0.02	0.016	O					0.10
106.333	0.00	0.02	0.016	O					0.10
106.417	0.00	0.02	0.016	O					0.10

106.500	0.00	0.02	0.016	O					0.10
106.583	0.00	0.02	0.016	O					0.09
106.667	0.00	0.02	0.016	O					0.09
106.750	0.00	0.02	0.016	O					0.09
106.833	0.00	0.02	0.016	O					0.09
106.917	0.00	0.02	0.016	O					0.09
107.000	0.00	0.02	0.015	O					0.09
107.083	0.00	0.02	0.015	O					0.09
107.167	0.00	0.02	0.015	O					0.09
107.250	0.00	0.02	0.015	O					0.09
107.333	0.00	0.02	0.015	O					0.09
107.417	0.00	0.01	0.015	O					0.09
107.500	0.00	0.01	0.015	O					0.09
107.583	0.00	0.01	0.015	O					0.09
107.667	0.00	0.01	0.015	O					0.09
107.750	0.00	0.01	0.014	O					0.09
107.833	0.00	0.01	0.014	O					0.09
107.917	0.00	0.01	0.014	O					0.08
108.000	0.00	0.01	0.014	O					0.08
108.083	0.00	0.01	0.014	O					0.08
108.167	0.00	0.01	0.014	O					0.08
108.250	0.00	0.01	0.014	O					0.08
108.333	0.00	0.01	0.014	O					0.08
108.417	0.00	0.01	0.014	O					0.08
108.500	0.00	0.01	0.014	O					0.08
108.583	0.00	0.01	0.014	O					0.08
108.667	0.00	0.01	0.013	O					0.08
108.750	0.00	0.01	0.013	O					0.08
108.833	0.00	0.01	0.013	O					0.08
108.917	0.00	0.01	0.013	O					0.08
109.000	0.00	0.01	0.013	O					0.08
109.083	0.00	0.01	0.013	O					0.08
109.167	0.00	0.01	0.013	O					0.08
109.250	0.00	0.01	0.013	O					0.08
109.333	0.00	0.01	0.013	O					0.08
109.417	0.00	0.01	0.013	O					0.07
109.500	0.00	0.01	0.013	O					0.07
109.583	0.00	0.01	0.012	O					0.07
109.667	0.00	0.01	0.012	O					0.07
109.750	0.00	0.01	0.012	O					0.07
109.833	0.00	0.01	0.012	O					0.07
109.917	0.00	0.01	0.012	O					0.07
110.000	0.00	0.01	0.012	O					0.07
110.083	0.00	0.01	0.012	O					0.07
110.167	0.00	0.01	0.012	O					0.07
110.250	0.00	0.01	0.012	O					0.07
110.333	0.00	0.01	0.012	O					0.07
110.417	0.00	0.01	0.012	O					0.07
110.500	0.00	0.01	0.012	O					0.07
110.583	0.00	0.01	0.011	O					0.07
110.667	0.00	0.01	0.011	O					0.07
110.750	0.00	0.01	0.011	O					0.07
110.833	0.00	0.01	0.011	O					0.07
110.917	0.00	0.01	0.011	O					0.07

111.000	0.00	0.01	0.011	O	|	|	|	|	0.07
111.083	0.00	0.01	0.011	O	|	|	|	|	0.06
111.167	0.00	0.01	0.011	O	|	|	|	|	0.06
111.250	0.00	0.01	0.011	O	|	|	|	|	0.06
111.333	0.00	0.01	0.011	O	|	|	|	|	0.06
111.417	0.00	0.01	0.011	O	|	|	|	|	0.06
111.500	0.00	0.01	0.011	O	|	|	|	|	0.06
111.583	0.00	0.01	0.011	O	|	|	|	|	0.06
111.667	0.00	0.01	0.010	O	|	|	|	|	0.06
111.750	0.00	0.01	0.010	O	|	|	|	|	0.06
111.833	0.00	0.01	0.010	O	|	|	|	|	0.06
111.917	0.00	0.01	0.010	O	|	|	|	|	0.06
112.000	0.00	0.01	0.010	O	|	|	|	|	0.06
112.083	0.00	0.01	0.010	O	|	|	|	|	0.06
112.167	0.00	0.01	0.010	O	|	|	|	|	0.06
112.250	0.00	0.01	0.010	O	|	|	|	|	0.06
112.333	0.00	0.01	0.010	O	|	|	|	|	0.06
112.417	0.00	0.01	0.010	O	|	|	|	|	0.06
112.500	0.00	0.01	0.010	O	|	|	|	|	0.06
112.583	0.00	0.01	0.010	O	|	|	|	|	0.06
112.667	0.00	0.01	0.010	O	|	|	|	|	0.06
112.750	0.00	0.01	0.010	O	|	|	|	|	0.06
112.833	0.00	0.01	0.009	O	|	|	|	|	0.06
112.917	0.00	0.01	0.009	O	|	|	|	|	0.06
113.000	0.00	0.01	0.009	O	|	|	|	|	0.06
113.083	0.00	0.01	0.009	O	|	|	|	|	0.06
113.167	0.00	0.01	0.009	O	|	|	|	|	0.05
113.250	0.00	0.01	0.009	O	|	|	|	|	0.05
113.333	0.00	0.01	0.009	O	|	|	|	|	0.05
113.417	0.00	0.01	0.009	O	|	|	|	|	0.05
113.500	0.00	0.01	0.009	O	|	|	|	|	0.05
113.583	0.00	0.01	0.009	O	|	|	|	|	0.05
113.667	0.00	0.01	0.009	O	|	|	|	|	0.05
113.750	0.00	0.01	0.009	O	|	|	|	|	0.05
113.833	0.00	0.01	0.009	O	|	|	|	|	0.05
113.917	0.00	0.01	0.009	O	|	|	|	|	0.05
114.000	0.00	0.01	0.009	O	|	|	|	|	0.05
114.083	0.00	0.01	0.009	O	|	|	|	|	0.05
114.167	0.00	0.01	0.008	O	|	|	|	|	0.05
114.250	0.00	0.01	0.008	O	|	|	|	|	0.05
114.333	0.00	0.01	0.008	O	|	|	|	|	0.05
114.417	0.00	0.01	0.008	O	|	|	|	|	0.05
114.500	0.00	0.01	0.008	O	|	|	|	|	0.05
114.583	0.00	0.01	0.008	O	|	|	|	|	0.05
114.667	0.00	0.01	0.008	O	|	|	|	|	0.05
114.750	0.00	0.01	0.008	O	|	|	|	|	0.05
114.833	0.00	0.01	0.008	O	|	|	|	|	0.05
114.917	0.00	0.01	0.008	O	|	|	|	|	0.05
115.000	0.00	0.01	0.008	O	|	|	|	|	0.05
115.083	0.00	0.01	0.008	O	|	|	|	|	0.05
115.167	0.00	0.01	0.008	O	|	|	|	|	0.05
115.250	0.00	0.01	0.008	O	|	|	|	|	0.05
115.333	0.00	0.01	0.008	O	|	|	|	|	0.05
115.417	0.00	0.01	0.008	O	|	|	|	|	0.05

115.500	0.00	0.01	0.008	O	|	|	|	|	0.04
115.583	0.00	0.01	0.008	O	|	|	|	|	0.04
115.667	0.00	0.01	0.008	O	|	|	|	|	0.04
115.750	0.00	0.01	0.007	O	|	|	|	|	0.04
115.833	0.00	0.01	0.007	O	|	|	|	|	0.04
115.917	0.00	0.01	0.007	O	|	|	|	|	0.04
116.000	0.00	0.01	0.007	O	|	|	|	|	0.04
116.083	0.00	0.01	0.007	O	|	|	|	|	0.04
116.167	0.00	0.01	0.007	O	|	|	|	|	0.04
116.250	0.00	0.01	0.007	O	|	|	|	|	0.04
116.333	0.00	0.01	0.007	O	|	|	|	|	0.04
116.417	0.00	0.01	0.007	O	|	|	|	|	0.04
116.500	0.00	0.01	0.007	O	|	|	|	|	0.04
116.583	0.00	0.01	0.007	O	|	|	|	|	0.04
116.667	0.00	0.01	0.007	O	|	|	|	|	0.04
116.750	0.00	0.01	0.007	O	|	|	|	|	0.04
116.833	0.00	0.01	0.007	O	|	|	|	|	0.04
116.917	0.00	0.01	0.007	O	|	|	|	|	0.04
117.000	0.00	0.01	0.007	O	|	|	|	|	0.04
117.083	0.00	0.01	0.007	O	|	|	|	|	0.04
117.167	0.00	0.01	0.007	O	|	|	|	|	0.04
117.250	0.00	0.01	0.007	O	|	|	|	|	0.04
117.333	0.00	0.01	0.007	O	|	|	|	|	0.04
117.417	0.00	0.01	0.006	O	|	|	|	|	0.04
117.500	0.00	0.01	0.006	O	|	|	|	|	0.04
117.583	0.00	0.01	0.006	O	|	|	|	|	0.04
117.667	0.00	0.01	0.006	O	|	|	|	|	0.04
117.750	0.00	0.01	0.006	O	|	|	|	|	0.04
117.833	0.00	0.01	0.006	O	|	|	|	|	0.04
117.917	0.00	0.01	0.006	O	|	|	|	|	0.04
118.000	0.00	0.01	0.006	O	|	|	|	|	0.04
118.083	0.00	0.01	0.006	O	|	|	|	|	0.04
118.167	0.00	0.01	0.006	O	|	|	|	|	0.04
118.250	0.00	0.01	0.006	O	|	|	|	|	0.04
118.333	0.00	0.01	0.006	O	|	|	|	|	0.04
118.417	0.00	0.01	0.006	O	|	|	|	|	0.04
118.500	0.00	0.01	0.006	O	|	|	|	|	0.04
118.583	0.00	0.01	0.006	O	|	|	|	|	0.03
118.667	0.00	0.01	0.006	O	|	|	|	|	0.03
118.750	0.00	0.01	0.006	O	|	|	|	|	0.03
118.833	0.00	0.01	0.006	O	|	|	|	|	0.03
118.917	0.00	0.01	0.006	O	|	|	|	|	0.03
119.000	0.00	0.01	0.006	O	|	|	|	|	0.03
119.083	0.00	0.01	0.006	O	|	|	|	|	0.03
119.167	0.00	0.01	0.006	O	|	|	|	|	0.03
119.250	0.00	0.01	0.006	O	|	|	|	|	0.03
119.333	0.00	0.01	0.006	O	|	|	|	|	0.03
119.417	0.00	0.01	0.005	O	|	|	|	|	0.03
119.500	0.00	0.01	0.005	O	|	|	|	|	0.03
119.583	0.00	0.01	0.005	O	|	|	|	|	0.03
119.667	0.00	0.01	0.005	O	|	|	|	|	0.03
119.750	0.00	0.01	0.005	O	|	|	|	|	0.03
119.833	0.00	0.01	0.005	O	|	|	|	|	0.03
119.917	0.00	0.01	0.005	O	|	|	|	|	0.03

120.000	0.00	0.01	0.005	O	|	|	|	0.03
120.083	0.00	0.01	0.005	O	|	|	|	0.03
120.167	0.00	0.01	0.005	O	|	|	|	0.03
120.250	0.00	0.01	0.005	O	|	|	|	0.03
120.333	0.00	0.01	0.005	O	|	|	|	0.03
120.417	0.00	0.01	0.005	O	|	|	|	0.03
120.500	0.00	0.01	0.005	O	|	|	|	0.03
120.583	0.00	0.01	0.005	O	|	|	|	0.03
120.667	0.00	0.00	0.005	O	|	|	|	0.03
120.750	0.00	0.00	0.005	O	|	|	|	0.03
120.833	0.00	0.00	0.005	O	|	|	|	0.03
120.917	0.00	0.00	0.005	O	|	|	|	0.03
121.000	0.00	0.00	0.005	O	|	|	|	0.03
121.083	0.00	0.00	0.005	O	|	|	|	0.03
121.167	0.00	0.00	0.005	O	|	|	|	0.03
121.250	0.00	0.00	0.005	O	|	|	|	0.03
121.333	0.00	0.00	0.005	O	|	|	|	0.03
121.417	0.00	0.00	0.005	O	|	|	|	0.03
121.500	0.00	0.00	0.005	O	|	|	|	0.03
121.583	0.00	0.00	0.005	O	|	|	|	0.03
121.667	0.00	0.00	0.005	O	|	|	|	0.03
121.750	0.00	0.00	0.005	O	|	|	|	0.03
121.833	0.00	0.00	0.004	O	|	|	|	0.03
121.917	0.00	0.00	0.004	O	|	|	|	0.03
122.000	0.00	0.00	0.004	O	|	|	|	0.03
122.083	0.00	0.00	0.004	O	|	|	|	0.03
122.167	0.00	0.00	0.004	O	|	|	|	0.03
122.250	0.00	0.00	0.004	O	|	|	|	0.03
122.333	0.00	0.00	0.004	O	|	|	|	0.03
122.417	0.00	0.00	0.004	O	|	|	|	0.03
122.500	0.00	0.00	0.004	O	|	|	|	0.03
122.583	0.00	0.00	0.004	O	|	|	|	0.02
122.667	0.00	0.00	0.004	O	|	|	|	0.02
122.750	0.00	0.00	0.004	O	|	|	|	0.02
122.833	0.00	0.00	0.004	O	|	|	|	0.02
122.917	0.00	0.00	0.004	O	|	|	|	0.02
123.000	0.00	0.00	0.004	O	|	|	|	0.02
123.083	0.00	0.00	0.004	O	|	|	|	0.02
123.167	0.00	0.00	0.004	O	|	|	|	0.02
123.250	0.00	0.00	0.004	O	|	|	|	0.02
123.333	0.00	0.00	0.004	O	|	|	|	0.02
123.417	0.00	0.00	0.004	O	|	|	|	0.02
123.500	0.00	0.00	0.004	O	|	|	|	0.02
123.583	0.00	0.00	0.004	O	|	|	|	0.02
123.667	0.00	0.00	0.004	O	|	|	|	0.02
123.750	0.00	0.00	0.004	O	|	|	|	0.02
123.833	0.00	0.00	0.004	O	|	|	|	0.02
123.917	0.00	0.00	0.004	O	|	|	|	0.02
124.000	0.00	0.00	0.004	O	|	|	|	0.02
124.083	0.00	0.00	0.004	O	|	|	|	0.02
124.167	0.00	0.00	0.004	O	|	|	|	0.02
124.250	0.00	0.00	0.004	O	|	|	|	0.02
124.333	0.00	0.00	0.004	O	|	|	|	0.02
124.417	0.00	0.00	0.004	O	|	|	|	0.02

124.500	0.00	0.00	0.004	O					0.02
124.583	0.00	0.00	0.004	O					0.02
124.667	0.00	0.00	0.004	O					0.02
124.750	0.00	0.00	0.004	O					0.02
124.833	0.00	0.00	0.004	O					0.02
124.917	0.00	0.00	0.003	O					0.02
125.000	0.00	0.00	0.003	O					0.02
125.083	0.00	0.00	0.003	O					0.02
125.167	0.00	0.00	0.003	O					0.02
125.250	0.00	0.00	0.003	O					0.02
125.333	0.00	0.00	0.003	O					0.02
125.417	0.00	0.00	0.003	O					0.02
125.500	0.00	0.00	0.003	O					0.02
125.583	0.00	0.00	0.003	O					0.02
125.667	0.00	0.00	0.003	O					0.02
125.750	0.00	0.00	0.003	O					0.02
125.833	0.00	0.00	0.003	O					0.02
125.917	0.00	0.00	0.003	O					0.02
126.000	0.00	0.00	0.003	O					0.02
126.083	0.00	0.00	0.003	O					0.02
126.167	0.00	0.00	0.003	O					0.02
126.250	0.00	0.00	0.003	O					0.02
126.333	0.00	0.00	0.003	O					0.02
126.417	0.00	0.00	0.003	O					0.02
126.500	0.00	0.00	0.003	O					0.02
126.583	0.00	0.00	0.003	O					0.02
126.667	0.00	0.00	0.003	O					0.02
126.750	0.00	0.00	0.003	O					0.02
126.833	0.00	0.00	0.003	O					0.02
126.917	0.00	0.00	0.003	O					0.02
127.000	0.00	0.00	0.003	O					0.02
127.083	0.00	0.00	0.003	O					0.02
127.167	0.00	0.00	0.003	O					0.02
127.250	0.00	0.00	0.003	O					0.02
127.333	0.00	0.00	0.003	O					0.02
127.417	0.00	0.00	0.003	O					0.02
127.500	0.00	0.00	0.003	O					0.02
127.583	0.00	0.00	0.003	O					0.02
127.667	0.00	0.00	0.003	O					0.02
127.750	0.00	0.00	0.003	O					0.02
127.833	0.00	0.00	0.003	O					0.02
127.917	0.00	0.00	0.003	O					0.02
128.000	0.00	0.00	0.003	O					0.02
128.083	0.00	0.00	0.003	O					0.02
128.167	0.00	0.00	0.003	O					0.02
128.250	0.00	0.00	0.003	O					0.02
128.333	0.00	0.00	0.003	O					0.02
128.417	0.00	0.00	0.003	O					0.02
128.500	0.00	0.00	0.003	O					0.02
128.583	0.00	0.00	0.003	O					0.02
128.667	0.00	0.00	0.003	O					0.02
128.750	0.00	0.00	0.003	O					0.01
128.833	0.00	0.00	0.003	O					0.01
128.917	0.00	0.00	0.002	O					0.01

129.000	0.00	0.00	0.002	O					0.01
129.083	0.00	0.00	0.002	O					0.01
129.167	0.00	0.00	0.002	O					0.01
129.250	0.00	0.00	0.002	O					0.01
129.333	0.00	0.00	0.002	O					0.01
129.417	0.00	0.00	0.002	O					0.01
129.500	0.00	0.00	0.002	O					0.01
129.583	0.00	0.00	0.002	O					0.01
129.667	0.00	0.00	0.002	O					0.01
129.750	0.00	0.00	0.002	O					0.01
129.833	0.00	0.00	0.002	O					0.01
129.917	0.00	0.00	0.002	O					0.01
130.000	0.00	0.00	0.002	O					0.01
130.083	0.00	0.00	0.002	O					0.01
130.167	0.00	0.00	0.002	O					0.01
130.250	0.00	0.00	0.002	O					0.01
130.333	0.00	0.00	0.002	O					0.01
130.417	0.00	0.00	0.002	O					0.01
130.500	0.00	0.00	0.002	O					0.01
130.583	0.00	0.00	0.002	O					0.01
130.667	0.00	0.00	0.002	O					0.01
130.750	0.00	0.00	0.002	O					0.01
130.833	0.00	0.00	0.002	O					0.01
130.917	0.00	0.00	0.002	O					0.01
131.000	0.00	0.00	0.002	O					0.01
131.083	0.00	0.00	0.002	O					0.01
131.167	0.00	0.00	0.002	O					0.01
131.250	0.00	0.00	0.002	O					0.01
131.333	0.00	0.00	0.002	O					0.01
131.417	0.00	0.00	0.002	O					0.01
131.500	0.00	0.00	0.002	O					0.01
131.583	0.00	0.00	0.002	O					0.01
131.667	0.00	0.00	0.002	O					0.01
131.750	0.00	0.00	0.002	O					0.01
131.833	0.00	0.00	0.002	O					0.01
131.917	0.00	0.00	0.002	O					0.01
132.000	0.00	0.00	0.002	O					0.01
132.083	0.00	0.00	0.002	O					0.01
132.167	0.00	0.00	0.002	O					0.01
132.250	0.00	0.00	0.002	O					0.01
132.333	0.00	0.00	0.002	O					0.01
132.417	0.00	0.00	0.002	O					0.01
132.500	0.00	0.00	0.002	O					0.01
132.583	0.00	0.00	0.002	O					0.01
132.667	0.00	0.00	0.002	O					0.01
132.750	0.00	0.00	0.002	O					0.01
132.833	0.00	0.00	0.002	O					0.01
132.917	0.00	0.00	0.002	O					0.01
133.000	0.00	0.00	0.002	O					0.01
133.083	0.00	0.00	0.002	O					0.01
133.167	0.00	0.00	0.002	O					0.01
133.250	0.00	0.00	0.002	O					0.01
133.333	0.00	0.00	0.002	O					0.01
133.417	0.00	0.00	0.002	O					0.01

133.500	0.00	0.00	0.002	O					0.01
133.583	0.00	0.00	0.002	O					0.01
133.667	0.00	0.00	0.002	O					0.01
133.750	0.00	0.00	0.002	O					0.01
133.833	0.00	0.00	0.002	O					0.01
133.917	0.00	0.00	0.002	O					0.01
134.000	0.00	0.00	0.002	O					0.01
134.083	0.00	0.00	0.002	O					0.01
134.167	0.00	0.00	0.002	O					0.01
134.250	0.00	0.00	0.002	O					0.01
134.333	0.00	0.00	0.002	O					0.01
134.417	0.00	0.00	0.002	O					0.01
134.500	0.00	0.00	0.002	O					0.01
134.583	0.00	0.00	0.002	O					0.01
134.667	0.00	0.00	0.002	O					0.01
134.750	0.00	0.00	0.002	O					0.01
134.833	0.00	0.00	0.002	O					0.01
134.917	0.00	0.00	0.002	O					0.01
135.000	0.00	0.00	0.002	O					0.01
135.083	0.00	0.00	0.001	O					0.01
135.167	0.00	0.00	0.001	O					0.01
135.250	0.00	0.00	0.001	O					0.01
135.333	0.00	0.00	0.001	O					0.01
135.417	0.00	0.00	0.001	O					0.01
135.500	0.00	0.00	0.001	O					0.01
135.583	0.00	0.00	0.001	O					0.01
135.667	0.00	0.00	0.001	O					0.01
135.750	0.00	0.00	0.001	O					0.01
135.833	0.00	0.00	0.001	O					0.01
135.917	0.00	0.00	0.001	O					0.01
136.000	0.00	0.00	0.001	O					0.01
136.083	0.00	0.00	0.001	O					0.01
136.167	0.00	0.00	0.001	O					0.01
136.250	0.00	0.00	0.001	O					0.01
136.333	0.00	0.00	0.001	O					0.01
136.417	0.00	0.00	0.001	O					0.01
136.500	0.00	0.00	0.001	O					0.01
136.583	0.00	0.00	0.001	O					0.01
136.667	0.00	0.00	0.001	O					0.01
136.750	0.00	0.00	0.001	O					0.01
136.833	0.00	0.00	0.001	O					0.01
136.917	0.00	0.00	0.001	O					0.01
137.000	0.00	0.00	0.001	O					0.01
137.083	0.00	0.00	0.001	O					0.01
137.167	0.00	0.00	0.001	O					0.01
137.250	0.00	0.00	0.001	O					0.01
137.333	0.00	0.00	0.001	O					0.01
137.417	0.00	0.00	0.001	O					0.01
137.500	0.00	0.00	0.001	O					0.01
137.583	0.00	0.00	0.001	O					0.01
137.667	0.00	0.00	0.001	O					0.01
137.750	0.00	0.00	0.001	O					0.01
137.833	0.00	0.00	0.001	O					0.01
137.917	0.00	0.00	0.001	O					0.01

138.000	0.00	0.00	0.001	O	|	|	|	|	0.01
138.083	0.00	0.00	0.001	O	|	|	|	|	0.01
138.167	0.00	0.00	0.001	O	|	|	|	|	0.01
138.250	0.00	0.00	0.001	O	|	|	|	|	0.01
138.333	0.00	0.00	0.001	O	|	|	|	|	0.01
138.417	0.00	0.00	0.001	O	|	|	|	|	0.01
138.500	0.00	0.00	0.001	O	|	|	|	|	0.01
138.583	0.00	0.00	0.001	O	|	|	|	|	0.01
138.667	0.00	0.00	0.001	O	|	|	|	|	0.01
138.750	0.00	0.00	0.001	O	|	|	|	|	0.01
138.833	0.00	0.00	0.001	O	|	|	|	|	0.01
138.917	0.00	0.00	0.001	O	|	|	|	|	0.01
139.000	0.00	0.00	0.001	O	|	|	|	|	0.01
139.083	0.00	0.00	0.001	O	|	|	|	|	0.01
139.167	0.00	0.00	0.001	O	|	|	|	|	0.01
139.250	0.00	0.00	0.001	O	|	|	|	|	0.01
139.333	0.00	0.00	0.001	O	|	|	|	|	0.01
139.417	0.00	0.00	0.001	O	|	|	|	|	0.01
139.500	0.00	0.00	0.001	O	|	|	|	|	0.01
139.583	0.00	0.00	0.001	O	|	|	|	|	0.01
139.667	0.00	0.00	0.001	O	|	|	|	|	0.01
139.750	0.00	0.00	0.001	O	|	|	|	|	0.01
139.833	0.00	0.00	0.001	O	|	|	|	|	0.01
139.917	0.00	0.00	0.001	O	|	|	|	|	0.01
140.000	0.00	0.00	0.001	O	|	|	|	|	0.01

**********HYDROGRAPH DATA**********

Number of intervals = 1680
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.629 (CFS)
Total volume = 2.635 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

0.63 CFS IS LESS THAN ALLOWABLE 0.80 CFS

Appendix 8: Source Control

This section will be completed and addressed at the time of the final WQMP submittal

Pollutant Sources/Source Control Checklist

Appendix 9: O&M

This section will be completed and addressed at the time of the final WQMP submittal

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Appendix 10: Educational Materials

This section will be completed and addressed at the time of the final WQMP submittal

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

I-6 Preliminary Offsite Water Quality Management Plan

Santa Ana Region MS4 Permit Program

Template for
Low Impact Development:
Guidance and Standards for Transportation Projects

Veterans Industrial Park (VIP) 215
Offsite Improvements for Van Buren Blvd. and Western Way
Preliminary

Prepared for:

March Joint Powers Authority

14205 Meridian Parkway, Suite 140

Riverside, CA, 92518

9561-656-7000

Prepared by:

Albert A. Webb Associates

3788 McCray St.

Riverside, CA 92506

951-686-1070

Date: 08/22/2018

Van Buren Blvd. Off-Ramp and I-215, Riverside, CA

Project Certification

This report has been completed in compliance with the *Low Impact Development: Guidance and Standards for Transportation Projects*, prepared to comply with the Santa Ana Region MS_4 Permit requirements applicable to Transportation Projects. The signatory of this document attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions have been based. I find this report to be complete, current, and accurate:

Name: _____

Title: _____

Agency: _____

Date: _____

Section 1: Introduction

Overview

The federal Clean Water Act (CWA) establishes requirements for the discharge of urban runoff from Municipal Separate Storm Sewer Systems (MS4) under the National Pollutant Discharge Elimination System (NPDES) program. On January 29, 2010, the Santa Ana Regional Water Quality Control Board (RWQCB) issued Permit Order No. R8-2010-0033 ("MS4 Permit") to authorize the discharge of urban runoff from MS4 facilities in Riverside County within the Santa Ana Region MS4 Permit area.

The MS4 Permit requires development of a standard design and post-development Best Management Practices (BMP) guidance to guide application of Low Impact Development (LID) BMPs to the maximum extent practicable (MEP) on streets, roads or highways under the jurisdiction of the Permittees used for transportation of automobiles, trucks, motorcycles, and other vehicles. The Santa Ana Region MS4 Permit Program prepared the *Low Impact Development: Guidance and Standards for Transportation Projects* ("Guidance") to provide direction to Transportation Project owners and operators regarding how to address MS4 Permit requirements for public works Transportation Projects within their jurisdiction.

The LID-based BMP techniques contained within this document are based on information provided by a variety of sources, including the *Design Handbook for Low Impact Development Best Management Practices* prepared by the Riverside County Flood Control and Water Conservation District, Environmental Protection Agency's (USEPA) Municipal Handbook, *Managing Wet Weather with Green Infrastructure: Green Streets*, and the *Low Impact Development Manual for Southern California* prepared for the Southern California Stormwater Monitoring Coalition, in cooperation with the State Water Resources Control Board, by the Low Impact Development Center. This Guidance also provides links and references to other sources of information regarding the application of LID-based BMPs to Transportation Projects (Section 6). This referenced material should be used by the project owner/operator as appropriate to support the use of this template during the project design phase.

This template was prepared to provide a tool for project proponents to (1) determine the applicability of the Guidance to a proposed Transportation Project; (2) provide a process for evaluating the feasibility of using LID-based techniques in the proposed project; and (3) establish a template for documenting the project evaluation process and the decisions made regarding the feasibility to incorporate LID-based BMPs into the design of the project. Users should review the Guidance before applying this template to a proposed project.

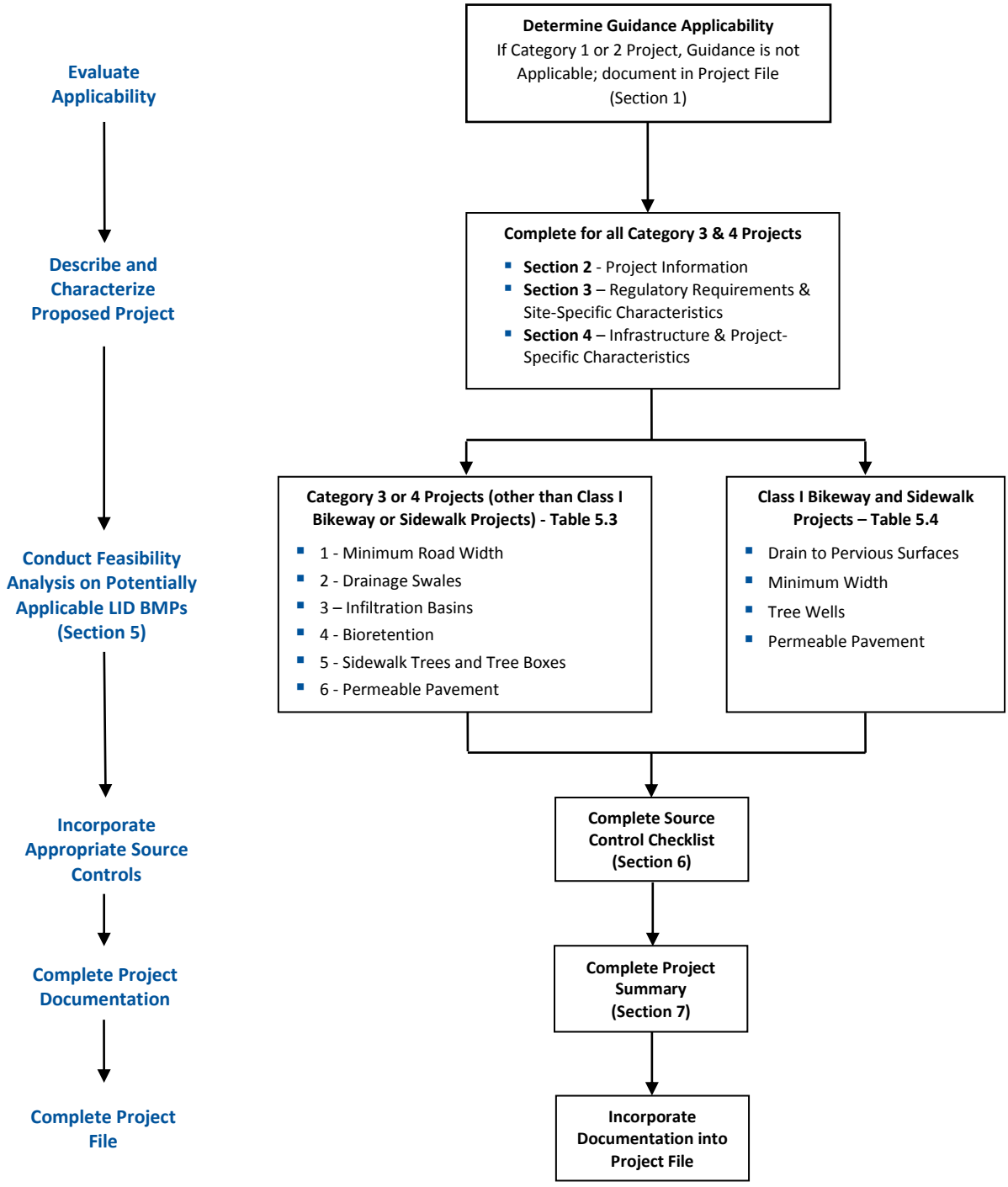
Guidance Applicability

Table 1.1 summarizes the applicability of the Guidance to Transportation Projects. If the Guidance applies to the proposed project, this template should be used to evaluate the feasibility of incorporating LID-based BMPs into the project design. Figure 1-1 illustrates the process for completing the template. Refer to this figure as needed to ensure that all steps are completed.

Table 1.1. Transportation Project Guidance Applicability

The Transportation Project Guidance applies to the following projects: • Public Transportation Projects in the area covered by the Santa Ana Region MS4 Permit, which involve the construction of new transportation surfaces or the improvement of existing transportation surfaces (including Class I Bikeways and sidewalks).
The Transportation Project Guidance does not apply to the following projects that are either exempt or covered by other MS4 Permit requirements: • Transportation Projects that have received CEQA approval by the effective date of this Guidance • Emergency Projects, as defined by this Guidance (see Section 2 of the Guidance) • Maintenance Projects, as defined by this Guidance (see Section 2 of the Guidance) • Dirt or gravel roads • Transportation Projects that are part of a private new development or significant redevelopment project and required to prepare a Water Quality Management Plan (WQMP) • Transportation Projects subject to other MS4 Permit requirements, e.g., California Transportation Department (Caltrans) oversight projects, cooperative projects with an adjoining County or an agency outside the jurisdiction covered by the Santa Ana Region MS4 Permit

Figure 1-1. Process to Complete Transportation Project BMP Template



Section 2: Project Information

The purpose of this section is to provide general project information and a description of the proposed project. The description should have sufficient detail to identify the project location, project boundaries and size, and, if classified as a Category 3 Project, the basis for the subcategorization (Capacity vs. Non-Capacity Roadway Improvement Project or non-adjoining Class I Bikeway or Sidewalk Project).

Table 2.1 - Project Characteristics

Project Name	Veteran Industrial Park 215 offsite street improvements for Van Buren Blvd.				
Project Owner/Operator (Agency)	March Joint Power Authority				
Project Contact Name:	Jeffrey Smith - Senior Planner				
Mailing Address:	14205 Meridian Parkway, Suite 140 Riverside, CA 92518	E-mail Address:	smith@marchjpa.com	Telephone:	951-656-7000

Project Category	Check the box for the applicable Project Category *(See Table 2-1 in Guidance* ☐ Category 3 – Existing Transportation Project ☒ Category 4 – New Transportation Project	
Check the appropriate boxes below, based on the Project Category checked above		
Category 3	☐ Roadway Capacity Improvement Project	☐ Lane additions ☐ Bridge project ☐ Grade separation project ☐ Other project type
	☐ Non-Capacity Roadway Improvement Project	☐ Shoulder improvements ☐ Parking lane improvements ☐ Turn pocket addition ☐ Signal project that adds a turn lane ☐ Horizontal alignment correction (improve sight distance) ☐ Grade separation project ☐ Passing lane addition ☐ Turn out addition ☐ Other project type
	☐ Class I Bikeway or sidewalk	☐ Improvement to existing Class I Bikeway or sidewalk ☐ Other project type
Category 4	☒ New road project ☐ New bridge project ☐ New Class I Bikeway or sidewalk project	
Project Schedule: Approximate start of construction - To be determined		

Table 2.2 - Project Description

General Project Description:
Project-related improvements include

1. The extension of Van Buren Boulevard between its existing terminus and the project site, constructed as a divided Modified Secondary Highway, with two northbound and two southbound lanes with a center turn median design. The Modified Secondary Highway street section includes a 97-foot right-of-way along the frontage with I-215 and along the site's southern edge, connecting with Western Way.
2. Western Way from end of above extension of Van Buren Blvd. up to Nandina Avenue constructed as 94' Secondary Highway.

Project Area (ft^2):	740,225 ft^2	Project Length (ft):	7,591 ft	Coordinates of the approximate center of the project: **See Right**	Latitude: 33°52'27.42" Longitude: -117°15'43.44"

For Category 3 & 4 projects, complete the information below.

Describe how the existing surface footprint will be modified, if applicable	The existing surface footprint will include stripping of the surficial vegetation including existing moderate to dense native grass and weed growth, trees and any organic soils.
Describe how the capacity of the existing transportation surface (if any) will be improved	Currently, there is no traffic through this area except for maintenance vehicles. The proposed road improvements will increase traffic and will have adequate capacity with 2 lanes on each side of the road centerline.
For a Class I Bikeway or sidewalk project, describe how the existing surface will be improved	N/A

Section 3: Regulatory Requirements & Site-Specific Chararacteristics

Describe the regulatory requirements and site-specific characteristics associated with the project site that can influence the selection of LID-based BMPs. Attach supporting information, as needed.

Table 3.1 – Regulatory Requirements & Site-Specific Characteristics

Regulatory Requirements	
Consult Local Implementation Plan(s) to document pollutants of concern based on impaired waters listings or TMDL implementation requirements.	Per the Riverside County stormwater & water conservation Tracking Tool (SWCT[2]) geodatabase, pollutants of concern for Hillwood VIP 215 project are pathogens, nutrients, polychlorinated biphenyls, and sediment toxicity.
Document any known CEQA conditions, Multi-Species Habitat Conservation Plan, California Fish & Game Code Section 1600, CWA Section 401, or CWA Section 404 requirements	Environmentally Sensitive Area within 200 feet (Fish and Wildlife Habitat/Species): None Environmentally Sensitive Area within 200 feet (CVMSHCP): None Environmentally Sensitive Area within 200 feet (WRMSHCP): Burrowing Owl Survey Required Area.
Site-Specific Characteristics	
Drainage Area (ft^2)	≈740,225 sf
Existing Site Impervious Area (ft^2)	≈57,388 sf
Expected Post-Project Impervious Area (ft^2)	≈568,577 sf
Hydrologic Soil Group* *Describe hydrologic soil group and associated infiltration characteristics, if known*	Project offsite soils groups – A, C. Per geotechnical investigation soils surrounding proposed project are considered relatively impermeable. See Appendix I for geotechnical report.
Expected Infiltration Characteristics *Describe known infiltration characteristics based on soil group or soil test data (attach if such data are available)*	Per geotechnical investigation report, the soils found in the site possess high densities and are weakly to moderately cemented. Therefore, these soils are considered relatively impermeable with respect to storm water infiltration. See Appendix I for geotechnical report.
Natural Sediment Load Characteristics *Describe local sediment characteristics that could impact selection or functionality of BMPs*	Sediment load impacts will be minimal and therefore have no impact in the selection of BMPs.
Depth to Groundwater *Determine depth to groundwater, if known (provide source of information*)	Per geotechnical investigation report, free water was encountered in several borings at depths ranging from 22 feet to 36 feet.

* See soils section of the Flood Control District's Hydrology Manual
http://floodcontrol.co.riverside.ca.us/downloads/planning/Hydrology%20Manual%20-%20Complete.pdf

Section 4: Infrastructure & Project-Specific Characteristics

Describe the existing infrastructure and project-specific characteristics associated with the project site that can influence the selection of LID-based BMPs. Attach supporting information, as needed; insert N/A for any element that is not applicable to the proposed project.

Table 4.1 - Infrastructure & Project-Specific Characteristics

Programmatic & Funding Restrictions	
Project Funding *Provide information regarding project funding*	Project Budget: TBD
	Funding Source: Unknown
	Are there any limitations or restrictions on the use of dedicated funds: ☐ Yes; if this box checked, explain limitations ☒ No
Programmatic Constraints *Identify any programmatic or regulatory constraints, e.g., Americans with Disabilities Act; need for emergency access, etc.*	Does the project require compliance with other programmatic, regulatory, or code requirements that may affect application of BMPs? ☐ Yes; if this box checked, explain limitations ☒ No
Impaired Waters & TMDL Requirements	
Regulatory Constraints *Describe applicable BMP specific requirements to address impaired water related concerns*	Identify the MS4 Local Implementation Plan(s) consulted: County of Riverside LIP; Order No. R8-2010-0033 Does the applicable LIP(s) identify any BMP requirements that need to be implemented in the project area: ☐ Yes; describe the BMP requirements and how they have been addressed in the project design: ☒ No: Project does not contain specific BMP reference above and beyond what is required herein.
Right-of-Way (ROW)	
ROW Constraints *Describe potential ROW constraints to BMP implementation*	Acquisition of additional ROW for LID BMP is limited due to the project proximity to Interstate 215 ultimate build out plans.
Drainage Connectivity	

Connectivity Constraints *Based on drainage features of the project site, describe potential constraints to BMP implementation*	N/A

Table 4.1 - Infrastructure & Project-Specific Characteristics

Utilities	
Utility Constraints *Identify any utility-related constraints*	Does the project have any utility constraints that that may affect application of BMPs? ☐ Yes; if this box checked, explain constraints ☒ No
Resource Availability	
Irrigation Water *Describe availability of irrigation water to support BMPs that require establishment of landscaping*	A potable water line will be installed as part of the street improvements plans to provide irrigation to support BMPs.
Power *Describe availability of power to support use of an irrigation system*	Power lines will be installed as part of the project that will provide support to the irrigation system.
Estimated Road Use	
Vehicle Load *Describe the expected vehicle loads, e.g., H-20 truck loads, that will use the transportation surface after project completion*	H-20 trucks are expected to use the transportation surface upon project completion.
Maximum Allowable Speed (MAS) *Describe expected speed of vehicles on completed transportation surface; if variable, provide the MAS for different project elements*	The maximum allowable speed anticipated on Van Buren Boulevard is 50 MPH, and on Western Avenue is 40 MPH.
Roadside Parking Requirements *Describe any minimum requirements associated with design of roadside parking areas*	There are presently no off-street parking area requirements.
Capacity Design (Average Daily Traffic, ADT). Is the ADT ≥ 25,000?	☐ Yes ☒ No; ADT is determined to be less than 25,000.

Section 5: BMP Feasibility Analysis

Section 5.1 - Overview

Projects categorized as a Category 3 or Category 4 shall incorporate the following site design BMP principles to the maximum extent feasible:

- Conservation of natural areas to the extent feasible
- Minimization of the impervious footprint
- Minimization of disturbances to natural drainage
- Design and construction of pervious areas to receive runoff from impervious areas
- Use of landscaping that minimizes irrigation and runoff, promotes surface infiltration, and minimizes the use of pesticides and fertilizers

The extent to which these design principles may be incorporated into a project through the use of BMP techniques depends on the project type and the project-specific feasibility analysis. This section provides a stepwise approach for evaluating the feasibility to incorporate LID-based BMPs into a proposed project. Table 5.1 identifies the BMPs required for evaluation in relation to the project category or type. Based on the box checked the project reviewer is directed to the appropriate table for subsequent analyses. Table 5.2 provides sources for BMP planning and design information that may be considered for use in Transportation Projects. Table 5.3 provides a checklist for LID BMP feasibility analysis for Category 3 or 4 projects, and Table 5.4 provides a similar checklist applicable to Class I Bikeway or Sidewalk Projects analysis.

Section 5.2 – BMP References

To support completion of the feasibility analyses for each LID-based BMP in Table 5.3, Table 5.2 provides sources for BMP design information that may be considered for use in Transportation Projects. These information sources are intended to guide decision-making with regards to making feasibility determinations about the efficacy of incorporating LID-based BMPs in the project design. Additional general information regarding the use of LID-based BMPs in Transportation Projects may be found in Section 6.C of the Guidance.

The resource information provided in Table 5.2 does not represent an exhaustive list of source material regarding LIP-based BMPs; in fact, new information regarding how to design LID-based BMPs is regularly published. In addition, this information is not to be used as a substitute for development of engineering designs appropriate to the project site.

Table 5.1 - LID BMP Evaluation Requirements

Check the appropriate box. The LID BMPs listed within each category must be included in the feasibility analysis

☒ **Category 3 or 4 (other than a Class I Bikeway or sidewalk project)**	☐ **Class I Bikeway or Sidewalk Project**
▪ 1 - Minimum Road Width ▪ 2 - Drainage Swales ▪ 3 – Infiltration Basins ▪ 4 - Bioretention ▪ 5 - Sidewalk Trees and Tree Boxes ▪ 6 - Permeable Pavement	▪ Drain to Pervious Surfaces ▪ Minimum Width ▪ Use of Tree Wells ▪ Permeable Pavement

- If the Category 3 or 4 box was checked above, complete the feasibility analysis for each of the LID BMPs in Table 5.3
- If the Class I Bikeway or Sidewalk project box was checked, complete Table 5.4

Table 5.2 – BMP Design Information

LID-based BMP Information Source	Minimum Street Width	Drainage Swales	Infiltration Basins	Bioretention	Sidewalk Trees & Tree Boxes	Permeable Pavement
Riverside County Flood Control and Water Conservation District Design Handbook for Low Impact Development Management Practices http://rcflood.org/NPDES/LIDBMP.aspx	--	--	Section 3.1	Section 3.5	Section 3.5, p. 5[1]	Section 3.3
Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies http://www.casqa.org/LID/SoCalLID/tabid/218/Default.aspx	--	pp. 137-138	--	pp. 68-84	p. 71[1]	pp. 83-113
U. S. EPA Municipal Handbook: Green Streets, Managing Wet Weather with Green Infrastructure[2] http://water.epa.gov/infrastructure/greeninfrastructure/upload/gi_munichandbook_green_streets.pdf	pp. 2-4	--	--	--	--	--
County of San Diego, Low Impact Development Handbook: Stormwater Management Strategies http://www.sdcounty.ca.gov/dplu/docs/LID-Handbook.pdf (General Information) http://www.sdcounty.ca.gov/dplu/docs/LID-Appendices.pdf (Fact Sheets)	Fact Sheet 14, 15	--	--	Fact Sheets 15, 19	--	pp. 46-51, Fact Sheets 8, 9, 10
County of Los Angeles Low Impact Development Standards Manual. January 2009. http://dpw.lacounty.gov/wmd/LA_County_LID_Manual.pdf	--	--	--	--	pp. 49-52[1]	pp. 53-57
City of Santa Barbara Storm Water BMP Guidance Manual http://www.santabarbaraca.gov/Resident/Community/Creeks/Storm_Water_Management_Program.htm	--	Section 6.6.2	--	Section 6.6.1	Section 6.9.2[1]	Section 6.8
Caltrans Treatment Control BMP Technology Report http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment_BMP_Technology_Rprt.pdf	--	p. D-5	--	pp. B-11 – B-12	pp. B-7 – B-10	--
Evaluation of Best Management Practices for Highway Runoff Control: *Low Impact Development Design Manual for Highway Runoff Control* http://www.coralreef.gov/transportation/evalbmp.pdf	--	Section 14	--	Section 5	--	Section 10

[1] Information focuses on design of planter boxes

[2] Handbook provides information on all LID types except Infiltration Basins, but information is general in nature

Table 5.3 – LID BMP Feasibility Analysis 1 – Minimum Road Widths	
1.a - Does the project need to meet jurisdictional code or General Plan requirements for minimum road widths?	☒ Yes; if checked, describe requirements March JPA General plans for minimum road width are implemented. ☐ No
1.b – Based on the findings of 1.a., determine if this BMP can be applied to the project. If applicable, describe how it was incorporated into the project design.	☒ Applicable, describe design features incorporating this BMP; include in Table 7.1 ☐ Not Applicable, describe basis for decision (e.g., project requirements, traffic or pedestrian safety concerns)

Table 5.3 – LID BMP Feasibility Analysis **2 – Drainage Swales**	
2.a – Are there any programmatic constraints that prevent the use of this BMP, *e.g., Americans with Disabilities Act; need for emergency access, funding restrictions, etc.? See Section 3.b of the Guidance.*	☐ Yes; if checked, provide basis for finding and STOP; this BMP is infeasible ☒ No; BMP is potentially feasible, continue to 2.b
2.b - Considering grade and need for drainage connectivity, is there sufficient ROW for proper swale installation?	☐ No; if checked, provide basis for finding ☒ Yes; There is adequate ROW to install properly sized swales.
2.c - Can drainage swales be sized large enough to capture site run-on and redirect it into the drainage system?	☐ No; if checked, provide basis for finding . ☒ Yes
2.d - Are existing soil characteristics sufficient to support infiltration such that nuisance or vector conditions are not created by any ponded water that may occur?	☒ No; if checked, provide basis for finding Appendix I - Infiltration test results ☐ Yes
• If "No" is checked for 2.b, 2.c, or 2.d, then STOP - this BMP is infeasible; attach appropriate documentation support as needed • If "Yes" is checked for 2.b, 2.c, and 2.d, then this BMP is potentially feasible, continue on to 2.e and 2.f	
2.e - Are irrigation water and power available to support vegetation in swale during dry periods?	☐ No; if checked, provide basis for finding ☒ Yes
2.f - If irrigation water and power are not available, can the site support native vegetation that does not require irrigation?	☐ No; if checked, provide basis for finding ☒ Yes
• If "No" is checked for 2.e and 2.f, this BMP is infeasible • If "Yes" is checked for 2.e or 2.f, then this BMP is potentially feasible; continue to 2.g	
2.g – Are there any special maintenance, equipment, or experience requirements associated with the implementation of this BMP?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☒ No
2.h – If this BMP is implemented, will there be any one-time capital costs incurred, e.g., for new equipment required to maintain the BMP, that impacts project funding?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☒ No
2.i – Is there long-term funding available to maintain this BMP?	☒ Yes ☐ No
• If any of the findings from 2.g, 2.h or 2.i prevent the use of this BMP, then this BMP is infeasible; attach appropriate documentation as needed • If the findings from 2.g., 2.h, and 2.i do not prevent implementation of this BMP, then the BMP is feasible; incorporate into Table 7.1	

Table 5.3 – LID BMP Feasibility Analysis
3 – Infiltration Basins

3.a – Are there any programmatic constraints that prevent the use of this BMP, *e.g., Americans with Disabilities Act; need for emergency access, funding restrictions, etc.? See Section 3.b of the Guidance.*	☐ Yes; if checked, provide basis for finding and STOP; this BMP is infeasible ☒ No; BMP is potentially feasible, continue to 3.b
3.b - Do appropriate soil conditions exist at the project site to allow effective infiltration consistent with a drawdown period, not to exceed 72 hours?	☒ No; if checked, provide basis for finding Per geotechnical investigation, the soils surrounding the project are considered relatively impermeable with respect to storm water infiltration. See Appendix I for geotechnical report. ☐ Yes
3.c - Is there at least 10 feet separation between the planned basin invert and the measured groundwater elevation?	☐ No; if checked, provide basis for finding ☒ Yes
3.d- Is there at least 100 feet separation from the proposed basin(s) and any known water supply wells?	☐ No; if checked, provide basis for finding ☒ Yes
3.e - Is the underlying soil and/or groundwater free from any known contamination?	☐ No; if checked, provide basis for finding ☒ Yes
3.f - Is there sufficient space to size or place an infiltration basin that: • Has slopes that are no steeper than 4:1, and • Is located at least 100 feet from bridge structures?	☒ No; if checked, provide basis for finding There is limited ROW that does not support the minimum requirement of an infiltration basin. ☐ Yes
3.g - For a project area that has high vehicular traffic (25,000 or more average daily traffic), can the planned infiltration basin meet the MS4 Permit's pretreatment of runoff requirements?	☒ No; if checked, provide basis for finding Project is not expected to have high vehicular traffic. ☐ Yes
3.h - Can an infiltration basin be incorporated into the site plan in a manner that does not create traffic or pedestrian safety concerns?	☒ No; if checked, provide basis for finding ☐ Yes
3.i - Does inclusion of an infiltration basin detract from the aesthetics of the roadway or project area that cannot be mitigated?	☐ No; if checked, provide basis for finding ☒ Yes
• If "No" is checked for any of the above questions (3.b – 3.i), this BMP is infeasible • If "Yes" is checked for all of the above (3.b - 3.i), then this BMP is potentially feasible; continue to 3.j	
3.j – Are there any special maintenance, equipment, or experience requirements associated with the implementation of this BMP?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☐ No
3.k – If this BMP is implemented, will there be any one-time capital costs incurred, e.g., for new equipment required to maintain the BMP, that impacts project funding?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☐ No
3.l – Is there long-term funding available to maintain this BMP?	☐ Yes ☐ No
• If any of the findings from 3.j, 3.k or 3.l prevent the use of this BMP, then this BMP is infeasible; attach appropriate documentation as needed • If the findings from 3.j., 3.k, and 3.l do not prevent implementation of this BMP, then the BMP is feasible; incorporate into Table 7.1	

Table 5.3 – LID BMP Feasibility Analysis
4 – Bioretention

4.a – Are there any programmatic constraints that prevent the use of this BMP, *e.g., Americans with Disabilities Act; need for emergency access, funding restrictions, etc.? See Section 3.b of the Guidance.*	☐ Yes; if checked, provide basis for finding and STOP; this BMP is infeasible ☒ No; BMP is potentially feasible, continue to 4.b
4.b - Is there sufficient ROW to consider curb extensions?	☒ No; if checked, provide basis for finding There not enough ROW to consider curb extensions. It is infeasible to acquire additional ROW to implement this BMP due to the projects proximity to interstate 215 ultimate build out plans. ☐ Yes
4.c - Is there sufficient ROW to consider sidewalk planters?	☐ No; if checked, provide basis for finding ☒ Yes
4.d – Is there sufficient space to consider using the road median for bioretention?	☐ No; if checked, provide basis for finding ☒ Yes
• If "No" is checked for 4.b, 4.c and 4.d, then STOP - this BMP is infeasible; attach appropriate documentation support as needed • If "Yes" is checked for 4.b, 4.c or 4.d, then this BMP is potentially feasible, continue on to 4.e	
4.e – Can the site be designed so that median, curb extensions or sidewalk planters tie into the existing drainage at the project site?	☐ No; if checked, provide basis for finding ☒ Yes
• If "No" is checked for 4.e, then STOP - this BMP is infeasible; attach appropriate documentation support as needed • If "Yes" is checked for 4.e, then this BMP is potentially feasible, continue on to 4.f and 4.g	
4.f - Are irrigation water and power available to support bioretention area or sidewalk planters?	☐ No; if checked, provide basis for finding ☒ Yes
4.g - If irrigation water and power are not available, can the site support native vegetation that does not require irrigation?	☐ No; if checked, provide basis for finding ☒ Yes
• If "No" is checked for 4.f and 4.g, then STOP - this BMP is infeasible • If "Yes" is checked for 4.f or 4.g, then this BMP is potentially feasible; continue on to 4.h	
4.h – Based on anticipated traffic capacity and MAS applicable to the project site, are there any traffic or pedestrian safety concerns that prevent application of this BMP?	☐ Yes; if checked, provide basis for finding ☒ No
• If "Yes" is checked for 4.h this BMP is infeasible • If "No" is checked for 4.h, then this BMP is potentially feasible; continue to 4.i.	
4.i – Are there any special maintenance, equipment, or experience requirements associated with the implementation of this BMP?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☒ No
4.j – If this BMP is implemented, will there be any one-time capital costs incurred, e.g., for new equipment required to maintain the BMP, that impacts project funding?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☒ No
4.j – Is there long-term funding available to maintain this BMP?	☒ Yes ☐ No
• If any of the findings from 4.i, 4.j or 4.k prevent the use of this BMP, then this BMP is infeasible; attach appropriate documentation as needed • If the findings from 4.i, 4.j, and 4.k do not prevent implementation of this BMP, then the BMP is feasible; incorporate into Table 7.1	

Table 5.3 – LID BMP Feasibility Analysis
5 – Sidewalk Trees and Tree Boxes

5.a – Are there any or programmatic constraints that prevent the use of this BMP, *e.g., Americans with Disabilities Act; need for emergency access, funding restrictions, etc.? See Section 3.b of the Guidance.*	☐ Yes; if checked, provide basis for finding and STOP; this BMP is infeasible ☒ No; BMP is potentially feasible, continue to 5.b
5.b - Is there sufficient ROW to incorporate sidewalk trees or tree boxes into the project site?	☐ No; if checked, provide basis for finding ☒ Yes
• If "No" is checked for 5.b, then STOP - this BMP is infeasible; attach appropriate documentation support as needed • If "Yes" is checked for 5.b, then this BMP is potentially feasible, continue on to 5.c and 5.d	
5.c - Are irrigation water and power available to support vegetation in the bioretention area or sidewalk planters?	☐ No; if checked, provide basis for finding ☒ Yes
5.d - If irrigation water and power are not available, can the site support native vegetation that does not require irrigation?	☐ No; if checked, provide basis for finding ☒ Yes
• If "No" is checked for 5.c and 5.d, then STOP - this BMP is infeasible • If "Yes" is checked for 5.c or 5.d, then this BMP is potentially feasible; continue on to 5.e	
5.e – Based on anticipated traffic capacity and MAS applicable to the project site, are there any traffic or pedestrian safety concerns that prevent application of this BMP?	☐ Yes; if checked, provide basis for finding ☒ No
• If "Yes" is checked for 5.e this BMP is infeasible • If "No" is checked for 5.e, then this BMP is potentially feasible; continue to 5.f	
5.f – Are there any special maintenance, equipment, or experience requirements associated with the implementation of this BMP?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☒ No
5.g – If this BMP is implemented, will there be any one-time capital costs incurred, e.g., for new equipment required to maintain the BMP, that impacts project funding?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☒ No
5.h – Is there long-term funding available to maintain this BMP?	☒ Yes ☐ No
• If any of the findings from 5.f, 5.g or 5.h prevent the use of this BMP, then this BMP is infeasible; attach appropriate documentation as needed • If the findings from 5.f, 5.g and 5.h do not prevent implementation of this BMP, then the BMP is feasible; incorporate into Table 7.1	

Table 5.3 – LID BMP Feasibility Analysis
6 – Permeable Pavement

6.a – Are there any or programmatic constraints that prevent the use of this BMP, *e.g., Americans with Disabilities Act; need for emergency access, funding restrictions, etc.? See Section 3.b of the Guidance.*	☒ Yes; if checked, provide basis for finding; STOP, this BMP is infeasible Funding for this project does not include any parking or parking lane and no sidewalks on the south side of the road, therefore, this BMP is not feasible to implement. ☐ No; BMP is potentially feasible, continue to 6.b
6.b - Does the planned road project include any of the listed types of impervious surfaces (check all that apply)?	☐ Roadside parking/parking lane ☐ Driveways ☐ Sidewalks, walkways ☐ None of the above
• If "none of the above" is checked in 6.b, then STOP – BMP is infeasible • If any box other than "none of the above" is checked, BMP is potentially feasible; continue to 6.c	
6.c – Will any of the transportation surfaces checked in 6.b be subject to high traffic volume or heavy traffic loads that prevent the use of permeable pavement?	☐ Yes; if checked, provide basis for finding ☐ No
6.d – Do the underlying soils at the project site provide adequate infiltration capacity for use of this BMP while not causing structural concerns?	☐ No; if checked, provide basis for finding ☐ Yes
• If "Yes" is checked for 6.c or "No" is checked for 6.d, then STOP - this BMP is infeasible; attach appropriate documentation support as needed • If "No" is checked for 6.c and "Yes" is checked for 6.d, then this BMP is potentially feasible for all impervious surface types checked in 6.b; continue to 6.e • If "Yes" is checked for 6.c and 6.d and "sidewalks, walkways" was checked in 6.b, then this BMP is potentially feasible for sidewalk or walkway elements of the project; continue to 6.e	
6.e – Are there any special maintenance, equipment, or experience requirements associated with the implementation of this BMP?	☐ No; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☐ Yes
6.f – Will the BMP maintain an adequate service life (at least 5 years) such that the BMP is economically feasible?	☐ No; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☐ Yes
6.g – If this BMP is implemented, will there be any one-time capital costs incurred, e.g., for new equipment required to maintain the BMP, that impacts project funding?	☐ Yes; if checked, provide basis for finding and determine whether the findings prevent implementation of this BMP ☐ No
6.h – Is there long-term funding available to maintain this BMP?	☐ Yes ☐ No
• If any of the findings from 6.e, 6.f, 6.g or 6.h prevent the use of this BMP, then this BMP is infeasible; attach appropriate documentation as needed • If the findings from 6.e, 6.f, 6.g and 6.h do not prevent implementation of this BMP, then the BMP is feasible; incorporate into Table 7.1	

Table 5.4 – LID BMP Feasibility Analysis – Class I Bikeway and Sidewalks

1 - Has the Class I Bikeway or sidewalk been designed to sheet-flow runoff onto adjacent permeable areas in a manner that will maximize opportunities for infiltration and filtration, while not channelizing or causing erosion?	☐ Yes; if checked, provide basis for finding, incorporate BMP into Table 7.1 ☐ No; if checked, provide basis for finding; continue on to Question 2.
2 - Has the Class I Bikeway or sidewalk been designed using the minimum width possible, given expected usage and considering public safety?	☐ Yes; if checked, provide basis for finding; incorporate BMP into Table 7.1; continue on to Questions 3 and 4. ☐ No; if checked, provide basis for finding; continue on to Questions 3 and 4.
3 - If trees are incorporated into the design of the Bikeway or sidewalk, have tree boxes been used?	☐ Yes; if checked, provide basis for finding; incorporate BMP into Table 7.1 ☐ No; if checked, provide basis for finding
4 - Do the underlying soils at the project site provide adequate infiltration capacity for use of some type of permeable pavement?	☐ No; if checked, BMP is infeasible; provide basis for finding ☐ Yes; if checked, continue on to Question 5
5 – Are there any project funding or programmatic constraints that prevent the use of permeable pavement in the project design, *e.g., Americans with Disabilities Act; need for emergency access, funding restrictions, etc.*?	☐ Yes; if checked, BMP is infeasible; provide basis for finding ☐ No; if checked, continue on to Question 6
6 – Are there any maintenance requirements, including long-term funding, that prevent the use of permeable pavement in the project design?	☐ Yes; if checked, BMP is infeasible; provide basis for finding ☐ No; if checked, include permeable pavement in the project design and incorporate the BMP into Table 7.1

Section 6: Source Control BMPs

Section 6 identifies source control BMPs potentially applicable to the proposed project. If this is strictly a road project, then only Part 1 needs to be filled out. Part 2 needs to be filled out if the road project includes bike path or sidewalk features adjoining or non-adjoining the road surface, or if the proposed project is only a Class I Bikeway or sidewalk project. The project reviewer should evaluate the applicability of each source control BMP and identify the agency responsible for implementing the BMPs once the project is constructed.

Table 6.1 - Source Control BMPs

Source Control BMP	Check One		If not Included, Provide Basis	If Included, Agency Responsible for Implementation
	Included	Not Included		
Part 1: Category 3 or 4 Projects (other than Class I Bikeway or sidewalk projects)				
Irrigation System and Landscape Maintenance	☒	☐		March JPA – Van Buren Blvd.
Sweeping of Transportation Surfaces adjoining curb and gutter	☒	☐		March JPA – Van Buren Blvd.
Drainage Facility Inspection and Maintenance	☒	☐		City of Perris – Western Way March JPA – Van Buren Blvd.
MS4 Stenciling and Signage	☒	☐		March JPA – Van Buren Blvd.
Landscape and Irrigation System Design	☒	☐		City of Perris – Western Way March JPA – Van Buren Blvd.
Protect Slopes and Channels	☒	☐		March JPA – Van Buren Blvd.
Maintain Fossil Filters	☒	☐		March JPA – Van Buren Blvd.
Part 2: Class I Bikeway and Sidewalk Projects				
Public Education Program	☐	☐		
Use of Signage	☐	☐		
Installation and Maintenance of Trash Bins and Pet Waste Collection Bags	☐	☐		

Section 7: Project Summary

Table 7.1 summarizes and documents (a) applicability and use of LID-based BMPs in the project design; (b) applicable source control BMPs, and (c) known regulatory requirements that impacted the project design. Fill out the information relevant to the project type and provide supporting information where needed. Continue to Section 8 on the following page for the steps to follow for applicable projects to appropriately size proposed BMP(s).

Table 7.1 – Project Summary (Category 3 & 4 Projects)

<table>
<tr><td rowspan="6">☒ Category 3 or Category 4 Project (other than Class I Bikeway or sidewalk projects)

Summarize the LID BMPs incorporated into the project design (based on the findings of the Table 5.3 - LID BMP Feasibility Analysis). For each LID BMP checked:
▪ Describe briefly how the LID BMP was incorporated; and
▪ Provide references to attachments or design plans (e.g., sheet numbers) where needed to support description</td><td colspan="2">☒ Minimum Road Width
Project proposes to construct extension of Van Buren Boulevard in compliance with March JPA General Plans for minimum road width.</td></tr>
<tr><td>☒ Drainage Swales
Vegetated drainage swales (bio-swales) and curb cut openings have been proposed at several locations of the project. See street improvement plans for locations of this BMP.</td><td>Maintenance Responsibility:
March JPA</td></tr>
<tr><td>☐ Infiltration Basins
Per geotechnical investigation, soils surrounding the project are considered relatively impermeable.</td><td>Maintenance Responsibility:</td></tr>
<tr><td>☐ Bioretention
Bio-retention BMP was not implemented due to the excessive geometry required for each location. This BMP is not acceptable from both a cost and aesthetic point of view.</td><td>Maintenance Responsibility:</td></tr>
<tr><td>☐ Sidewalk Trees and Tree Boxes
Sidewalk and tree boxes were not implemented due to high cost. Bio-swales were used as an alternative.</td><td>Maintenance Responsibility:</td></tr>
<tr><td>☐ Permeable Pavement
Not feasible.</td><td>Maintenance Responsibility:</td></tr>
<tr><td rowspan="4">☐ Class 1 Bikeway and Sidewalk Projects

Summarize the LID BMPs incorporated into the project design (based on the Table 5.4 - LID BMP Feasibility Analysis). For each BMP checked:
▪ Describe briefly how the LID BMP was incorporated; and
▪ Provide references to attachments or design plans (e.g., sheet numbers) as needed to support description</td><td colspan="2">☐ Drain to Pervious Surfaces</td></tr>
<tr><td colspan="2">☐ Minimum Width</td></tr>
<tr><td>☐ Use of Tree Wells</td><td>Maintenance Responsibility:</td></tr>
<tr><td>☐ Permeable Pavement</td><td>Maintenance Responsibility:</td></tr>
<tr><td>Regulatory Requirements
Document design elements that address any known regulatory requirements (see Table 3.1); if none, check the N/A box.</td><td colspan="2">☐ Design elements affected by regulatory requirements
Describe:

☒ N/A</td></tr>
<tr><td>Source Control BMPs
Summarize the applicable source controls and the agency responsible for implementation</td><td colspan="2">See table 6.1.</td></tr>
</table>

Table 7.1 – Project Summary (Category 3 & 4 Projects)	
Documentation List all attachments that support this project summary	See below for list of appendices

Appendix A: Water Quality BMP Plan

Appendix B: Summary of Calculations: Bio-Swale Sizing

Appendix C: Swale Sizing Calculations/Design

Appendix D: Hydraulic Results: Bio-Swale Calculations

Appendix E: Q_{BMP} Calculations

Appendix F: Riverside County of Transportation Department: Bio-Swale Standard B-001

Appendix G: Fossil Filter

Appendix H: Drainage Swale Design Guidance

Appendix I: Infiltration Non-Feasibility Letter

Section 8: BMP Sizing for Applicable Green Streets Projects

*NOTE: **All** documentation and analyses used in this section shall be provided in Appendix A, Project BMP Sizing Documentation.*

The following steps are used to size previously selected BMPs (e.g. LID and Treatment Control) for **Category 3 and 4** projects:

1. Delineate drainage areas tributary to proposed BMP locations and compute imperviousness.

2. Using the information provided in Table 5.2 above, look up the recommended sizing method for the BMP selected in each drainage area and calculate target sizing criteria (e.g., Design Capture Volume).

3. Using the information provided in Table 5.2 above, appropriately design your BMP(s) per the provided guidance links.

4. Attempt to provide the calculated sizing criteria for the selected BMPs.

5. If sizing criteria cannot be achieved, document the constraints that override the application of BMPs, and provide the largest portion of the sizing criteria that can be reasonably provided given constraints.

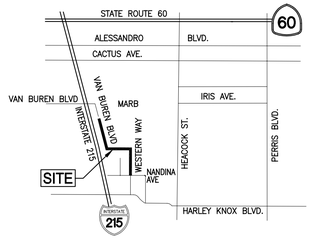
If BMPs cannot be sized to provide the calculated volume for the tributary area, it is still essential to design the BMP inlet, energy dissipation, and overflow capacity for the full tributary area to ensure that flooding and scour is avoided. It is strongly recommended that BMPs which are designed to less than their target design volume be designed to bypass peak flows.

For those **Category 4** projects that cannot meet the sizing criteria, notification to the Santa Ana Regional Water Quality Control Board – Inland Stormwater Unit is required. Notification must include a cover letter justifying why your **Category 4** project cannot meet the sizing criteria and needs to include the feasibility analysis used to reach that conclusion. A copy of this notification must also be included in Appendix A, below.

Appendix A: Water Quality BMP Plan

VAN BUREN BOULEVARD IMPROVEMENTS

MARCH JOINT POWERS AUTHORITY
WATER QUALITY BMP PLAN



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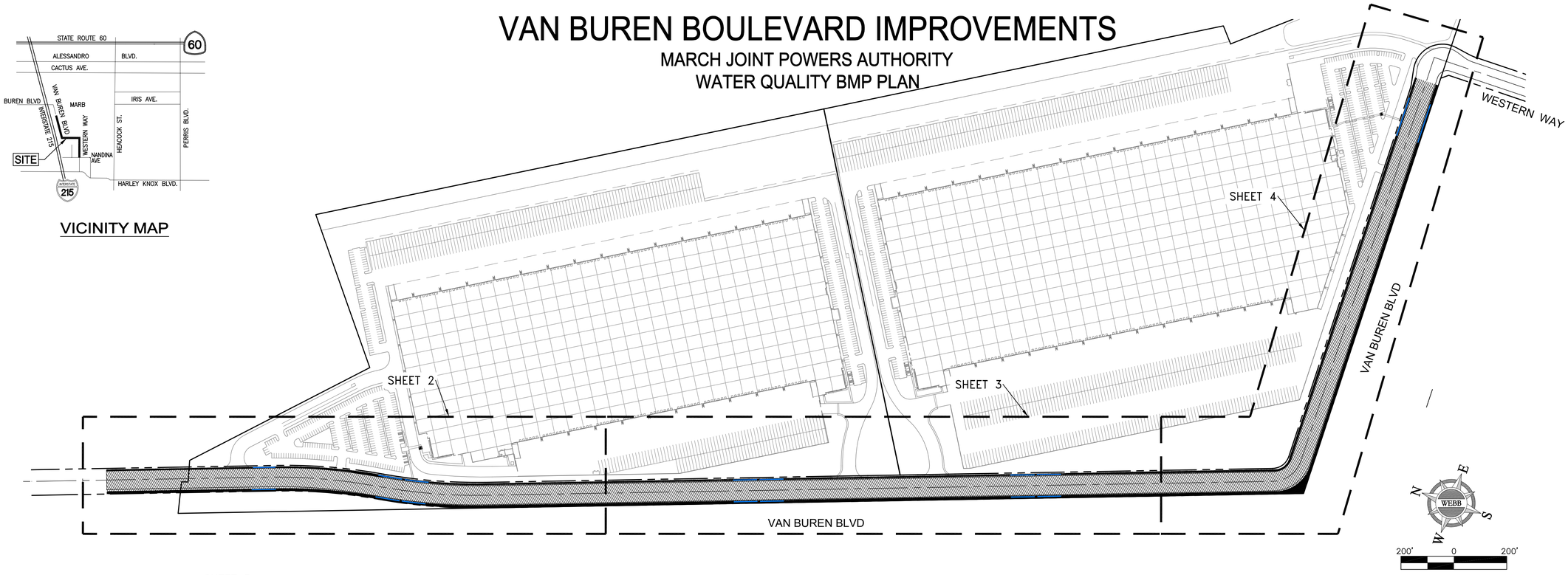
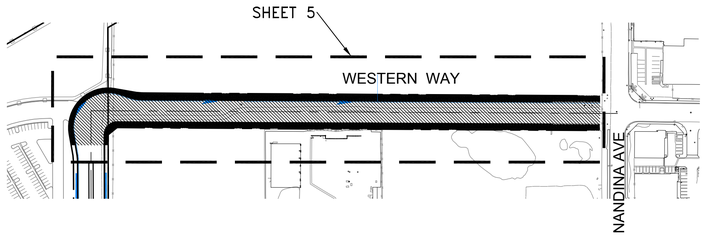
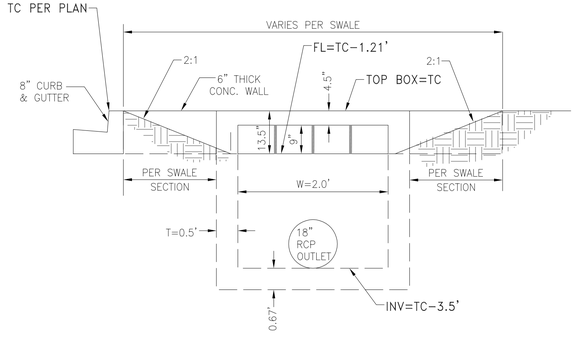
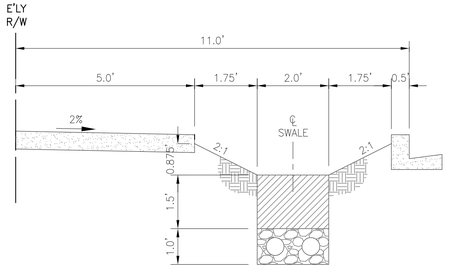






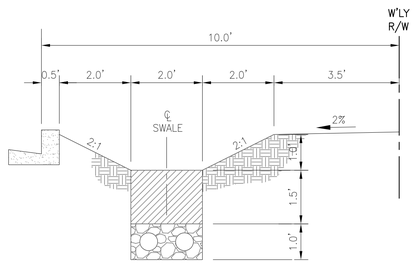
BIO-SWALE INLET DETAIL

CONCRETE DROP INLET RCFC&WCD STD. DWG. NO. CB110 (MODIFIED)
NTS



TYPICAL BIO-SWALE DETAIL

EAST OF VAN BUREN BLVD.
NTS



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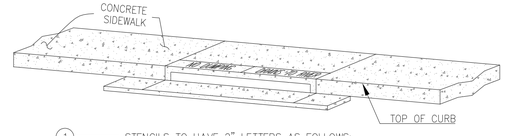

1. STENCILS TO HAVE 2" LETTERS AS FOLLOWS: "NO DUMPING – DRAINS TO RIVER"
2. PLACE BOTH STENCILS CENTERED WITHIN THE CATCHBASIN OPENINGS AND WITHIN THE TOP OF THE CURB.
3. SPRAY BOTH STENCILS WITH WHITE PAINT.
4. REMOVE STENCILS WHEN PAINT IS DRY.

CATCH BASIN STENCILING DETAIL

N.T.S.

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DESIGNED BY:
CHECKED BY:
DATE:

BENCHMARK:

SCALE:
H: V:

FOR: HIP

W.O. 16-0280

FILE NO. MJ-087

MARCH JOINT POWERS AUTHORITY
WATER QUALITY BMP PLAN

SHEET NO. 1
OF 5 SHEETS

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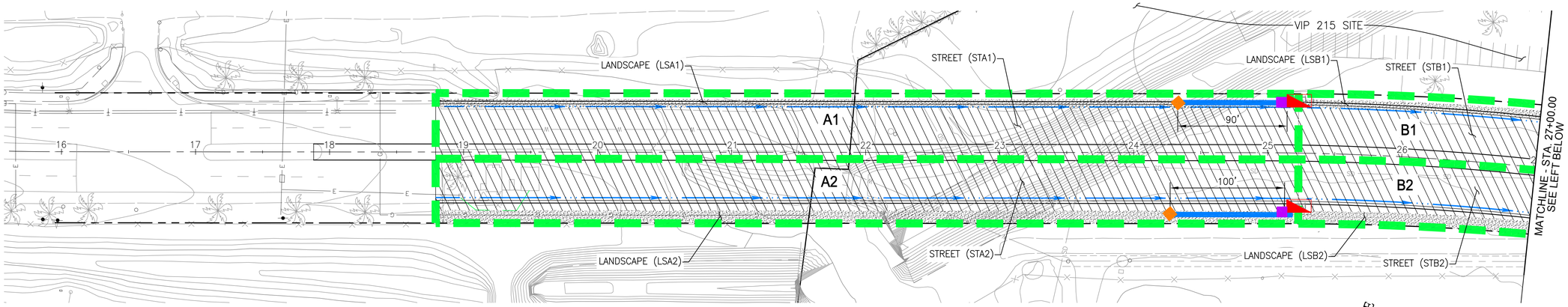
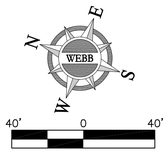
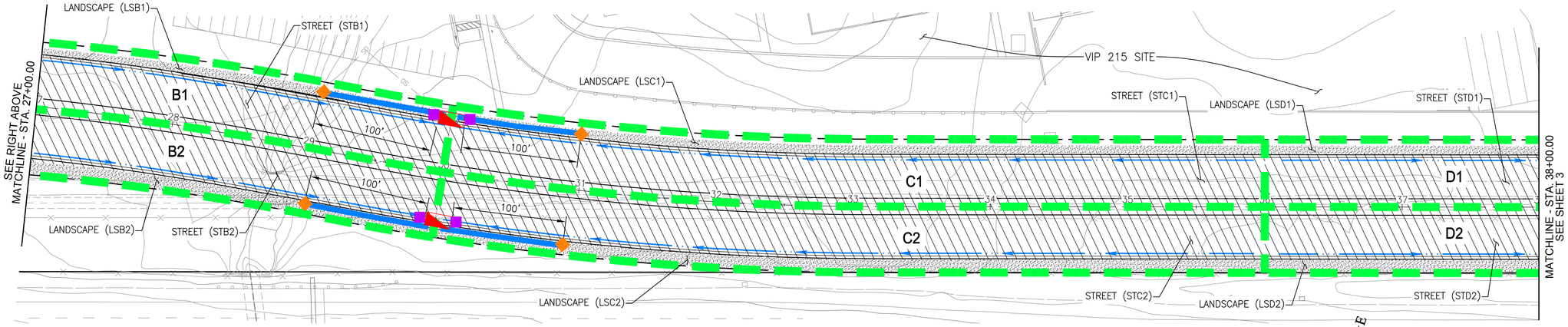


VAN BUREN BOULEVARD





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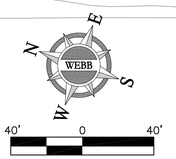

LEGEND

- STREET
- LANDSCAPE
- BIO-SWALE BMP
- DRAINAGE AREA BOUNDARY
- FLOW PATH
- STORM DRAIN INLET WITH FOSSIL FILTER (PER RIVERSIDE COUNTY STD. 300A) AND STENCILING PER DETAIL ON SHEET 1
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- WATER QUALITY INLET

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MARCH JOINT POWERS AUTHORITY
WATER QUALITY BMP PLAN

SHEET NO. 2 OF 5 SHEETS

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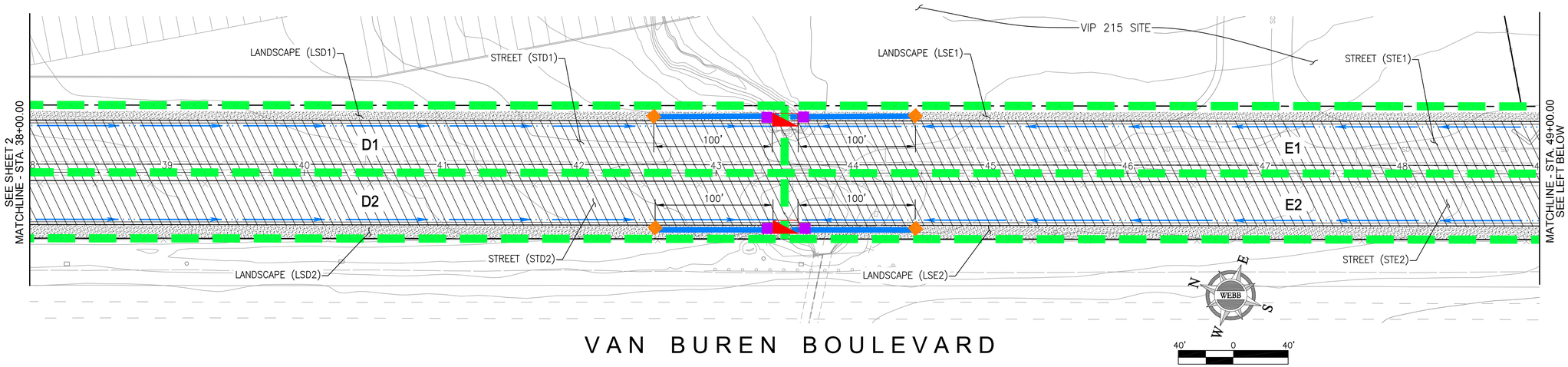

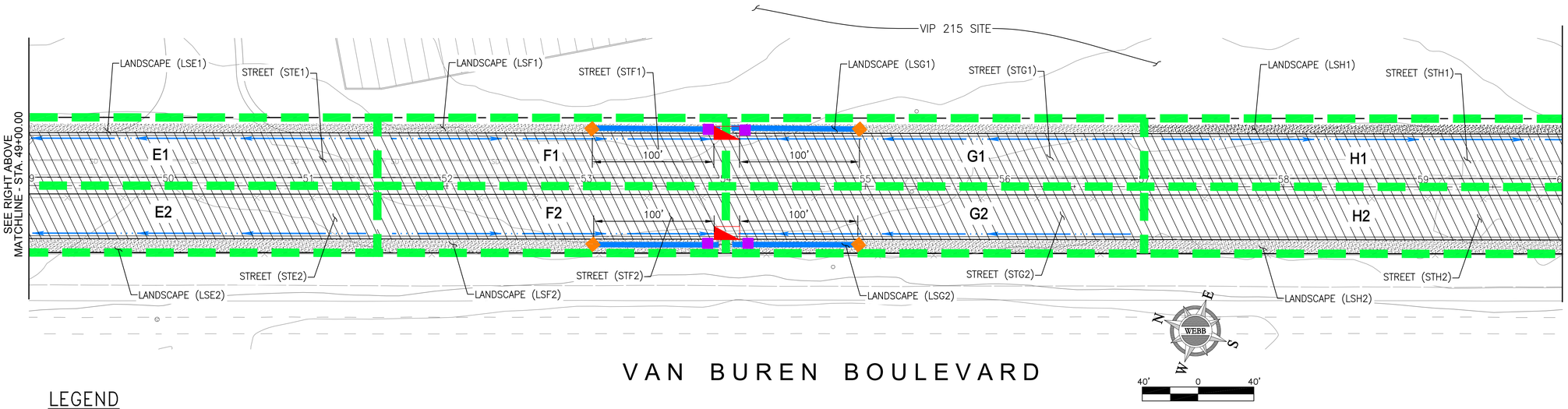

LEGEND

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W.O. 16-0280

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MARCH JOINT POWERS AUTHORITY
WATER QUALITY BMP PLAN

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OF 5 SHEETS

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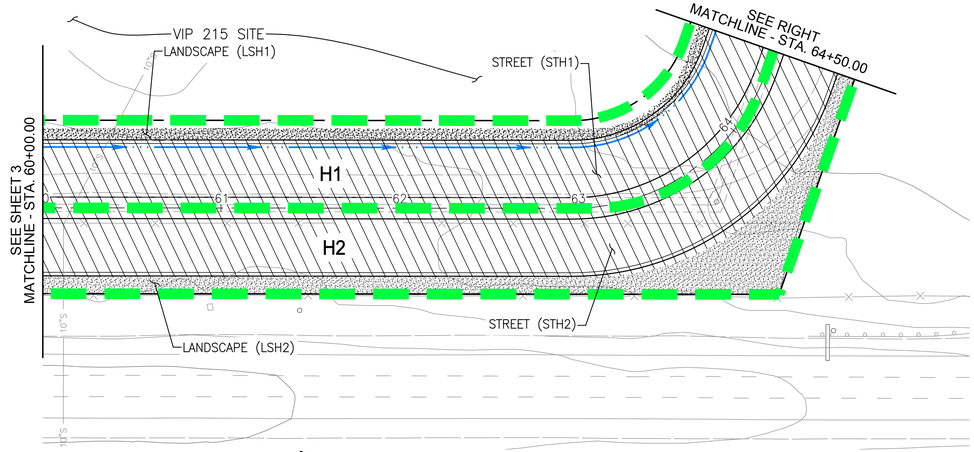

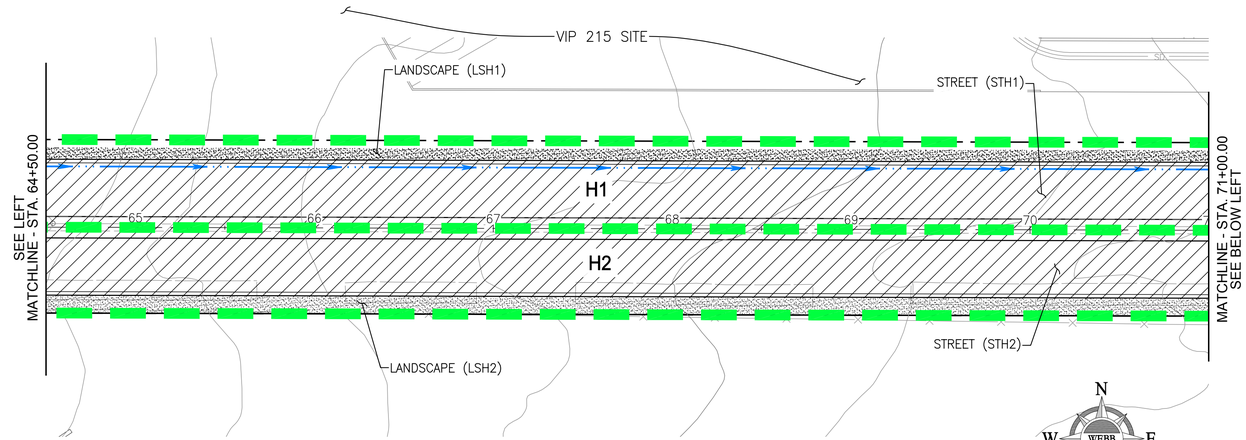

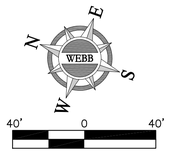

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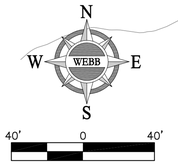

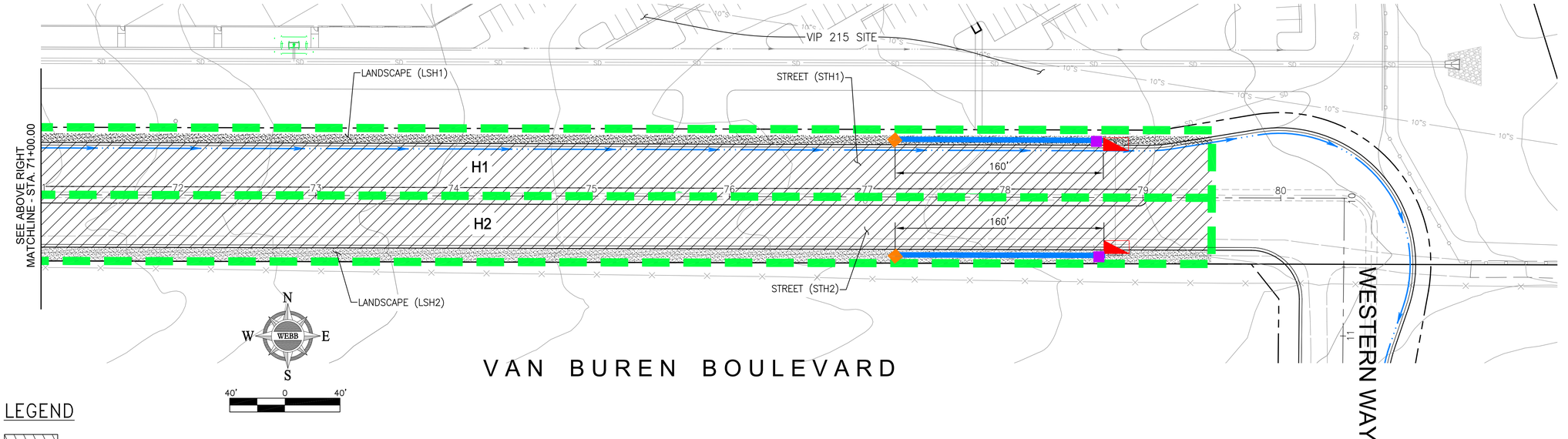

VAN BUREN BOULEVARD

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APPROVED BY:

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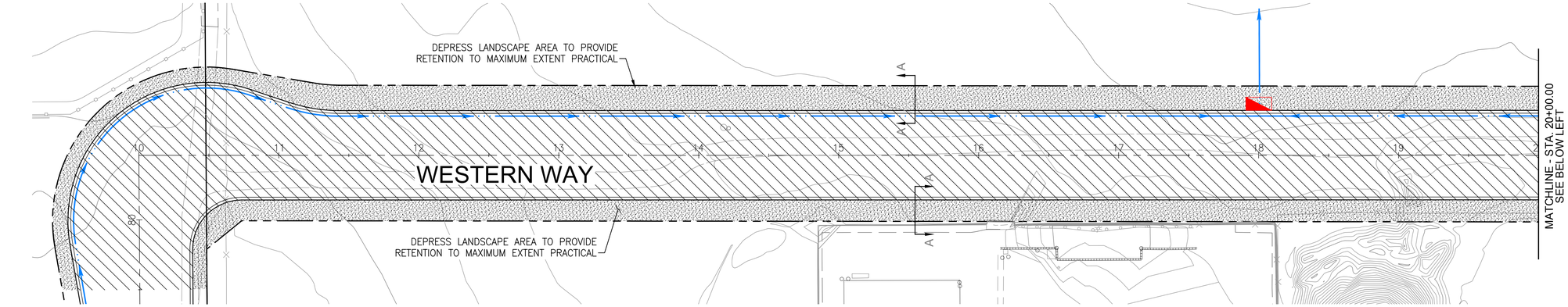
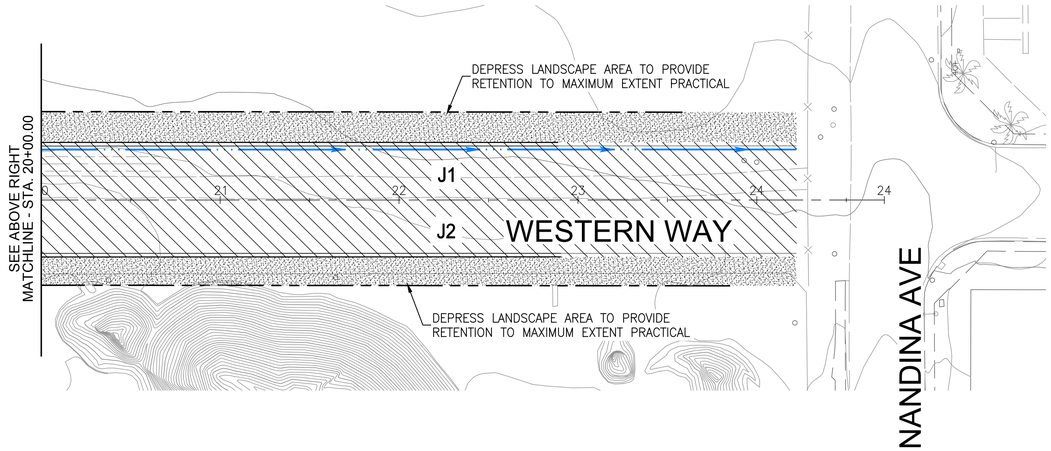
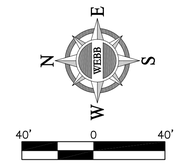
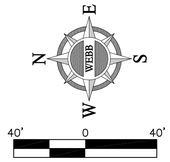
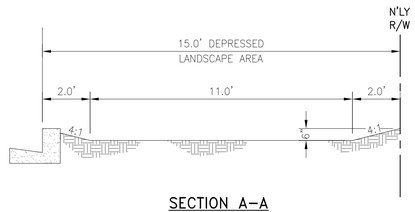










SECTION A–A
WESTERN WAY
NTS

LEGEND

- STREET
- LANDSCAPE
- DRAINAGE AREA BOUNDARY
- FLOW PATH
- UNDER SIDE WALK DRAIN W/ CHECKERED PLATE

DIGALERT
DIAL BEFORE YOU DIG — TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NOTE:
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER MJPA APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY MJPA.

MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				MJPA	

MARCH JOINT POWERS AUTHORITY
APPROVED BY:

MJPA PUBLIC WORKS

DATE

SEAL – ENGINEER
REGISTERED PROFESSIONAL ENGINEER
DILESH R. SHETH
No. C65078
CIVIL
STATE OF CALIFORNIA

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

PREPARED UNDER THE SUPERVISION OF:
DILESH R. SHETH, RCE C65078
DESIGNED BY:
CHECKED BY:
DATE:

BENCHMARK:

SCALE: H: 1"=40' V:

FOR: HIP

W.O. 16-0280

FILE NO. MJ-087

MARCH JOINT POWERS AUTHORITY
WATER QUALITY BMP PLAN

SHEET NO. 5
OF 5 SHEETS

G:\2016\16-0280\WQMP\TPG\2017-05-05 TPG (PRELIMINARY)\TPG EXHIBIT\16-0280-HYD EXHIBIT.DWG 8/22/2018

Appendix B: Summary of Calculations: Bio-Swale Sizing

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Summary of Vegetated Swale Calculations

See TPG WQ exhibit for BMP locations

Vegetated Swale Sizing Calculations: Summary Table						
Per County of Los Angeles BMP Design Criteria						
BMP	Q_{BMP}	Velocity	Flow Depth	Slope	Min. Length	Prop. Length
ID	(cfs)	(fps)	(ft)	(ft/ft)	(ft)	(ft)
A1	0.1	0.15	0.3	0.0050	90	90
A2	0.1	0.15	0.3	0.0050	90	100
B1	0.1	0.10	0.4	0.0012	60	100
B2	0.1	0.10	0.4	0.0012	60	100
C1	0.1	0.10	0.4	0.0012	60	100
C2	0.1	0.10	0.4	0.0012	60	100
D1	0.1	0.15	0.3	0.0050	90	100
D2	0.1	0.15	0.3	0.0050	90	100
E1	0.1	0.15	0.3	0.0050	90	100
E2	0.1	0.15	0.3	0.0050	90	100
F1	0.1	0.12	0.3	0.0024	72	100
F2	0.1	0.12	0.3	0.0024	72	100
G1	0.1	0.12	0.3	0.0024	72	100
G2	0.1	0.12	0.3	0.0024	72	100
H1	0.4	0.26	0.51	0.0069	156	160
H2	0.4	0.26	0.51	0.0069	156	160

Note:
Per the Transportation Project Guidance (TPG) requirements, drainage swales (bio-swales) are permitted for use as LID BMP's. For drainage swales, the LID BMP Design Handbook references *Stormwater Best Management Practice Design and Maintenance Manual* provided by the County of Los Angeles Department of Public Works. Design criteria for Vegetated Swales was utilized as the basis for design of bio-Swales in this project.

* The length of bio-swale provided is either the minimum length calculated or 100', whichever is greater, except when required to be less due to physical site constraints driveway approaches. In all cases, the minimum calculated swale length is provided.

Above mentioned BMPs cover Van Buren Boulevard only. For Western Way, depressed parkway landscaped areas are provided as the only means of treating flows by interception for parkway areas. For impervious roadway (section between curbs), runoff drains through under sidewalk drains, located in the easterly parkway, onto existing east property without treatment. It is infeasible to treat Western Way due to lack of SD infrastructure. In future, when MDP infrastructure is available, the parkways can be modified to accommodate LID BMPs for treating Western Way.

Appendix C: Swale Sizing Calcualtions/Design

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP A1 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale A1
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.15 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 90 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP A2 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale A2
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.15 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 90 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP B1 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale B1
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.10 fps WQ Flow Depth = 0.4 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 60 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP B2 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale B2
<u>BMP Design Flow Rate results:</u> Q_{BMP} = 0.1 cfs
<u>LA County parameters:</u> Hydraulic Residence Time (HRT) = 10 min.
<u>Hydraulic model results:</u> V_{BMP} = 0.10 fps WQ Flow Depth = 0.4 ft
<u>Min. Length of Bio-Swale:</u> $L = HRTx(60xV_{BMP})$ L = 60 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP C1 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale C1
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.10 fps WQ Flow Depth = 0.4 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 60 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP C2 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale C2
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.10 fps WQ Flow Depth = 0.4 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 60 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP D1 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale D1
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.15 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 90 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP D2 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale D2
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.15 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 90 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP E1 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale E1
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.15 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 90 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP E2 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale E2
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.15 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 90 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP F1 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale F1
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.12 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 72 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP F2 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale F2
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.12 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 72 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP G1 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale G1
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.12 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 72 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP G2 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale G2
BMP Design Flow Rate results: Q_{BMP} = 0.1 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.12 fps WQ Flow Depth = 0.3 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 72 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP H1 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale H1
BMP Design Flow Rate results: Q_{BMP} = 0.4 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.26 fps WQ Flow Depth = 0.51 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 156 ft

Project: Hillwood VIP 215
Date: 5/3/2017
W.O. #: 16-0280
By: lg
Checked: ea

Bio-Swale BMP H2 Calculations

See TPG WQ exhibit for BMP locations

LA County Bio-Swale Calculations
BMP Swale H2
BMP Design Flow Rate results: Q_{BMP} = 0.4 cfs
LA County parameters: Hydraulic Residence Time (HRT) = 10 min.
Hydraulic model results: V_{BMP} = 0.26 fps WQ Flow Depth = 0.51 ft
Min. Length of Bio-Swale: $L = HRTx(60xV_{BMP})$ L = 156 ft

Appendix D: Hydraulic Results: Bio-Swale Calculations

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale A1-S=.5%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.2595 ft

Area of Flow: 0.6537 ft^2

Wetted Perimeter: 3.1605 ft

Average Velocity: 0.1530 ft/s

Top Width: 3.0380 ft

Froude Number: 0.0581

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4730 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0810 lb/ft^2

Calculated Avg Shear Stress: 0.0645 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale A2-S=.5%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.2595 ft

Area of Flow: 0.6537 ft^2

Wetted Perimeter: 3.1605 ft

Average Velocity: 0.1530 ft/s

Top Width: 3.0380 ft

Froude Number: 0.0581

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4730 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0810 lb/ft^2

Calculated Avg Shear Stress: 0.0645 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale B1-S=.12%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0012 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.3864 ft

Area of Flow: 1.0716 ft^2

Wetted Perimeter: 3.7283 ft

Average Velocity: 0.0933 ft/s

Top Width: 3.5458 ft

Froude Number: 0.0299

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4731 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0289 lb/ft^2

Calculated Avg Shear Stress: 0.0215 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale B2-S=.12%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0012 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.3864 ft

Area of Flow: 1.0716 ft^2

Wetted Perimeter: 3.7283 ft

Average Velocity: 0.0933 ft/s

Top Width: 3.5458 ft

Froude Number: 0.0299

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4731 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0289 lb/ft^2

Calculated Avg Shear Stress: 0.0215 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale C1-S=.12%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0012 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.3864 ft

Area of Flow: 1.0716 ft^2

Wetted Perimeter: 3.7283 ft

Average Velocity: 0.0933 ft/s

Top Width: 3.5458 ft

Froude Number: 0.0299

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4731 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0289 lb/ft^2

Calculated Avg Shear Stress: 0.0215 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale C2-S=.12%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0012 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.3864 ft

Area of Flow: 1.0716 ft^2

Wetted Perimeter: 3.7283 ft

Average Velocity: 0.0933 ft/s

Top Width: 3.5458 ft

Froude Number: 0.0299

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4731 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0289 lb/ft^2

Calculated Avg Shear Stress: 0.0215 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale D1-S=.5%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.2595 ft

Area of Flow: 0.6537 ft^2

Wetted Perimeter: 3.1605 ft

Average Velocity: 0.1530 ft/s

Top Width: 3.0380 ft

Froude Number: 0.0581

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4730 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0810 lb/ft^2

Calculated Avg Shear Stress: 0.0645 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale D2-S=.5%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.2595 ft

Area of Flow: 0.6537 ft^2

Wetted Perimeter: 3.1605 ft

Average Velocity: 0.1530 ft/s

Top Width: 3.0380 ft

Froude Number: 0.0581

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4730 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0810 lb/ft^2

Calculated Avg Shear Stress: 0.0645 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale E1-S=.5%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.2595 ft

Area of Flow: 0.6537 ft^2

Wetted Perimeter: 3.1605 ft

Average Velocity: 0.1530 ft/s

Top Width: 3.0380 ft

Froude Number: 0.0581

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4730 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0810 lb/ft^2

Calculated Avg Shear Stress: 0.0645 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale E2-S=.5%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.2595 ft

Area of Flow: 0.6537 ft^2

Wetted Perimeter: 3.1605 ft

Average Velocity: 0.1530 ft/s

Top Width: 3.0380 ft

Froude Number: 0.0581

Critical Depth: 0.0421 ft

Critical Velocity: 1.1403 ft/s

Critical Slope: 2.4730 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0810 lb/ft^2

Calculated Avg Shear Stress: 0.0645 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale F1-S=.24%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0024 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.3187 ft

Area of Flow: 0.8404 ft^2

Wetted Perimeter: 3.4251 ft

Average Velocity: 0.1190 ft/s

Top Width: 3.2746 ft

Froude Number: 0.0414

Critical Depth: 0.0421 ft

Critical Velocity: 1.1406 ft/s

Critical Slope: 2.4750 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0477 lb/ft^2

Calculated Avg Shear Stress: 0.0367 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale F2-S=.24%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0024 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.3187 ft

Area of Flow: 0.8404 ft^2

Wetted Perimeter: 3.4251 ft

Average Velocity: 0.1190 ft/s

Top Width: 3.2746 ft

Froude Number: 0.0414

Critical Depth: 0.0421 ft

Critical Velocity: 1.1406 ft/s

Critical Slope: 2.4750 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0477 lb/ft^2

Calculated Avg Shear Stress: 0.0367 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale G1-S=.24%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0024 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.3187 ft

Area of Flow: 0.8404 ft^2

Wetted Perimeter: 3.4251 ft

Average Velocity: 0.1190 ft/s

Top Width: 3.2746 ft

Froude Number: 0.0414

Critical Depth: 0.0421 ft

Critical Velocity: 1.1406 ft/s

Critical Slope: 2.4750 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0477 lb/ft^2

Calculated Avg Shear Stress: 0.0367 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale G2-S=.24%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0024 ft/ft

Manning's n: 0.2400

Flow: 0.1000 cfs

Result Parameters

Depth: 0.3187 ft

Area of Flow: 0.8404 ft^2

Wetted Perimeter: 3.4251 ft

Average Velocity: 0.1190 ft/s

Top Width: 3.2746 ft

Froude Number: 0.0414

Critical Depth: 0.0421 ft

Critical Velocity: 1.1406 ft/s

Critical Slope: 2.4750 ft/ft

Critical Top Width: 2.1683 ft

Calculated Max Shear Stress: 0.0477 lb/ft^2

Calculated Avg Shear Stress: 0.0367 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale H1-S=.69%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0069 ft/ft

Manning's n: 0.2400

Flow: 0.4000 cfs

Result Parameters

Depth: 0.5093 ft

Area of Flow: 1.5375 ft^2

Wetted Perimeter: 4.2778 ft

Average Velocity: 0.2602 ft/s

Top Width: 4.0373 ft

Froude Number: 0.0743

Critical Depth: 0.1037 ft

Critical Velocity: 1.7466 ft/s

Critical Slope: 1.8900 ft/ft

Critical Top Width: 2.4150 ft

Calculated Max Shear Stress: 0.2193 lb/ft^2

Calculated Avg Shear Stress: 0.1547 lb/ft^2

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Wednesday, November 16, 2016

Project Units: U.S. Customary Units

Notes:

Channel Analysis: BioSwale H2-S=.69%

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 2.0000 ft

Longitudinal Slope: 0.0069 ft/ft

Manning's n: 0.2400

Flow: 0.4000 cfs

Result Parameters

Depth: 0.5093 ft

Area of Flow: 1.5375 ft^2

Wetted Perimeter: 4.2778 ft

Average Velocity: 0.2602 ft/s

Top Width: 4.0373 ft

Froude Number: 0.0743

Critical Depth: 0.1037 ft

Critical Velocity: 1.7466 ft/s

Critical Slope: 1.8900 ft/ft

Critical Top Width: 2.4150 ft

Calculated Max Shear Stress: 0.2193 lb/ft^2

Calculated Avg Shear Stress: 0.1547 lb/ft^2

Appendix E: QBMP Calculations

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates | Date: 5/3/2017

Designed by: lg | Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area A1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STA1	*27,681*	*Concrete or Asphalt*	*1*	*0.89*	*24691.5*			
LSA1	*3,863*	*Ornamental Landscaping*	*0.1*	*0.11046*	*426.7*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates — Date: 5/3/2017

Designed by: lg — Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area A2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity — I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STA2	*24,781*	*Concrete or Asphalt*	*1*	*0.89*	*22104.7*			
LSA2	*6,114*	*Ornamental Landscaping*	*0.1*	*0.11046*	*675.3*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates | Date: 5/3/2017

Designed by: lg | Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area B1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STB1	*20,644*	*Concrete or Asphalt*	*1*	*0.89*	*18414.4*			
LSB1	*2,899*	*Ornamental Landscaping*	*0.1*	*0.11046*	*320.2*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates | Date: 5/3/2017

Designed by: lg | Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area B2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STB2	*18,236*	*Concrete or Asphalt*	*1*	*0.89*	*16266.5*			
LSB2	*4,464*	*Ornamental Landscaping*	*0.1*	*0.11046*	*493.1*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates — Date: 5/3/2017

Designed by: lg — Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area C1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity — I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STC1	*25,650*	*Concrete or Asphalt*	*1*	*0.89*	*22879.8*			
LSC1	*3,561*	*Ornamental Landscaping*	*0.1*	*0.11046*	*393.3*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates — Date: 5/3/2017

Designed by: lg — Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area C2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity — I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STC2	*23,216*	*Concrete or Asphalt*	*1*	*0.89*	*20708.7*			
LSC2	*5,765*	*Ornamental Landscaping*	*0.1*	*0.11046*	*636.8*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates — Date: 5/3/2017

Designed by: lg — Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area D1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity — I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STD1	*32,250*	*Concrete or Asphalt*	*1*	*0.89*	*28767*			
LSD1	*4,500*	*Ornamental Landscaping*	*0.1*	*0.11046*	*497.1*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates | Date: 5/3/2017

Designed by: lg | Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area D2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STD2	*28,875*	*Concrete or Asphalt*	*1*	*0.89*	*25756.5*			
LSD2	*7,125*	*Ornamental Landscaping*	*0.1*	*0.11046*	*787*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates — Date: 5/3/2017

Designed by: lg — Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area E1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity — I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STE1	*34,400*	*Concrete or Asphalt*	*1*	*0.89*	*30684.8*			
LSE1	*4,800*	*Ornamental Landscaping*	*0.1*	*0.11046*	*530.2*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Albert Webb Associates	Date	5/3/2017
Designed by	lg	Case No	
Company Project Number/Name	16-0280 Hillwood		

BMP Identification

BMP NAME / ID: Area E2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STE2	*30,800*	*Concrete or Asphalt*	*1*	*0.89*	*27473.6*			
LSE2	*7,600*	*Ornamental Landscaping*	*0.1*	*0.11046*	*839.5*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates — Date: 5/3/2017

Designed by: lg — Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area F1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity — I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STF1	*10,750*	*Concrete or Asphalt*	*1*	*0.89*	*9589*			
LSF1	*1,500*	*Ornamental Landscaping*	*0.1*	*0.11046*	*165.7*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates | Date: 5/3/2017

Designed by: lg | Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area F2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STF2	*9,625*	*Concrete or Asphalt*	*1*	*0.89*	*8585.5*			
LSF2	*2,375*	*Ornamental Landscaping*	*0.1*	*0.11046*	*262.3*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates | Date: 5/3/2017

Designed by: lg | Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area G1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STG1	*12,900*	*Concrete or Asphalt*	*1*	*0.89*	*11506.8*			
LSG1	*1,800*	*Ornamental Landscaping*	*0.1*	*0.11046*	*198.8*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates — Date: 5/3/2017

Designed by: lg — Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area G2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity — I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STG2	*11,550*	*Concrete or Asphalt*	*1*	*0.89*	*10302.6*			
LSG2	*2,850*	*Ornamental Landscaping*	*0.1*	*0.11046*	*314.8*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates — Date: 5/3/2017

Designed by: lg — Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area H1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity — I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STH1	*95,859*	*Concrete or Asphalt*	*1*	*0.89*	*85506.2*			
LSH1	*13,209*	*Ornamental Landscaping*	*0.1*	*0.11046*	*1459*			

Santa Ana Watershed - BMP Design Flow Rate, Q_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Albert Webb Associates | Date: 5/3/2017

Designed by: lg | Case No:

Company Project Number/Name: 16-0280 Hillwood

BMP Identification

BMP NAME / ID: Area H2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

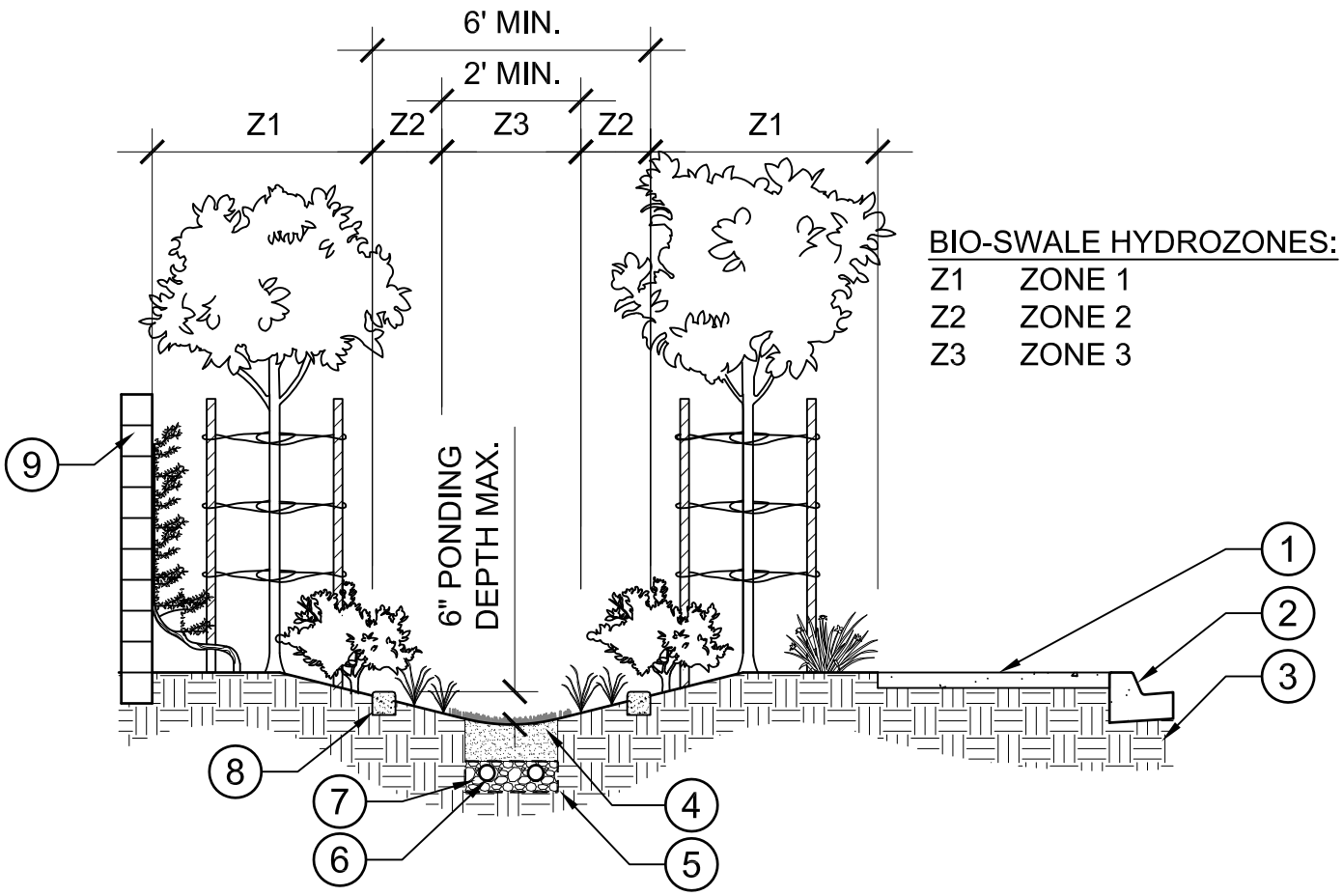
Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
STH2	*87,645*	*Concrete or Asphalt*	*1*	*0.89*	*78179.3*			
LSH2	*23,934*	*Ornamental Landscaping*	*0.1*	*0.11046*	*2643.7*			

Appendix F: Riverside County Transportation Department: Bio-Swale Standard B-001



BIO-SWALE HYDROZONES:

Z1	ZONE 1
Z2	ZONE 2
Z3	ZONE 3

1. SIDEWALK/HARDSCAPE PER PLANS
2. CURB AND GUTTER PER PLANS
3. SUBGRADE COMPACTED PER GEOTECH REPORT
4. 2/3 WASHED SAND AND 1/3 PEAT 18" - 36" DEEP
5. APPROVED FILTER FABRIC SURROUNDING GRAVEL
6. 4" TO 6" DIA. PERFORATED PIPES CONNECTED TO OUTLET DRAIN OR DAYLIGHT INTO LANDSCAPE PER APPROVED PLANS
7. 3/4" CRUSHED GRAVEL LAYER
8. 6" X 6" CONC. HEADER (PER STD H-004) ALIGNED WITH Z2
9. WALL / FENCE PER PLANS (WHERE APPLICABLE)

NOTES:

1. REFER TO SWALE PLANT PALETTE FOR ZONE APPROVED PLANTS
2. ALL TREES MUST BE LOCATED AT LEAST 24"-36" FROM THE HEADER
3. ALL BIO-SWALE GRADES AND DRAINAGE MUST BE APPROVED IN WRITING BY COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT PRIOR TO ANY IRRIGATION OR PLANTING
4. DUE TO THE DENSITY OF PLANTING AND WATER FLOW ZONES 2 AND 3 WILL NOT REQUIRE BARK MULCH. 3" DEEP BARK MULCH WILL BE REQUIRED FOR OTHER ZONES.
5. CONCRETE HEADER INSTALLATION IS REQUIRED WITH SPREADING / CREEPING PLANT VARIETIES ONLY AND WILL BE REVIEWED BY LMD REPRESENTATIVE

LMD	RIVERSIDE COUNTY TLMA: PLANNING AND TRANSPORTATION DEPARTMENTS		DATE: 02-05-13
	BIO-SWALE GRADING / PLANTING		
	SECTION	APPROVED BY: MPH	
STD. B-001	1/4" = 1'-0"	REV:	

FILE: B-001_BIO_SWALE_GRADING-PLANTING_SECTION.DWG

HYDROZONE 2 PLANT PALETTE

BOTANICAL NAME	COMMON NAME	HEIGHT	WIDTH
CALAMAGROSTIS ACUTIFLORA	FEATHER REED GRASS	30"	36"
CAREX BUCHANANII	LEATHER LEAF SEDGE	36"	30"
CAREX FLACCA	BLUE SEDGE	24"	24"
CAREX FLAGELLIFERA	NEW ZEALAND SEDGE	36"	30"
CAREX TESTACEA	NEW ZEALAND SEDGE	24"	36"
DESCHAMPSIA CESPITOSA	TUFTED HAIR GRASS	18"	24"
DESCHAMPSIA FLEXUOSA	CRINKLED HAIR GRASS	24"	12"
ELYMUS MAGELLANICUS	MAGELLAN WHEATGRASS	18"	18"
FESTUCA IDAHOENSIS	FESCUE	14"	10"
IMPERATA CYLINDRICA RUBRA	JAPANESE BLOOD GRASS	18"	12"
ISOCOMA MENZIESII	GOLDENBUSH	12"	24" - 36"
LEYMUS CONDENSATUS 'CANYON PRINCE'	GIANT WILD RYE	48"	36"
MISCANTHUS SINENSIS (SEE NOTE #3 BELOW)	SILVER GRASS (VARIOUS)	36" MAX	
MUHLENBERGIA RIGENS	DEER GRASS	36"	48"
SPOROBOLUS AIROIDES	ALKALI SACATON	36"	36"

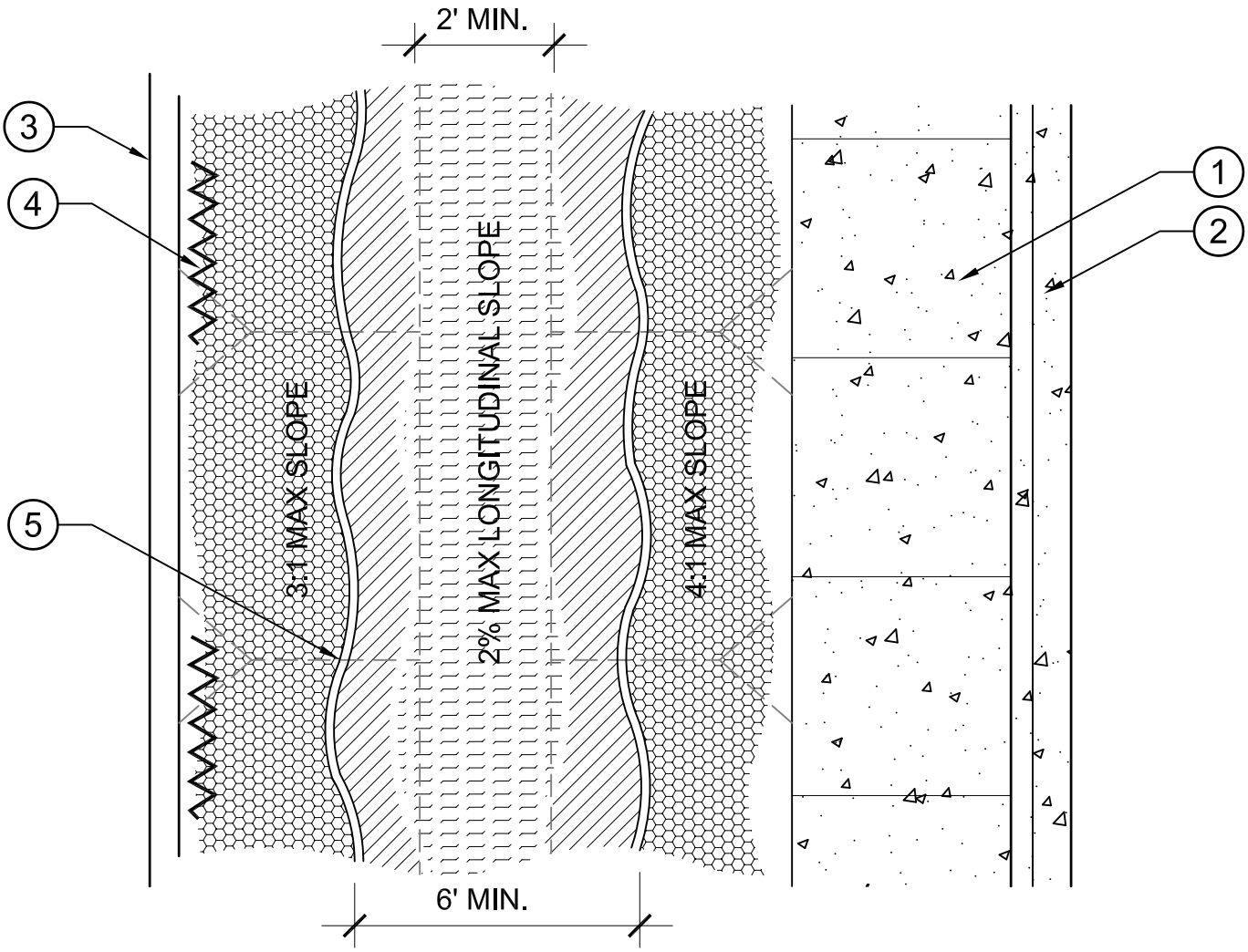
HYDROZONE 3 PLANT PALETTE

BOTANICAL NAME	COMMON NAME	HEIGHT	WIDTH
ANEMOPSIS CALIFORNICA	YERBA MANSA	6"	12" - 36"
ARTEMISIA DOUGLASIANA	MUGWORT	36"	36"
CAREX ELATA 'AUREA'	BOWLES GOLDEN SEDGE	24"	18"
CAREX PANSA	DUNE SEDGE	6"	SPREADING
CAREX SPISSA	SAN DIEGO SEDGE	36" - 48"	36" - 48"
CAREX TUMULICOLA	BERKELEY SEDGE	12" - 24"	12" - 24"
CHONDROPETALUM TECTORUM	CAPE RUSH	36"	36"
JUNCUS PATENS	CALIFORNIA GRAY RUSH	24"	24"
LEYMUS TRITICOIDES	CREEPING WILDRYE	24" - 48"	SPREADING
LUPINUS SUCCULENTUS	ARROYO LUPINE	18" - 36"	18" - 36"
MILIUM EFFUSUM AUREUM	BOWLES GOLDEN GRASS	24"	24"
MOLINA CAERULEA VARIEGATA	MOOR GRASS	18"	18"
SCIRPUS CERNUUS	FIBER OPTICS PLANT	12"	20"
SISYRINCHIUM CALIFORNICUM	GOLDEN EYED GRASS	24"	10"

NOTES:
1. ZONE 3 SHALL HAVE FIVE (5) SPECIES MAXIMUM FROM THE ZONE 3 LIST
2. ZONE 2 MAY USE THE SAME MIX WITH THREE (3) SPECIES FROM THE ZONE 2 LIST ADDED
3. ANY MISCANTHUS SINENSIS CULTIVARS USED MUST NOT HAVE A MATURE HEIGHT OVER 3'.

LMD	RIVERSIDE COUNTY TLMA: PLANNING AND TRANSPORTATION DEPARTMENTS			DATE: 02-05-13
	BIO-SWALE PLANTING			COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT
	PLANT PALETTE	APPROVED BY: MPH		
STD. B-002	NO SCALE	REV:		

FILE: B-002_BIO_SWALE_PLANT PALETTE.DWG



1. SIDEWALK PER APPROVED PLANS
2. CURB AND GUTTER PER APPROVED PLANS
3. WALL / FENCE PER APPROVED PLANS (WHERE APPLICABLE)
4. VINE AT 20' SPACING TYPICAL
5. 6" X 6" CONC. HEADER (PER STD H-004) ALIGNED WITH Z2

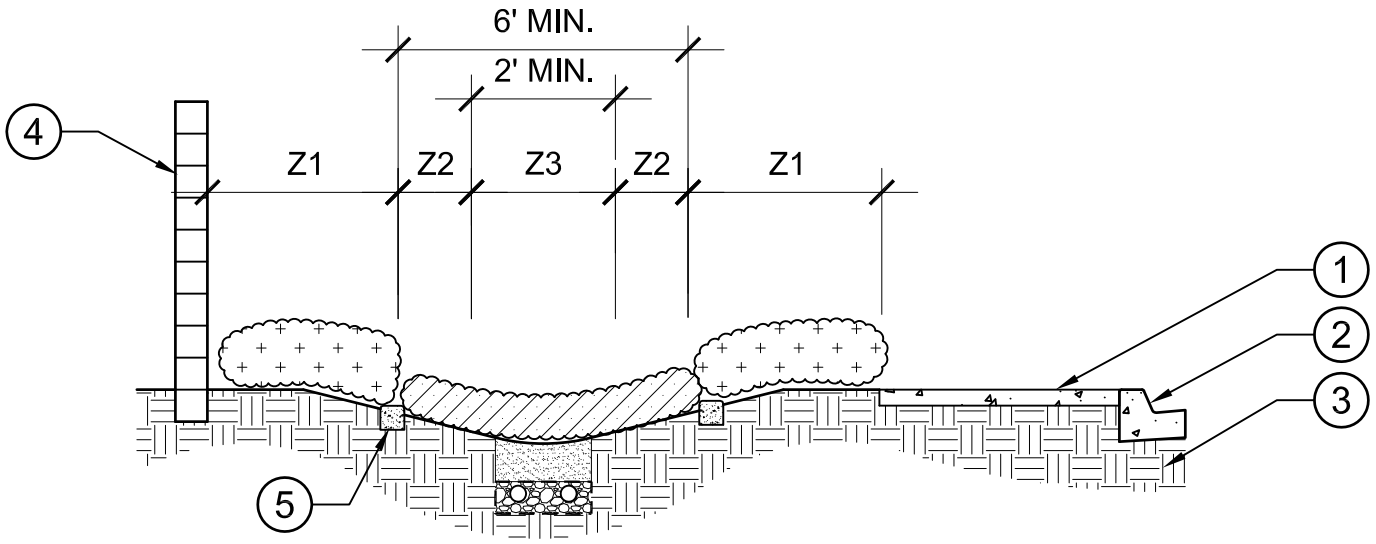
HYDROZONE 1
STANDARD ORNAMENTAL SHRUBS PER RIVERSIDE CALIFORNIA FRIENDLY PLANT LIST

HYDROZONE 2
SEE BIO-SWALE ZONE 2 PLANT PALETTE, 24" - 36" TYPICAL SPACING

HYDROZONE 3
SEE BIO-SWALE ZONE 3 PLANT PALETTE, 12" - 24" TYPICAL SPACING

LMD	RIVERSIDE COUNTY TLMA: PLANNING AND TRANSPORTATION DEPARTMENTS		DATE: 02-05-13
	BIO-SWALE GRADING & PLANTING		
	PLAN	APPROVED BY: MPH	
STD. B-003	NO SCALE	REV:	

FILE: B-003_BIO_SWALE_GRADING-PLANTING_PLAN.DWG



1. SIDEWALK PER APPROVED PLANS
2. CURB AND GUTTER PER APPROVED PLANS
3. SUBGRADE COMPACTED PER GEOTECH REPORT
4. WALL / FENCE PER APPROVED PLANS (WHERE APPLICABLE)
5. 6" X 6" CONC. HEADER (PER STD H-004) ALIGNED WITH Z2

HYDROZONE 1
STANDARD ORNAMENTAL SHRUBS PER RIVERSIDE CALIFORNIA FRIENDLY PLANT LIST

HYDROZONES 2, 3
SEE BIO-SWALE PLANT PALETTE, 24" - 36" TYPICAL SPACING

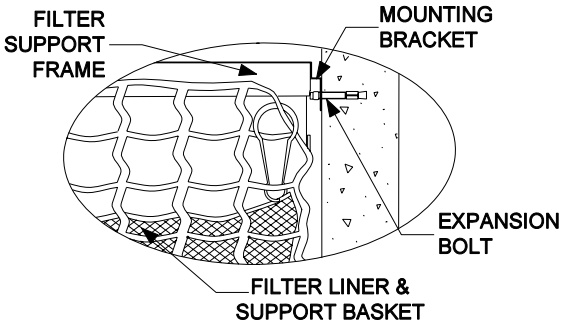
NOTES:

1. ALL CHANNEL BOTTOMS SHALL BE IRRIGATED WITH A SEPARATE CONTROL VALVE FOR MOISTURE CONTROL
2. IRRIGATION FOR EACH SIDE OF BIOSWALE BOTTOM OUTSIDE OF HYDROZONE 3 SHOULD BE CONNECTED TOGETHER
3. ALL BIO-SWALES SHALL BE IRRIGATED WITH POINT-TO-POINT LOW VOLUME IRRIGATION AS INDICATED. NO OVER-HEAD CONVENTIONAL SPRAY IRRIGATION WILL BE ALLOWED UNLESS APPROVED IN WRITING
5. ALL IRRIGATION MUST CONFORM TO COUNTY OF RIVERSIDE LOW-VOLUME IRRIGATION DETAILS
6. ALL BIO-SWALE GRADES AND DRAINAGE MUST BE APPROVED IN WRITING BY COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT PRIOR TO ANY IRRIGATION OR PLANTING
7. DRAWINGS INDICATE ABOVE GRADE PIPING, ALTHOUGH BELOW GRADE PIPING IS ALSO ACCEPTABLE
8. CONCRETE HEADER INSTALLATION IS REQUIRED WITH SPREADING / CREEPING PLANT VARIETIES ONLY AND WILL BE REVIEWED BY LMD REPRESENTATIVE

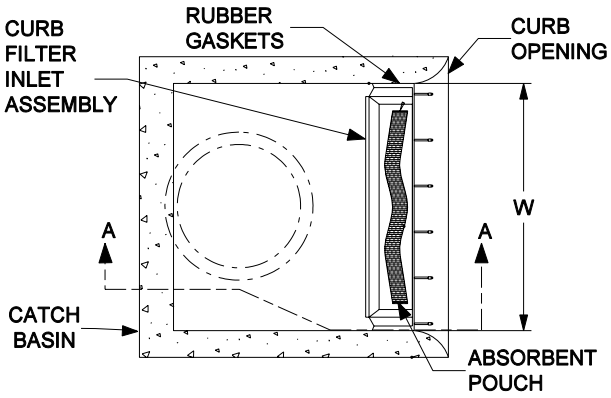
LMD	RIVERSIDE COUNTY TLMA: PLANNING AND TRANSPORTATION DEPARTMENTS		DATE: 02-05-13
	BIO-SWALE IRRIGATION ZONING		
	SECTION	APPROVED BY: MPH	
STD. B-004	1/4" = 1'-0"	REV:	

FILE: B-004_BIO_SWALE_IRRIGATION-ZONING_SECTION.DWG

Appendix G: Fossil Filter



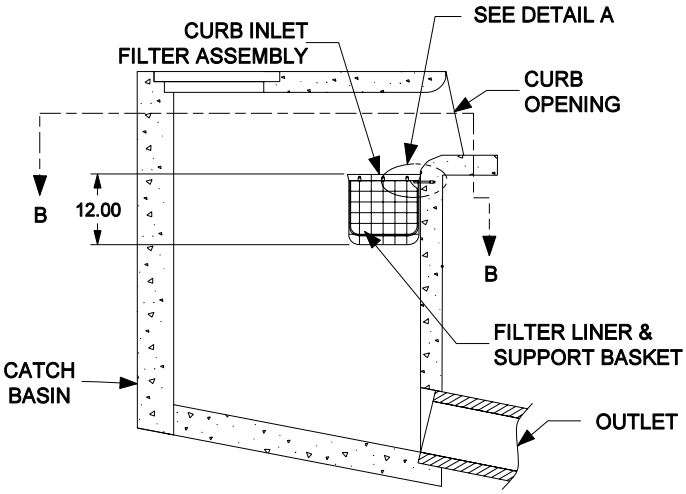
DETAIL A
MOUNTING BRACKET &
EXPANSION BOLTS
SEE NOTE 4



DETAIL B-B
TOP
VIEW

NOTE:

1. FILTER INSERTS SHALL BE INSTALLED ACROSS THE ENTIRE WIDTH OF THE CURB OPENING, NO GAPS ALONG CURB OPENING SHALL BE PERMITTED.
2. FILTER SUPPORT FRAME SHALL BE CONSTRUCTED FROM STAINLESS STEEL TYPE 304.
3. FILTER LINER SHALL BE CONSTRUCTED FROM DURABLE POLYPROPYLENE, WOVEN, MONOFILAMENT, GEOTEXTILE. FILTER LINER SHALL NOT ALLOW THE RETENTION OF WATER BETWEEN STORM EVENTS. DRAINAGE SHALL BE OUT OF THE BOTTOM OF THE FOSSIL FILTER.
4. FILTER INSERT SHALL BE ATTACHED TO THE CATCH BASIN WITH STAINLESS STEEL EXPANSION ANCHOR BOLTS & WASHERS (3/8" X 2-1/2" MINIMUM LENGHTH).
5. FILTER INSERTS SHALL BE AVAILABLE IN STANDARD LENGTHS OF 24", 30", 35", 42" & 48" AND MAY BE INSTALLED IN VARIOUS LENGHT COMBINATIONS (END TO END) TO FIT LENGTH OF NOTED CATCH BASIN
6. FILTER INSERTS AND FILTER MEDIUM POUCHES MUST BE MAINTAINED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
7. FILTER INSERTS SHALL BE DESIGNED WITH A DEBRIS TRAP FOR THE RETENTION OF FLOATABLES AND COLLECTED SEDIMENTS.
8. FILTER INSERTS SHALL BE SUPPLIED WITH "CLIP-IN" FILTER POUCHES UTILIZING FILTER MEDIUM FOR THE COLLECTION AND RETENTION OF PETROLEUM HYDROCARBONS (OILS & GREASES).



DETAIL A-A
SIDE
VIEW

NOT TO SCALE

APPROVED BY:

DATE: 05/01/07

DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

REGISTERED PROFESSIONAL ENGINEER
GEORGE A. JOHNSON
No. CE 42328
Exp. 3-31-08
CIVIL
STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

FOSSIL FILTER

STANDARD NO. 300A

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
2-90, 11-04		1				4			
		2				5			
		3				6			

Appendix H: Drainage Swale Design Guidance

C. LID-based BMP Planning and Design Information

The purpose of this Guidance section is to provide examples of LID-based BMPs that may be considered for use in Transportation Projects. This information is provided in two parts (1) general LID-based BMP information; and (2) LID-based BMP-specific information. These sources are intended to guide decision-making with regards to making feasibility determinations about the efficacy of incorporating these BMPs into Transportation Project planning and design. This information does not represent an exhaustive list of source material; in fact, new information regarding how to design LID-based BMPs is regularly published. This information is not to be used as a substitute for development of engineering designs appropriate to the Transportation Project site.

General LID-based BMP Guidance

The following documents provide general information regarding the application of LID-based BMPs in various scenarios including Transportation Projects. While reference material is available from other areas outside the southwestern United States, these references have not been included, primarily because of their lack of relevance to the hydrologic regime that exists in the Santa Ana Region:

- *Design Handbook for Low Impact Development Best Management Practices*. 2011. Riverside County Flood Control and Water Conservation District. September 2011. http://rcflood.org/NPDES/LIDBMP.aspx.
- *Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies*. 2010. Prepared for the Southern California Stormwater Monitoring Coalition. April 2010. http://www.casqa.org/LID/SoCalLID/tabid/218/Default.aspx.
- *Municipal Handbook: Green Streets, Managing Wet Weather with Green Infrastructure.* 2008. U.S. Environmental Protection Agency, EPA-833-F-08-009. December 2008. http://water.epa.gov/infrastructure/greeninfrastructure/upload/gi_munichandbook_green_streets.pdf
- *Low Impact Development Handbook: Stormwater Management Strategies*. 2007. County of San Diego, Department of Planning and Land Use. December 2007. http://www.sdcounty.ca.gov/dplu/docs/LID-Handbook.pdf (General Information); http://www.sdcounty.ca.gov/dplu/docs/LID-Appendices.pdf (Fact Sheets)
- *Storm Water BMP Guidance Manual*. 2008. City of Santa Barbara. June 2008. http://www.santabarbaraca.gov/Resident/Community/Creeks/Storm_Water_Management_Program.htm
- *County of Los Angeles Low Impact Development Standards Manual. January 2009.* http://dpw.lacounty.gov/wmd/LA_County_LID_Manual.pdf
- *Rainwater Harvesting Program: Green Streets and Green Alleys Design Guidelines Standards*, 1st Edition. City of Los Angeles, Department of Public Works, Bureau of Sanitation, Watershed Protection Division, September 4, 2009. http://www.lastormwater.org/siteorg/program/green.htm
- *Evaluation of Best Management Practices for Highway Runoff Control*: *Low Impact Development Design Manual for Highway Runoff Control*. 2006. Prepared for the National Cooperative Highway Research Program, Transportation Research Board, and National Research Council. http://www.coralreef.gov/transportation/evalbmp.pdf

- *Green Infrastructure for Southwest Neighborhoods*. 2010. Watershed Management Group, Tucson, AZ. August 2010. http://watershedmg.org/sites/default/files/greenstreets/WMG_GISWNH_1.0.pdf
- Low Impact Development Center, http://www.lowimpactdevelopment.org

Specific LID-Based BMP Information

The following sections provide design-related information for the LID-based BMPs described in Section 3 of this Guidance.

Minimum Road Width

- *Municipal Handbook: Green Streets, Managing Wet Weather with Green Infrastructure.* 2008. U.S. Environmental Protection Agency, EPA-833-F-08-009. December 2008. http://water.epa.gov/infrastructure/greeninfrastructure/upload/gi_munichandbook_green_streets.pdf - **see pages 2-4**
- *Low Impact Development Handbook: Stormwater Management Strategies*. 2007. County of San Diego, Department of Planning and Land Use. December 2007. http://www.sdcounty.ca.gov/dplu/docs/LID-Appendices.pdf (Fact Sheets) – **Fact Sheets 14, 15**

Drainage Swales

- *Design Handbook for Low Impact Development Best Management Practices*. 2011. Riverside County Flood Control and Water Conservation District. September 2011. http://rcflood.org/NPDES/LIDBMP.aspx - **see Section 3.2**
- *Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies*. 2010. Low Impact Development Center, Inc. April 2010. http://www.casqa.org/LID/SoCalLID/tabid/218/Default.aspx - **see pages 137-138**
- *Storm Water BMP Guidance Manual*. 2008. City of Santa Barbara. June 2008. http://www.santabarbaraca.gov/Resident/Community/Creeks/Storm_Water_Management_Program.htm – **see Section 6.6.2**
- *Treatment BMP Technology Report*. 2008. California Department of Transportation (Caltrans), CTSW-RT-08-167.02.02. April 2008. http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment_BMP_Technology_Rprt.pdf - **see page D-5**
- *Evaluation of Best Management Practices for Highway Runoff Control*: *Low Impact Development Design Manual for Highway Runoff Control*. 2006. Prepared for the National Cooperative Highway Research Program, Transportation Research Board, and National Research Council. http://www.coralreef.gov/transportation/evalbmp.pdf - **see Section 14**

Infiltration Basins

- *Design Handbook for Low Impact Development Best Management Practices*. 2011. Riverside County Flood Control and Water Conservation District. September 2011. http://rcflood.org/NPDES/LIDBMP.aspx - **see Section 3.1**

Bioretention

- *Design Handbook for Low Impact Development Best Management Practices*. 2011. Riverside County Flood Control and Water Conservation District. September 2011. http://rcflood.org/NPDES/LIDBMP.aspx - **see Section 3.5**
- *Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies*. 2010. Low Impact Development Center, Inc. April 2010. http://www.casqa.org/LID/SoCalLID/tabid/218/Default.aspx - **see pages 68-84**
- *Low Impact Development Handbook: Stormwater Management Strategies*. 2007. County of San Diego, Department of Planning and Land Use. December 2007. http://www.sdcounty.ca.gov/dplu/docs/LID-Appendices.pdf (Fact Sheets) – **see Fact Sheets 15, 19**
- *Storm Water BMP Guidance Manual*. 2008. City of Santa Barbara. June 2008. http://www.santabarbaraca.gov/Resident/Community/Creeks/Storm_Water_Management_Program.htm – **see Section 6.6.1**
- *Treatment BMP Technology Report*. 2008. California Department of Transportation (Caltrans), CTSW-RT-08-167.02.02. April 2008. http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment_BMP_Technology_Rprt.pdf - **see pages B-11 - B-12**
- *Evaluation of Best Management Practices for Highway Runoff Control*: *Low Impact Development Design Manual for Highway Runoff Control*. 2006. Prepared for the National Cooperative Highway Research Program, Transportation Research Board, and National Research Council. http://www.coralreef.gov/transportation/evalbmp.pdf - **see Section 5**

Sidewalk Trees & Tree Boxes (including planter boxes)

- *Design Handbook for Low Impact Development Best Management Practices*. 2011. Riverside County Flood Control and Water Conservation District. September 2011. http://rcflood.org/NPDES/LIDBMP.aspx - **see Section 3.5**, **page 5** for information regarding planter boxes
- *Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies*. 2010. Low Impact Development Center, Inc. April 2010. http://www.casqa.org/LID/SoCalLID/tabid/218/Default.aspx - **see page 71** for information regarding planter boxes
- *County of Los Angeles Low Impact Development Standards Manual. January 2009.* http://dpw.lacounty.gov/wmd/LA_County_LID_Manual.pdf - **see pages 49-52** for information regarding planter boxes
- *Storm Water BMP Guidance Manual*. 2008. City of Santa Barbara. June 2008. http://www.santabarbaraca.gov/Resident/Community/Creeks/Storm_Water_Management_Program.htm – **see Section 6.9.2** for information regarding planter boxes
- *Treatment BMP Technology Report*. 2008. California Department of Transportation (Caltrans), CTSW-RT-08-167.02.02. April 2008. http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment_BMP_Technology_Rprt.pdf - **see pages B-7 - B-10**

Permeable Pavement

- *Design Handbook for Low Impact Development Best Management Practices*. 2011. Riverside County Flood Control and Water Conservation District. September 2011. http://rcflood.org/NPDES/LIDBMP.aspx - **see Section 3.3**
- *Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies*. 2010. Low Impact Development Center, Inc. April 2010. http://www.casqa.org/LID/SoCalLID/tabid/218/Default.aspx - **see pages 83-113**
- *Low Impact Development Handbook: Stormwater Management Strategies*. 2007. County of San Diego, Department of Planning and Land Use. December 2007. http://www.sdcounty.ca.gov/dplu/docs/LID-Handbook.pdf (General Information); http://www.sdcounty.ca.gov/dplu/docs/LID-Appendices.pdf (Fact Sheets) – **see pages 46-51, Fact Sheets 8, 9, 10**
- *County of Los Angeles Low Impact Development Standards Manual. January 2009.* http://dpw.lacounty.gov/wmd/LA_County_LID_Manual.pdf - **see pages 53-57**
- *Storm Water BMP Guidance Manual*. 2008. City of Santa Barbara. June 2008. http://www.santabarbaraca.gov/Resident/Community/Creeks/Storm_Water_Management_Program.htm – **see Section 6.8**
- *Evaluation of Best Management Practices for Highway Runoff Control*: *Low Impact Development Design Manual for Highway Runoff Control*. 2006. Prepared for the National Cooperative Highway Research Program, Transportation Research Board, and National Research Council. http://www.coralreef.gov/transportation/evalbmp.pdf – **see Section 10**

Low Impact Development Manual for Southern California:

Technical Guidance and Site Planning Strategies

Prepared for

the Southern California Stormwater Monitoring Coalition

in cooperation with the State Water Resources Control Board

By

The Low Impact Development Center Inc

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Vegetated Swales

Vegetated swales are broad, shallow channels designed to convey and either filter or infiltrate stormwater runoff. The swales are vegetated along the bottom and sides of the channel and are used to reduce stormwater volume through infiltration, improve water quality through infiltration and vegetative filtering, and reduce runoff velocity by increasing flow path lengths and channel roughness.

Figure 75. A vegetated swale with curb cuts in Playa Vista, California.
Source: Keith Linker

Figure 76. A vegetated swale with curb cuts in El Monte, California.
Source: Bill DePoto

Benefits

- Reduced stormwater volume
- Reduced peak discharge rate
- Reduced TSS
- Reduced pollutant loading
- Enhanced site aesthetics
- Reduced phosphorus (moderate efficiency)
- Reduced metals (moderate efficiency)
- Increases time of concentration, T_c

Limitations

- Not applicable for steep slopes
- Requires regular vegetation maintenance and trash removal
- Not suitable for areas with highly erodible soils
- Should not be located under trees which may drop leaves or needles, impeding flow
- Must be used in conjunction with additional BMPs to provide volume storage and peak flow reduction.

Potential LEED Credits:

Primary: Sustainable Sites – Credit 6 "Stormwater Management" (1-2 Points)
Other: Sustainable Sites – Credit 7 "Landscape & Exterior Design to Reduce Heat Islands" (1-2 Points)
Water Efficiency – Credit 1 "Water Efficient Landscaping" (1-2 Points)
Innovation & Design Process (1-4 Points)

Links to Detailed Information

California Department of Transportation. 2008. *Caltrans Treatment BMP Technology Report*. April 2008, CTSW-RT-08-167.02.02.
http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment_BMP_Technology_Rprt.pdf

California Stormwater Quality Association (CASQA). 2003. *California Stormwater BMP Handbook – New Development and Redevelopment*. BMP Factsheet TC-30: Vegetated Swale.
http://www.cabmphandbooks.com/Documents/Development/TC-30.pdf

County of Los Angeles Department of Public Works. 2009. *Stormwater Best Management Practice Design and Maintenance Manual*.
http://dpw.lacounty.gov/DES/design_manuals/StormwaterBMPDesignandMaintenance.pdf

County of San Diego. 2007. *Low Impact Development Handbook.*
http://www.sdcounty.ca.gov/dplu/docs/LID-Handbook.pdf

3. VEGETATED SWALES

Definition

Vegetated swales are open, shallow channels with low-lying vegetation covering the side slopes and bottom that collect and slowly convey runoff flow to downstream discharge points. Vegetated swales provide pollutant removal through settling and filtration in the vegetation (usually grasses) lining the channels, provide the opportunity for stormwater volume reduction through infiltration and evapotranspiration, and reduce the flow velocity in addition to conveying stormwater runoff. An effective vegetated swale achieves uniform sheet flow over and through a densely vegetated area for a period of several minutes. The vegetation in the swale can vary depending on its location within a development project and is the choice of the designer, depending on the design criteria outlined below.

Vegetated swales can be designed to be either on-line or off-line. On-line vegetated swales are used for conveying high flows as well as providing treatment of the water quality design flow, and can replace curbs, gutters, and storm drain systems. On-line swales are sized so that the low flow portion of the swale meets the treatment BMP design criteria, and the upper portion of the swale conveys high flows up to the capital storm (e.g. flood conveyance), with a set freeboard (per the LACFCD "Design Manual Hydraulics"). Flow velocities are limited to prevent reentrainment of sediment and associated pollutants. Off-line swales have flows up to the water quality design flow diverted to them from the conveyance system. Freeboard for off-line swales is 8 inches.

The effectiveness of vegetated swales can be enhanced by adding check dams at approximately 50 foot increments along their length. These dams maximize the retention time within the swale, decrease flow velocities, and promote particulate settling. The incorporation of vegetated filter strips parallel to the top of the channel banks can help to treat sheet flows entering the swale.

General Constraints and Siting Considerations

- High flow velocity - steep terrain and/or large tributary area may cause erosive flows
- Shallow grades - limited site slope may cause ponding
- Compatibility with flood control - swales must not interfere with flood control functions of existing conveyance and detention structures
- Appropriate selection of vegetation based on irrigation requirements and exposure (shady versus sunny areas).

Multi-Use Opportunities

Swales can be easily integrated into roadside vegetated buffers or parking lot landscaping.

Vegetated Swale Design Specifications

Geotechnical Considerations

Vegetated swales can be used wherever the local climate and soils permit the establishment and maintenance of an appropriate vegetative cover, and slopes are low or can be engineered to swale specifications. They are impractical in areas with steep topography (slopes in excess of approximately 10%).

Sizing

The flow capacity of a vegetated swale is a function of the longitudinal slope (parallel to flow), the resistance to flow (i.e. Manning's roughness), and the cross sectional area. The cross section is normally approximately trapezoidal and the area is a function of the bottom width and side slopes. The flow capacity of vegetated swales should be such that the design water quality flow rate will not exceed a flow depth of 2/3 the height of the vegetation within the swale or 4 inches at the SUSMP design intensity. Once design criteria have been selected, the resulting flow depth for the design water quality flow rate is checked. If the depth restriction is exceeded, swale parameters (e.g. longitudinal slope, width) are adjusted to reduce the flow depth.

Procedures for sizing swales are summarized below and illustrated in Figure 3-1.

Step 1: Select design flows

The swale sizing is based on the SUSMP design flow Q_{wq} (see *A Manual for the Standard Urban Storm Water Mitigation Plan*, LACDPW, September 2002 (or as amended)).

Step 2: Calculate swale bottom width.

The swale bottom width is calculated based on Manning's equation for open-channel flow. This equation can be used to calculate discharges as follows:

$$Q = 1.49 / nAR^{1.67} S^{0.5} \qquad \text{(Equation 3-1)}$$

where:

- Q = flow rate (cfs)
- n = Manning's roughness coefficient (unitless)
- A = cross-sectional area of flow (ft^2)
- R = hydraulic radius (ft) = area divided by wetted perimeter
- S = longitudinal slope (ft/ft)

For shallow flow depths in swales, channel side slopes are ignored in the calculation of bottom width. Use the following equation (a simplified form of Manning's formula) to estimate the swale bottom width:

$$b = Q_{wq} n_{wq} / 1.49 y^{1.67} s^{0.5} \qquad \text{(Equation 3-2)}$$

Where:

b = bottom width of swale (ft)
Q_{wq} = water quality design flow (cfs)
n_{wq} = Manning's roughness coefficient for shallow flow conditions = 0.2 (unitless)
y = design flow depth (ft)
s = longitudinal slope (along direction of flow) (ft/ft)

Proceed to Step 3 if the bottom width is calculated to be between 2 and 10 feet. A minimum 2-foot bottom width is required. Therefore, if the calculated bottom width is less than 2 feet, increase the width to 2 feet and recalculate the design flow depth y using the Equation 3-2 where Q_{wq}, n_{wq}, and s are the same values as used above, but b = 2 feet.

The maximum allowable bottom width is 10 feet; therefore if the calculated bottom width exceeds 10 feet, then one of the following steps is necessary to reduce the design bottom width:

- Increase the longitudinal slope (s) to a maximum of 6 feet in 100 feet (0.06 feet per foot).
- Increase the design flow depth (y) to a maximum of 4 inches.
- Place a divider lengthwise along the swale bottom (Figure 3-1) at least three-quarters of the swale length (beginning at the inlet), without compromising the design flow depth and swale lateral slope requirements. Swale width can be increased to an absolute maximum of 16 feet if a divider is provided.

Step 3: Determine design flow velocity

To calculate the design flow velocity through the swale, use the flow continuity equation:

$$V_{wq} = Q_{wq} / A_{wq} \qquad \text{(Equation 3-3)}$$

where:

V_{wq} = design flow velocity (fps)
A_{wq} = $by + Zy^2$ = cross-sectional area (ft^2) of flow at design depth, where Z = side slope length per unit height (e.g., Z = 3 if side slopes are 3H:1V)

If the design flow velocity exceeds 1 foot per second, go back to Step 2 and modify one or more of the design parameters (longitudinal slope, bottom width, or flow depth) to reduce the design flow velocity to 1 foot per second or less. If the design flow velocity is calculated to be less than 1 foot per second, proceed to Step 4. *Note: It is desirable to have the design velocity as low as possible, both to improve treatment effectiveness and to reduce swale length requirements.*

Step 4: Calculate swale length

Use the following equation to determine the necessary swale length to achieve a hydraulic residence time of at least 10 minutes (600 seconds):

$$L = 60 t_{hr} V_{wq} \quad \text{(Equation 3-4)}$$

Where:

L = minimum allowable swale length (ft)
t_{hr} = hydraulic residence time (s)
V_{wq} = design flow velocity (fps)

The minimum swale length is 100 feet; therefore, if the swale length is calculated to be less than 100 feet, increase the length to a minimum of 100 feet, leaving the bottom width unchanged. If a larger swale can be fitted on the site, consider using a greater length to increase the hydraulic residence time and improve the swale's pollutant removal capability. If the calculated length is too long for the site, or if it would cause layout problems, such as encroachment into shaded areas, proceed to Step 5 to further modify the layout. If the swale length can be accommodated on the site, proceed to Step 6.

Step 5: Adjust swale layout to fit on site

If the swale length calculated in Step 4 is too long for the site, the length can be reduced (to a minimum of 100 feet) by increasing the bottom width up to a maximum of 16 feet, as long as the 10 minute retention time is retained. However, the length cannot be increased in order to reduce the bottom width because Manning's depth-velocity-flow rate relationships would not be preserved. If the bottom width is increased to greater than 10 feet, a low flow dividing berm is needed to split the swale cross section in half to prevent channelization.

Length can be adjusted by calculating the top area of the swale and providing an equivalent top area with the adjusted dimensions.

a) Calculate the swale treatment top area based on the swale length calculated in Step 4:

$$A_{top} = (b_i + b_{slope}) L_i \quad \text{(Equation 3-5)}$$

Where:

A_{top} = top area (ft^2) at the design treatment depth
b_i = bottom width (ft) calculated in Step 2
b_{slope} = the additional top width (ft) above the side slope for the design water depth (for 3:1 side slopes and a 4-inch water depth, b_{slope} = 2 feet)
L_i = initial length (ft) calculated in Step 4.

b) Use the swale top area and a reduced swale length L_f to increase the bottom width, using the following equation:

$$L_f = A_{top} / (b_f + b_{slope}) \quad \text{(Equation 3-6)}$$

where:

L_f = reduced swale length (ft)
b_f = increased bottom width (ft).

c) Recalculate V_{wq} according to Step 3 using the revised cross-sectional area A_{wq} based on the increased bottom width b_f. Revise the design as necessary if the design flow velocity exceeds 1 foot per second.

d) Recalculate to assure that the 10 minute retention time is retained.

Step 6: Provide conveyance capacity for flows higher than Q_{wq}

Vegetated swales may be designed as flow-through channels that convey flows higher than the water quality design flow rate, or they may be designed to incorporate a high-flow bypass upstream of the swale inlet. A high-flow bypass usually results in a smaller swale size. If a high-flow bypass is provided, this step is not needed. If no high-flow bypass is provided, proceed with the procedure below. Flow diversion structure design is described in Appendix D.

a) Check the swale size to determine whether the swale can convey the capital storm peak flows (Refer to Design Manual - Hydraulic, Section C, "Criteria for Hydraulic Design Open Channels" and "Hydrology Manual" LACDPW).

b) The capital storm peak flow velocity must be less than 3.0 feet per second. If this velocity exceeds 3.0 feet per second, return to Step 2 and increase the bottom width or flatten the longitudinal slope as necessary to reduce the capital storm peak flow velocity to 3.0 feet per second or less. If the longitudinal slope is flattened, the swale bottom width must be recalculated (Step 2) and must meet all design criteria.

Swale Geometry

1. In general, trapezoidal channel shape should be assumed for sizing calculations above, but a more naturalistic channel cross-section is preferred.

2. Swales designed for water quality treatment purposes only are anticipated to be fairly shallow, generally less than 1-foot. Therefore, a side slope of 2:1 (H:V) can be used and is acceptable. Milder slopes are necessary for mowed turf swales (3H:1V max).

3. Overall depth from the top of the side walls to the swale bottom shall be at least 12 inches.

4. Swale length shall be greater than 100 linear feet. Regardless of the recommended detention time, the swale should be not less than 100 feet in length. Length can be increased by meandering the swale.

5. The minimum swale bottom width shall be 2 feet to allow for ease of mowing.

6. The maximum swale bottom width shall be limited to 10 feet, unless a dividing berm is provided, then maximum bottom width can be 16 feet. Swale width is calculated without the dividing berm. *Intent: Experience shows that when the width exceeds about 10 feet, it*

is difficult to keep the water from concentrating in low-flow channels. It is also difficult to construct the bottom level and without sloping to one side. Vegetated swales are best constructed by leveling the bottom after excavating. A single-width pass with a front-end loader produces a better result than a multiple-width pass.

7. Swales that are required to convey flood as well as SUSMP flows should be sized to convey the capital storm and include 2 feet of freeboard.

8. Gradual meandering bends in the swale are desirable for aesthetic purposes and to promote slower flow.

Bottom Slope

1. The longitudinal slope (along the direction of flow) shall be between 1% and 6%.

2. If longitudinal slopes are less than 1.5% and the soils are poorly drained (e.g., silts and clays), then underdrains shall be provided. A soils report to verify soils properties shall be provided for swales less than 1.5%.

3. If longitudinal slope exceeds 6%, check dams with vertical drops of 12 inches or less shall be provided to achieve a bottom slope of 6% or less between the drop structures.

4. The lateral (horizontal) slope at the bottom of the swale shall be zero (flat) to discourage channeling.

Water Depth and Dry Weather Flow Drain

1. Water depth should not exceed 4 inches (or 2/3 of expected vegetation height), except for frequently mowed turf swales, for which the depth should not exceed 2 inches.

2. The swale length must provide a minimum hydraulic residence time of 10 minutes.

3. A low flow drain shall be provided for dry weather flows extending the entire length of the swale. The drain shall have a minimum depth of 6 inches, and a width no more than 5% of the calculated bottom swale width; the width of the drain shall be in addition to the required bottom width. If an anchored plate is used for flow spreading at the swale inlet, the plate wall shall have v-notches (maximum top width = 5% of swale width) or holes to allow preferential exit of low flows into the drain. If an underdrain is installed as required below, the low flow drain shall be omitted.

Energy Dissipation

1. Vegetated swales may be designed either on-line or off-line. If the facility is on-line, velocities shall be maintained below the maximum flow design velocity of 3 feet per second to prevent scour and resuspension of deposited sediments.

2. The maximum SUSMP flow velocity shall not exceed 1.0 foot per second. *Intent: This maximum SUSMP flow velocity promotes settling and keeps vegetation upright.*

3. This velocity limitation combined with a maximum depth of 4 inches and bottom width of 10 feet results in a recommended maximum flow capacity of about 3.3 cfs, after accounting for the side slopes. The contributory drainage area to each swale is limited so as not to exceed this recommended maximum flow capacity.

4. The maximum flow velocity during the capital storm shall not exceed 3.0 foot per second. This can be accomplished by:

    a. splitting roadside swales near high points in the road so that flows drain in opposite directions, mimicking flow patterns on the road surface.

    b. limiting contributory drainage areas to long swales by diverting flows throughout the length of the swale at regular intervals, to the downstream stormwater conveyance system.

5. A flow spreader (see "Flow Spreaders" below and detail in Figure 3-2) shall be used at the inlet so that the entrance velocity is quickly dissipated and the flow is uniformly distributed across the whole swale. Energy dissipation controls shall be constructed of sound materials such as stones, concrete, or proprietary devices that are rated to withstand the energy of the influent flows.

6. If check dams are used to reduce the longitudinal slope, a flow spreader shall be provided at the toe of each vertical drop, with specifications described below.

7. If flow is to be introduced through curb cuts, place pavement slightly above the elevation of the vegetated areas. Curb cuts should be at least 12 inches wide to prevent clogging.

Flow Spreaders

1. An anchored plate flow spreader shall be provided at the inlet to the swale. Equivalent methods for spreading flows evenly throughout the width the swale are acceptable.

2. The top surface of the flow spreader plate shall be level, projecting a minimum of 2 inches above the ground surface of the water quality facility, or v-notched with notches 6 to 10 inches on center and 1 to 4 inches deep (use shallower notches with closer spacing).

3. A flow spreader plate shall extend horizontally beyond the bottom width of the facility to prevent water from eroding the side slope. The horizontal extent should be such that the bank is protected for all flows up to the capital design flow (on-line swales) or the maximum flow that will enter the WQ facility (off-line swales).

4. Flow spreader plates shall be securely fixed in place.

5. Flow spreader plates may be made of either concrete, stainless steel, or other durable material.

6. Anchor posts shall be 4-inch square concrete, tubular stainless steel, or other material resistant to decay.

Check Dams

If check dams are required, they can be designed out of a number of different materials, including riprap, earthen berms, or removal stop logs. Check dams must be placed as to achieve the desired slope (<6%), and desired velocity (not to exceed 3 fps during the capital storm or 1 fps during the SUSMP storm), at a maximum of 50 feet apart. If rip rap is used, the material should consist of well-graded stone consisting of a mixture of rock sizes. The following is an example of an acceptable gradation:

Particle Size	% Passing
24"	100
15"	75
9"	50
4"	10

Underdrains

If underdrains (not to be confused with a dry weather flow drain (see page 3-25 above)) are required, then they must meet the following criteria:

1. Underdrains must be made of slotted, polyvinyl chloride (PVC) pipe conforming to ASTM D 3034 or equivalent or corrugated high density polyethylene (HDPE) pipe conforming to AASHTO 252M or equivalent. *Intent: As compared to round-hole perforated pipe, slotted underdrains provide greater intake capacity, clog resistant drainage, and reduced entrance velocity into the pipe, thereby reducing the chances of solids migration.*

2. Slotted pipe shall have 2 to 4 rows of slots cut perpendicular to the axis of the pipe or at right angles to the pitch of corrugations. Slots shall have a width of 0.04-inch to 0.1-inch and shall have a length of 1-inch to 1.25-inch. Slots shall be spaced such that the pipe has a minimum of one square inch per lineal foot.

3. The pipe must be 6 inches or greater in diameter, so it can be cleaned without damage to the pipe. Clean-out risers with diameters equal to the underdrain pipe must be placed at the terminal ends of the underdrain and can be incorporated into the flow spreader and outlet structure to minimize maintenance obstacles in the swale. Intermediate clean-out risers may also be placed in the check dams or grade control structures. The cleanout risers shall be capped with a lockable screw cap.

4. The underdrain shall be placed parallel to the swale bottom and backfilled and bedded with six inches of drain rock. The following aggregate shall be used to provide a gravel blanket and bedding for the underdrain pipe to provide a 1-foot minimum depth around the top and sides of the slotted pipe.

Sieve size	Percent Passing
¾ inch	100
¼ inch	30-60
US No. 8	20-50
US No. 50	3-12
US No. 200	0-1

5. The drain rock must be wrapped in a geotextile fabric meeting the following minimum materials requirements.

Geotextile Property	Value	Test Method
Trapezoidal Tear (lbs)	40 (min)	ASTM D4533
Permeability (cm/sec)	0.2 (min)	ASTM D4491
AOS (sieve size)	#60 - #70 (min)	ASTM D4751
Ultraviolet resistance	70% or greater	ASTM D4355

6. The underdrain must infiltrate into the subsurface or drain freely to an acceptable discharge point.

Swale Divider

1. If a swale divider is used, the divider should be constructed of a firm material that will resist weathering and not erode, such as concrete or compacted soil seeded with grass. Treated timber should not be used. Selection of divider material must take into account maintenance activities, such as mowing.

2. The divider must have a minimum height of 1 inch greater than the water quality design water depth.

3. Earthen berms should be no steeper than 2H:1V.

4. Material other than earth shall be embedded to a depth sufficient to be stable.

Soils

1. Turf swale soils shall be amended with 2 inches of well-rotted compost, unless the organic content is already greater than 10%. The compost shall be mixed into the native soils to a depth of 6 inches to prevent soil layering and washout of compost. The compost will contain no sawdust, green or under-composted material, or any other toxic or harmful substance. It should contain no un-sterilized manure which can lead to high levels of pathogen indicators (coliform bacteria) in the runoff.

Vegetation

Swales must be vegetated in order to provide adequate treatment of runoff. It is important to maximize water contact with vegetation and the soil surface.

1. The swale area should be appropriately vegetated with a mix of erosion-resistant plant species that effectively bind the soil. A diverse selection of low growing plants that thrive under the specific site, climatic, and watering conditions should be specified. A mixture of dry-area and wet-area grass species that can continue to grow through silt deposits is most effective. Native or adapted grasses are preferred because they generally require less fertilizer, limited maintenance, and are more drought resistant than exotic plants. Consultation with a landscape or erosion control specialist is recommended for project-

specific recommendations on grass seed, fertilizer, and mulching applications to ensure healthy grass growth. Suitable plant types can also be found by referring to various online sources such as:

- CalFlora - a database of wild California plants that include plant characteristics and photos
  http://www.calflora.org
- The California Invasive Plant Council - a listing of invasive, non-native plants of California
  http://www.cal-ipc.org/
- L.A. River Master Plan Landscaping and Plant Palettes - a guidance document providing a listing of native plant communities in the Los Angeles area
  http://ladpw.org/wmd/watershed/LA/LAR_planting_guidelines_webversion.pdf
- Jepson Online Interchange For California Floristics - a database that provides information on identification, taxonomy, distribution, ecology, relationships, and diversity of California vascular plants.
  http://ucjeps.berkeley.edu/interchange.html
- VegSpec - a web-based decision support system that assists land managers in the planning and design of vegetative establishment practices
  http://ironwood.itc.nrcs.usda.gov/Netdynamics/Vegspec/pages/HomeVegspec.htm
- USDA Plants Database - an extensive database of native and non-native plants of the United States with over 100 plant characteristics
  http://plants.usda.gov/index.html

2. Trees or shrubs may be used in the surrounding landscape as long as they do not excessively shade the swale.

3. Above the design treatment elevation, a typical lawn mix or landscape plants can be used provided they do not shade the swale vegetation.

4. Irrigation is required if the seed is planted in spring or summer. Use of a permanent irrigation system may help provide maximal water quality performance. Drought-tolerant grasses should be specified to minimize irrigation requirements.

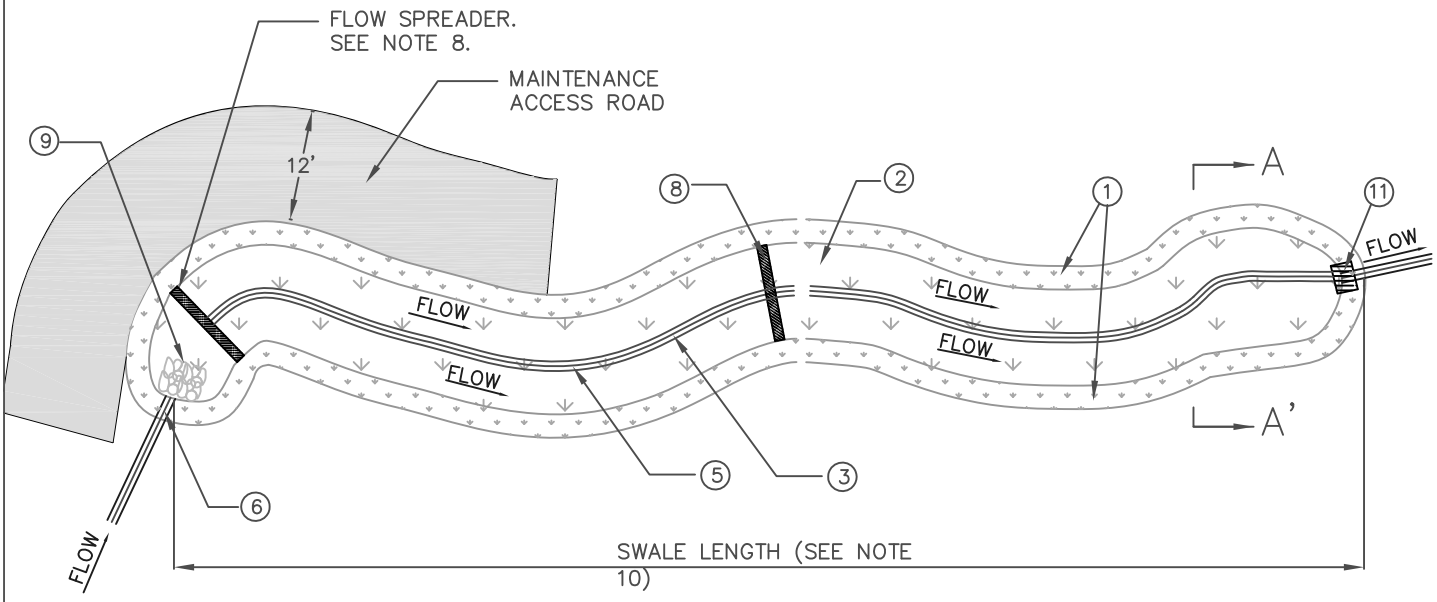
5. Vegetative cover should be at least 4 inches in height, ideally 6 inches. Swale water depth should ideally be 2 inches below the height of the shortest plant species and should not exceed 4 inches.

6. Locate the swale in an area without excessive shade to avoid poor vegetative growth. For moderately shaded areas, shade tolerant plants should be used.

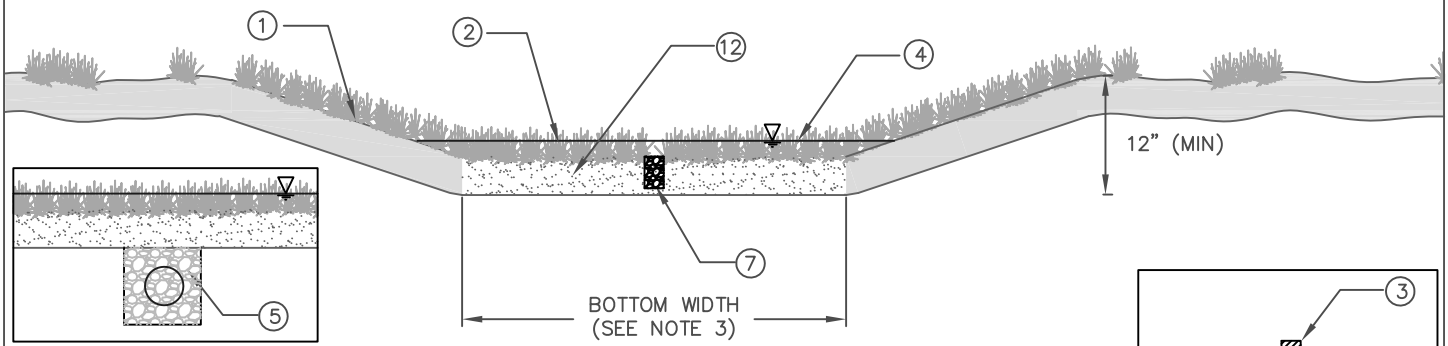
7. Locate the swale away from large trees that may drop leaves or needles. Excessive tree debris may smother the grass or impede the flow through the swale. Landscape planter beds should be designed and located so that soil does not erode from the beds and enter a nearby swale.

Restricted Construction Materials

The use of treated wood or galvanized metal within the vegetated swale is prohibited.

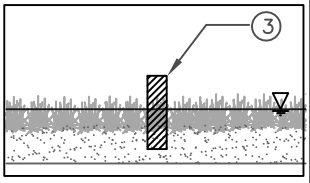


Plan View
(Not to Scale)



Underdrain
(Not to Scale)

Section A – A'
(Not to Scale)

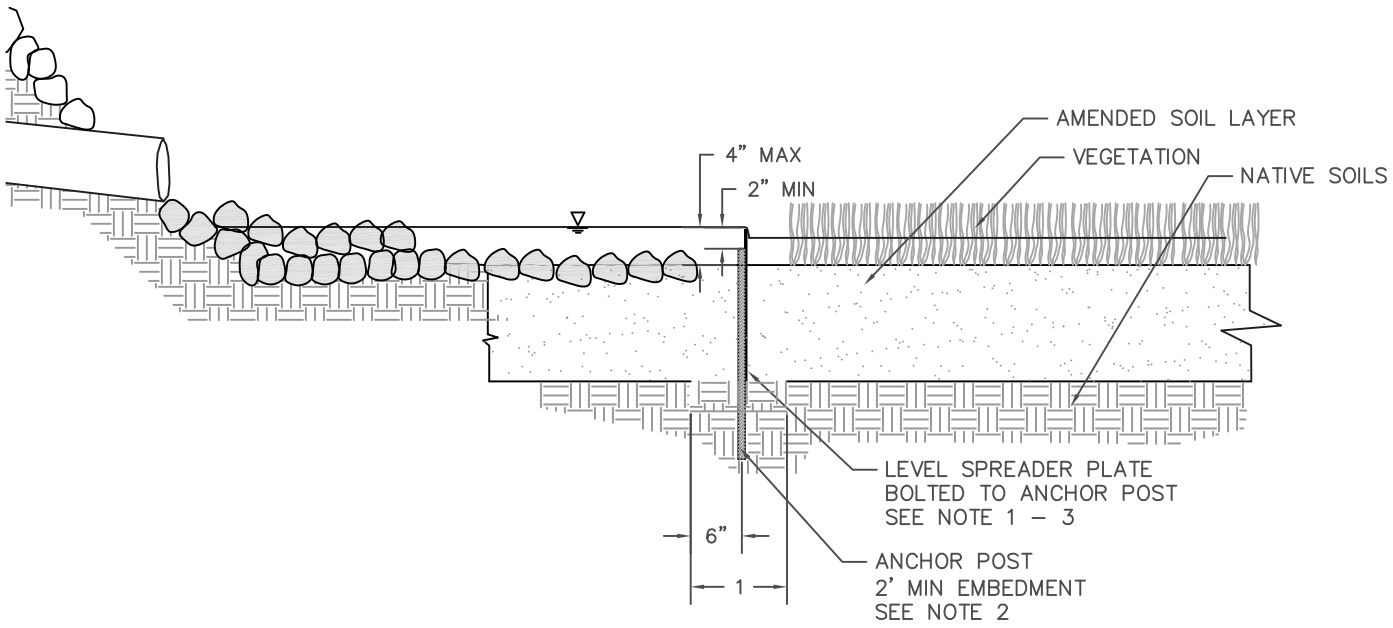


Swale Divider
(Not to Scale)

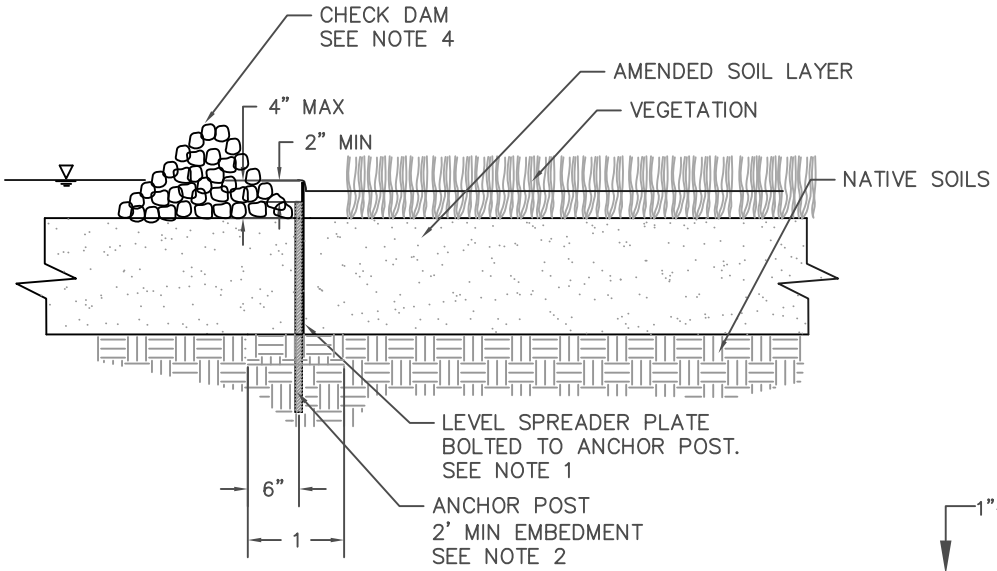
NOTES:

1. VEGETATED SIDE SLOPES AT 2H:1V MAXIMUM SLOPE. MOWED TURF SWALES AT 3H:1V MAXIMUM.
2. GRASS HEIGHT SHALL BE 4" – 6" HIGH.
3. SWALE DIVIDER REQUIRED FOR BOTTOM WIDTHS > 10'. MINIMUM REQUIRED BOTTOM WIDTH IS 2' EXCLUDING WIDTH OF LOW FLOW CHANNEL. MAXIMUM BOTTOM WIDTH WITH DIVIDER IS 16'.
4. DEPTH OF FLOW FOR WATER QUALITY TREATMENT MUST NOT EXCEED TWO–THIRDS OF THE GRASS HEIGHT AND NOT GREATER THAN 4" (INFREQUENTLY MOWED) OR 2" (FREQUENTLY MOWED).
5. 6" PERFORATED UNDERDRAIN IN 9" DEEP COARSE AGGREGATE BED CONNECTED TO STORM DRAIN. REQUIRED FOR SLOPES < 1.5% OR AS NEEDED.
6. INLET PIPE WITH INLET PROTECTION.
7. IF NO UNDERDRAIN, LOW FLOW DRAIN SHALL EXTEND ENTIRE LENGTH OF SWALE AND SHALL HAVE A DEPTH OF 6" MINIMUM AND WIDTH NO MORE THAN 5% SWALE BOTTOM WIDTH. ANCHORED PLATE FLOW SPREADER IF USED, SHALL HAVE V–NOTCHES (MAX TOP WIDTH = 5% OF SWALE WIDTH) OR HOLES TO ALLOW PREFERENTIAL EXIT OF LOW FLOWS.
8. INSTALL CHECK DAMS OR GRADE CONTROL STRUCTURES FOR SLOPES > 6% AT 50' MAXIMUM SPACING TO ACHIEVE A MAXIMUM EFFECTIVE LONGITUDINAL SLOPE OF 6%. FLOW SPREADERS SHALL BE PROVIDED AT INLET AND AT THE BASE OF EACH CHECK DAM SEE FIGURE 3–2.
9. INSTALL ENERGY DISSIPATOR AT THE INLET OF VEGETATED SWALE.
10. SWALE LENGTH SHALL BE 100' OR LENGTH REQUIRED TO PROVIDE 10 MINUTES RESIDENCE TIME, WHICH EVER IS GREATER.
11. INSTALL APPROPRIATE OUTLET STRUCTURE. ACCOMODATE LOW FLOW CHANNEL AND/OR UNDERDRAIN (IF PRESENT).
12. AMEND SOILS WITH 2" OF COMPOST TILLED INTO 6" OF NATIVE SOIL UNLESS NATIVE SOIL ORGANIC CONTENT > 10%.

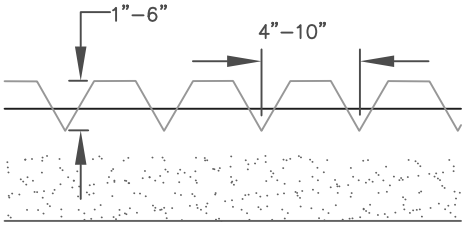
Figure 3–1
VEGETATED SWALE FILTER



Inlet Flow Spreader Detail
(Not to Scale)



Check Dam and Flow Spreader Detail
(Not to Scale)



V–Notched Flow Spreader Detail
(Not to Scale)

NOTES:

1. TOP SURFACE OF FLOW SPREADER SHALL BE LEVEL AND SHALL PROJECT 2" MINIMUM ABOVE GROUND. V–NOTCHES AT 6 TO 10 INCHES ON CENTER AND 1 TO 4 INCHES DEEP SHALL BE ACCEPTABLE.
2. FLOW SPREADER ANCHOR POSTS SHALL BE 4–INCH SQUARE CONCRETE , TUBULAR STEEL OR OTHER MATERIAL RESISTANT TO DECAY.
3. FLOW SPREADER PLATES SHALL HAVE A ROW OF PERFORATIONS AT THE BASE OF THE PLATE TO PREVENT PONDING FOR LONG DURATIONS.
4. CHECK DAM SHALL BE NO HIGHER THAN 12". CHECK DAM SPACING SHALL BE NO GREATER THAN 50 FEET APART.

Figure 3–2
FLOW SPREADER AND CHECK DAM

Vegetated Swale Maintenance Standards

General Requirements

1. Inspect vegetated swales for erosion or damage to vegetation after every storm greater than 0.75" for on-line swales and at least twice annually for off-line swales, preferably at the end of the wet season to schedule summer maintenance and in the fall to ensure readiness for winter (see Appendix E for guidance on facility inspection). Additional inspection after periods of heavy runoff is recommended. Each swale should be checked for debris and litter and areas of sediment accumulation (see Appendix F for a vegetated swale inspection and maintenance checklist).

2. Swale inlets (curb cuts or pipes) should maintain a calm flow of water entering the swale. Remove sediment as needed at the inlet if vegetation growth is inhibited in greater than 10% of the swale or if the sediment is blocking even distribution and entry of the water. Following sediment removal activities, replanting and/or reseeding of vegetation may be required for reestablishment.

3. Flow spreaders should provide even dispersion of flows across the swale. Sediments and debris should be removed from the flow spreader if blocking flows. Splash pads should be repaired if needed to prevent erosion. Spreader level should be checked and releveled if necessary.

4. Side slopes should be maintained to prevent erosion that introduces sediment into the swale. Slopes should be stabilized and planted using appropriate erosion control measures when native soil is exposed or erosion channels are forming.

5. Swales should drain within 48 hours of the end of a storm. Till the swale if compaction or clogging occurs and revegetate. The perforated underdrain pipe, if present, should be cleaned if necessary.

6. Vegetation should be healthy and dense enough to provide filtering while protecting underlying soils from erosion:

    - Mulch should be replenished as needed to ensure survival of vegetation.
    - Vegetation, large shrubs or trees that interfere with landscape swale operation should be pruned.
    - Fallen leaves and debris from deciduous plant foliage should be removed.
    - Grassy swales should be mowed to keep grass 4" to 6" in height. Grass clippings shall be removed.
    - Invasive vegetation, such as Alligatorweed (*Alternanthera philoxeroides*), Halogeton (*Halogeton glomeratus*), Spotted Knapweed (*Centaurea maculosa*), Giant Reed (*Arundo donax*), Castor Bean (*Ricinus communis*), Perennial Pepperweed (*Lepidium latifolium*), and Yellow Starthistle (*Centaurea solstitalis*) must be removed and replaced with non-invasive species. Invasive species should never contribute more than 10% of the vegetated area. For more information on invasive weeds, including biology and control

of listed weeds, look at the "encycloweedia" located at the California Department of Food and Agriculture website at http://www.cdfa.ca.gov/wma or the California Invasive Plant Council website at http://portal.cal-ipc.org/weedlist.

- Dead vegetation should be removed if greater than 10% of area coverage or when swale function is impaired. Vegetation should be replaced and established before the wet season to maintain cover density and control erosion where soils are exposed.

7. Check dams (if present) should control and distribute flow across the swale. Causes for altered water flow and/or channelization should be identified and obstructions cleared. Check dams and swale should be repaired if damaged.

8. The vegetated swale should be well maintained; trash and debris, sediment, visual contamination (e.g., oils), noxious or nuisance weeds, should all be removed.

Maintenance Standards

A summary of the routine and major maintenance activities recommended for vegetated swales is shown in Table 3-1. Detailed routine and major maintenance standards are listed in Tables 3-2 and 3-3.

Table 3-1: Vegetated Swale Routine and Major Maintenance Quick Guide

Inspection and Maintenance Activities Summary	
Routine Maintenance	• Remove excess sediment as needed • Removal trash and debris • Clean underdrain (where applicable) and/or unclog outlet to eliminate standing water • Clean and reset flow spreaders as needed to restore original function • Restore sunlight access to shaded regions. Remove overhanging tree branches as needed to prevent excessive shading. • Remove any evidence of visual contamination from floatables such as oil and grease • Mow routinely to maintain ideal grass height and to suppress weeds • Replace invasive vegetation with non-invasive species • Remove sediment and debris accumulation near inlet and outlet structures • Stabilize/repair minor erosion and scouring with gravel • Take photographs before and after maintenance (encouraged)
Major Maintenance	• Regrade swale bottom and reseed to mitigate ponding of water between storms or excessive erosion and scouring • Install or replace low flow channel using pea gravel media to better convey nuisance flows • Revegetate bare exposed portions of the swale to restore vegetation to original level of coverage • De-thatch grass to remove accumulated sediment and aerate compacted areas to promote infiltration

Table 3-2: Routine Maintenance Standards - Vegetated Swales

Defect or Problem	**Condition When Maintenance is Needed**	**Results Expected When Maintenance Is Performed**	**Frequency**
Sediment Accumulation	Sediment depth exceeds 2 inches or covers vegetation.	Sediment deposits on grass treatment area of the vegetated swale removed without significant disturbance of the vegetation. When finished, swale should be level from side to side and drain freely toward outlet. There should be no areas of standing water once inflow has ceased.	Annually prior to wet season After major storm events (>0.75 in/24 hrs) if spot checks of some basins indicate widespread damage/ maintenance needs
Trash and Debris Accumulation	Any trash and debris which exceed 5 cubic feet per 1,000 square feet (one standard garbage can).	Trash and debris removed from vegetated swale.	
Standing Water	When water stands in the swale between storms and does not drain freely.	There should be no areas of standing water once inflow has ceased. Outlet structures and underdrain (if installed) shall drain freely.	
Flow Spreader	Flow spreader uneven or clogged so that flows are not uniformly distributed through entire swale width.	Spreader leveled and cleaned such that flows are distributed evenly over entire swale width.	
Excessive Shading	Vegetation growth is poor because sunlight does not reach swale.	Over-hanging limbs and brushy vegetation on side slopes are trimmed back.	
Erosion/ Scouring	Eroded or scoured swale bottom due to flow channelization or higher flows.	No erosion or scouring in swale bottom. For ruts or bare areas less than 12 inches wide, damaged areas repaired by filling with crushed gravel. Over time, the grass will have started to cover the rock.	
Visual Contaminants and Pollution	Any visual evidence of oil, gasoline, contaminants or other pollutants.	No visual contaminants or pollutants present.	
Vegetation Length	When the grass becomes excessively tall (greater than 10-inches); when nuisance weeds and other vegetation starts to take over.	Vegetation mowed or nuisance vegetation removed so that flow is not impeded. Grass should be mowed to a height of 4 to 6 inches (depending on landscape requirements). Grass clippings removed.	Monthly (or as dictated by agreement between County and landscape contractor

Defect or Problem	Condition When Maintenance is Needed	Results Expected When Maintenance Is Performed	Frequency
Inlet/Outlet Blockage	Inlet/outlet areas clogged with sediment and/or debris.	Material removed so that there is no clogging or blockage in the inlet and outlet area.	
Low Flow Channel Overflow	Nuisance flows are ponding, swale is continually wet.	Low flow channel media is renewed to adequately convey nuisance flows.	

Table 3-3: Major Maintenance Standards - Vegetated Swales

Defect or Problem	Condition When Maintenance is Needed	Results Expected When Maintenance Is Performed	Frequency
Standing Water	When water stands in the swale between storms and does not drain freely.	There should be no areas of standing water once inflow has ceased. Any of the following may apply: improved grade from head to foot of swale, removed clogged check dams, added underdrains or converted to a wet biofiltration swale.	Annual – preferably at end of wet season or as needed (infrequent) After major storm events (>0.75 in/24 hrs) if spot checks of some basins indicate widespread damage/ maintenance needs
Erosion/ Scouring	Eroded or scoured swale bottom due to flow channelization, or higher flows.	No erosion or scouring in swale bottom. Bare areas greater than 12 inches wide are regraded and reseeded.	
Constant Baseflow	When small quantities of water continually flow through the swale, even when it has been dry for weeks and an eroded, muddy channel has formed in the swale bottom	No eroded, muddy channel on the bottom. A low-flow pea-gravel drain added to the length of the swale, or an underdrain installed.	
Poor Vegetation Coverage	When grass is sparse or bare or eroded patches occur in more than 10% of the swale bottom.	Vegetation coverage in more than 90% of the swale bottom. Poorly vegetated areas are replanted with plugs of grass from the upper slope and reseeded there, plugs planted in the swale bottom with no gaps, or reseeded into loosened, fertile soil.	Semiannual – at beginning and end of wet season

Appendix I: Infiltration Non-Feasibility Letter

February 23, 2016

Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Attention: Mr. Kathy Hoffer

Project No.: **15G204-3**

Subject: **Storm Water Infiltration**
Proposed D2 Air Cargo Compatible Development
SE Terminus of Van Buren Boulevard
Between I-215 and MARB
Moreno Valley, California

Reference: Geotechnical Investigation, D2 Air Cargo Compatible Development, SE Terminus of Van Buren Boulevard, Between I-215 and MARB, Moreno Valley, California, prepared for Hillwood by Southern California Geotechnical, Inc. (SCG), SCG Project No. 15G204-1, dated December 16, 2015.

Gentlemen:

In accordance your request, we have prepared this letter in order to comment on the infiltration characteristics of the on-site soils. The near surface soils generally consist of medium dense to very dense silty sands and clayey sands and stiff to hard silty clays and sandy clays. In general, these soils possess high densities and are weakly to moderately cemented. These soils are considered relatively impermeable with respect to storm water infiltration.

Based on the relatively high densities, cementation, and the silt and clay content of the near surface soils, no significant storm water infiltration should be expected within the near surface soils at the subject site.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. NIELSEN
No. 77915
CIVIL
STATE OF CALIFORNIA

Distribution: (1) Addressee
(1) Huitt-Zollars, Attention: Mr. Johnny Murad

I-7 Preliminary Master Plan Storm Drain Design

Technical Memorandum

To: Kathy Hoffer, Vice President, Hillwood

From: Joseph C. Caldwell, PE,
Director – Stormwater Engineering, Albert A. Webb Associates

Date: September 12, 2019

Re: VIP 215 Preliminary Master Plan Storm Drain Design

Introduction

Veterans Industrial Park 215 (VIP 215) is a proposed industrial development project located between Interstate 215 (I-215) and March Air Reserve Base (MARB) on March Joint Powers Authority (MJPA) property. MJPA is currently updating the Master Drainage Plan (MDP) and a reach of the planned MDP Line B (Line B) traverses across the site. This memorandum is written to document the preliminary sizing of the Line B facilities across the VIP 215 site. Based upon coordination with MJPA the current alignment of Line B is along the westerly and southerly boundaries of the VIP215 site**. Exhibit 1** shows the current proposed alignment for Line B.

Hydrology

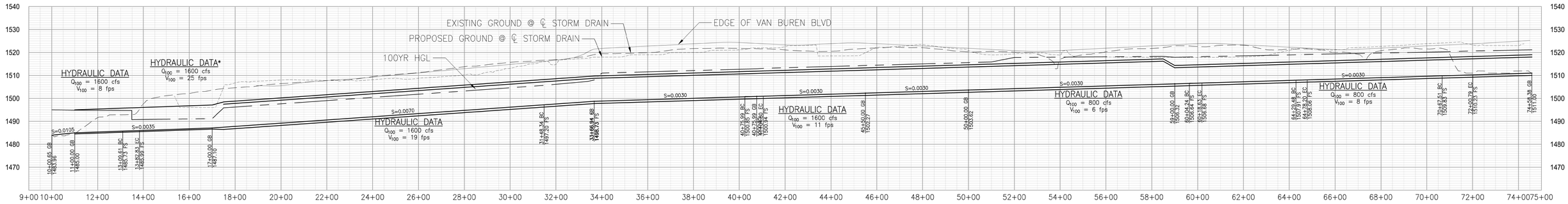
The upstream flows entering the proposed Line B are generated from large tributary areas westerly of I-215 and northerly of the March Air Museum. Existing (and future proposed) culverts convey flows easterly across I-215. The Meridian North and South developments have implemented an extensive network of storm drains and detention basins. The MDP that is being prepared by the MJPA has not yet been approved by Riverside County Flood Control and Water Conservation District (RCFC&WCD). However, based upon a review of the draft analysis, RCFC&WCD provided direction to conceptually size the Line B facility to accommodate a flow rate of 800 cfs along the northwesterly side of the site and for 1,600 CFS from the middle of the site to the downstream end of the site. Based upon the review of current and historical hydrology studies by WEBB and RCFC&WCD these preliminary flow rates are on the conservative side. They are appropriate for planning purposes. During final design the actual flow rates from the MDP will be utilized and the design flow rates used for this analysis will be reduced slightly.

Hydraulics

The alignment, profile and facility size shown on **Exhibit 1** was used to develop a WSPG model of the proposed drainage improvements. The results of the WSPG analysis are included as part of this Technical Memorandum in **Attachment A**. The proposed facility consists of a reinforced

concrete box pipe with three sizes: 7'H x 14'W upstream of the mid-site junction, 10'H x14'W downstream of the junction, and 10'H x10'W along the downstream portion of the facility. In interterm conditions Line B will discharge into an existing drainage channel on MARB. A box-to-channel transition and channel section was incorporated at the downstream end of the RCB pipe to transition the flows to the vegetated swale. In the future a downstream portion of Line B will be constructed outside of MARB property and will eventually tie into Lateral B of the Perris Valley Storm Drain.

Based upon the hydraulic analysis the conceptual sizing of Line B is appropriate to convey the 100-Year runoff. During final design the facility will be optimized to convey the 100-Year design flow rate. At that time a comprehensive drainage study will be prepared to accompany the final design.



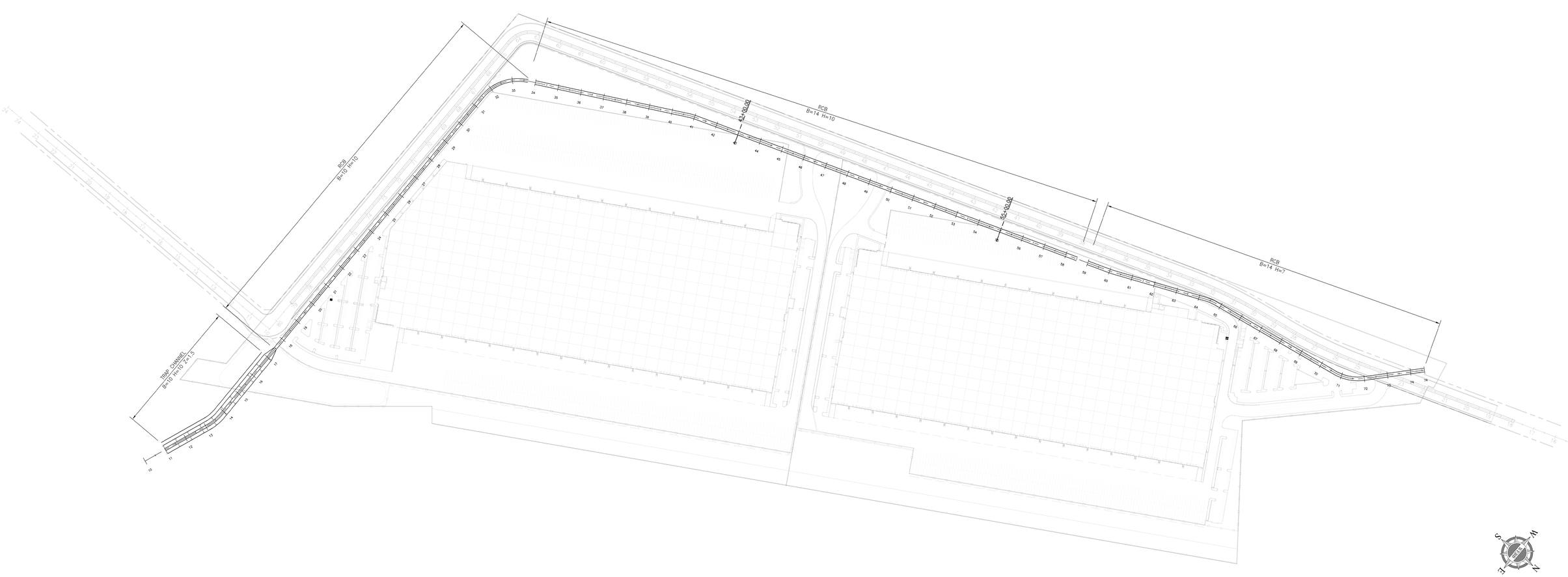


EXHIBIT 1

SCALE:	ALBERT A. WEBB ASSOCIATES — ENGINEERING CONSULTANTS, 3788 McCRAY STREET, RIVERSIDE CA. 92506, PH. (951) 686-1070, FAX (951) 788-1256	PRELIMINARY STORM DRAIN DESIGN	W.O. 16-0280
DATE: 7/2019			SHEET 1
DESIGNED:			OF 1 SHEETS
CHECKED:		VIP 215	DWG. NO.
PLN CK REF:			
F.B.			

S:\2016\16-0280\DRAWINGS\DESIGN (30)\16-0280 SD RCB PRELIMINARY.DWG 9/5/2019 9:15:14 AM

Attachment A

```
T1 16-0280 VIP 215  RCB SAME ALIGNMENT AS CHANNEL ALT, 0.3% SLOPE            0
T2 preliminary hydraulics of SD along Van Buren
T3 CCS
SO   1000.6501483.960  1                          1495.000
R    1100.0001485.000  1      .015                                  .000
R    1309.6101485.730  1      .015                                  .000
R    1382.8301485.990  1      .015                                -20.976
R    1700.0001487.100  1      .015                                  .000
TS   1750.0001487.450  2      .014                                  .000
R    3148.3401497.200  2      .014                                  .000
R    3366.9401498.730  2      .014                                62.624
TS   3400.0001498.830  5      .014                                  .000
R    4075.9901500.850  5      .014                                  .000
R    4104.8001500.940  5      .014                                 8.253
R    4550.0001502.270  5      .014                                  .000
R    5000.0001503.620  5      .014                                  .000
R    5100.0001503.920  5      .014                                  .000
JX   5200.0001504.220  5  6   .014  800.000         1504.220        -30.0         .000
R    5850.0001506.170  5      .014                                  .000
TS   5900.0001506.320  6      .014                                  .000
R    6004.2401506.640  6      .014                                  .000
R    6018.6301506.680  6      .014                                -4.122
R    6429.4801507.910  6      .014                                  .000
R    6478.2001508.060  6      .014                                13.957
R    7067.5101509.830  6      .014                                  .000
R    7200.7901510.230  6      .014                                -38.182
R    7458.3801511.000  6      .014                                  .000
SH   7458.3801511.000  6                          1511.000
CD   1  1   0    .000  10.000   10.000 1.500 1.500   .00
CD   2  3   0    .000  10.000   10.000  .000  .000   .00
CD   5  3   0    .000  10.000   14.000  .000  .000   .00
CD   6  3   0    .000   7.000   14.000  .000  .000   .00
Q           800.000   .0
```

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	1	0	.000	10.000	10.000	1.500	1.500	.00										
CD	2	3	0	.000	10.000	10.000	.000	.000	.00										
CD	5	3	0	.000	10.000	14.000	.000	.000	.00										
CD	6	3	0	.000	7.000	14.000	.000	.000	.00										

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
16-0280 VIP 215 RCB SAME ALIGNMENT AS CHANNEL ALT, 0.3% SLOPE
HEADING LINE NO 2 IS -
preliminary hydraulics of SD along Van Buren
HEADING LINE NO 3 IS -
CCS

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.650	1483.960	1	1495.000

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1100.000	1485.000	1	.015	.000	.000	.000	0

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1309.610	1485.730	1	.015	.000	.000	.000	0

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1382.830	1485.990	1	.015	200.000	-20.976	.000	0

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1700.000	1487.100	1	.015	.000	.000	.000	0

ELEMENT NO 6 IS A TRANSITION * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE
	1750.000	1487.450	2	.014	.000	.000

ELEMENT NO 7 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3148.340	1497.200	2	.014	.000	.000	.000	0

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3366.940	1498.730	2	.014	200.001	62.624	.000	0

ELEMENT NO 9 IS A TRANSITION * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE
	3400.000	1498.830	5	.014	.000	.000

ELEMENT NO 10 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	4075.990	1500.850	5	.014	.000	.000	.000	0

ELEMENT NO 11 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H

```
                          4104.800 1500.940    5              .014                      200.010    8.253      .000     0
ELEMENT NO  12 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          4550.000 1502.270    5              .014                        .000     .000      .000     0
ELEMENT NO  13 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          5000.000 1503.620    5              .014                        .000     .000      .000     0
                                                 W S P G W                                                    PAGE NO   3
                       WATER SURFACE PROFILE - ELEMENT CARD LISTING
ELEMENT NO  14 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          5100.000 1503.920    5              .014                        .000     .000      .000     0
ELEMENT NO  15 IS A JUNCTION        *         *     *     *              *                  *                 *
                  U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                          5200.000 1504.220    5     6     0   .014   800.000      .000  1504.220      .000 -30.000     .000
                                                                                         RADIUS    ANGLE
                                                                                          .000     .000
ELEMENT NO  16 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          5850.000 1506.170    5              .014                        .000     .000      .000     0
ELEMENT NO  17 IS A TRANSITION      *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS   ANGLE
                          5900.000 1506.320    6              .014                        .000     .000
ELEMENT NO  18 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          6004.240 1506.640    6              .014                        .000     .000      .000     0
ELEMENT NO  19 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          6018.630 1506.680    6              .014                      200.016   -4.122      .000     0
ELEMENT NO  20 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          6429.480 1507.910    6              .014                        .000     .000      .000     0
ELEMENT NO  21 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          6478.200 1508.060    6              .014                      200.005   13.957      .000     0
ELEMENT NO  22 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          7067.510 1509.830    6              .014                        .000     .000      .000     0
ELEMENT NO  23 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          7200.790 1510.230    6              .014                      200.000  -38.182      .000     0
ELEMENT NO  24 IS A REACH           *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                       RADIUS    ANGLE     ANG PT  MAN H
                          7458.380 1511.000    6              .014                        .000     .000      .000     0
ELEMENT NO  25 IS A SYSTEM HEADWORKS                *                    *
                  U/S DATA   STATION    INVERT  SECT                          W S ELEV
                          7458.380 1511.000    6                           1511.000
                                                 W S P G W                                                    PAGE NO   4
                       WATER SURFACE PROFILE - ELEMENT CARD LISTING
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Program Package Serial Number: 1585

WATER SURFACE PROFILE LISTING Date: 9- 4-2019 Time: 2:48: 8

16-0280 VIP 215 RCB SAME ALIGNMENT AS CHANNEL ALT, 0.3% SLOPE
preliminary hydraulics of SD along Van Buren
CCS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.650	1483.960	11.040	1495.000	1600.00	5.46	.46	1495.46	.00	6.68	43.12	10.000	10.000	1.50	0 .0
26.938	.0105					.0003	.01	11.04	.37	4.58	.015	.00	1.50	TRAP
1027.588	1484.242	10.720	1494.962	1600.00	5.72	.51	1495.47	.00	6.68	42.16	10.000	10.000	1.50	0 .0
25.806	.0105					.0003	.01	10.72	.39	4.58	.015	.00	1.50	TRAP
1053.395	1484.512	10.408	1494.920	1600.00	6.00	.56	1495.48	.00	6.68	41.22	10.000	10.000	1.50	0 .0
24.651	.0105					.0004	.01	10.41	.42	4.58	.015	.00	1.50	TRAP
1078.045	1484.770	10.104	1494.874	1600.00	6.30	.62	1495.49	.00	6.68	40.31	10.000	10.000	1.50	0 .0
21.955	.0105					.0004	.01	10.10	.44	4.58	.015	.00	1.50	TRAP
1100.000	1485.000	9.826	1494.826	1600.00	6.58	.67	1495.50	.00	6.68	39.48	10.000	10.000	1.50	0 .0
74.691	.0035					.0005	.04	9.83	.47	6.06	.015	.00	1.50	TRAP
1174.691	1485.260	9.537	1494.797	1600.00	6.90	.74	1495.54	.00	6.68	38.61	10.000	10.000	1.50	0 .0
71.642	.0035					.0006	.04	9.54	.50	6.06	.015	.00	1.50	TRAP
1246.333	1485.510	9.254	1494.764	1600.00	7.24	.81	1495.58	.00	6.68	37.76	10.000	10.000	1.50	0 .0
63.277	.0035					.0006	.04	9.25	.53	6.06	.015	.00	1.50	TRAP
1309.610	1485.730	9.000	1494.730	1600.00	7.56	.89	1495.62	.43	6.68	37.00	10.000	10.000	1.50	0 .0
39.143	.0036					.0007	.03	9.43	.56	6.03	.015	.00	1.50	TRAP
1348.753	1485.869	8.839	1494.708	1600.00	7.78	.94	1495.65	.45	6.68	36.52	10.000	10.000	1.50	0 .0

HYDRAULIC JUMP

16-0280 VIP 215 RCB SAME ALIGNMENT AS CHANNEL ALT, 0.3% SLOPE
preliminary hydraulics of SD along Van Buren
CCS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1348.753	1485.869	4.855	1490.724	1600.00	19.07	5.65	1496.37	1.80	6.68	24.56	10.000	10.000	1.50	0 .0
34.077	.0036					.0086	.29	6.66	1.82	6.03	.015	.00	1.50	TRAP
1382.830	1485.990	4.786	1490.776	1600.00	19.46	5.88	1496.66	.00	6.68	24.36	10.000	10.000	1.50	0 .0
66.761	.0035					.0094	.63	4.79	1.87	6.06	.015	.00	1.50	TRAP
1449.591	1486.224	4.639	1490.863	1600.00	20.34	6.42	1497.29	.00	6.68	23.92	10.000	10.000	1.50	0 .0
67.837	.0035					.0107	.73	4.64	1.98	6.06	.015	.00	1.50	TRAP
1517.428	1486.461	4.484	1490.945	1600.00	21.33	7.07	1498.01	.00	6.68	23.45	10.000	10.000	1.50	0 .0
64.054	.0035					.0122	.78	4.48	2.10	6.06	.015	.00	1.50	TRAP
1581.482	1486.685	4.334	1491.019	1600.00	22.37	7.77	1498.79	.00	6.68	23.00	10.000	10.000	1.50	0 .0
60.739	.0035					.0139	.84	4.33	2.24	6.06	.015	.00	1.50	TRAP
1642.221	1486.898	4.188	1491.086	1600.00	23.47	8.55	1499.64	.00	6.68	22.56	10.000	10.000	1.50	0 .0
57.779	.0035					.0158	.92	4.19	2.38	6.06	.015	.00	1.50	TRAP
1700.000	1487.100	4.046	1491.146	1600.00	24.61	9.41	1500.55	.00	6.68	22.14	10.000	10.000	1.50	0 .0
TRANS STR	.0070					.0108	.54	4.05	2.53		.014	.00	1.50	TRAP
1750.000	1487.450	8.423	1495.873	1600.00	19.00	5.60	1501.48	.00	9.26	10.00	10.000	10.000	.00	0 .0
1084.569	.0070					.0070	7.56	8.42	1.15	8.42	.014	.00	.00	BOX
2834.569	1495.012	8.423	1503.435	1600.00	19.00	5.60	1509.04	.00	9.26	10.00	10.000	10.000	.00	0 .0
313.771	.0070					.0069	2.18	8.42	1.15	8.42	.014	.00	.00	BOX

Program Package Serial Number: 1585

WATER SURFACE PROFILE LISTING Date: 9- 4-2019 Time: 2:48: 8

16-0280 VIP 215 RCB SAME ALIGNMENT AS CHANNEL ALT, 0.3% SLOPE
preliminary hydraulics of SD along Van Buren
CCS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3148.340	1497.200	8.460	1505.660	1600.00	18.91	5.55	1511.21	.56	9.26	10.00	10.000	10.000	.00	0 .0
190.674	.0070					.0065	1.25	9.02	1.15	8.41	.014	.00	.00	BOX
3339.014	1498.535	8.833	1507.367	1600.00	18.11	5.10	1512.46	.51	9.26	10.00	10.000	10.000	.00	0 .0
27.926	.0070					.0058	.16	9.34	1.07	8.41	.014	.00	.00	BOX
3366.940	1498.730	9.265	1507.995	1600.00	17.27	4.63	1512.63	.00	9.26	10.00	10.000	10.000	.00	0 .0
TRANS STR	.0030					.0028	.09	9.26	1.00		.014	.00	.00	BOX
		---------- WARNING - Flow depth near top of box conduit ----------												
3400.000	1498.830	12.165	1510.995	1600.00	11.43	2.03	1513.02	.00	7.40	14.00	10.000	14.000	.00	0 .0
675.990	.0030					.0028	1.88	12.17	.64	8.14	.014	.00	.00	BOX
4075.990	1500.850	12.026	1512.876	1600.00	11.43	2.03	1514.90	.00	7.40	14.00	10.000	14.000	.00	0 .0
28.810	.0031					.0028	.08	.00	.64	8.00	.014	.00	.00	BOX
4104.800	1500.940	12.139	1513.079	1600.00	11.43	2.03	1515.11	.00	7.40	14.00	10.000	14.000	.00	0 .0
445.200	.0030					.0028	1.24	12.14	.64	8.14	.014	.00	.00	BOX
4550.000	1502.270	12.047	1514.317	1600.00	11.43	2.03	1516.35	.00	7.40	14.00	10.000	14.000	.00	0 .0
450.000	.0030					.0028	1.25	12.05	.64	8.13	.014	.00	.00	BOX
5000.000	1503.620	11.949	1515.569	1600.00	11.43	2.03	1517.60	.00	7.40	14.00	10.000	14.000	.00	0 .0
100.000	.0030					.0028	.28	11.95	.64	8.13	.014	.00	.00	BOX

16-0280 VIP 215 RCB SAME ALIGNMENT AS CHANNEL ALT, 0.3% SLOPE
preliminary hydraulics of SD along Van Buren
CCS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
5100.000	1503.920	11.927	1515.847	1600.00	11.43	2.03	1517.88	.00	7.40	14.00	10.000	14.000	.00	0 .0
JUNCT STR	.0030					.0007	.07	11.93	.64		.014	.00	.00	BOX
5200.000	1504.220	13.589	1517.809	800.00	5.71	.51	1518.32	.00	4.66	14.00	10.000	14.000	.00	0 .0
650.000	.0030					.0007	.45	13.59	.32	4.87	.014	.00	.00	BOX
5850.000	1506.170	12.091	1518.261	800.00	5.71	.51	1518.77	.00	4.66	14.00	10.000	14.000	.00	0 .0
TRANS STR	.0030					.0007	.03	12.09	.32		.014	.00	.00	BOX
5900.000	1506.320	11.584	1517.904	800.00	8.16	1.03	1518.94	.00	4.66	14.00	7.000	14.000	.00	0 .0
104.240	.0031					.0019	.20	11.58	.54	4.83	.014	.00	.00	BOX
6004.240	1506.640	11.463	1518.103	800.00	8.16	1.03	1519.14	.00	4.66	14.00	7.000	14.000	.00	0 .0
14.390	.0028					.0019	.03	.00	.54	5.00	.014	.00	.00	BOX
6018.630	1506.680	11.495	1518.175	800.00	8.16	1.03	1519.21	.00	4.66	14.00	7.000	14.000	.00	0 .0
410.850	.0030					.0019	.79	11.49	.54	4.87	.014	.00	.00	BOX
6429.480	1507.910	11.050	1518.960	800.00	8.16	1.03	1519.99	.00	4.66	14.00	7.000	14.000	.00	0 .0
48.720	.0031					.0019	.09	.00	.54	4.82	.014	.00	.00	BOX
6478.200	1508.060	11.075	1519.135	800.00	8.16	1.03	1520.17	.00	4.66	14.00	7.000	14.000	.00	0 .0
589.310	.0030					.0019	1.13	11.07	.54	4.86	.014	.00	.00	BOX
7067.510	1509.830	10.431	1520.261	800.00	8.16	1.03	1521.30	.00	4.66	14.00	7.000	14.000	.00	0 .0
133.280	.0030					.0019	.25	.00	.54	4.87	.014	.00	.00	BOX

Program Package Serial Number: 1585

WATER SURFACE PROFILE LISTING Date: 9- 4-2019 Time: 2:48: 8

16-0280 VIP 215 RCB SAME ALIGNMENT AS CHANNEL ALT, 0.3% SLOPE
preliminary hydraulics of SD along Van Buren
CCS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
7200.790	1510.230	10.421	1520.651	800.00	8.16	1.03	1521.69	.00	4.66	14.00	7.000	14.000	.00	0 .0
257.590	.0030					.0019	.49	10.42	.54	4.87	.014	.00	.00	BOX
7458.380	1511.000	10.143	1521.143	800.00	8.16	1.03	1522.18	.00	4.66	14.00	7.000	14.000	.00	0 .0

I-8 Preliminary Drainage Report (Single Building Option)

PRELIMINARY DRAINAGE REPORT

For

Veterans Industrial Park 215

PROJECT LOCATION

East of 215 Freeway adjacent to March Air Force Base

DEVELOPER

Riverside Inland Development, LLC
901 Via Piemonte Suite 175
Ontario, CA 91764

PREPARED BY

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David White, P.E.
C52921, Exp 12/31/2016

PREPARATION DATE

October 14, 2016
Revised: January 8, 2020

HZ PROJECT NUMBER

R311930.01

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Purpose	1
Existing Condition	1
Site Discussion	1
Hydrologic Analysis	2
Results	2
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Introduction

This preliminary drainage report has been prepared for Riverside Inland Development and March Joint Powers Authority (MJPA). The project is a new development of an industrial warehouse building located on the east side of the 215 Freeway at the southerly terminus of Van Buren Boulevard adjacent to March Air Force Base. The building is approximately 2,006,101 square feet in size on approximately 126 acres of undeveloped land.

Purpose

The purpose of this report is to present the drainage concept for the project and to determine the design flow rates, estimate the storm drain sizes, and accurately size the bio-retention basin. The hydrology maps and calculations reflect the tributary areas and runoff flows for multiple storm events.

Existing Condition

The project site generally slopes from northwest to southeast, elevations ranging from ±1525 feet to ±1500 feet. There is an existing earthen channel that runs from the northwest corner to the southeast corner of the site. The channel picks up runoff from culverts beneath the 215 freeway and conveys the runoff southerly through the Air Force Base property. Runoff from the vacant site is also tributary to this channel, which eventually discharges into the Perris Valley Channel at Heacock Street.

Due to the condition of the earthen channel and the lack of improved downstream drainage facilities, the project will be required to mitigate the developed flows to pre-development levels.

Site Discussion

The earthen channel will be replaced with an underground RCB storm drain which will run just inside the property along Van Buren. Once the RCB reaches the southeast corner it will transition to a concrete-lined trapezoidal channel and discharge to the existing earthen channel inside the Air Force Base property. Existing runoff from the freeway culverts will be connected to the RCB by new storm drain box culverts or pipes.

The proposed runoff will be directed to an on-site bio-retention basin using a combination of surface gutters and sub-surface storm drain pipes. The project WQMP report contains specific details about the bio-retention basins. The basin has additional storage capacity above the water quality treatment volume to mitigate different storm events. Runoff from the basin's subdrain system and overflow grate will gravity drain to the proposed RCB storm drain.

Off-site runoff generated from Van Buren will be addressed by others and is excluded from this report.

Hydrologic Analysis

A hydrologic analysis was prepared using the methodology outlined in the Riverside County Flood Control and Water Conservation District Hydrology Manual. A rational method analysis was completed for the proposed 100-year return event using Civild software. The calculations are included in Appendix A and indicate flow data at each node. Existing and Proposed condition Hydrology Maps for this project are included in Appendix B of this report.

Unit Hydrograph and Basin Routing calculations were also performed utilizing the Civild software and the results are included in Appendices C and D.

The 100-year, 1-hour rainfall rates were taken from the isohyetal maps in the Riverside County Flood Control and Water Conservation District Hydrology Manual. The hydrologic soils type for the site is "C" and was taken from the soils map in the Riverside County Flood Control and Water Conservation District Hydrology Manual (see Appendix E for reference maps). A "commercial" land use was used with an AMC of III.

Results

The basin routing summary table on the following page demonstrates that the proposed discharge after basin routing is less than the existing runoff at the bio-retention basin for the 1, 2, 5, 10, 25, and 100 year storm events.

All proposed drainage and storm drain facilities will be sized adequately for the 100-year storm event and additional calculations will be provided in the final Drainage Report including storm drain hydraulics and catch basin sizing.

AREA A - BASIN 1 (126.12 ac.)

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	10.62	15.26	24.88	36.41	46.03	64.37
EXISTING RUNOFF	1.99	2.71	3.63	24.38	33.89	59.64
REQUIRED MITIGATION:	**8.63**	**12.55**	**21.25**	**12.03**	**12.14**	**4.73**
DISCHARGE FROM BASIN AFTER ROUTING*	1.37	1.65	2.81	16.43	28.78	47.64
ALLOWABLE TOTAL DISCHARGE	**1.99**	**2.71**	**3.63**	**24.38**	**33.89**	**59.64**
IS ALLOWABLE GREATER THAN ROUTING?	YES	YES	YES	YES	YES	YES

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)

List of Appendices

Appendix A
Proposed 100-year Rational Method Hydrologic Analysis
Appendix B
Existing Preliminary Hydrology Map
Proposed Preliminary Hydrology Map

Appendix C
Existing U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
Proposed U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms

Appendix D
Basin Routing Analysis for 1, 2, 5, 10, 25, and 100 year storms

Appendix E
Soil Group Map and Isohyetal Map

Appendix A
Proposed 100-year Rational Method Hydrologic Analysis

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 01/08/20 File:1930Q100P.out

HILLWOOD - APOLLO
100 YEAR STORM EVENT PROPOSED
1930Q100P
DS

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6145

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 3

2 year, 1 hour precipitation = 0.480(In.)
100 year, 1 hour precipitation = 1.200(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.200(In/Hr)
Slope of intensity duration curve = 0.4800

++
Process from Point/Station 1.000 to Point/Station 2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 740.000(Ft.)
Top (of initial area) elevation = 1525.400(Ft.)
Bottom (of initial area) elevation = 1520.560(Ft.)
Difference in elevation = 4.840(Ft.)
Slope = 0.00654 s(percent)= 0.65
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.526 min.
Rainfall intensity = 2.649(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.892
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3) = 84.40
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 11.417(CFS)
Total initial stream area = 4.830(Ac.)
Pervious area fraction = 0.100

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1515.860(Ft.)
Downstream point/station elevation =  1514.200(Ft.)
Pipe length  =   331.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    11.417(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    11.417(CFS)
Normal flow depth in pipe =   16.17(In.)
Flow top width inside pipe =   17.67(In.)
Critical Depth =   15.11(In.)
Pipe flow velocity =      5.75(Ft/s)
Travel time through pipe =    0.96 min.
Time of concentration (TC) =    12.49 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        3.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.892
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    12.49 min.
Rainfall intensity =      2.549(In/Hr) for a   100.0 year storm
Subarea runoff =      6.731(CFS) for      2.960(Ac.)
Total runoff =     18.148(CFS)   Total area =       7.790(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1514.200(Ft.)
Downstream point/station elevation =  1511.660(Ft.)
Pipe length  =   405.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    18.148(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    18.148(CFS)
Normal flow depth in pipe =   18.40(In.)
Flow top width inside pipe =   20.30(In.)
Critical Depth =   18.41(In.)
Pipe flow velocity =      7.02(Ft/s)
Travel time through pipe =    0.96 min.
Time of concentration (TC) =    13.45 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        4.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.892
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
```

```
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    13.45 min.
Rainfall intensity =      2.460(In/Hr) for a   100.0 year storm
Subarea runoff =      9.829(CFS) for      4.480(Ac.)
Total runoff =     27.977(CFS)    Total area =      12.270(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1511.660(Ft.)
Downstream point/station elevation =  1508.950(Ft.)
Pipe length  =   446.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    27.977(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    27.977(CFS)
Normal flow depth in pipe =   20.44(In.)
Flow top width inside pipe =   27.96(In.)
Critical Depth =   21.63(In.)
Pipe flow velocity =      7.85(Ft/s)
Travel time through pipe =    0.95 min.
Time of concentration (TC) =    14.39 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        5.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.892
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    14.39 min.
Rainfall intensity =      2.381(In/Hr) for a   100.0 year storm
Subarea runoff =     12.440(CFS) for      5.860(Ac.)
Total runoff =     40.417(CFS)    Total area =      18.130(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1508.950(Ft.)
Downstream point/station elevation =  1506.660(Ft.)
Pipe length  =   358.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    40.417(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    40.417(CFS)
Normal flow depth in pipe =   24.07(In.)
Flow top width inside pipe =   29.32(In.)
Critical Depth =   25.37(In.)
Pipe flow velocity =      8.71(Ft/s)
Travel time through pipe =    0.69 min.
Time of concentration (TC) =    15.08 min.
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        6.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    15.08 min.
Rainfall intensity =      2.328(In/Hr) for a   100.0 year storm
Subarea runoff =     11.000(CFS) for      5.300(Ac.)
Total runoff =     51.417(CFS)   Total area =      23.430(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1506.660(Ft.)
Downstream point/station elevation =  1505.420(Ft.)
Pipe length  =   248.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    51.417(CFS)
Nearest computed pipe diameter  =     36.00(In.)
Calculated individual pipe flow  =    51.417(CFS)
Normal flow depth in pipe =   29.72(In.)
Flow top width inside pipe =   27.33(In.)
Critical Depth =   27.98(In.)
Pipe flow velocity =      8.24(Ft/s)
Travel time through pipe =    0.50 min.
Time of concentration (TC) =    15.58 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        7.000 to Point/Station        7.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    15.58 min.
Rainfall intensity =      2.292(In/Hr) for a   100.0 year storm
Subarea runoff =      8.110(CFS) for      3.970(Ac.)
Total runoff =     59.527(CFS)   Total area =      27.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        7.000 to Point/Station        8.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1505.420(Ft.)
Downstream point/station elevation =  1503.660(Ft.)
Pipe length  =   252.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    59.527(CFS)
```

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Nearest computed pipe diameter  =     36.00(In.)
Calculated individual pipe flow  =    59.527(CFS)
Normal flow depth in pipe =   29.06(In.)
Flow top width inside pipe =   28.40(In.)
Critical Depth =   29.90(In.)
Pipe flow velocity =      9.74(Ft/s)
Travel time through pipe =    0.43 min.
Time of concentration (TC) =    16.01 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        8.000 to Point/Station        8.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    16.01 min.
Rainfall intensity =      2.262(In/Hr) for a   100.0 year storm
Subarea runoff =      8.649(CFS) for      4.290(Ac.)
Total runoff =     68.176(CFS)   Total area =      31.690(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        8.000 to Point/Station        9.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1503.660(Ft.)
Downstream point/station elevation =  1502.410(Ft.)
Pipe length  =   250.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    68.176(CFS)
Nearest computed pipe diameter  =     42.00(In.)
Calculated individual pipe flow  =    68.176(CFS)
Normal flow depth in pipe =   30.70(In.)
Flow top width inside pipe =   37.25(In.)
Critical Depth =   31.07(In.)
Pipe flow velocity =      9.04(Ft/s)
Travel time through pipe =    0.46 min.
Time of concentration (TC) =    16.47 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        9.000 to Point/Station        9.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    16.47 min.
Rainfall intensity =      2.232(In/Hr) for a   100.0 year storm
Subarea runoff =      8.988(CFS) for      4.520(Ac.)
Total runoff =     77.165(CFS)   Total area =      36.210(Ac.)
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Process from Point/Station        9.000 to Point/Station       10.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1502.410(Ft.)
Downstream point/station elevation =  1500.660(Ft.)
Pipe length  =   249.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    77.165(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    77.165(CFS)
Normal flow depth in pipe =   33.09(In.)
Flow top width inside pipe =   27.96(In.)
Critical Depth =   33.24(In.)
Pipe flow velocity =     10.28(Ft/s)
Travel time through pipe =    0.40 min.
Time of concentration (TC) =    16.88 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station       10.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    16.88 min.
Rainfall intensity =      2.206(In/Hr) for a   100.0 year storm
Subarea runoff =      9.375(CFS) for      4.770(Ac.)
Total runoff =     86.539(CFS)   Total area =      40.980(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station       11.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1500.660(Ft.)
Downstream point/station elevation =  1499.670(Ft.)
Pipe length  =   248.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    86.539(CFS)
Nearest computed pipe diameter  =     45.00(In.)
Calculated individual pipe flow  =    86.539(CFS)
Normal flow depth in pipe =   39.00(In.)
Flow top width inside pipe =   30.59(In.)
Critical Depth =   34.35(In.)
Pipe flow velocity =      8.50(Ft/s)
Travel time through pipe =    0.49 min.
Time of concentration (TC) =    17.36 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       11.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
```

```
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    17.36 min.
Rainfall intensity =      2.176(In/Hr) for a   100.0 year storm
Subarea runoff =      8.723(CFS) for      4.500(Ac.)
Total runoff =     95.263(CFS)    Total area =      45.480(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       12.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1499.670(Ft.)
Downstream point/station elevation =  1498.660(Ft.)
Pipe length  =   252.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    95.263(CFS)
Nearest computed pipe diameter  =     48.00(In.)
Calculated individual pipe flow  =    95.263(CFS)
Normal flow depth in pipe =   37.97(In.)
Flow top width inside pipe =   39.03(In.)
Critical Depth =   35.51(In.)
Pipe flow velocity =      8.93(Ft/s)
Travel time through pipe =    0.47 min.
Time of concentration (TC) =    17.83 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station       12.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    17.83 min.
Rainfall intensity =      2.148(In/Hr) for a   100.0 year storm
Subarea runoff =     10.908(CFS) for      5.700(Ac.)
Total runoff =    106.170(CFS)    Total area =      51.180(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station       13.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1498.660(Ft.)
Downstream point/station elevation =  1496.900(Ft.)
Pipe length  =   315.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =   106.170(CFS)
Nearest computed pipe diameter  =     48.00(In.)
Calculated individual pipe flow  =   106.170(CFS)
Normal flow depth in pipe =   36.00(In.)
Flow top width inside pipe =   41.57(In.)
Critical Depth =   37.43(In.)
Pipe flow velocity =     10.49(Ft/s)
Travel time through pipe =    0.50 min.
Time of concentration (TC) =    18.33 min.
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       13.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    18.33 min.
Rainfall intensity =      2.120(In/Hr) for a   100.0 year storm
Subarea runoff =     12.311(CFS) for      6.520(Ac.)
Total runoff =    118.481(CFS)   Total area =      57.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       14.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1496.900(Ft.)
Downstream point/station elevation =  1496.300(Ft.)
Pipe length  =   301.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =   118.481(CFS)
Nearest computed pipe diameter  =     60.00(In.)
Calculated individual pipe flow  =   118.481(CFS)
Normal flow depth in pipe =   46.22(In.)
Flow top width inside pipe =   50.48(In.)
Critical Depth =   37.31(In.)
Pipe flow velocity =      7.29(Ft/s)
Travel time through pipe =    0.69 min.
Time of concentration (TC) =    19.02 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       14.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    19.02 min.
Rainfall intensity =      2.083(In/Hr) for a   100.0 year storm
Subarea runoff =      3.821(CFS) for      2.060(Ac.)
Total runoff =    122.302(CFS)   Total area =      59.760(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       15.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1496.300(Ft.)
Downstream point/station elevation =  1495.000(Ft.)
Pipe length  =   649.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =   122.302(CFS)
```

```
Nearest computed pipe diameter  =     60.00(In.)
Calculated individual pipe flow  =   122.302(CFS)
Normal flow depth in pipe =   47.53(In.)
Flow top width inside pipe =   48.69(In.)
Critical Depth =   37.92(In.)
Pipe flow velocity =      7.33(Ft/s)
Travel time through pipe =    1.48 min.
Time of concentration (TC) =    20.50 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       15.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    20.50 min.
Rainfall intensity =      2.009(In/Hr) for a   100.0 year storm
Subarea runoff =     33.378(CFS) for     18.660(Ac.)
Total runoff =    155.680(CFS)   Total area =      78.420(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       15.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     78.420(Ac.)
Runoff from this stream =    155.680(CFS)
Time of concentration =   20.50 min.
Rainfall intensity =     2.009(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       21.000 to Point/Station       22.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1526.000(Ft.)
Bottom (of initial area) elevation =  1516.710(Ft.)
Difference in elevation =     9.290(Ft.)
Slope =    0.00929  s(percent)=       0.93
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.120 min.
Rainfall intensity =      2.586(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.892
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      6.990(CFS)
Total initial stream area =        3.030(Ac.)
Pervious area fraction = 0.100
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       22.000 to Point/Station       23.000
**** IMPROVED CHANNEL TRAVEL TIME ****
______________________________________________________________________________
Upstream point elevation =  1516.710(Ft.)
Downstream point elevation =  1508.650(Ft.)
Channel length thru subarea  =  1380.000(Ft.)
Channel base width  =    0.000(Ft.)
Slope or 'Z' of left channel bank =  18.750
Slope or 'Z' of right channel bank =  18.750
Manning's 'N'    = 0.015
Maximum depth of channel  =    0.500(Ft.)
Flow(q) thru subarea =      6.990(CFS)
Depth of flow =   0.385(Ft.), Average velocity =   2.520(Ft/s)
Channel flow top width =   14.423(Ft.)
Flow Velocity =    2.52(Ft/s)
Travel time  =    9.13 min.
Time of concentration =   21.25 min.

Sub-Channel No. 1 Critical depth =      0.387(Ft.)
  '     '       '     Critical flow top width =     14.502(Ft.)
  '     '       '     Critical flow velocity=    2.493(Ft/s)
  '     '       '     Critical flow area =      2.804(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       23.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    21.25 min.
Rainfall intensity =      1.975(In/Hr) for a   100.0 year storm
Subarea runoff =     37.742(CFS) for     21.470(Ac.)
Total runoff =     44.732(CFS)   Total area =      24.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       24.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1503.650(Ft.)
Downstream point/station elevation =  1495.310(Ft.)
Pipe length  =  1040.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    44.732(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    44.732(CFS)
Normal flow depth in pipe =   23.86(In.)
Flow top width inside pipe =   29.54(In.)
Critical Depth =   26.61(In.)
Pipe flow velocity =      9.73(Ft/s)
Travel time through pipe =    1.78 min.
Time of concentration (TC) =    23.03 min.
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       24.000 to Point/Station       24.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    23.03 min.
Rainfall intensity =      1.900(In/Hr) for a   100.0 year storm
Subarea runoff =     27.658(CFS) for     16.360(Ac.)
Total runoff =     72.390(CFS)   Total area =      40.860(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       24.000 to Point/Station       15.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1495.310(Ft.)
Downstream point/station elevation =  1495.000(Ft.)
Pipe length  =    41.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    72.390(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    72.390(CFS)
Normal flow depth in pipe =   29.77(In.)
Flow top width inside pipe =   33.16(In.)
Critical Depth =   32.33(In.)
Pipe flow velocity =     10.65(Ft/s)
Travel time through pipe =    0.06 min.
Time of concentration (TC) =    23.09 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       15.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.890
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  84.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    23.09 min.
Rainfall intensity =      1.898(In/Hr) for a   100.0 year storm
Subarea runoff =     13.236(CFS) for      7.840(Ac.)
Total runoff =     85.627(CFS)   Total area =      48.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       15.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     48.700(Ac.)
Runoff from this stream =     85.627(CFS)
Time of concentration =   23.09 min.
Rainfall intensity =     1.898(In/Hr)
```

Summary of stream data:

Stream No.	Flow rate (CFS)	TC (min)	Rainfall Intensity (In/Hr)
1	155.680	20.50	2.009
2	85.627	23.09	1.898

Largest stream flow has longer or shorter time of concentration
Qp = 155.680 + sum of

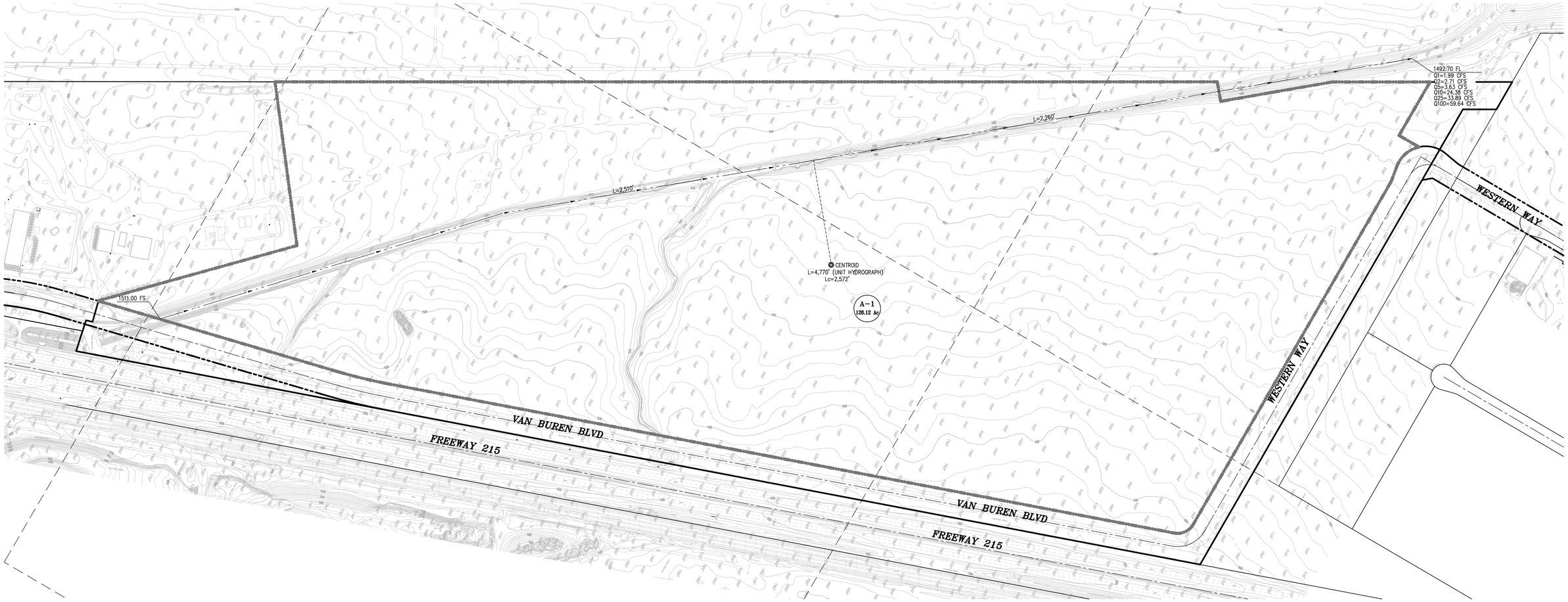
Qa		Tb/Ta	
85.627	*	0.888	= 76.008

Qp = 231.687

Total of 2 streams to confluence:
Flow rates before confluence point:
155.680 85.627
Area of streams before confluence:
78.420 48.700
Results of confluence:
Total flow rate = 231.687(CFS)
Time of concentration = 20.498 min.
Effective stream area after confluence = 127.120(Ac.)
End of computations, total study area = 127.12 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

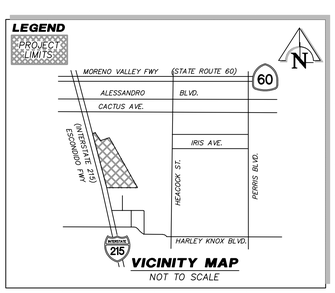
Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number = 69.0

Appendix B
Existing Preliminary Hydrology Map
Proposed Preliminary Hydrology Map



LEGEND

- NO. 900 — HYDROLOGY MODEL NODE NUMBER / ELEVATION AT NODE
- X — HYDRAULIC MODEL NODE NUMBER
- A= XXX.X AC — TRIBUTARY AREA IN ACRES
- L= XXX.X — LENGTH OF FLOW
- DRAINAGE BOUNDARY
- PROPOSED STORM DRAIN
- CB #1 — CATCH BASIN NUMBER
- XXXX — CONTOUR ELEVATION
- —R— — PROPOSED RIDGE LINE
- PROPOSED GRATING INLET
- PROPOSED CURB OPENING INLET
- FL — FLOWLINE
- INV — INVERT
- LAT. — LATERAL
- SD — STORM DRAIN
- TG — TOP OF GRATE



VICINITY MAP
NOT TO SCALE

SCALE: 1"= 150'

GRAPHIC SCALE

150 75 0 75 150 300 600
(IN FEET)
1"=80'

REGISTERED PROFESSIONAL ENGINEER — JOHNNY MURAD — No. 67512 Expiration 6-30-21 — CIVIL — STATE OF CALIFORNIA

REV	DESCRIPTION	DATE

PRELIMINARY HYDROLOGY MAP - EXISTING CONDITION
FOR
VETERANS INDUSTRIAL PARK 215
PROJECT APOLLO
GPA 16-01, SP 16-02, PP 16-06, TPM 16-06

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

APPROVED BY JOHNNY MURAD — R.C.E. 67512 — EXPIRES 6-30-21 — DATE

DESIGNED BY J.M.
DRAWN BY H-Z STAFF
CHECKED BY J.M.
FIELD BOOK

SHEET 1 OF 1 SHEETS
JOB NO. R311930.01

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PROPERTY LINE

L=1040'

1516.71 FL
Q100=6.99 CFS
27

11508.65 FL
1503.65 INV
Q100=37.74 CFS
ΣQ100=44.73 CFS
23

B-1
3.03 Ac
L=1000'

B-2
21.47 Ac
L=1380'

B-3
16.36 Ac

PROPOSED BUILDING

1523.00 FF

1522.00 FF

0.5% BUILDING SLOPES @

1521.00 FF

1520.00 FF

1519.00 FF

1518.00 FF

0.5% BUILDING SLOPES @

1517.00 FF

1516.00 FF

1515.00 FF

PROPERTY LINE

21
1526.0 FG

1525.4 FG
1

A-1
4.83 Ac
L=740'

A-2
2.96 Ac

A-3
4.48 Ac

A-4
5.86 Ac

A-5
5.30 Ac

L=731'

1520.56 FL
1516.30 INV
Q100=11.42 CFS
2

L=405'

1514.20 INV
Q100=6.73 CFS
ΣQ100=18.15 CFS
3

L=446'

1511.68 INV
Q100=9.83 CFS
ΣQ100=27.98 CFS
4

L=358'

1508.95 INV
Q100=12.44 CFS
ΣQ100=40.42 CFS
5

VAN BUREN BLVD

FREEWAY 215

LEGEND

- NO. 900 — HYDROLOGY MODEL NODE NUMBER / ELEVATION AT NODE
- X — HYDRAULIC MODEL NODE NUMBER
- A= XXX.X AC — TRIBUTARY AREA IN ACRES
- L= XXX.X — LENGTH OF FLOW
- DRAINAGE BOUNDARY
- PROPOSED STORM DRAIN
- CB #1 — CATCH BASIN NUMBER
- XXXX — CONTOUR ELEVATION
- R — PROPOSED RIDGE LINE
- PROPOSED GRATING INLET
- PROPOSED CURB OPENING INLET
- FL — FLOWLINE
- INV — INVERT
- LAT. — LATERAL
- SD — STORM DRAIN
- TG — TOP OF GRATE

SCALE: 1"=80'

GRAPHIC SCALE

80 40 0 40 80 160 320

(IN FEET)
1"=80'

LEGEND

PROJECT LIMITS

MORENO VALLEY FWY (STATE ROUTE 60) 60
ALESSANDRO BLVD.
CACTUS AVE.
IRIS AVE.
INTERSTATE 215 ESCONDIDO FWY
HEACOCK ST.
PERRIS BLVD.
HARLEY KNOX BLVD.
INTERSTATE 215 ESCONDIDO FWY

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
JOHNNY MURAD
No. 67512
Expiration 6-30-21
CIVIL
STATE OF CALIFORNIA

REV	DESCRIPTION	DATE

PRELIMINARY HYDROLOGY MAP - PROPOSED CONDITION
FOR
HILLWOOD - PROJECT APOLLO
EAST OF 215 FREEWAY
COUNTY OF RIVERSIDE

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

APPROVED BY JOHNNY MURAD — R.C.E. 67512 — EXPIRES 6-30-21 — DATE

DESIGNED BY J.M.
DRAWN BY H-Z STAFF
CHECKED BY J.M.
FIELD BOOK

SHEET 1 OF 2 SHEETS
JOB NO. R311930.01

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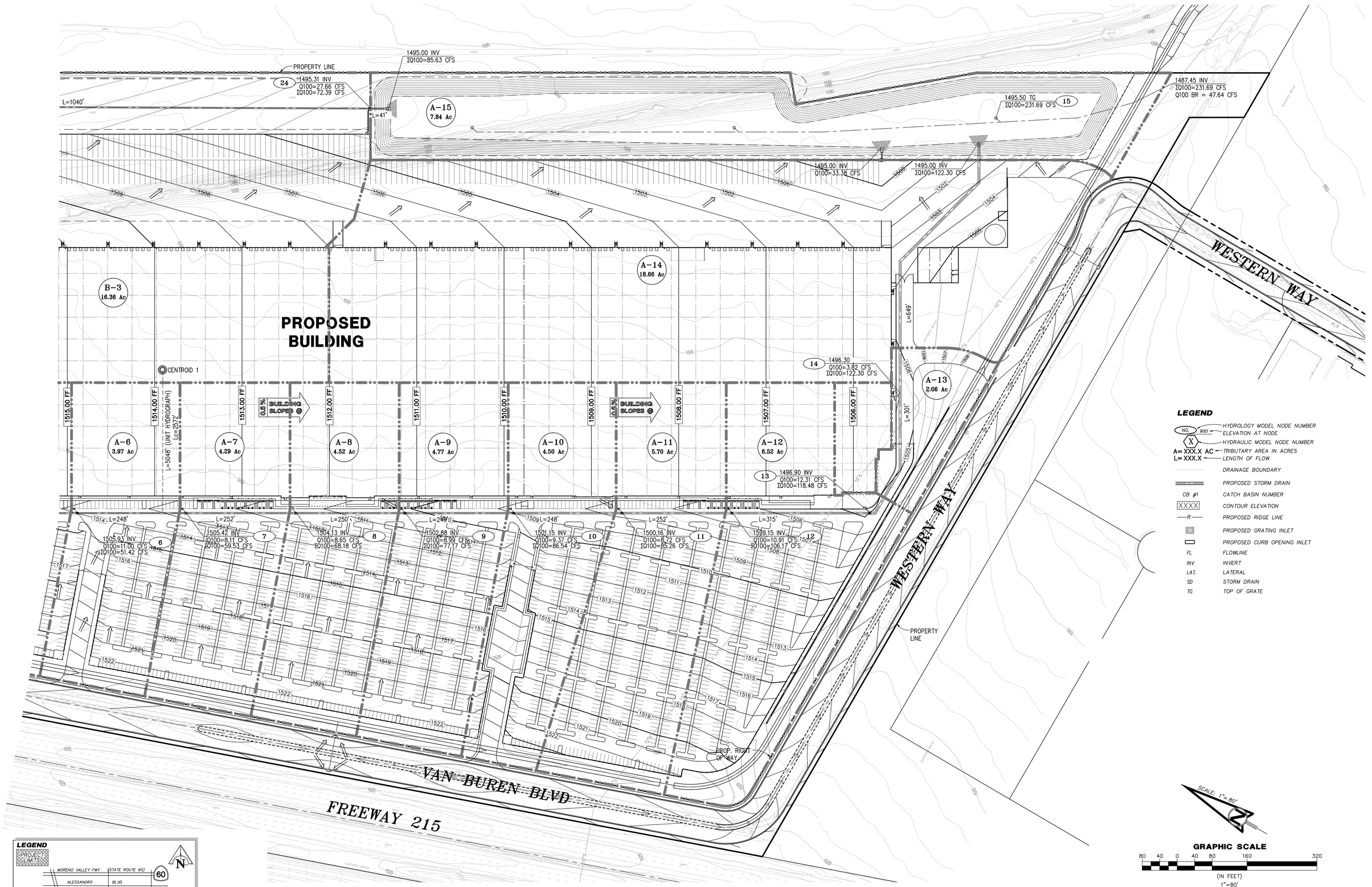

REV	DESCRIPTION	DATE

REGISTERED PROFESSIONAL ENGINEER JOHNNY MURAD No. 67512 Expiration 6-30-21 CIVIL STATE OF CALIFORNIA

PRELIMINARY HYDROLOGY MAP - PROPOSED CONDITION
FOR
HILLWOOD - PROJECT APOLLO
EAST OF 215 FREEWAY
COUNTY OF RIVERSIDE

HUITT~ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

APPROVED BY JOHNNY MURAD | R.C.E. 67512 | EXPIRES 6-30-21 | DATE

DESIGNED BY J.M.
DRAWN BY H-Z STAFF
CHECKED BY J.M.
FIELD BOOK

SHEET 2 OF 2 SHEETS
JOB NO. R311930.01

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Appendix C
Existing U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms
Proposed U.H. Analysis for 1, 2, 5, 10, 25, and 100 year storms

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
Study date 01/06/20 File: 1930uhex1241.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
1 YEAR STORM EVENT UNIT HYDROGRAPH
1930UHEX1
DS

Drainage Area = 126.12(Ac.) = 0.197 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 126.12(Ac.) = 0.197 Sq. Mi.
Length along longest watercourse = 4770.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.903 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 15.30(Ft.)
Slope along watercourse = 16.9358 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.154 Hr.
Lag time = 9.24 Min.
25% of lag time = 2.31 Min.
40% of lag time = 3.69 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	1.60	201.79

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	4.00	504.48

STORM EVENT (YEAR) = 1.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.175(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.174(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
126.120	86.00	0.000

Total Area Entered = 126.12(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	54.132	6.940	8.822
2	0.167	108.263	29.553	37.563
3	0.250	162.395	28.209	35.855
4	0.333	216.527	11.633	14.786
5	0.417	270.658	6.464	8.216
6	0.500	324.790	4.467	5.677
7	0.583	378.922	3.222	4.096
8	0.667	433.053	2.355	2.993
9	0.750	487.185	1.756	2.232
10	0.833	541.317	1.503	1.911
11	0.917	595.448	1.127	1.432
12	1.000	649.580	0.886	1.127
13	1.083	703.712	0.652	0.829
14	1.167	757.843	0.541	0.688
15	1.250	811.975	0.692	0.880
			Sum = 100.000	Sum= 127.105

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.009	0.608	0.008	0.00
2	0.17	0.07	0.009	0.606	0.008	0.00
3	0.25	0.07	0.009	0.604	0.008	0.00
4	0.33	0.10	0.014	0.601	0.013	0.00
5	0.42	0.10	0.014	0.599	0.013	0.00
6	0.50	0.10	0.014	0.597	0.013	0.00
7	0.58	0.10	0.014	0.594	0.013	0.00
8	0.67	0.10	0.014	0.592	0.013	0.00
9	0.75	0.10	0.014	0.590	0.013	0.00
10	0.83	0.13	0.019	0.587	0.017	0.00
11	0.92	0.13	0.019	0.585	0.017	0.00
12	1.00	0.13	0.019	0.583	0.017	0.00
13	1.08	0.10	0.014	0.580	0.013	0.00
14	1.17	0.10	0.014	0.578	0.013	0.00
15	1.25	0.10	0.014	0.576	0.013	0.00
16	1.33	0.10	0.014	0.573	0.013	0.00
17	1.42	0.10	0.014	0.571	0.013	0.00
18	1.50	0.10	0.014	0.569	0.013	0.00
19	1.58	0.10	0.014	0.567	0.013	0.00
20	1.67	0.10	0.014	0.564	0.013	0.00
21	1.75	0.10	0.014	0.562	0.013	0.00
22	1.83	0.13	0.019	0.560	0.017	0.00
23	1.92	0.13	0.019	0.558	0.017	0.00
24	2.00	0.13	0.019	0.555	0.017	0.00
25	2.08	0.13	0.019	0.553	0.017	0.00
26	2.17	0.13	0.019	0.551	0.017	0.00
27	2.25	0.13	0.019	0.549	0.017	0.00
28	2.33	0.13	0.019	0.546	0.017	0.00
29	2.42	0.13	0.019	0.544	0.017	0.00
30	2.50	0.13	0.019	0.542	0.017	0.00

31	2.58	0.17	0.023	0.540	0.021	0.00
32	2.67	0.17	0.023	0.537	0.021	0.00
33	2.75	0.17	0.023	0.535	0.021	0.00
34	2.83	0.17	0.023	0.533	0.021	0.00
35	2.92	0.17	0.023	0.531	0.021	0.00
36	3.00	0.17	0.023	0.529	0.021	0.00
37	3.08	0.17	0.023	0.526	0.021	0.00
38	3.17	0.17	0.023	0.524	0.021	0.00
39	3.25	0.17	0.023	0.522	0.021	0.00
40	3.33	0.17	0.023	0.520	0.021	0.00
41	3.42	0.17	0.023	0.518	0.021	0.00
42	3.50	0.17	0.023	0.516	0.021	0.00
43	3.58	0.17	0.023	0.513	0.021	0.00
44	3.67	0.17	0.023	0.511	0.021	0.00
45	3.75	0.17	0.023	0.509	0.021	0.00
46	3.83	0.20	0.028	0.507	0.025	0.00
47	3.92	0.20	0.028	0.505	0.025	0.00
48	4.00	0.20	0.028	0.503	0.025	0.00
49	4.08	0.20	0.028	0.501	0.025	0.00
50	4.17	0.20	0.028	0.498	0.025	0.00
51	4.25	0.20	0.028	0.496	0.025	0.00
52	4.33	0.23	0.033	0.494	0.030	0.00
53	4.42	0.23	0.033	0.492	0.030	0.00
54	4.50	0.23	0.033	0.490	0.030	0.00
55	4.58	0.23	0.033	0.488	0.030	0.00
56	4.67	0.23	0.033	0.486	0.030	0.00
57	4.75	0.23	0.033	0.484	0.030	0.00
58	4.83	0.27	0.038	0.482	0.034	0.00
59	4.92	0.27	0.038	0.480	0.034	0.00
60	5.00	0.27	0.038	0.477	0.034	0.00
61	5.08	0.20	0.028	0.475	0.025	0.00
62	5.17	0.20	0.028	0.473	0.025	0.00
63	5.25	0.20	0.028	0.471	0.025	0.00
64	5.33	0.23	0.033	0.469	0.030	0.00
65	5.42	0.23	0.033	0.467	0.030	0.00
66	5.50	0.23	0.033	0.465	0.030	0.00
67	5.58	0.27	0.038	0.463	0.034	0.00
68	5.67	0.27	0.038	0.461	0.034	0.00
69	5.75	0.27	0.038	0.459	0.034	0.00
70	5.83	0.27	0.038	0.457	0.034	0.00
71	5.92	0.27	0.038	0.455	0.034	0.00
72	6.00	0.27	0.038	0.453	0.034	0.00
73	6.08	0.30	0.042	0.451	0.038	0.00
74	6.17	0.30	0.042	0.449	0.038	0.00
75	6.25	0.30	0.042	0.447	0.038	0.00
76	6.33	0.30	0.042	0.445	0.038	0.00
77	6.42	0.30	0.042	0.443	0.038	0.00
78	6.50	0.30	0.042	0.441	0.038	0.00
79	6.58	0.33	0.047	0.439	0.042	0.00
80	6.67	0.33	0.047	0.437	0.042	0.00
81	6.75	0.33	0.047	0.435	0.042	0.00
82	6.83	0.33	0.047	0.433	0.042	0.00
83	6.92	0.33	0.047	0.431	0.042	0.00
84	7.00	0.33	0.047	0.429	0.042	0.00
85	7.08	0.33	0.047	0.427	0.042	0.00
86	7.17	0.33	0.047	0.425	0.042	0.00
87	7.25	0.33	0.047	0.423	0.042	0.00
88	7.33	0.37	0.052	0.421	0.047	0.01
89	7.42	0.37	0.052	0.419	0.047	0.01
90	7.50	0.37	0.052	0.417	0.047	0.01
91	7.58	0.40	0.056	0.416	0.051	0.01
92	7.67	0.40	0.056	0.414	0.051	0.01
93	7.75	0.40	0.056	0.412	0.051	0.01
94	7.83	0.43	0.061	0.410	0.055	0.01
95	7.92	0.43	0.061	0.408	0.055	0.01
96	8.00	0.43	0.061	0.406	0.055	0.01
97	8.08	0.50	0.070	0.404	0.063	0.01
98	8.17	0.50	0.070	0.402	0.063	0.01
99	8.25	0.50	0.070	0.400	0.063	0.01
100	8.33	0.50	0.070	0.399	0.063	0.01
101	8.42	0.50	0.070	0.397	0.063	0.01

102	8.50	0.50	0.070	0.395	0.063	0.01
103	8.58	0.53	0.075	0.393	0.068	0.01
104	8.67	0.53	0.075	0.391	0.068	0.01
105	8.75	0.53	0.075	0.389	0.068	0.01
106	8.83	0.57	0.080	0.387	0.072	0.01
107	8.92	0.57	0.080	0.386	0.072	0.01
108	9.00	0.57	0.080	0.384	0.072	0.01
109	9.08	0.63	0.089	0.382	0.080	0.01
110	9.17	0.63	0.089	0.380	0.080	0.01
111	9.25	0.63	0.089	0.378	0.080	0.01
112	9.33	0.67	0.094	0.377	0.085	0.01
113	9.42	0.67	0.094	0.375	0.085	0.01
114	9.50	0.67	0.094	0.373	0.085	0.01
115	9.58	0.70	0.099	0.371	0.089	0.01
116	9.67	0.70	0.099	0.369	0.089	0.01
117	9.75	0.70	0.099	0.368	0.089	0.01
118	9.83	0.73	0.103	0.366	0.093	0.01
119	9.92	0.73	0.103	0.364	0.093	0.01
120	10.00	0.73	0.103	0.362	0.093	0.01
121	10.08	0.50	0.070	0.361	0.063	0.01
122	10.17	0.50	0.070	0.359	0.063	0.01
123	10.25	0.50	0.070	0.357	0.063	0.01
124	10.33	0.50	0.070	0.355	0.063	0.01
125	10.42	0.50	0.070	0.354	0.063	0.01
126	10.50	0.50	0.070	0.352	0.063	0.01
127	10.58	0.67	0.094	0.350	0.085	0.01
128	10.67	0.67	0.094	0.348	0.085	0.01
129	10.75	0.67	0.094	0.347	0.085	0.01
130	10.83	0.67	0.094	0.345	0.085	0.01
131	10.92	0.67	0.094	0.343	0.085	0.01
132	11.00	0.67	0.094	0.342	0.085	0.01
133	11.08	0.63	0.089	0.340	0.080	0.01
134	11.17	0.63	0.089	0.338	0.080	0.01
135	11.25	0.63	0.089	0.337	0.080	0.01
136	11.33	0.63	0.089	0.335	0.080	0.01
137	11.42	0.63	0.089	0.333	0.080	0.01
138	11.50	0.63	0.089	0.332	0.080	0.01
139	11.58	0.57	0.080	0.330	0.072	0.01
140	11.67	0.57	0.080	0.328	0.072	0.01
141	11.75	0.57	0.080	0.327	0.072	0.01
142	11.83	0.60	0.085	0.325	0.076	0.01
143	11.92	0.60	0.085	0.324	0.076	0.01
144	12.00	0.60	0.085	0.322	0.076	0.01
145	12.08	0.83	0.117	0.320	0.106	0.01
146	12.17	0.83	0.117	0.319	0.106	0.01
147	12.25	0.83	0.117	0.317	0.106	0.01
148	12.33	0.87	0.122	0.316	0.110	0.01
149	12.42	0.87	0.122	0.314	0.110	0.01
150	12.50	0.87	0.122	0.312	0.110	0.01
151	12.58	0.93	0.132	0.311	0.118	0.01
152	12.67	0.93	0.132	0.309	0.118	0.01
153	12.75	0.93	0.132	0.308	0.118	0.01
154	12.83	0.97	0.136	0.306	0.123	0.01
155	12.92	0.97	0.136	0.305	0.123	0.01
156	13.00	0.97	0.136	0.303	0.123	0.01
157	13.08	1.13	0.160	0.301	0.144	0.02
158	13.17	1.13	0.160	0.300	0.144	0.02
159	13.25	1.13	0.160	0.298	0.144	0.02
160	13.33	1.13	0.160	0.297	0.144	0.02
161	13.42	1.13	0.160	0.295	0.144	0.02
162	13.50	1.13	0.160	0.294	0.144	0.02
163	13.58	0.77	0.108	0.292	0.097	0.01
164	13.67	0.77	0.108	0.291	0.097	0.01
165	13.75	0.77	0.108	0.289	0.097	0.01
166	13.83	0.77	0.108	0.288	0.097	0.01
167	13.92	0.77	0.108	0.286	0.097	0.01
168	14.00	0.77	0.108	0.285	0.097	0.01
169	14.08	0.90	0.127	0.284	0.114	0.01
170	14.17	0.90	0.127	0.282	0.114	0.01
171	14.25	0.90	0.127	0.281	0.114	0.01
172	14.33	0.87	0.122	0.279	0.110	0.01

173	14.42	0.87	0.122	0.278	0.110	0.01
174	14.50	0.87	0.122	0.276	0.110	0.01
175	14.58	0.87	0.122	0.275	0.110	0.01
176	14.67	0.87	0.122	0.274	0.110	0.01
177	14.75	0.87	0.122	0.272	0.110	0.01
178	14.83	0.83	0.117	0.271	0.106	0.01
179	14.92	0.83	0.117	0.269	0.106	0.01
180	15.00	0.83	0.117	0.268	0.106	0.01
181	15.08	0.80	0.113	0.267	0.101	0.01
182	15.17	0.80	0.113	0.265	0.101	0.01
183	15.25	0.80	0.113	0.264	0.101	0.01
184	15.33	0.77	0.108	0.263	0.097	0.01
185	15.42	0.77	0.108	0.261	0.097	0.01
186	15.50	0.77	0.108	0.260	0.097	0.01
187	15.58	0.63	0.089	0.259	0.080	0.01
188	15.67	0.63	0.089	0.257	0.080	0.01
189	15.75	0.63	0.089	0.256	0.080	0.01
190	15.83	0.63	0.089	0.255	0.080	0.01
191	15.92	0.63	0.089	0.253	0.080	0.01
192	16.00	0.63	0.089	0.252	0.080	0.01
193	16.08	0.13	0.019	0.251	0.017	0.00
194	16.17	0.13	0.019	0.249	0.017	0.00
195	16.25	0.13	0.019	0.248	0.017	0.00
196	16.33	0.13	0.019	0.247	0.017	0.00
197	16.42	0.13	0.019	0.246	0.017	0.00
198	16.50	0.13	0.019	0.244	0.017	0.00
199	16.58	0.10	0.014	0.243	0.013	0.00
200	16.67	0.10	0.014	0.242	0.013	0.00
201	16.75	0.10	0.014	0.241	0.013	0.00
202	16.83	0.10	0.014	0.239	0.013	0.00
203	16.92	0.10	0.014	0.238	0.013	0.00
204	17.00	0.10	0.014	0.237	0.013	0.00
205	17.08	0.17	0.023	0.236	0.021	0.00
206	17.17	0.17	0.023	0.235	0.021	0.00
207	17.25	0.17	0.023	0.233	0.021	0.00
208	17.33	0.17	0.023	0.232	0.021	0.00
209	17.42	0.17	0.023	0.231	0.021	0.00
210	17.50	0.17	0.023	0.230	0.021	0.00
211	17.58	0.17	0.023	0.229	0.021	0.00
212	17.67	0.17	0.023	0.228	0.021	0.00
213	17.75	0.17	0.023	0.227	0.021	0.00
214	17.83	0.13	0.019	0.225	0.017	0.00
215	17.92	0.13	0.019	0.224	0.017	0.00
216	18.00	0.13	0.019	0.223	0.017	0.00
217	18.08	0.13	0.019	0.222	0.017	0.00
218	18.17	0.13	0.019	0.221	0.017	0.00
219	18.25	0.13	0.019	0.220	0.017	0.00
220	18.33	0.13	0.019	0.219	0.017	0.00
221	18.42	0.13	0.019	0.218	0.017	0.00
222	18.50	0.13	0.019	0.217	0.017	0.00
223	18.58	0.10	0.014	0.216	0.013	0.00
224	18.67	0.10	0.014	0.215	0.013	0.00
225	18.75	0.10	0.014	0.214	0.013	0.00
226	18.83	0.07	0.009	0.213	0.008	0.00
227	18.92	0.07	0.009	0.212	0.008	0.00
228	19.00	0.07	0.009	0.211	0.008	0.00
229	19.08	0.10	0.014	0.210	0.013	0.00
230	19.17	0.10	0.014	0.209	0.013	0.00
231	19.25	0.10	0.014	0.208	0.013	0.00
232	19.33	0.13	0.019	0.207	0.017	0.00
233	19.42	0.13	0.019	0.206	0.017	0.00
234	19.50	0.13	0.019	0.205	0.017	0.00
235	19.58	0.10	0.014	0.204	0.013	0.00
236	19.67	0.10	0.014	0.203	0.013	0.00
237	19.75	0.10	0.014	0.202	0.013	0.00
238	19.83	0.07	0.009	0.201	0.008	0.00
239	19.92	0.07	0.009	0.200	0.008	0.00
240	20.00	0.07	0.009	0.199	0.008	0.00
241	20.08	0.10	0.014	0.198	0.013	0.00
242	20.17	0.10	0.014	0.197	0.013	0.00
243	20.25	0.10	0.014	0.197	0.013	0.00

244	20.33	0.10	0.014	0.196	0.013	0.00
245	20.42	0.10	0.014	0.195	0.013	0.00
246	20.50	0.10	0.014	0.194	0.013	0.00
247	20.58	0.10	0.014	0.193	0.013	0.00
248	20.67	0.10	0.014	0.192	0.013	0.00
249	20.75	0.10	0.014	0.192	0.013	0.00
250	20.83	0.07	0.009	0.191	0.008	0.00
251	20.92	0.07	0.009	0.190	0.008	0.00
252	21.00	0.07	0.009	0.189	0.008	0.00
253	21.08	0.10	0.014	0.189	0.013	0.00
254	21.17	0.10	0.014	0.188	0.013	0.00
255	21.25	0.10	0.014	0.187	0.013	0.00
256	21.33	0.07	0.009	0.186	0.008	0.00
257	21.42	0.07	0.009	0.186	0.008	0.00
258	21.50	0.07	0.009	0.185	0.008	0.00
259	21.58	0.10	0.014	0.184	0.013	0.00
260	21.67	0.10	0.014	0.184	0.013	0.00
261	21.75	0.10	0.014	0.183	0.013	0.00
262	21.83	0.07	0.009	0.182	0.008	0.00
263	21.92	0.07	0.009	0.182	0.008	0.00
264	22.00	0.07	0.009	0.181	0.008	0.00
265	22.08	0.10	0.014	0.181	0.013	0.00
266	22.17	0.10	0.014	0.180	0.013	0.00
267	22.25	0.10	0.014	0.179	0.013	0.00
268	22.33	0.07	0.009	0.179	0.008	0.00
269	22.42	0.07	0.009	0.178	0.008	0.00
270	22.50	0.07	0.009	0.178	0.008	0.00
271	22.58	0.07	0.009	0.177	0.008	0.00
272	22.67	0.07	0.009	0.177	0.008	0.00
273	22.75	0.07	0.009	0.176	0.008	0.00
274	22.83	0.07	0.009	0.176	0.008	0.00
275	22.92	0.07	0.009	0.175	0.008	0.00
276	23.00	0.07	0.009	0.175	0.008	0.00
277	23.08	0.07	0.009	0.175	0.008	0.00
278	23.17	0.07	0.009	0.174	0.008	0.00
279	23.25	0.07	0.009	0.174	0.008	0.00
280	23.33	0.07	0.009	0.173	0.008	0.00
281	23.42	0.07	0.009	0.173	0.008	0.00
282	23.50	0.07	0.009	0.173	0.008	0.00
283	23.58	0.07	0.009	0.173	0.008	0.00
284	23.67	0.07	0.009	0.172	0.008	0.00
285	23.75	0.07	0.009	0.172	0.008	0.00
286	23.83	0.07	0.009	0.172	0.008	0.00
287	23.92	0.07	0.009	0.172	0.008	0.00
288	24.00	0.07	0.009	0.172	0.008	0.00
Sum =		100.0			Sum =	1.4

Flood volume = Effective rainfall 0.12(In)
times area 126.1(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)
Total soil loss = 1.06(In)
Total soil loss = 11.109(Ac.Ft)
Total rainfall = 1.17(In)
Flood volume = 53769.0 Cubic Feet
Total soil loss = 483921.4 Cubic Feet

Peak flow rate of this hydrograph = 1.988(CFS)

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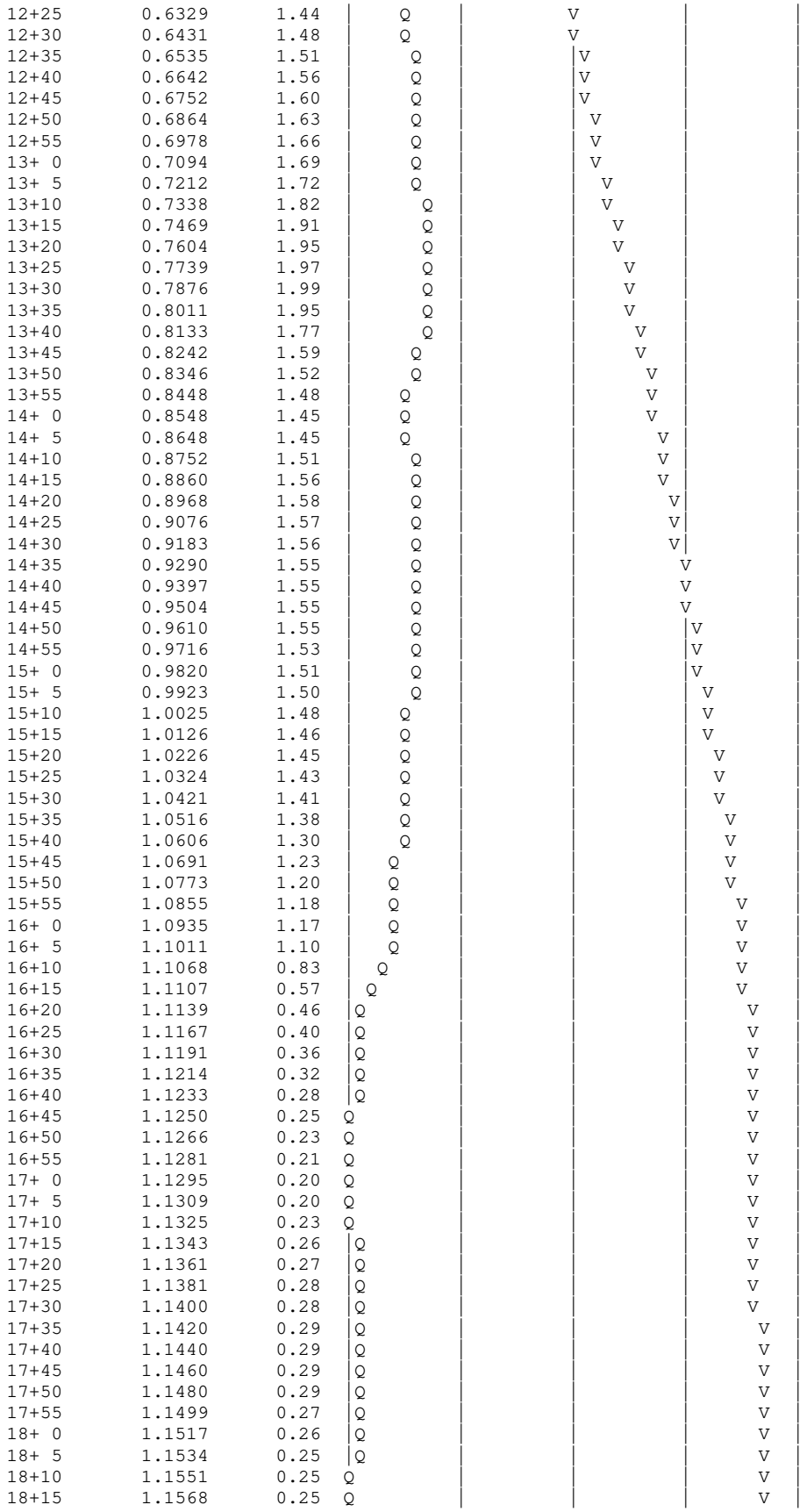
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0004	0.04	Q	|	|	|	|
0+15	0.0009	0.08	Q	|	|	|	|
0+20	0.0015	0.10	Q	|	|	|	|
0+25	0.0024	0.12	Q	|	|	|	|
0+30	0.0034	0.14	Q	|	|	|	|

0+35	0.0044	0.15	Q				
0+40	0.0055	0.16	Q				
0+45	0.0067	0.17	Q				
0+50	0.0079	0.17	Q				
0+55	0.0092	0.19	Q				
1+ 0	0.0107	0.21	Q				
1+ 5	0.0121	0.22	Q				
1+10	0.0136	0.20	Q				
1+15	0.0149	0.19	Q				
1+20	0.0162	0.19	Q				
1+25	0.0174	0.18	Q				
1+30	0.0187	0.18	Q				
1+35	0.0200	0.18	Q				
1+40	0.0212	0.18	Q				
1+45	0.0225	0.18	Q				
1+50	0.0237	0.18	Q				
1+55	0.0251	0.20	Q				
2+ 0	0.0266	0.22	Q				
2+ 5	0.0282	0.23	Q				
2+10	0.0298	0.23	Q				
2+15	0.0314	0.23	QV				
2+20	0.0330	0.23	QV				
2+25	0.0346	0.23	QV				
2+30	0.0362	0.24	QV				
2+35	0.0379	0.24	QV				
2+40	0.0396	0.26	|Q				
2+45	0.0415	0.28	|Q				
2+50	0.0435	0.28	|Q				
2+55	0.0455	0.29	|Q				
3+ 0	0.0475	0.29	|Q				
3+ 5	0.0495	0.29	|Q				
3+10	0.0515	0.29	|Q				
3+15	0.0536	0.30	|Q				
3+20	0.0556	0.30	|Q				
3+25	0.0577	0.30	|Q				
3+30	0.0597	0.30	|Q				
3+35	0.0618	0.30	|QV				
3+40	0.0638	0.30	|QV				
3+45	0.0659	0.30	|QV				
3+50	0.0680	0.30	|QV				
3+55	0.0702	0.32	|QV				
4+ 0	0.0725	0.34	|QV				
4+ 5	0.0749	0.34	|QV				
4+10	0.0773	0.35	|QV				
4+15	0.0797	0.35	|QV				
4+20	0.0821	0.36	|QV				
4+25	0.0847	0.38	|QV				
4+30	0.0874	0.39	|QV				
4+35	0.0902	0.40	|QV				
4+40	0.0930	0.41	|Q V				
4+45	0.0958	0.41	|Q V				
4+50	0.0987	0.42	|Q V				
4+55	0.1017	0.44	|Q V				
5+ 0	0.1048	0.45	|Q V				
5+ 5	0.1079	0.45	|Q V				
5+10	0.1108	0.42	|Q V				
5+15	0.1135	0.39	|Q V				
5+20	0.1162	0.38	|Q V				
5+25	0.1189	0.40	|Q V				
5+30	0.1217	0.41	|Q V				
5+35	0.1246	0.42	|Q V				
5+40	0.1276	0.44	|Q V				
5+45	0.1307	0.45	|Q V				
5+50	0.1339	0.46	|Q V				
5+55	0.1371	0.47	|Q V				
6+ 0	0.1404	0.47	|Q V				
6+ 5	0.1436	0.48	|Q V				
6+10	0.1471	0.49	|Q V				
6+15	0.1506	0.51	| Q V				
6+20	0.1542	0.52	| Q V				
6+25	0.1578	0.53	| Q V				

6+30	0.1614	0.53	Q V				
6+35	0.1651	0.54	Q V				
6+40	0.1689	0.55	Q V				
6+45	0.1729	0.57	Q V				
6+50	0.1769	0.58	Q V				
6+55	0.1809	0.59	Q V				
7+ 0	0.1850	0.59	Q V				
7+ 5	0.1890	0.59	Q V				
7+10	0.1931	0.59	Q V				
7+15	0.1972	0.59	Q V				
7+20	0.2013	0.60	Q V				
7+25	0.2056	0.62	Q V				
7+30	0.2100	0.63	Q V				
7+35	0.2144	0.65	Q V				
7+40	0.2190	0.67	Q V				
7+45	0.2238	0.69	Q V				
7+50	0.2286	0.70	Q V				
7+55	0.2336	0.72	Q V				
8+ 0	0.2387	0.74	Q V				
8+ 5	0.2440	0.76	Q V				
8+10	0.2495	0.80	Q V				
8+15	0.2553	0.84	Q V				
8+20	0.2612	0.86	Q V				
8+25	0.2672	0.87	Q V				
8+30	0.2732	0.88	Q V				
8+35	0.2793	0.89	Q V				
8+40	0.2856	0.91	Q V				
8+45	0.2920	0.93	Q V				
8+50	0.2984	0.94	Q V				
8+55	0.3051	0.96	Q V				
9+ 0	0.3119	0.98	Q V				
9+ 5	0.3188	1.00	Q V				
9+10	0.3260	1.04	Q V				
9+15	0.3334	1.08	Q V				
9+20	0.3410	1.10	Q V				
9+25	0.3488	1.13	Q V				
9+30	0.3567	1.15	Q V				
9+35	0.3648	1.17	Q V				
9+40	0.3730	1.20	Q V				
9+45	0.3814	1.22	Q V				
9+50	0.3899	1.23	Q V				
9+55	0.3986	1.26	Q V				
10+ 0	0.4074	1.28	Q V				
10+ 5	0.4161	1.26	Q V				
10+10	0.4240	1.14	Q V				
10+15	0.4311	1.03	Q V				
10+20	0.4379	0.99	Q V				
10+25	0.4445	0.96	Q V				
10+30	0.4510	0.95	Q V				
10+35	0.4576	0.95	Q V				
10+40	0.4647	1.03	Q V				
10+45	0.4723	1.11	Q V				
10+50	0.4802	1.14	Q V				
10+55	0.4881	1.15	Q V				
11+ 0	0.4962	1.16	Q V				
11+ 5	0.5042	1.17	Q V				
11+10	0.5122	1.15	Q V				
11+15	0.5200	1.14	Q V				
11+20	0.5278	1.14	Q V				
11+25	0.5357	1.14	Q V				
11+30	0.5435	1.14	Q V				
11+35	0.5513	1.13	Q V				
11+40	0.5588	1.09	Q V				
11+45	0.5661	1.06	Q V				
11+50	0.5734	1.05	Q V				
11+55	0.5807	1.06	Q V				
12+ 0	0.5880	1.07	Q V				
12+ 5	0.5956	1.10	Q V				
12+10	0.6041	1.23	Q V				
12+15	0.6133	1.34	Q V				
12+20	0.6230	1.40	Q V				



18+20	1.1585	0.24	Q				V
18+25	1.1602	0.24	Q				V
18+30	1.1619	0.24	Q				V
18+35	1.1635	0.24	Q				V
18+40	1.1650	0.22	Q				V
18+45	1.1664	0.20	Q				V
18+50	1.1677	0.19	Q				V
18+55	1.1689	0.17	Q				V
19+ 0	1.1699	0.15	Q				V
19+ 5	1.1709	0.14	Q				V
19+10	1.1719	0.16	Q				V
19+15	1.1731	0.17	Q				V
19+20	1.1743	0.18	Q				V
19+25	1.1757	0.20	Q				V
19+30	1.1772	0.21	Q				V
19+35	1.1787	0.22	Q				V
19+40	1.1801	0.20	Q				V
19+45	1.1814	0.19	Q				V
19+50	1.1826	0.18	Q				V
19+55	1.1837	0.16	Q				V
20+ 0	1.1847	0.14	Q				V
20+ 5	1.1857	0.14	Q				V
20+10	1.1868	0.15	Q				V
20+15	1.1879	0.17	Q				V
20+20	1.1891	0.17	Q				V
20+25	1.1903	0.17	Q				V
20+30	1.1915	0.18	Q				V
20+35	1.1927	0.18	Q				V
20+40	1.1940	0.18	Q				V
20+45	1.1952	0.18	Q				V
20+50	1.1964	0.17	Q				V
20+55	1.1974	0.16	Q				V
21+ 0	1.1984	0.14	Q				V
21+ 5	1.1993	0.14	Q				V
21+10	1.2004	0.15	Q				V
21+15	1.2015	0.17	Q				V
21+20	1.2027	0.17	Q				V
21+25	1.2037	0.15	Q				V
21+30	1.2047	0.14	Q				V
21+35	1.2056	0.13	Q				V
21+40	1.2066	0.15	Q				V
21+45	1.2077	0.16	Q				V
21+50	1.2089	0.17	Q				V
21+55	1.2099	0.15	Q				V
22+ 0	1.2108	0.14	Q				V
22+ 5	1.2118	0.13	Q				V
22+10	1.2128	0.15	Q				V
22+15	1.2139	0.16	Q				V
22+20	1.2150	0.17	Q				V
22+25	1.2161	0.15	Q				V
22+30	1.2170	0.14	Q				V
22+35	1.2179	0.13	Q				V
22+40	1.2188	0.13	Q				V
22+45	1.2196	0.12	Q				V
22+50	1.2205	0.12	Q				V
22+55	1.2213	0.12	Q				V
23+ 0	1.2222	0.12	Q				V
23+ 5	1.2230	0.12	Q				V
23+10	1.2238	0.12	Q				V
23+15	1.2247	0.12	Q				V
23+20	1.2255	0.12	Q				V
23+25	1.2263	0.12	Q				V
23+30	1.2271	0.12	Q				V
23+35	1.2280	0.12	Q				V
23+40	1.2288	0.12	Q				V
23+45	1.2296	0.12	Q				V
23+50	1.2304	0.12	Q				V
23+55	1.2313	0.12	Q				V
24+ 0	1.2321	0.12	Q				V
24+ 5	1.2328	0.11	Q				V
24+10	1.2334	0.08	Q				V

24+15	1.2337	0.04	Q				V
24+20	1.2339	0.03	Q				V
24+25	1.2340	0.02	Q				V
24+30	1.2341	0.02	Q				V
24+35	1.2342	0.01	Q				V
24+40	1.2342	0.01	Q				V
24+45	1.2343	0.01	Q				V
24+50	1.2343	0.00	Q				V
24+55	1.2343	0.00	Q				V
25+ 0	1.2344	0.00	Q				V
25+ 5	1.2344	0.00	Q				V
25+10	1.2344	0.00	Q				V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930UHEX2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
2 YEAR STORM EVENT UNIT HYDROGRAPH
1930UHEX2
DS

Drainage Area = 126.12(Ac.) = 0.197 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 126.12(Ac.) = 0.197 Sq. Mi.
Length along longest watercourse = 4770.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.903 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 15.30(Ft.)
Slope along watercourse = 16.9358 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.154 Hr.
Lag time = 9.24 Min.
25% of lag time = 2.31 Min.
40% of lag time = 3.69 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	1.60	201.79

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	4.00	504.48

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
126.120	86.00	0.000

Total Area Entered = 126.12(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	54.132	6.940	8.822
2	0.167	108.263	29.553	37.563
3	0.250	162.395	28.209	35.855
4	0.333	216.527	11.633	14.786
5	0.417	270.658	6.464	8.216
6	0.500	324.790	4.467	5.677
7	0.583	378.922	3.222	4.096
8	0.667	433.053	2.355	2.993
9	0.750	487.185	1.756	2.232
10	0.833	541.317	1.503	1.911
11	0.917	595.448	1.127	1.432
12	1.000	649.580	0.886	1.127
13	1.083	703.712	0.652	0.829
14	1.167	757.843	0.541	0.688
15	1.250	811.975	0.692	0.880
			Sum = 100.000	Sum= 127.105

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.013	0.608	0.012	0.00
2	0.17	0.07	0.013	0.606	0.012	0.00
3	0.25	0.07	0.013	0.604	0.012	0.00
4	0.33	0.10	0.019	0.601	0.017	0.00
5	0.42	0.10	0.019	0.599	0.017	0.00
6	0.50	0.10	0.019	0.597	0.017	0.00
7	0.58	0.10	0.019	0.594	0.017	0.00
8	0.67	0.10	0.019	0.592	0.017	0.00
9	0.75	0.10	0.019	0.590	0.017	0.00
10	0.83	0.13	0.026	0.587	0.023	0.00
11	0.92	0.13	0.026	0.585	0.023	0.00
12	1.00	0.13	0.026	0.583	0.023	0.00
13	1.08	0.10	0.019	0.580	0.017	0.00
14	1.17	0.10	0.019	0.578	0.017	0.00
15	1.25	0.10	0.019	0.576	0.017	0.00
16	1.33	0.10	0.019	0.573	0.017	0.00
17	1.42	0.10	0.019	0.571	0.017	0.00
18	1.50	0.10	0.019	0.569	0.017	0.00
19	1.58	0.10	0.019	0.567	0.017	0.00
20	1.67	0.10	0.019	0.564	0.017	0.00
21	1.75	0.10	0.019	0.562	0.017	0.00
22	1.83	0.13	0.026	0.560	0.023	0.00
23	1.92	0.13	0.026	0.558	0.023	0.00
24	2.00	0.13	0.026	0.555	0.023	0.00
25	2.08	0.13	0.026	0.553	0.023	0.00
26	2.17	0.13	0.026	0.551	0.023	0.00
27	2.25	0.13	0.026	0.549	0.023	0.00
28	2.33	0.13	0.026	0.546	0.023	0.00
29	2.42	0.13	0.026	0.544	0.023	0.00
30	2.50	0.13	0.026	0.542	0.023	0.00

31	2.58	0.17	0.032	0.540	0.029	0.00
32	2.67	0.17	0.032	0.537	0.029	0.00
33	2.75	0.17	0.032	0.535	0.029	0.00
34	2.83	0.17	0.032	0.533	0.029	0.00
35	2.92	0.17	0.032	0.531	0.029	0.00
36	3.00	0.17	0.032	0.529	0.029	0.00
37	3.08	0.17	0.032	0.526	0.029	0.00
38	3.17	0.17	0.032	0.524	0.029	0.00
39	3.25	0.17	0.032	0.522	0.029	0.00
40	3.33	0.17	0.032	0.520	0.029	0.00
41	3.42	0.17	0.032	0.518	0.029	0.00
42	3.50	0.17	0.032	0.516	0.029	0.00
43	3.58	0.17	0.032	0.513	0.029	0.00
44	3.67	0.17	0.032	0.511	0.029	0.00
45	3.75	0.17	0.032	0.509	0.029	0.00
46	3.83	0.20	0.038	0.507	0.035	0.00
47	3.92	0.20	0.038	0.505	0.035	0.00
48	4.00	0.20	0.038	0.503	0.035	0.00
49	4.08	0.20	0.038	0.501	0.035	0.00
50	4.17	0.20	0.038	0.498	0.035	0.00
51	4.25	0.20	0.038	0.496	0.035	0.00
52	4.33	0.23	0.045	0.494	0.040	0.00
53	4.42	0.23	0.045	0.492	0.040	0.00
54	4.50	0.23	0.045	0.490	0.040	0.00
55	4.58	0.23	0.045	0.488	0.040	0.00
56	4.67	0.23	0.045	0.486	0.040	0.00
57	4.75	0.23	0.045	0.484	0.040	0.00
58	4.83	0.27	0.051	0.482	0.046	0.01
59	4.92	0.27	0.051	0.480	0.046	0.01
60	5.00	0.27	0.051	0.477	0.046	0.01
61	5.08	0.20	0.038	0.475	0.035	0.00
62	5.17	0.20	0.038	0.473	0.035	0.00
63	5.25	0.20	0.038	0.471	0.035	0.00
64	5.33	0.23	0.045	0.469	0.040	0.00
65	5.42	0.23	0.045	0.467	0.040	0.00
66	5.50	0.23	0.045	0.465	0.040	0.00
67	5.58	0.27	0.051	0.463	0.046	0.01
68	5.67	0.27	0.051	0.461	0.046	0.01
69	5.75	0.27	0.051	0.459	0.046	0.01
70	5.83	0.27	0.051	0.457	0.046	0.01
71	5.92	0.27	0.051	0.455	0.046	0.01
72	6.00	0.27	0.051	0.453	0.046	0.01
73	6.08	0.30	0.058	0.451	0.052	0.01
74	6.17	0.30	0.058	0.449	0.052	0.01
75	6.25	0.30	0.058	0.447	0.052	0.01
76	6.33	0.30	0.058	0.445	0.052	0.01
77	6.42	0.30	0.058	0.443	0.052	0.01
78	6.50	0.30	0.058	0.441	0.052	0.01
79	6.58	0.33	0.064	0.439	0.058	0.01
80	6.67	0.33	0.064	0.437	0.058	0.01
81	6.75	0.33	0.064	0.435	0.058	0.01
82	6.83	0.33	0.064	0.433	0.058	0.01
83	6.92	0.33	0.064	0.431	0.058	0.01
84	7.00	0.33	0.064	0.429	0.058	0.01
85	7.08	0.33	0.064	0.427	0.058	0.01
86	7.17	0.33	0.064	0.425	0.058	0.01
87	7.25	0.33	0.064	0.423	0.058	0.01
88	7.33	0.37	0.070	0.421	0.063	0.01
89	7.42	0.37	0.070	0.419	0.063	0.01
90	7.50	0.37	0.070	0.417	0.063	0.01
91	7.58	0.40	0.077	0.416	0.069	0.01
92	7.67	0.40	0.077	0.414	0.069	0.01
93	7.75	0.40	0.077	0.412	0.069	0.01
94	7.83	0.43	0.083	0.410	0.075	0.01
95	7.92	0.43	0.083	0.408	0.075	0.01
96	8.00	0.43	0.083	0.406	0.075	0.01
97	8.08	0.50	0.096	0.404	0.086	0.01
98	8.17	0.50	0.096	0.402	0.086	0.01
99	8.25	0.50	0.096	0.400	0.086	0.01
100	8.33	0.50	0.096	0.399	0.086	0.01
101	8.42	0.50	0.096	0.397	0.086	0.01

102	8.50	0.50	0.096	0.395	0.086	0.01
103	8.58	0.53	0.102	0.393	0.092	0.01
104	8.67	0.53	0.102	0.391	0.092	0.01
105	8.75	0.53	0.102	0.389	0.092	0.01
106	8.83	0.57	0.109	0.387	0.098	0.01
107	8.92	0.57	0.109	0.386	0.098	0.01
108	9.00	0.57	0.109	0.384	0.098	0.01
109	9.08	0.63	0.122	0.382	0.109	0.01
110	9.17	0.63	0.122	0.380	0.109	0.01
111	9.25	0.63	0.122	0.378	0.109	0.01
112	9.33	0.67	0.128	0.377	0.115	0.01
113	9.42	0.67	0.128	0.375	0.115	0.01
114	9.50	0.67	0.128	0.373	0.115	0.01
115	9.58	0.70	0.134	0.371	0.121	0.01
116	9.67	0.70	0.134	0.369	0.121	0.01
117	9.75	0.70	0.134	0.368	0.121	0.01
118	9.83	0.73	0.141	0.366	0.127	0.01
119	9.92	0.73	0.141	0.364	0.127	0.01
120	10.00	0.73	0.141	0.362	0.127	0.01
121	10.08	0.50	0.096	0.361	0.086	0.01
122	10.17	0.50	0.096	0.359	0.086	0.01
123	10.25	0.50	0.096	0.357	0.086	0.01
124	10.33	0.50	0.096	0.355	0.086	0.01
125	10.42	0.50	0.096	0.354	0.086	0.01
126	10.50	0.50	0.096	0.352	0.086	0.01
127	10.58	0.67	0.128	0.350	0.115	0.01
128	10.67	0.67	0.128	0.348	0.115	0.01
129	10.75	0.67	0.128	0.347	0.115	0.01
130	10.83	0.67	0.128	0.345	0.115	0.01
131	10.92	0.67	0.128	0.343	0.115	0.01
132	11.00	0.67	0.128	0.342	0.115	0.01
133	11.08	0.63	0.122	0.340	0.109	0.01
134	11.17	0.63	0.122	0.338	0.109	0.01
135	11.25	0.63	0.122	0.337	0.109	0.01
136	11.33	0.63	0.122	0.335	0.109	0.01
137	11.42	0.63	0.122	0.333	0.109	0.01
138	11.50	0.63	0.122	0.332	0.109	0.01
139	11.58	0.57	0.109	0.330	0.098	0.01
140	11.67	0.57	0.109	0.328	0.098	0.01
141	11.75	0.57	0.109	0.327	0.098	0.01
142	11.83	0.60	0.115	0.325	0.104	0.01
143	11.92	0.60	0.115	0.324	0.104	0.01
144	12.00	0.60	0.115	0.322	0.104	0.01
145	12.08	0.83	0.160	0.320	0.144	0.02
146	12.17	0.83	0.160	0.319	0.144	0.02
147	12.25	0.83	0.160	0.317	0.144	0.02
148	12.33	0.87	0.166	0.316	0.150	0.02
149	12.42	0.87	0.166	0.314	0.150	0.02
150	12.50	0.87	0.166	0.312	0.150	0.02
151	12.58	0.93	0.179	0.311	0.161	0.02
152	12.67	0.93	0.179	0.309	0.161	0.02
153	12.75	0.93	0.179	0.308	0.161	0.02
154	12.83	0.97	0.186	0.306	0.167	0.02
155	12.92	0.97	0.186	0.305	0.167	0.02
156	13.00	0.97	0.186	0.303	0.167	0.02
157	13.08	1.13	0.218	0.301	0.196	0.02
158	13.17	1.13	0.218	0.300	0.196	0.02
159	13.25	1.13	0.218	0.298	0.196	0.02
160	13.33	1.13	0.218	0.297	0.196	0.02
161	13.42	1.13	0.218	0.295	0.196	0.02
162	13.50	1.13	0.218	0.294	0.196	0.02
163	13.58	0.77	0.147	0.292	0.132	0.01
164	13.67	0.77	0.147	0.291	0.132	0.01
165	13.75	0.77	0.147	0.289	0.132	0.01
166	13.83	0.77	0.147	0.288	0.132	0.01
167	13.92	0.77	0.147	0.286	0.132	0.01
168	14.00	0.77	0.147	0.285	0.132	0.01
169	14.08	0.90	0.173	0.284	0.155	0.02
170	14.17	0.90	0.173	0.282	0.155	0.02
171	14.25	0.90	0.173	0.281	0.155	0.02
172	14.33	0.87	0.166	0.279	0.150	0.02

173	14.42	0.87	0.166	0.278	0.150	0.02
174	14.50	0.87	0.166	0.276	0.150	0.02
175	14.58	0.87	0.166	0.275	0.150	0.02
176	14.67	0.87	0.166	0.274	0.150	0.02
177	14.75	0.87	0.166	0.272	0.150	0.02
178	14.83	0.83	0.160	0.271	0.144	0.02
179	14.92	0.83	0.160	0.269	0.144	0.02
180	15.00	0.83	0.160	0.268	0.144	0.02
181	15.08	0.80	0.154	0.267	0.138	0.02
182	15.17	0.80	0.154	0.265	0.138	0.02
183	15.25	0.80	0.154	0.264	0.138	0.02
184	15.33	0.77	0.147	0.263	0.132	0.01
185	15.42	0.77	0.147	0.261	0.132	0.01
186	15.50	0.77	0.147	0.260	0.132	0.01
187	15.58	0.63	0.122	0.259	0.109	0.01
188	15.67	0.63	0.122	0.257	0.109	0.01
189	15.75	0.63	0.122	0.256	0.109	0.01
190	15.83	0.63	0.122	0.255	0.109	0.01
191	15.92	0.63	0.122	0.253	0.109	0.01
192	16.00	0.63	0.122	0.252	0.109	0.01
193	16.08	0.13	0.026	0.251	0.023	0.00
194	16.17	0.13	0.026	0.249	0.023	0.00
195	16.25	0.13	0.026	0.248	0.023	0.00
196	16.33	0.13	0.026	0.247	0.023	0.00
197	16.42	0.13	0.026	0.246	0.023	0.00
198	16.50	0.13	0.026	0.244	0.023	0.00
199	16.58	0.10	0.019	0.243	0.017	0.00
200	16.67	0.10	0.019	0.242	0.017	0.00
201	16.75	0.10	0.019	0.241	0.017	0.00
202	16.83	0.10	0.019	0.239	0.017	0.00
203	16.92	0.10	0.019	0.238	0.017	0.00
204	17.00	0.10	0.019	0.237	0.017	0.00
205	17.08	0.17	0.032	0.236	0.029	0.00
206	17.17	0.17	0.032	0.235	0.029	0.00
207	17.25	0.17	0.032	0.233	0.029	0.00
208	17.33	0.17	0.032	0.232	0.029	0.00
209	17.42	0.17	0.032	0.231	0.029	0.00
210	17.50	0.17	0.032	0.230	0.029	0.00
211	17.58	0.17	0.032	0.229	0.029	0.00
212	17.67	0.17	0.032	0.228	0.029	0.00
213	17.75	0.17	0.032	0.227	0.029	0.00
214	17.83	0.13	0.026	0.225	0.023	0.00
215	17.92	0.13	0.026	0.224	0.023	0.00
216	18.00	0.13	0.026	0.223	0.023	0.00
217	18.08	0.13	0.026	0.222	0.023	0.00
218	18.17	0.13	0.026	0.221	0.023	0.00
219	18.25	0.13	0.026	0.220	0.023	0.00
220	18.33	0.13	0.026	0.219	0.023	0.00
221	18.42	0.13	0.026	0.218	0.023	0.00
222	18.50	0.13	0.026	0.217	0.023	0.00
223	18.58	0.10	0.019	0.216	0.017	0.00
224	18.67	0.10	0.019	0.215	0.017	0.00
225	18.75	0.10	0.019	0.214	0.017	0.00
226	18.83	0.07	0.013	0.213	0.012	0.00
227	18.92	0.07	0.013	0.212	0.012	0.00
228	19.00	0.07	0.013	0.211	0.012	0.00
229	19.08	0.10	0.019	0.210	0.017	0.00
230	19.17	0.10	0.019	0.209	0.017	0.00
231	19.25	0.10	0.019	0.208	0.017	0.00
232	19.33	0.13	0.026	0.207	0.023	0.00
233	19.42	0.13	0.026	0.206	0.023	0.00
234	19.50	0.13	0.026	0.205	0.023	0.00
235	19.58	0.10	0.019	0.204	0.017	0.00
236	19.67	0.10	0.019	0.203	0.017	0.00
237	19.75	0.10	0.019	0.202	0.017	0.00
238	19.83	0.07	0.013	0.201	0.012	0.00
239	19.92	0.07	0.013	0.200	0.012	0.00
240	20.00	0.07	0.013	0.199	0.012	0.00
241	20.08	0.10	0.019	0.198	0.017	0.00
242	20.17	0.10	0.019	0.197	0.017	0.00
243	20.25	0.10	0.019	0.197	0.017	0.00

244	20.33	0.10	0.019	0.196	0.017	0.00
245	20.42	0.10	0.019	0.195	0.017	0.00
246	20.50	0.10	0.019	0.194	0.017	0.00
247	20.58	0.10	0.019	0.193	0.017	0.00
248	20.67	0.10	0.019	0.192	0.017	0.00
249	20.75	0.10	0.019	0.192	0.017	0.00
250	20.83	0.07	0.013	0.191	0.012	0.00
251	20.92	0.07	0.013	0.190	0.012	0.00
252	21.00	0.07	0.013	0.189	0.012	0.00
253	21.08	0.10	0.019	0.189	0.017	0.00
254	21.17	0.10	0.019	0.188	0.017	0.00
255	21.25	0.10	0.019	0.187	0.017	0.00
256	21.33	0.07	0.013	0.186	0.012	0.00
257	21.42	0.07	0.013	0.186	0.012	0.00
258	21.50	0.07	0.013	0.185	0.012	0.00
259	21.58	0.10	0.019	0.184	0.017	0.00
260	21.67	0.10	0.019	0.184	0.017	0.00
261	21.75	0.10	0.019	0.183	0.017	0.00
262	21.83	0.07	0.013	0.182	0.012	0.00
263	21.92	0.07	0.013	0.182	0.012	0.00
264	22.00	0.07	0.013	0.181	0.012	0.00
265	22.08	0.10	0.019	0.181	0.017	0.00
266	22.17	0.10	0.019	0.180	0.017	0.00
267	22.25	0.10	0.019	0.179	0.017	0.00
268	22.33	0.07	0.013	0.179	0.012	0.00
269	22.42	0.07	0.013	0.178	0.012	0.00
270	22.50	0.07	0.013	0.178	0.012	0.00
271	22.58	0.07	0.013	0.177	0.012	0.00
272	22.67	0.07	0.013	0.177	0.012	0.00
273	22.75	0.07	0.013	0.176	0.012	0.00
274	22.83	0.07	0.013	0.176	0.012	0.00
275	22.92	0.07	0.013	0.175	0.012	0.00
276	23.00	0.07	0.013	0.175	0.012	0.00
277	23.08	0.07	0.013	0.175	0.012	0.00
278	23.17	0.07	0.013	0.174	0.012	0.00
279	23.25	0.07	0.013	0.174	0.012	0.00
280	23.33	0.07	0.013	0.173	0.012	0.00
281	23.42	0.07	0.013	0.173	0.012	0.00
282	23.50	0.07	0.013	0.173	0.012	0.00
283	23.58	0.07	0.013	0.173	0.012	0.00
284	23.67	0.07	0.013	0.172	0.012	0.00
285	23.75	0.07	0.013	0.172	0.012	0.00
286	23.83	0.07	0.013	0.172	0.012	0.00
287	23.92	0.07	0.013	0.172	0.012	0.00
288	24.00	0.07	0.013	0.172	0.012	0.00
Sum =		100.0			Sum =	1.9

Flood volume = Effective rainfall 0.16(In)
times area 126.1(Ac.)/[(In)/(Ft.)] = 1.7(Ac.Ft)
Total soil loss = 1.44(In)
Total soil loss = 15.131(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 73232.5 Cubic Feet
Total soil loss = 659092.1 Cubic Feet

Peak flow rate of this hydrograph = 2.707(CFS)

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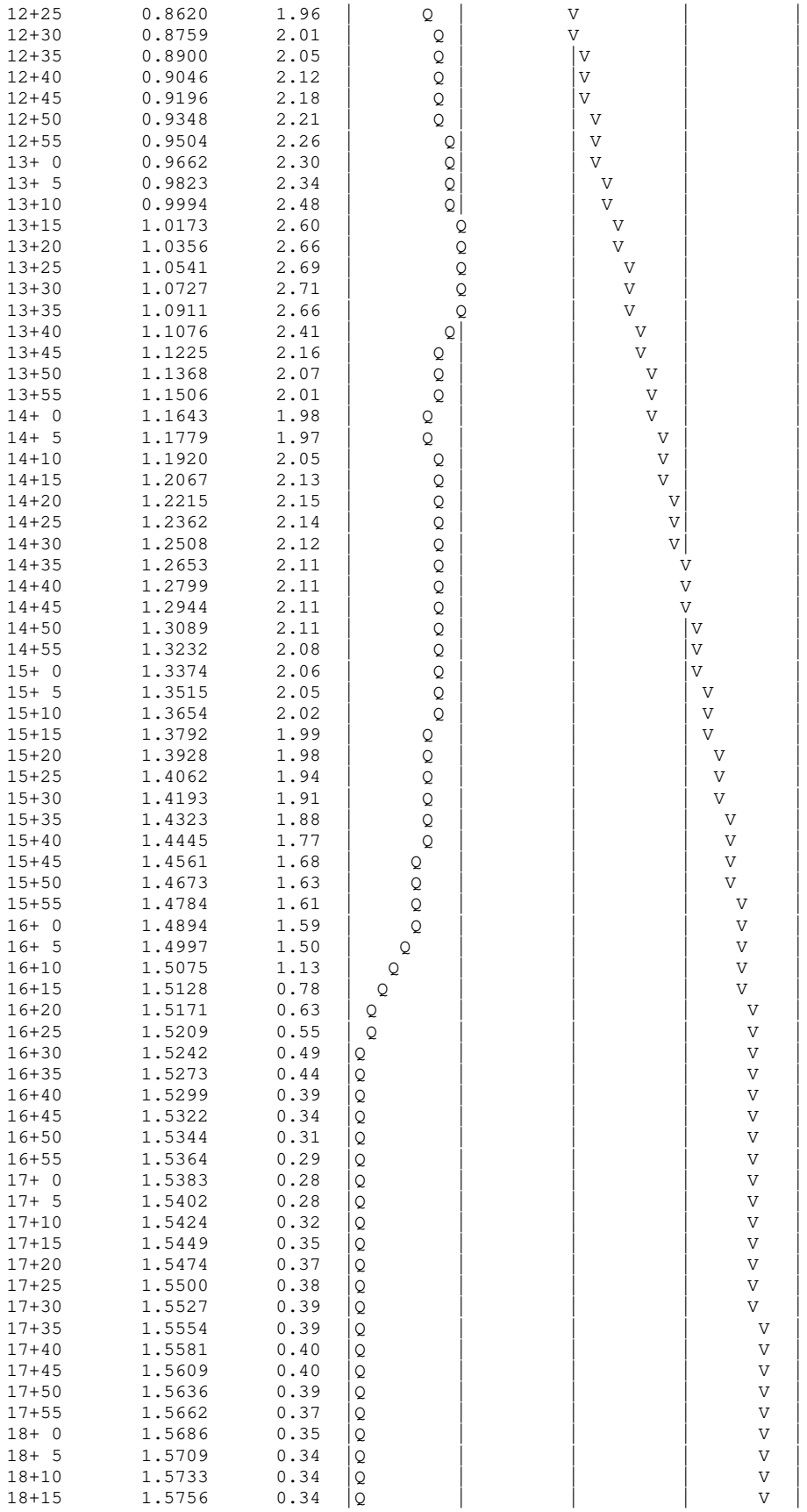
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0005	0.06	Q	|	|	|	|
0+15	0.0012	0.11	Q	|	|	|	|
0+20	0.0021	0.13	Q	|	|	|	|
0+25	0.0032	0.16	Q	|	|	|	|
0+30	0.0046	0.19	Q	|	|	|	|

0+35	0.0060	0.21	Q				
0+40	0.0075	0.22	Q				
0+45	0.0091	0.22	Q				
0+50	0.0107	0.24	Q				
0+55	0.0125	0.26	VQ				
1+ 0	0.0145	0.29	VQ				
1+ 5	0.0165	0.30	VQ				
1+10	0.0185	0.28	VQ				
1+15	0.0203	0.26	VQ				
1+20	0.0220	0.25	VQ				
1+25	0.0237	0.25	VQ				
1+30	0.0255	0.25	VQ				
1+35	0.0272	0.25	Q				
1+40	0.0289	0.25	Q				
1+45	0.0306	0.25	Q				
1+50	0.0323	0.25	VQ				
1+55	0.0342	0.28	VQ				
2+ 0	0.0363	0.30	VQ				
2+ 5	0.0384	0.31	VQ				
2+10	0.0405	0.31	VQ				
2+15	0.0427	0.32	|Q				
2+20	0.0449	0.32	|Q				
2+25	0.0471	0.32	|Q				
2+30	0.0493	0.32	|Q				
2+35	0.0516	0.33	|Q				
2+40	0.0540	0.35	|Q				
2+45	0.0566	0.38	|Q				
2+50	0.0593	0.39	|Q				
2+55	0.0620	0.39	|Q				
3+ 0	0.0647	0.40	|Q				
3+ 5	0.0674	0.40	|Q				
3+10	0.0702	0.40	|Q				
3+15	0.0730	0.40	|Q				
3+20	0.0757	0.40	|Q				
3+25	0.0785	0.40	|Q				
3+30	0.0813	0.41	|Q				
3+35	0.0841	0.41	|QV				
3+40	0.0869	0.41	|QV				
3+45	0.0897	0.41	|QV				
3+50	0.0926	0.41	|QV				
3+55	0.0956	0.44	|QV				
4+ 0	0.0987	0.46	|QV				
4+ 5	0.1020	0.47	|QV				
4+10	0.1052	0.47	|QV				
4+15	0.1085	0.48	|QV				
4+20	0.1119	0.49	|QV				
4+25	0.1154	0.51	| Q				
4+30	0.1191	0.54	| Q				
4+35	0.1229	0.55	| Q				
4+40	0.1267	0.55	| QV				
4+45	0.1305	0.56	| QV				
4+50	0.1344	0.57	| QV				
4+55	0.1385	0.59	| QV				
5+ 0	0.1427	0.62	| QV				
5+ 5	0.1470	0.62	| QV				
5+10	0.1510	0.58	| QV				
5+15	0.1546	0.53	| QV				
5+20	0.1582	0.52	| QV				
5+25	0.1620	0.54	| QV				
5+30	0.1658	0.56	| QV				
5+35	0.1697	0.57	| Q V				
5+40	0.1738	0.59	| Q V				
5+45	0.1781	0.62	| Q V				
5+50	0.1824	0.63	| Q V				
5+55	0.1868	0.64	| Q V				
6+ 0	0.1912	0.64	| Q V				
6+ 5	0.1956	0.65	| Q V				
6+10	0.2003	0.67	| Q V				
6+15	0.2051	0.70	| Q V				
6+20	0.2100	0.71	| Q V				
6+25	0.2149	0.72	| Q V				

6+30	0.2199	0.72	Q V				
6+35	0.2249	0.73	Q V				
6+40	0.2301	0.76	Q V				
6+45	0.2355	0.78	Q V				
6+50	0.2409	0.79	Q V				
6+55	0.2464	0.80	Q V				
7+ 0	0.2519	0.80	Q V				
7+ 5	0.2575	0.80	Q V				
7+10	0.2630	0.81	Q V				
7+15	0.2686	0.81	Q V				
7+20	0.2742	0.82	Q V				
7+25	0.2800	0.84	Q V				
7+30	0.2860	0.86	Q V				
7+35	0.2920	0.88	Q V				
7+40	0.2983	0.91	Q V				
7+45	0.3048	0.94	Q V				
7+50	0.3113	0.96	Q V				
7+55	0.3181	0.99	Q V				
8+ 0	0.3251	1.01	Q V				
8+ 5	0.3323	1.04	Q V				
8+10	0.3398	1.10	Q V				
8+15	0.3477	1.15	Q V				
8+20	0.3558	1.17	Q V				
8+25	0.3639	1.18	Q V				
8+30	0.3721	1.19	Q V				
8+35	0.3805	1.21	Q V				
8+40	0.3890	1.24	Q V				
8+45	0.3977	1.26	Q V				
8+50	0.4065	1.28	Q V				
8+55	0.4155	1.31	Q V				
9+ 0	0.4248	1.34	Q V				
9+ 5	0.4342	1.37	Q V				
9+10	0.4440	1.42	Q V				
9+15	0.4541	1.47	Q V				
9+20	0.4645	1.50	Q V				
9+25	0.4751	1.54	Q V				
9+30	0.4859	1.57	Q V				
9+35	0.4969	1.59	Q V				
9+40	0.5081	1.63	Q V				
9+45	0.5195	1.66	Q V				
9+50	0.5311	1.68	Q V				
9+55	0.5429	1.71	Q V				
10+ 0	0.5549	1.74	Q V				
10+ 5	0.5667	1.72	Q V				
10+10	0.5775	1.56	Q V				
10+15	0.5871	1.41	Q V				
10+20	0.5964	1.34	Q V				
10+25	0.6054	1.31	Q V				
10+30	0.6143	1.29	Q V				
10+35	0.6232	1.30	Q V				
10+40	0.6329	1.41	Q V				
10+45	0.6433	1.51	Q V				
10+50	0.6540	1.55	Q V				
10+55	0.6648	1.57	Q V				
11+ 0	0.6758	1.59	Q V				
11+ 5	0.6867	1.59	Q V				
11+10	0.6976	1.57	Q V				
11+15	0.7082	1.55	Q V				
11+20	0.7189	1.55	Q V				
11+25	0.7296	1.55	Q V				
11+30	0.7403	1.55	Q V				
11+35	0.7508	1.54	Q V				
11+40	0.7611	1.49	Q V				
11+45	0.7711	1.45	Q V				
11+50	0.7809	1.43	Q V				
11+55	0.7908	1.44	Q V				
12+ 0	0.8009	1.46	Q V				
12+ 5	0.8112	1.50	Q V				
12+10	0.8227	1.67	Q V				
12+15	0.8353	1.83	Q V				
12+20	0.8485	1.90	Q V				



18+20	1.5779	0.33	|Q	|	|	|	V |
18+25	1.5802	0.33	|Q	|	|	|	V |
18+30	1.5824	0.33	|Q	|	|	|	V |
18+35	1.5847	0.32	|Q	|	|	|	V |
18+40	1.5867	0.30	|Q	|	|	|	V |
18+45	1.5886	0.27	|Q	|	|	|	V |
18+50	1.5904	0.26	|Q	|	|	|	V |
18+55	1.5920	0.23	Q	|	|	|	V |
19+ 0	1.5933	0.20	Q	|	|	|	V |
19+ 5	1.5947	0.20	Q	|	|	|	V |
19+10	1.5962	0.21	Q	|	|	|	V |
19+15	1.5977	0.23	Q	|	|	|	V |
19+20	1.5994	0.24	Q	|	|	|	V |
19+25	1.6012	0.27	|Q	|	|	|	V |
19+30	1.6033	0.29	|Q	|	|	|	V |
19+35	1.6053	0.30	|Q	|	|	|	V |
19+40	1.6072	0.28	|Q	|	|	|	V |
19+45	1.6090	0.26	|Q	|	|	|	V |
19+50	1.6107	0.25	Q	|	|	|	V |
19+55	1.6122	0.22	Q	|	|	|	V |
20+ 0	1.6136	0.20	Q	|	|	|	V |
20+ 5	1.6149	0.19	Q	|	|	|	V |
20+10	1.6163	0.21	Q	|	|	|	V |
20+15	1.6179	0.23	Q	|	|	|	V |
20+20	1.6195	0.23	Q	|	|	|	V |
20+25	1.6212	0.24	Q	|	|	|	V |
20+30	1.6228	0.24	Q	|	|	|	V |
20+35	1.6245	0.24	Q	|	|	|	V |
20+40	1.6261	0.24	Q	|	|	|	V |
20+45	1.6278	0.24	Q	|	|	|	V |
20+50	1.6294	0.24	Q	|	|	|	V |
20+55	1.6309	0.21	Q	|	|	|	V |
21+ 0	1.6322	0.19	Q	|	|	|	V |
21+ 5	1.6335	0.19	Q	|	|	|	V |
21+10	1.6349	0.21	Q	|	|	|	V |
21+15	1.6365	0.23	Q	|	|	|	V |
21+20	1.6380	0.23	Q	|	|	|	V |
21+25	1.6394	0.21	Q	|	|	|	V|
21+30	1.6407	0.19	Q	|	|	|	V|
21+35	1.6420	0.18	Q	|	|	|	V|
21+40	1.6434	0.20	Q	|	|	|	V|
21+45	1.6449	0.22	Q	|	|	|	V|
21+50	1.6465	0.22	Q	|	|	|	V|
21+55	1.6479	0.20	Q	|	|	|	V|
22+ 0	1.6491	0.18	Q	|	|	|	V|
22+ 5	1.6504	0.18	Q	|	|	|	V|
22+10	1.6518	0.20	Q	|	|	|	V|
22+15	1.6533	0.22	Q	|	|	|	V|
22+20	1.6549	0.22	Q	|	|	|	V|
22+25	1.6563	0.20	Q	|	|	|	V|
22+30	1.6575	0.18	Q	|	|	|	V|
22+35	1.6588	0.18	Q	|	|	|	V|
22+40	1.6600	0.17	Q	|	|	|	V|
22+45	1.6611	0.17	Q	|	|	|	V|
22+50	1.6623	0.17	Q	|	|	|	V|
22+55	1.6634	0.17	Q	|	|	|	V|
23+ 0	1.6646	0.17	Q	|	|	|	V|
23+ 5	1.6657	0.16	Q	|	|	|	V|
23+10	1.6668	0.16	Q	|	|	|	V|
23+15	1.6680	0.16	Q	|	|	|	V|
23+20	1.6691	0.16	Q	|	|	|	V|
23+25	1.6702	0.16	Q	|	|	|	V|
23+30	1.6713	0.16	Q	|	|	|	V|
23+35	1.6725	0.16	Q	|	|	|	V|
23+40	1.6736	0.16	Q	|	|	|	V|
23+45	1.6747	0.16	Q	|	|	|	V|
23+50	1.6758	0.16	Q	|	|	|	V|
23+55	1.6769	0.16	Q	|	|	|	V|
24+ 0	1.6781	0.16	Q	|	|	|	V|
24+ 5	1.6791	0.15	Q	|	|	|	V|
24+10	1.6798	0.10	Q	|	|	|	V|

24+15	1.6802	0.06	Q				V
24+20	1.6805	0.04	Q				V
24+25	1.6807	0.03	Q				V
24+30	1.6808	0.02	Q				V
24+35	1.6809	0.02	Q				V
24+40	1.6810	0.01	Q				V
24+45	1.6811	0.01	Q				V
24+50	1.6811	0.01	Q				V
24+55	1.6811	0.00	Q				V
25+ 0	1.6812	0.00	Q				V
25+ 5	1.6812	0.00	Q				V
25+10	1.6812	0.00	Q				V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930UHEX5245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
5 YEAR STORM EVENT UNIT HYDROGRAPH
1930UHEX5
DS

Drainage Area = 126.12(Ac.) = 0.197 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 126.12(Ac.) = 0.197 Sq. Mi.
Length along longest watercourse = 4770.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.903 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 15.30(Ft.)
Slope along watercourse = 16.9358 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.154 Hr.
Lag time = 9.24 Min.
25% of lag time = 2.31 Min.
40% of lag time = 3.69 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	1.60	201.79

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	4.00	504.48

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.162(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.162(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
126.120	86.00	0.000

Total Area Entered = 126.12(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	54.132	6.940	8.822
2	0.167	108.263	29.553	37.563
3	0.250	162.395	28.209	35.855
4	0.333	216.527	11.633	14.786
5	0.417	270.658	6.464	8.216
6	0.500	324.790	4.467	5.677
7	0.583	378.922	3.222	4.096
8	0.667	433.053	2.355	2.993
9	0.750	487.185	1.756	2.232
10	0.833	541.317	1.503	1.911
11	0.917	595.448	1.127	1.432
12	1.000	649.580	0.886	1.127
13	1.083	703.712	0.652	0.829
14	1.167	757.843	0.541	0.688
15	1.250	811.975	0.692	0.880
			Sum = 100.000	Sum= 127.105

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.017	0.608	0.016	0.00
2	0.17	0.07	0.017	0.606	0.016	0.00
3	0.25	0.07	0.017	0.604	0.016	0.00
4	0.33	0.10	0.026	0.601	0.023	0.00
5	0.42	0.10	0.026	0.599	0.023	0.00
6	0.50	0.10	0.026	0.597	0.023	0.00
7	0.58	0.10	0.026	0.594	0.023	0.00
8	0.67	0.10	0.026	0.592	0.023	0.00
9	0.75	0.10	0.026	0.590	0.023	0.00
10	0.83	0.13	0.035	0.587	0.031	0.00
11	0.92	0.13	0.035	0.585	0.031	0.00
12	1.00	0.13	0.035	0.583	0.031	0.00
13	1.08	0.10	0.026	0.580	0.023	0.00
14	1.17	0.10	0.026	0.578	0.023	0.00
15	1.25	0.10	0.026	0.576	0.023	0.00
16	1.33	0.10	0.026	0.573	0.023	0.00
17	1.42	0.10	0.026	0.571	0.023	0.00
18	1.50	0.10	0.026	0.569	0.023	0.00
19	1.58	0.10	0.026	0.567	0.023	0.00
20	1.67	0.10	0.026	0.564	0.023	0.00
21	1.75	0.10	0.026	0.562	0.023	0.00
22	1.83	0.13	0.035	0.560	0.031	0.00
23	1.92	0.13	0.035	0.558	0.031	0.00
24	2.00	0.13	0.035	0.555	0.031	0.00
25	2.08	0.13	0.035	0.553	0.031	0.00
26	2.17	0.13	0.035	0.551	0.031	0.00
27	2.25	0.13	0.035	0.549	0.031	0.00
28	2.33	0.13	0.035	0.546	0.031	0.00
29	2.42	0.13	0.035	0.544	0.031	0.00
30	2.50	0.13	0.035	0.542	0.031	0.00

31	2.58	0.17	0.043	0.540	0.039	0.00
32	2.67	0.17	0.043	0.537	0.039	0.00
33	2.75	0.17	0.043	0.535	0.039	0.00
34	2.83	0.17	0.043	0.533	0.039	0.00
35	2.92	0.17	0.043	0.531	0.039	0.00
36	3.00	0.17	0.043	0.529	0.039	0.00
37	3.08	0.17	0.043	0.526	0.039	0.00
38	3.17	0.17	0.043	0.524	0.039	0.00
39	3.25	0.17	0.043	0.522	0.039	0.00
40	3.33	0.17	0.043	0.520	0.039	0.00
41	3.42	0.17	0.043	0.518	0.039	0.00
42	3.50	0.17	0.043	0.516	0.039	0.00
43	3.58	0.17	0.043	0.513	0.039	0.00
44	3.67	0.17	0.043	0.511	0.039	0.00
45	3.75	0.17	0.043	0.509	0.039	0.00
46	3.83	0.20	0.052	0.507	0.047	0.01
47	3.92	0.20	0.052	0.505	0.047	0.01
48	4.00	0.20	0.052	0.503	0.047	0.01
49	4.08	0.20	0.052	0.501	0.047	0.01
50	4.17	0.20	0.052	0.498	0.047	0.01
51	4.25	0.20	0.052	0.496	0.047	0.01
52	4.33	0.23	0.061	0.494	0.054	0.01
53	4.42	0.23	0.061	0.492	0.054	0.01
54	4.50	0.23	0.061	0.490	0.054	0.01
55	4.58	0.23	0.061	0.488	0.054	0.01
56	4.67	0.23	0.061	0.486	0.054	0.01
57	4.75	0.23	0.061	0.484	0.054	0.01
58	4.83	0.27	0.069	0.482	0.062	0.01
59	4.92	0.27	0.069	0.480	0.062	0.01
60	5.00	0.27	0.069	0.477	0.062	0.01
61	5.08	0.20	0.052	0.475	0.047	0.01
62	5.17	0.20	0.052	0.473	0.047	0.01
63	5.25	0.20	0.052	0.471	0.047	0.01
64	5.33	0.23	0.061	0.469	0.054	0.01
65	5.42	0.23	0.061	0.467	0.054	0.01
66	5.50	0.23	0.061	0.465	0.054	0.01
67	5.58	0.27	0.069	0.463	0.062	0.01
68	5.67	0.27	0.069	0.461	0.062	0.01
69	5.75	0.27	0.069	0.459	0.062	0.01
70	5.83	0.27	0.069	0.457	0.062	0.01
71	5.92	0.27	0.069	0.455	0.062	0.01
72	6.00	0.27	0.069	0.453	0.062	0.01
73	6.08	0.30	0.078	0.451	0.070	0.01
74	6.17	0.30	0.078	0.449	0.070	0.01
75	6.25	0.30	0.078	0.447	0.070	0.01
76	6.33	0.30	0.078	0.445	0.070	0.01
77	6.42	0.30	0.078	0.443	0.070	0.01
78	6.50	0.30	0.078	0.441	0.070	0.01
79	6.58	0.33	0.086	0.439	0.078	0.01
80	6.67	0.33	0.086	0.437	0.078	0.01
81	6.75	0.33	0.086	0.435	0.078	0.01
82	6.83	0.33	0.086	0.433	0.078	0.01
83	6.92	0.33	0.086	0.431	0.078	0.01
84	7.00	0.33	0.086	0.429	0.078	0.01
85	7.08	0.33	0.086	0.427	0.078	0.01
86	7.17	0.33	0.086	0.425	0.078	0.01
87	7.25	0.33	0.086	0.423	0.078	0.01
88	7.33	0.37	0.095	0.421	0.086	0.01
89	7.42	0.37	0.095	0.419	0.086	0.01
90	7.50	0.37	0.095	0.417	0.086	0.01
91	7.58	0.40	0.104	0.416	0.093	0.01
92	7.67	0.40	0.104	0.414	0.093	0.01
93	7.75	0.40	0.104	0.412	0.093	0.01
94	7.83	0.43	0.112	0.410	0.101	0.01
95	7.92	0.43	0.112	0.408	0.101	0.01
96	8.00	0.43	0.112	0.406	0.101	0.01
97	8.08	0.50	0.130	0.404	0.117	0.01
98	8.17	0.50	0.130	0.402	0.117	0.01
99	8.25	0.50	0.130	0.400	0.117	0.01
100	8.33	0.50	0.130	0.399	0.117	0.01
101	8.42	0.50	0.130	0.397	0.117	0.01

102	8.50	0.50	0.130	0.395	0.117	0.01
103	8.58	0.53	0.138	0.393	0.125	0.01
104	8.67	0.53	0.138	0.391	0.125	0.01
105	8.75	0.53	0.138	0.389	0.125	0.01
106	8.83	0.57	0.147	0.387	0.132	0.01
107	8.92	0.57	0.147	0.386	0.132	0.01
108	9.00	0.57	0.147	0.384	0.132	0.01
109	9.08	0.63	0.164	0.382	0.148	0.02
110	9.17	0.63	0.164	0.380	0.148	0.02
111	9.25	0.63	0.164	0.378	0.148	0.02
112	9.33	0.67	0.173	0.377	0.156	0.02
113	9.42	0.67	0.173	0.375	0.156	0.02
114	9.50	0.67	0.173	0.373	0.156	0.02
115	9.58	0.70	0.182	0.371	0.163	0.02
116	9.67	0.70	0.182	0.369	0.163	0.02
117	9.75	0.70	0.182	0.368	0.163	0.02
118	9.83	0.73	0.190	0.366	0.171	0.02
119	9.92	0.73	0.190	0.364	0.171	0.02
120	10.00	0.73	0.190	0.362	0.171	0.02
121	10.08	0.50	0.130	0.361	0.117	0.01
122	10.17	0.50	0.130	0.359	0.117	0.01
123	10.25	0.50	0.130	0.357	0.117	0.01
124	10.33	0.50	0.130	0.355	0.117	0.01
125	10.42	0.50	0.130	0.354	0.117	0.01
126	10.50	0.50	0.130	0.352	0.117	0.01
127	10.58	0.67	0.173	0.350	0.156	0.02
128	10.67	0.67	0.173	0.348	0.156	0.02
129	10.75	0.67	0.173	0.347	0.156	0.02
130	10.83	0.67	0.173	0.345	0.156	0.02
131	10.92	0.67	0.173	0.343	0.156	0.02
132	11.00	0.67	0.173	0.342	0.156	0.02
133	11.08	0.63	0.164	0.340	0.148	0.02
134	11.17	0.63	0.164	0.338	0.148	0.02
135	11.25	0.63	0.164	0.337	0.148	0.02
136	11.33	0.63	0.164	0.335	0.148	0.02
137	11.42	0.63	0.164	0.333	0.148	0.02
138	11.50	0.63	0.164	0.332	0.148	0.02
139	11.58	0.57	0.147	0.330	0.132	0.01
140	11.67	0.57	0.147	0.328	0.132	0.01
141	11.75	0.57	0.147	0.327	0.132	0.01
142	11.83	0.60	0.156	0.325	0.140	0.02
143	11.92	0.60	0.156	0.324	0.140	0.02
144	12.00	0.60	0.156	0.322	0.140	0.02
145	12.08	0.83	0.216	0.320	0.195	0.02
146	12.17	0.83	0.216	0.319	0.195	0.02
147	12.25	0.83	0.216	0.317	0.195	0.02
148	12.33	0.87	0.225	0.316	0.202	0.02
149	12.42	0.87	0.225	0.314	0.202	0.02
150	12.50	0.87	0.225	0.312	0.202	0.02
151	12.58	0.93	0.242	0.311	0.218	0.02
152	12.67	0.93	0.242	0.309	0.218	0.02
153	12.75	0.93	0.242	0.308	0.218	0.02
154	12.83	0.97	0.251	0.306	0.226	0.03
155	12.92	0.97	0.251	0.305	0.226	0.03
156	13.00	0.97	0.251	0.303	0.226	0.03
157	13.08	1.13	0.294	0.301	0.265	0.03
158	13.17	1.13	0.294	0.300	0.265	0.03
159	13.25	1.13	0.294	0.298	0.265	0.03
160	13.33	1.13	0.294	0.297	0.265	0.03
161	13.42	1.13	0.294	0.295	0.265	0.03
162	13.50	1.13	0.294	0.294	---	0.00
163	13.58	0.77	0.199	0.292	0.179	0.02
164	13.67	0.77	0.199	0.291	0.179	0.02
165	13.75	0.77	0.199	0.289	0.179	0.02
166	13.83	0.77	0.199	0.288	0.179	0.02
167	13.92	0.77	0.199	0.286	0.179	0.02
168	14.00	0.77	0.199	0.285	0.179	0.02
169	14.08	0.90	0.233	0.284	0.210	0.02
170	14.17	0.90	0.233	0.282	0.210	0.02
171	14.25	0.90	0.233	0.281	0.210	0.02
172	14.33	0.87	0.225	0.279	0.202	0.02

173	14.42	0.87	0.225	0.278	0.202	0.02
174	14.50	0.87	0.225	0.276	0.202	0.02
175	14.58	0.87	0.225	0.275	0.202	0.02
176	14.67	0.87	0.225	0.274	0.202	0.02
177	14.75	0.87	0.225	0.272	0.202	0.02
178	14.83	0.83	0.216	0.271	0.195	0.02
179	14.92	0.83	0.216	0.269	0.195	0.02
180	15.00	0.83	0.216	0.268	0.195	0.02
181	15.08	0.80	0.208	0.267	0.187	0.02
182	15.17	0.80	0.208	0.265	0.187	0.02
183	15.25	0.80	0.208	0.264	0.187	0.02
184	15.33	0.77	0.199	0.263	0.179	0.02
185	15.42	0.77	0.199	0.261	0.179	0.02
186	15.50	0.77	0.199	0.260	0.179	0.02
187	15.58	0.63	0.164	0.259	0.148	0.02
188	15.67	0.63	0.164	0.257	0.148	0.02
189	15.75	0.63	0.164	0.256	0.148	0.02
190	15.83	0.63	0.164	0.255	0.148	0.02
191	15.92	0.63	0.164	0.253	0.148	0.02
192	16.00	0.63	0.164	0.252	0.148	0.02
193	16.08	0.13	0.035	0.251	0.031	0.00
194	16.17	0.13	0.035	0.249	0.031	0.00
195	16.25	0.13	0.035	0.248	0.031	0.00
196	16.33	0.13	0.035	0.247	0.031	0.00
197	16.42	0.13	0.035	0.246	0.031	0.00
198	16.50	0.13	0.035	0.244	0.031	0.00
199	16.58	0.10	0.026	0.243	0.023	0.00
200	16.67	0.10	0.026	0.242	0.023	0.00
201	16.75	0.10	0.026	0.241	0.023	0.00
202	16.83	0.10	0.026	0.239	0.023	0.00
203	16.92	0.10	0.026	0.238	0.023	0.00
204	17.00	0.10	0.026	0.237	0.023	0.00
205	17.08	0.17	0.043	0.236	0.039	0.00
206	17.17	0.17	0.043	0.235	0.039	0.00
207	17.25	0.17	0.043	0.233	0.039	0.00
208	17.33	0.17	0.043	0.232	0.039	0.00
209	17.42	0.17	0.043	0.231	0.039	0.00
210	17.50	0.17	0.043	0.230	0.039	0.00
211	17.58	0.17	0.043	0.229	0.039	0.00
212	17.67	0.17	0.043	0.228	0.039	0.00
213	17.75	0.17	0.043	0.227	0.039	0.00
214	17.83	0.13	0.035	0.225	0.031	0.00
215	17.92	0.13	0.035	0.224	0.031	0.00
216	18.00	0.13	0.035	0.223	0.031	0.00
217	18.08	0.13	0.035	0.222	0.031	0.00
218	18.17	0.13	0.035	0.221	0.031	0.00
219	18.25	0.13	0.035	0.220	0.031	0.00
220	18.33	0.13	0.035	0.219	0.031	0.00
221	18.42	0.13	0.035	0.218	0.031	0.00
222	18.50	0.13	0.035	0.217	0.031	0.00
223	18.58	0.10	0.026	0.216	0.023	0.00
224	18.67	0.10	0.026	0.215	0.023	0.00
225	18.75	0.10	0.026	0.214	0.023	0.00
226	18.83	0.07	0.017	0.213	0.016	0.00
227	18.92	0.07	0.017	0.212	0.016	0.00
228	19.00	0.07	0.017	0.211	0.016	0.00
229	19.08	0.10	0.026	0.210	0.023	0.00
230	19.17	0.10	0.026	0.209	0.023	0.00
231	19.25	0.10	0.026	0.208	0.023	0.00
232	19.33	0.13	0.035	0.207	0.031	0.00
233	19.42	0.13	0.035	0.206	0.031	0.00
234	19.50	0.13	0.035	0.205	0.031	0.00
235	19.58	0.10	0.026	0.204	0.023	0.00
236	19.67	0.10	0.026	0.203	0.023	0.00
237	19.75	0.10	0.026	0.202	0.023	0.00
238	19.83	0.07	0.017	0.201	0.016	0.00
239	19.92	0.07	0.017	0.200	0.016	0.00
240	20.00	0.07	0.017	0.199	0.016	0.00
241	20.08	0.10	0.026	0.198	0.023	0.00
242	20.17	0.10	0.026	0.197	0.023	0.00
243	20.25	0.10	0.026	0.197	0.023	0.00

244	20.33	0.10	0.026	0.196	0.023	0.00
245	20.42	0.10	0.026	0.195	0.023	0.00
246	20.50	0.10	0.026	0.194	0.023	0.00
247	20.58	0.10	0.026	0.193	0.023	0.00
248	20.67	0.10	0.026	0.192	0.023	0.00
249	20.75	0.10	0.026	0.192	0.023	0.00
250	20.83	0.07	0.017	0.191	0.016	0.00
251	20.92	0.07	0.017	0.190	0.016	0.00
252	21.00	0.07	0.017	0.189	0.016	0.00
253	21.08	0.10	0.026	0.189	0.023	0.00
254	21.17	0.10	0.026	0.188	0.023	0.00
255	21.25	0.10	0.026	0.187	0.023	0.00
256	21.33	0.07	0.017	0.186	0.016	0.00
257	21.42	0.07	0.017	0.186	0.016	0.00
258	21.50	0.07	0.017	0.185	0.016	0.00
259	21.58	0.10	0.026	0.184	0.023	0.00
260	21.67	0.10	0.026	0.184	0.023	0.00
261	21.75	0.10	0.026	0.183	0.023	0.00
262	21.83	0.07	0.017	0.182	0.016	0.00
263	21.92	0.07	0.017	0.182	0.016	0.00
264	22.00	0.07	0.017	0.181	0.016	0.00
265	22.08	0.10	0.026	0.181	0.023	0.00
266	22.17	0.10	0.026	0.180	0.023	0.00
267	22.25	0.10	0.026	0.179	0.023	0.00
268	22.33	0.07	0.017	0.179	0.016	0.00
269	22.42	0.07	0.017	0.178	0.016	0.00
270	22.50	0.07	0.017	0.178	0.016	0.00
271	22.58	0.07	0.017	0.177	0.016	0.00
272	22.67	0.07	0.017	0.177	0.016	0.00
273	22.75	0.07	0.017	0.176	0.016	0.00
274	22.83	0.07	0.017	0.176	0.016	0.00
275	22.92	0.07	0.017	0.175	0.016	0.00
276	23.00	0.07	0.017	0.175	0.016	0.00
277	23.08	0.07	0.017	0.175	0.016	0.00
278	23.17	0.07	0.017	0.174	0.016	0.00
279	23.25	0.07	0.017	0.174	0.016	0.00
280	23.33	0.07	0.017	0.173	0.016	0.00
281	23.42	0.07	0.017	0.173	0.016	0.00
282	23.50	0.07	0.017	0.173	0.016	0.00
283	23.58	0.07	0.017	0.173	0.016	0.00
284	23.67	0.07	0.017	0.172	0.016	0.00
285	23.75	0.07	0.017	0.172	0.016	0.00
286	23.83	0.07	0.017	0.172	0.016	0.00
287	23.92	0.07	0.017	0.172	0.016	0.00
288	24.00	0.07	0.017	0.172	0.016	0.00
Sum =		100.0			Sum =	2.6

Flood volume = Effective rainfall 0.21(In)
times area 126.1(Ac.)/[(In)/(Ft.)] = 2.2(Ac.Ft)
Total soil loss = 1.95(In)
Total soil loss = 20.472(Ac.Ft)
Total rainfall = 2.16(In)
Flood volume = 97843.5 Cubic Feet
Total soil loss = 891773.3 Cubic Feet

Peak flow rate of this hydrograph = 3.629(CFS)

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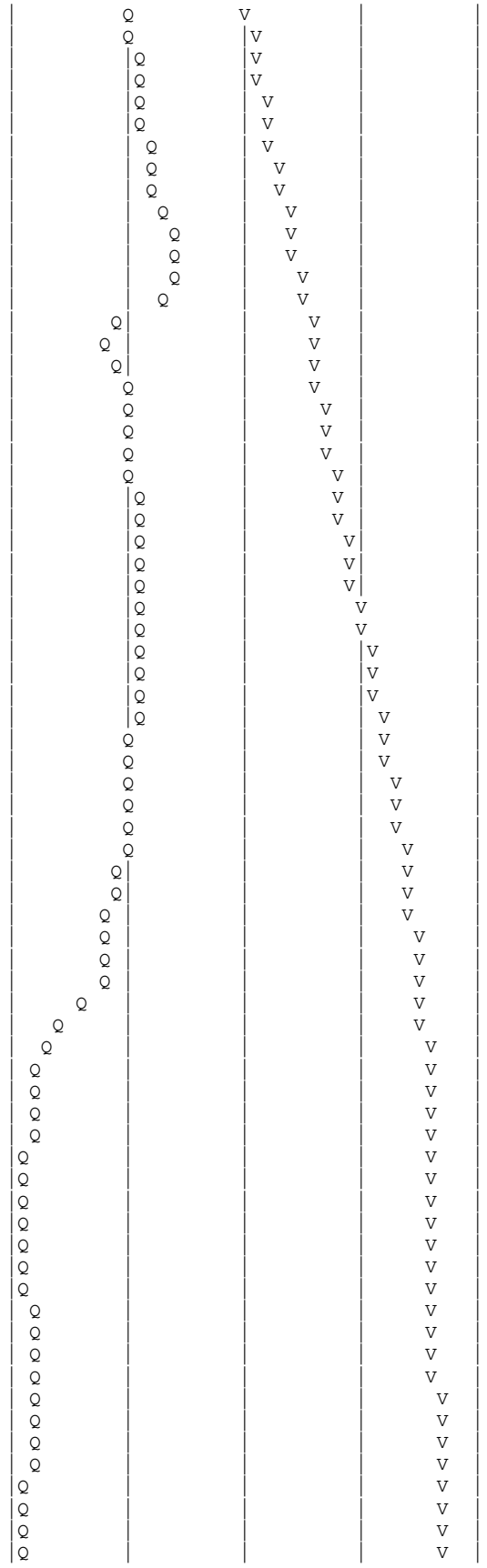
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.02	Q	|	|	|	|
0+10	0.0007	0.08	Q	|	|	|	|
0+15	0.0016	0.14	Q	|	|	|	|
0+20	0.0028	0.18	Q	|	|	|	|
0+25	0.0044	0.22	Q	|	|	|	|
0+30	0.0062	0.26	VQ	|	|	|	|

0+35	0.0081	0.28	VQ	|	|	|	|
0+40	0.0102	0.30	VQ	|	|	|	|
0+45	0.0123	0.30	VQ	|	|	|	|
0+50	0.0145	0.32	VQ	|	|	|	|
0+55	0.0169	0.36	VQ	|	|	|	|
1+ 0	0.0196	0.39	VQ	|	|	|	|
1+ 5	0.0224	0.40	VQ	|	|	|	|
1+10	0.0249	0.38	VQ	|	|	|	|
1+15	0.0274	0.35	VQ	|	|	|	|
1+20	0.0297	0.34	VQ	|	|	|	|
1+25	0.0321	0.34	VQ	|	|	|	|
1+30	0.0344	0.34	VQ	|	|	|	|
1+35	0.0367	0.34	VQ	|	|	|	|
1+40	0.0390	0.33	VQ	|	|	|	|
1+45	0.0413	0.33	VQ	|	|	|	|
1+50	0.0437	0.34	VQ	|	|	|	|
1+55	0.0462	0.37	VQ	|	|	|	|
2+ 0	0.0490	0.40	VQ	|	|	|	|
2+ 5	0.0519	0.42	VQ	|	|	|	|
2+10	0.0548	0.42	VQ	|	|	|	|
2+15	0.0577	0.43	|Q	|	|	|	|
2+20	0.0607	0.43	|Q	|	|	|	|
2+25	0.0636	0.43	|Q	|	|	|	|
2+30	0.0666	0.43	|Q	|	|	|	|
2+35	0.0697	0.44	|Q	|	|	|	|
2+40	0.0730	0.48	|Q	|	|	|	|
2+45	0.0765	0.51	|VQ	|	|	|	|
2+50	0.0801	0.52	|VQ	|	|	|	|
2+55	0.0837	0.53	|VQ	|	|	|	|
3+ 0	0.0874	0.54	|VQ	|	|	|	|
3+ 5	0.0911	0.54	|VQ	|	|	|	|
3+10	0.0949	0.54	|VQ	|	|	|	|
3+15	0.0986	0.54	|VQ	|	|	|	|
3+20	0.1024	0.55	|VQ	|	|	|	|
3+25	0.1061	0.55	|VQ	|	|	|	|
3+30	0.1099	0.55	|VQ	|	|	|	|
3+35	0.1137	0.55	| Q	|	|	|	|
3+40	0.1175	0.55	| Q	|	|	|	|
3+45	0.1212	0.55	| Q	|	|	|	|
3+50	0.1251	0.56	| Q	|	|	|	|
3+55	0.1291	0.59	| Q	|	|	|	|
4+ 0	0.1334	0.62	| Q	|	|	|	|
4+ 5	0.1378	0.63	| Q	|	|	|	|
4+10	0.1422	0.64	| Q	|	|	|	|
4+15	0.1466	0.65	| Q	|	|	|	|
4+20	0.1512	0.66	| Q	|	|	|	|
4+25	0.1559	0.69	| Q	|	|	|	|
4+30	0.1609	0.72	| Q	|	|	|	|
4+35	0.1660	0.74	| Q	|	|	|	|
4+40	0.1712	0.75	| QV	|	|	|	|
4+45	0.1764	0.75	| Q	|	|	|	|
4+50	0.1816	0.77	| Q	|	|	|	|
4+55	0.1871	0.80	| Q	|	|	|	|
5+ 0	0.1929	0.83	| Q	|	|	|	|
5+ 5	0.1986	0.83	| Q	|	|	|	|
5+10	0.2040	0.78	| Q	|	|	|	|
5+15	0.2090	0.72	| QV	|	|	|	|
5+20	0.2138	0.71	| QV	|	|	|	|
5+25	0.2189	0.73	| QV	|	|	|	|
5+30	0.2240	0.75	| Q	|	|	|	|
5+35	0.2293	0.77	| QV	|	|	|	|
5+40	0.2349	0.80	| QV	|	|	|	|
5+45	0.2406	0.84	| QV	|	|	|	|
5+50	0.2465	0.85	| QV	|	|	|	|
5+55	0.2524	0.86	| QV	|	|	|	|
6+ 0	0.2583	0.86	| QV	|	|	|	|
6+ 5	0.2644	0.88	| QV	|	|	|	|
6+10	0.2706	0.91	| QV	|	|	|	|
6+15	0.2771	0.94	| QV	|	|	|	|
6+20	0.2837	0.96	| Q V	|	|	|	|
6+25	0.2904	0.97	| Q V	|	|	|	|

6+30	0.2971	0.97	Q V				
6+35	0.3039	0.99	Q V				
6+40	0.3109	1.02	QV				
6+45	0.3182	1.05	QV				
6+50	0.3255	1.07	QV				
6+55	0.3330	1.08	QV				
7+ 0	0.3404	1.08	Q V				
7+ 5	0.3479	1.09	Q V				
7+10	0.3554	1.09	Q V				
7+15	0.3630	1.09	Q V				
7+20	0.3706	1.10	Q V				
7+25	0.3784	1.14	Q V				
7+30	0.3864	1.17	Q V				
7+35	0.3946	1.19	Q V				
7+40	0.4031	1.23	Q V				
7+45	0.4118	1.27	Q V				
7+50	0.4207	1.29	Q V				
7+55	0.4299	1.33	Q V				
8+ 0	0.4393	1.37	Q V				
8+ 5	0.4490	1.40	Q V				
8+10	0.4592	1.48	Q V				
8+15	0.4699	1.55	Q V				
8+20	0.4808	1.58	Q V				
8+25	0.4918	1.60	Q V				
8+30	0.5029	1.61	Q V				
8+35	0.5141	1.63	Q V				
8+40	0.5256	1.67	Q V				
8+45	0.5374	1.71	Q V				
8+50	0.5493	1.73	Q V				
8+55	0.5615	1.77	Q V				
9+ 0	0.5740	1.81	Q V				
9+ 5	0.5867	1.85	Q V				
9+10	0.5999	1.92	Q V				
9+15	0.6136	1.99	Q V				
9+20	0.6276	2.03	Q V				
9+25	0.6420	2.08	Q V				
9+30	0.6566	2.12	Q V				
9+35	0.6714	2.15	Q V				
9+40	0.6866	2.20	Q V				
9+45	0.7020	2.24	Q V				
9+50	0.7177	2.27	Q V				
9+55	0.7336	2.32	Q V				
10+ 0	0.7498	2.36	Q V				
10+ 5	0.7658	2.32	Q V				
10+10	0.7803	2.11	Q V				
10+15	0.7934	1.90	Q V				
10+20	0.8059	1.82	Q V				
10+25	0.8181	1.77	Q V				
10+30	0.8301	1.74	Q V				
10+35	0.8422	1.76	Q V				
10+40	0.8553	1.90	Q V				
10+45	0.8694	2.04	Q V				
10+50	0.8838	2.10	Q V				
10+55	0.8984	2.13	Q V				
11+ 0	0.9132	2.14	Q V				
11+ 5	0.9280	2.15	Q V				
11+10	0.9426	2.12	Q V				
11+15	0.9571	2.10	Q V				
11+20	0.9715	2.09	Q V				
11+25	0.9859	2.09	Q V				
11+30	1.0003	2.09	Q V				
11+35	1.0146	2.08	Q V				
11+40	1.0285	2.01	Q V				
11+45	1.0420	1.95	Q V				
11+50	1.0553	1.93	Q V				
11+55	1.0687	1.95	Q V				
12+ 0	1.0823	1.97	Q V				
12+ 5	1.0962	2.03	Q V				
12+10	1.1118	2.26	Q V				
12+15	1.1288	2.48	Q V				
12+20	1.1466	2.57	Q V				

12+25	1.1648	2.65	
12+30	1.1836	2.72	
12+35	1.2027	2.77	
12+40	1.2224	2.86	
12+45	1.2427	2.94	
12+50	1.2633	2.99	
12+55	1.2843	3.05	
13+ 0	1.3057	3.10	
13+ 5	1.3275	3.17	
13+10	1.3505	3.35	
13+15	1.3747	3.52	
13+20	1.3994	3.59	
13+25	1.4244	3.63	
13+30	1.4478	3.40	
13+35	1.4650	2.49	
13+40	1.4802	2.20	
13+45	1.4973	2.49	
13+50	1.5149	2.55	
13+55	1.5325	2.55	
14+ 0	1.5501	2.55	
14+ 5	1.5678	2.58	
14+10	1.5865	2.71	
14+15	1.6059	2.82	
14+20	1.6256	2.86	
14+25	1.6453	2.85	
14+30	1.6649	2.84	
14+35	1.6844	2.84	
14+40	1.7039	2.83	
14+45	1.7235	2.85	
14+50	1.7431	2.84	
14+55	1.7625	2.81	
15+ 0	1.7817	2.79	
15+ 5	1.8007	2.77	
15+10	1.8195	2.73	
15+15	1.8381	2.69	
15+20	1.8564	2.67	
15+25	1.8745	2.63	
15+30	1.8923	2.59	
15+35	1.9098	2.54	
15+40	1.9264	2.40	
15+45	1.9420	2.27	
15+50	1.9572	2.21	
15+55	1.9722	2.18	
16+ 0	1.9870	2.15	
16+ 5	2.0009	2.02	
16+10	2.0114	1.52	
16+15	2.0186	1.05	
16+20	2.0245	0.85	
16+25	2.0295	0.74	
16+30	2.0341	0.66	
16+35	2.0382	0.59	
16+40	2.0418	0.52	
16+45	2.0449	0.46	
16+50	2.0478	0.42	
16+55	2.0505	0.39	
17+ 0	2.0531	0.37	
17+ 5	2.0557	0.38	
17+10	2.0587	0.43	
17+15	2.0619	0.48	
17+20	2.0654	0.50	
17+25	2.0689	0.52	
17+30	2.0726	0.52	
17+35	2.0762	0.53	
17+40	2.0799	0.53	
17+45	2.0836	0.54	
17+50	2.0873	0.53	
17+55	2.0907	0.50	
18+ 0	2.0940	0.47	
18+ 5	2.0972	0.46	
18+10	2.1003	0.46	
18+15	2.1035	0.45	

18+20	2.1066	0.45	Q				V
18+25	2.1097	0.45	Q				V
18+30	2.1127	0.45	Q				V
18+35	2.1157	0.44	Q				V
18+40	2.1185	0.40	Q				V
18+45	2.1211	0.37	Q				V
18+50	2.1235	0.35	Q				V
18+55	2.1256	0.31	Q				V
19+ 0	2.1275	0.27	Q				V
19+ 5	2.1293	0.26	Q				V
19+10	2.1313	0.29	Q				V
19+15	2.1334	0.31	Q				V
19+20	2.1357	0.33	Q				V
19+25	2.1382	0.36	Q				V
19+30	2.1409	0.40	Q				V
19+35	2.1436	0.40	Q				V
19+40	2.1462	0.38	Q				V
19+45	2.1486	0.35	Q				V
19+50	2.1510	0.33	Q				V
19+55	2.1530	0.30	Q				V
20+ 0	2.1548	0.26	Q				V
20+ 5	2.1566	0.26	Q				V
20+10	2.1586	0.28	Q				V
20+15	2.1607	0.31	Q				V
20+20	2.1629	0.32	Q				V
20+25	2.1651	0.32	Q				V
20+30	2.1673	0.32	Q				V
20+35	2.1696	0.33	Q				V
20+40	2.1718	0.33	Q				V
20+45	2.1740	0.33	Q				V
20+50	2.1762	0.32	Q				V
20+55	2.1782	0.29	Q				V
21+ 0	2.1800	0.26	Q				V
21+ 5	2.1817	0.25	Q				V
21+10	2.1836	0.28	Q				V
21+15	2.1857	0.31	Q				V
21+20	2.1879	0.31	Q				V
21+25	2.1898	0.28	Q				V
21+30	2.1915	0.25	Q				V
21+35	2.1932	0.25	Q				V
21+40	2.1951	0.27	Q				V
21+45	2.1972	0.30	Q				V
21+50	2.1993	0.30	Q				V
21+55	2.2012	0.28	Q				V
22+ 0	2.2029	0.25	Q				V
22+ 5	2.2046	0.25	Q				V
22+10	2.2065	0.27	Q				V
22+15	2.2085	0.30	Q				V
22+20	2.2106	0.30	Q				V
22+25	2.2125	0.28	Q				V
22+30	2.2142	0.25	Q				V
22+35	2.2159	0.24	Q				V
22+40	2.2175	0.23	Q				V
22+45	2.2191	0.23	Q				V
22+50	2.2206	0.23	Q				V
22+55	2.2222	0.23	Q				V
23+ 0	2.2237	0.22	Q				V
23+ 5	2.2253	0.22	Q				V
23+10	2.2268	0.22	Q				V
23+15	2.2283	0.22	Q				V
23+20	2.2298	0.22	Q				V
23+25	2.2314	0.22	Q				V
23+30	2.2329	0.22	Q				V
23+35	2.2344	0.22	Q				V
23+40	2.2359	0.22	Q				V
23+45	2.2374	0.22	Q				V
23+50	2.2389	0.22	Q				V
23+55	2.2405	0.22	Q				V
24+ 0	2.2420	0.22	Q				V
24+ 5	2.2434	0.20	Q				V
24+10	2.2443	0.14	Q				V

24+15	2.2449	0.08	Q	|	|	|	V|
24+20	2.2452	0.05	Q	|	|	|	V|
24+25	2.2455	0.04	Q	|	|	|	V|
24+30	2.2457	0.03	Q	|	|	|	V|
24+35	2.2458	0.02	Q	|	|	|	V|
24+40	2.2459	0.02	Q	|	|	|	V|
24+45	2.2460	0.01	Q	|	|	|	V|
24+50	2.2461	0.01	Q	|	|	|	V|
24+55	2.2461	0.01	Q	|	|	|	V|
25+ 0	2.2461	0.00	Q	|	|	|	V|
25+ 5	2.2462	0.00	Q	|	|	|	V|
25+10	2.2462	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930UHEX102410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
10 YEAR STORM EVENT UNIT HYDROGRAPH
1930UHEX10
DS

Drainage Area = 126.12(Ac.) = 0.197 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 126.12(Ac.) = 0.197 Sq. Mi.
Length along longest watercourse = 4770.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.903 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 15.30(Ft.)
Slope along watercourse = 16.9358 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.154 Hr.
Lag time = 9.24 Min.
25% of lag time = 2.31 Min.
40% of lag time = 3.69 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	1.60	201.79

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	4.00	504.48

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.587(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.587(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
126.120	86.00	0.000

Total Area Entered = 126.12(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.000	0.176	1.000	0.176
					Sum (F) =	0.176

Area averaged mean soil loss (F) (In/Hr) = 0.176
Minimum soil loss rate ((In/Hr)) = 0.088
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	54.132	6.940	8.822
2	0.167	108.263	29.553	37.563
3	0.250	162.395	28.209	35.855
4	0.333	216.527	11.633	14.786
5	0.417	270.658	6.464	8.216
6	0.500	324.790	4.467	5.677
7	0.583	378.922	3.222	4.096
8	0.667	433.053	2.355	2.993
9	0.750	487.185	1.756	2.232
10	0.833	541.317	1.503	1.911
11	0.917	595.448	1.127	1.432
12	1.000	649.580	0.886	1.127
13	1.083	703.712	0.652	0.829
14	1.167	757.843	0.541	0.688
15	1.250	811.975	0.692	0.880
			Sum = 100.000	Sum= 127.105

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.021	0.311	0.019	0.00
2	0.17	0.07	0.021	0.310	0.019	0.00
3	0.25	0.07	0.021	0.309	0.019	0.00
4	0.33	0.10	0.031	0.308	0.028	0.00
5	0.42	0.10	0.031	0.306	0.028	0.00
6	0.50	0.10	0.031	0.305	0.028	0.00
7	0.58	0.10	0.031	0.304	0.028	0.00
8	0.67	0.10	0.031	0.303	0.028	0.00
9	0.75	0.10	0.031	0.302	0.028	0.00
10	0.83	0.13	0.041	0.301	0.037	0.00
11	0.92	0.13	0.041	0.299	0.037	0.00
12	1.00	0.13	0.041	0.298	0.037	0.00
13	1.08	0.10	0.031	0.297	0.028	0.00
14	1.17	0.10	0.031	0.296	0.028	0.00
15	1.25	0.10	0.031	0.295	0.028	0.00
16	1.33	0.10	0.031	0.293	0.028	0.00
17	1.42	0.10	0.031	0.292	0.028	0.00
18	1.50	0.10	0.031	0.291	0.028	0.00
19	1.58	0.10	0.031	0.290	0.028	0.00
20	1.67	0.10	0.031	0.289	0.028	0.00
21	1.75	0.10	0.031	0.288	0.028	0.00
22	1.83	0.13	0.041	0.287	0.037	0.00
23	1.92	0.13	0.041	0.285	0.037	0.00
24	2.00	0.13	0.041	0.284	0.037	0.00
25	2.08	0.13	0.041	0.283	0.037	0.00
26	2.17	0.13	0.041	0.282	0.037	0.00
27	2.25	0.13	0.041	0.281	0.037	0.00
28	2.33	0.13	0.041	0.280	0.037	0.00
29	2.42	0.13	0.041	0.278	0.037	0.00
30	2.50	0.13	0.041	0.277	0.037	0.00

31	2.58	0.17	0.052	0.276	0.047	0.01
32	2.67	0.17	0.052	0.275	0.047	0.01
33	2.75	0.17	0.052	0.274	0.047	0.01
34	2.83	0.17	0.052	0.273	0.047	0.01
35	2.92	0.17	0.052	0.272	0.047	0.01
36	3.00	0.17	0.052	0.271	0.047	0.01
37	3.08	0.17	0.052	0.269	0.047	0.01
38	3.17	0.17	0.052	0.268	0.047	0.01
39	3.25	0.17	0.052	0.267	0.047	0.01
40	3.33	0.17	0.052	0.266	0.047	0.01
41	3.42	0.17	0.052	0.265	0.047	0.01
42	3.50	0.17	0.052	0.264	0.047	0.01
43	3.58	0.17	0.052	0.263	0.047	0.01
44	3.67	0.17	0.052	0.262	0.047	0.01
45	3.75	0.17	0.052	0.261	0.047	0.01
46	3.83	0.20	0.062	0.259	0.056	0.01
47	3.92	0.20	0.062	0.258	0.056	0.01
48	4.00	0.20	0.062	0.257	0.056	0.01
49	4.08	0.20	0.062	0.256	0.056	0.01
50	4.17	0.20	0.062	0.255	0.056	0.01
51	4.25	0.20	0.062	0.254	0.056	0.01
52	4.33	0.23	0.072	0.253	0.065	0.01
53	4.42	0.23	0.072	0.252	0.065	0.01
54	4.50	0.23	0.072	0.251	0.065	0.01
55	4.58	0.23	0.072	0.250	0.065	0.01
56	4.67	0.23	0.072	0.249	0.065	0.01
57	4.75	0.23	0.072	0.248	0.065	0.01
58	4.83	0.27	0.083	0.246	0.074	0.01
59	4.92	0.27	0.083	0.245	0.074	0.01
60	5.00	0.27	0.083	0.244	0.074	0.01
61	5.08	0.20	0.062	0.243	0.056	0.01
62	5.17	0.20	0.062	0.242	0.056	0.01
63	5.25	0.20	0.062	0.241	0.056	0.01
64	5.33	0.23	0.072	0.240	0.065	0.01
65	5.42	0.23	0.072	0.239	0.065	0.01
66	5.50	0.23	0.072	0.238	0.065	0.01
67	5.58	0.27	0.083	0.237	0.074	0.01
68	5.67	0.27	0.083	0.236	0.074	0.01
69	5.75	0.27	0.083	0.235	0.074	0.01
70	5.83	0.27	0.083	0.234	0.074	0.01
71	5.92	0.27	0.083	0.233	0.074	0.01
72	6.00	0.27	0.083	0.232	0.074	0.01
73	6.08	0.30	0.093	0.231	0.084	0.01
74	6.17	0.30	0.093	0.230	0.084	0.01
75	6.25	0.30	0.093	0.229	0.084	0.01
76	6.33	0.30	0.093	0.228	0.084	0.01
77	6.42	0.30	0.093	0.227	0.084	0.01
78	6.50	0.30	0.093	0.226	0.084	0.01
79	6.58	0.33	0.103	0.225	0.093	0.01
80	6.67	0.33	0.103	0.224	0.093	0.01
81	6.75	0.33	0.103	0.223	0.093	0.01
82	6.83	0.33	0.103	0.222	0.093	0.01
83	6.92	0.33	0.103	0.221	0.093	0.01
84	7.00	0.33	0.103	0.220	0.093	0.01
85	7.08	0.33	0.103	0.219	0.093	0.01
86	7.17	0.33	0.103	0.218	0.093	0.01
87	7.25	0.33	0.103	0.217	0.093	0.01
88	7.33	0.37	0.114	0.216	0.102	0.01
89	7.42	0.37	0.114	0.215	0.102	0.01
90	7.50	0.37	0.114	0.214	0.102	0.01
91	7.58	0.40	0.124	0.213	0.112	0.01
92	7.67	0.40	0.124	0.212	0.112	0.01
93	7.75	0.40	0.124	0.211	0.112	0.01
94	7.83	0.43	0.135	0.210	0.121	0.01
95	7.92	0.43	0.135	0.209	0.121	0.01
96	8.00	0.43	0.135	0.208	0.121	0.01
97	8.08	0.50	0.155	0.207	0.140	0.02
98	8.17	0.50	0.155	0.206	0.140	0.02
99	8.25	0.50	0.155	0.205	0.140	0.02
100	8.33	0.50	0.155	0.204	0.140	0.02
101	8.42	0.50	0.155	0.203	0.140	0.02

102	8.50	0.50	0.155	0.202	0.140	0.02
103	8.58	0.53	0.166	0.201	0.149	0.02
104	8.67	0.53	0.166	0.200	0.149	0.02
105	8.75	0.53	0.166	0.199	0.149	0.02
106	8.83	0.57	0.176	0.198	0.158	0.02
107	8.92	0.57	0.176	0.197	0.158	0.02
108	9.00	0.57	0.176	0.196	0.158	0.02
109	9.08	0.63	0.197	0.195	---	0.00
110	9.17	0.63	0.197	0.195	---	0.00
111	9.25	0.63	0.197	0.194	---	0.00
112	9.33	0.67	0.207	0.193	---	0.01
113	9.42	0.67	0.207	0.192	---	0.02
114	9.50	0.67	0.207	0.191	---	0.02
115	9.58	0.70	0.217	0.190	---	0.03
116	9.67	0.70	0.217	0.189	---	0.03
117	9.75	0.70	0.217	0.188	---	0.03
118	9.83	0.73	0.228	0.187	---	0.04
119	9.92	0.73	0.228	0.186	---	0.04
120	10.00	0.73	0.228	0.185	---	0.04
121	10.08	0.50	0.155	0.185	0.140	0.02
122	10.17	0.50	0.155	0.184	0.140	0.02
123	10.25	0.50	0.155	0.183	0.140	0.02
124	10.33	0.50	0.155	0.182	0.140	0.02
125	10.42	0.50	0.155	0.181	0.140	0.02
126	10.50	0.50	0.155	0.180	0.140	0.02
127	10.58	0.67	0.207	0.179	---	0.03
128	10.67	0.67	0.207	0.178	---	0.03
129	10.75	0.67	0.207	0.177	---	0.03
130	10.83	0.67	0.207	0.177	---	0.03
131	10.92	0.67	0.207	0.176	---	0.03
132	11.00	0.67	0.207	0.175	---	0.03
133	11.08	0.63	0.197	0.174	---	0.02
134	11.17	0.63	0.197	0.173	---	0.02
135	11.25	0.63	0.197	0.172	---	0.02
136	11.33	0.63	0.197	0.171	---	0.03
137	11.42	0.63	0.197	0.171	---	0.03
138	11.50	0.63	0.197	0.170	---	0.03
139	11.58	0.57	0.176	0.169	---	0.01
140	11.67	0.57	0.176	0.168	---	0.01
141	11.75	0.57	0.176	0.167	---	0.01
142	11.83	0.60	0.186	0.166	---	0.02
143	11.92	0.60	0.186	0.166	---	0.02
144	12.00	0.60	0.186	0.165	---	0.02
145	12.08	0.83	0.259	0.164	---	0.09
146	12.17	0.83	0.259	0.163	---	0.10
147	12.25	0.83	0.259	0.162	---	0.10
148	12.33	0.87	0.269	0.161	---	0.11
149	12.42	0.87	0.269	0.161	---	0.11
150	12.50	0.87	0.269	0.160	---	0.11
151	12.58	0.93	0.290	0.159	---	0.13
152	12.67	0.93	0.290	0.158	---	0.13
153	12.75	0.93	0.290	0.157	---	0.13
154	12.83	0.97	0.300	0.157	---	0.14
155	12.92	0.97	0.300	0.156	---	0.14
156	13.00	0.97	0.300	0.155	---	0.14
157	13.08	1.13	0.352	0.154	---	0.20
158	13.17	1.13	0.352	0.154	---	0.20
159	13.25	1.13	0.352	0.153	---	0.20
160	13.33	1.13	0.352	0.152	---	0.20
161	13.42	1.13	0.352	0.151	---	0.20
162	13.50	1.13	0.352	0.150	---	0.20
163	13.58	0.77	0.238	0.150	---	0.09
164	13.67	0.77	0.238	0.149	---	0.09
165	13.75	0.77	0.238	0.148	---	0.09
166	13.83	0.77	0.238	0.147	---	0.09
167	13.92	0.77	0.238	0.147	---	0.09
168	14.00	0.77	0.238	0.146	---	0.09
169	14.08	0.90	0.279	0.145	---	0.13
170	14.17	0.90	0.279	0.144	---	0.13
171	14.25	0.90	0.279	0.144	---	0.14
172	14.33	0.87	0.269	0.143	---	0.13

173	14.42	0.87	0.269	0.142	---	0.13
174	14.50	0.87	0.269	0.141	---	0.13
175	14.58	0.87	0.269	0.141	---	0.13
176	14.67	0.87	0.269	0.140	---	0.13
177	14.75	0.87	0.269	0.139	---	0.13
178	14.83	0.83	0.259	0.139	---	0.12
179	14.92	0.83	0.259	0.138	---	0.12
180	15.00	0.83	0.259	0.137	---	0.12
181	15.08	0.80	0.248	0.136	---	0.11
182	15.17	0.80	0.248	0.136	---	0.11
183	15.25	0.80	0.248	0.135	---	0.11
184	15.33	0.77	0.238	0.134	---	0.10
185	15.42	0.77	0.238	0.134	---	0.10
186	15.50	0.77	0.238	0.133	---	0.10
187	15.58	0.63	0.197	0.132	---	0.06
188	15.67	0.63	0.197	0.132	---	0.06
189	15.75	0.63	0.197	0.131	---	0.07
190	15.83	0.63	0.197	0.130	---	0.07
191	15.92	0.63	0.197	0.130	---	0.07
192	16.00	0.63	0.197	0.129	---	0.07
193	16.08	0.13	0.041	0.128	0.037	0.00
194	16.17	0.13	0.041	0.128	0.037	0.00
195	16.25	0.13	0.041	0.127	0.037	0.00
196	16.33	0.13	0.041	0.126	0.037	0.00
197	16.42	0.13	0.041	0.126	0.037	0.00
198	16.50	0.13	0.041	0.125	0.037	0.00
199	16.58	0.10	0.031	0.124	0.028	0.00
200	16.67	0.10	0.031	0.124	0.028	0.00
201	16.75	0.10	0.031	0.123	0.028	0.00
202	16.83	0.10	0.031	0.123	0.028	0.00
203	16.92	0.10	0.031	0.122	0.028	0.00
204	17.00	0.10	0.031	0.121	0.028	0.00
205	17.08	0.17	0.052	0.121	0.047	0.01
206	17.17	0.17	0.052	0.120	0.047	0.01
207	17.25	0.17	0.052	0.119	0.047	0.01
208	17.33	0.17	0.052	0.119	0.047	0.01
209	17.42	0.17	0.052	0.118	0.047	0.01
210	17.50	0.17	0.052	0.118	0.047	0.01
211	17.58	0.17	0.052	0.117	0.047	0.01
212	17.67	0.17	0.052	0.117	0.047	0.01
213	17.75	0.17	0.052	0.116	0.047	0.01
214	17.83	0.13	0.041	0.115	0.037	0.00
215	17.92	0.13	0.041	0.115	0.037	0.00
216	18.00	0.13	0.041	0.114	0.037	0.00
217	18.08	0.13	0.041	0.114	0.037	0.00
218	18.17	0.13	0.041	0.113	0.037	0.00
219	18.25	0.13	0.041	0.113	0.037	0.00
220	18.33	0.13	0.041	0.112	0.037	0.00
221	18.42	0.13	0.041	0.111	0.037	0.00
222	18.50	0.13	0.041	0.111	0.037	0.00
223	18.58	0.10	0.031	0.110	0.028	0.00
224	18.67	0.10	0.031	0.110	0.028	0.00
225	18.75	0.10	0.031	0.109	0.028	0.00
226	18.83	0.07	0.021	0.109	0.019	0.00
227	18.92	0.07	0.021	0.108	0.019	0.00
228	19.00	0.07	0.021	0.108	0.019	0.00
229	19.08	0.10	0.031	0.107	0.028	0.00
230	19.17	0.10	0.031	0.107	0.028	0.00
231	19.25	0.10	0.031	0.106	0.028	0.00
232	19.33	0.13	0.041	0.106	0.037	0.00
233	19.42	0.13	0.041	0.105	0.037	0.00
234	19.50	0.13	0.041	0.105	0.037	0.00
235	19.58	0.10	0.031	0.104	0.028	0.00
236	19.67	0.10	0.031	0.104	0.028	0.00
237	19.75	0.10	0.031	0.103	0.028	0.00
238	19.83	0.07	0.021	0.103	0.019	0.00
239	19.92	0.07	0.021	0.102	0.019	0.00
240	20.00	0.07	0.021	0.102	0.019	0.00
241	20.08	0.10	0.031	0.102	0.028	0.00
242	20.17	0.10	0.031	0.101	0.028	0.00
243	20.25	0.10	0.031	0.101	0.028	0.00

244	20.33	0.10	0.031	0.100	0.028	0.00
245	20.42	0.10	0.031	0.100	0.028	0.00
246	20.50	0.10	0.031	0.099	0.028	0.00
247	20.58	0.10	0.031	0.099	0.028	0.00
248	20.67	0.10	0.031	0.099	0.028	0.00
249	20.75	0.10	0.031	0.098	0.028	0.00
250	20.83	0.07	0.021	0.098	0.019	0.00
251	20.92	0.07	0.021	0.097	0.019	0.00
252	21.00	0.07	0.021	0.097	0.019	0.00
253	21.08	0.10	0.031	0.097	0.028	0.00
254	21.17	0.10	0.031	0.096	0.028	0.00
255	21.25	0.10	0.031	0.096	0.028	0.00
256	21.33	0.07	0.021	0.095	0.019	0.00
257	21.42	0.07	0.021	0.095	0.019	0.00
258	21.50	0.07	0.021	0.095	0.019	0.00
259	21.58	0.10	0.031	0.094	0.028	0.00
260	21.67	0.10	0.031	0.094	0.028	0.00
261	21.75	0.10	0.031	0.094	0.028	0.00
262	21.83	0.07	0.021	0.093	0.019	0.00
263	21.92	0.07	0.021	0.093	0.019	0.00
264	22.00	0.07	0.021	0.093	0.019	0.00
265	22.08	0.10	0.031	0.092	0.028	0.00
266	22.17	0.10	0.031	0.092	0.028	0.00
267	22.25	0.10	0.031	0.092	0.028	0.00
268	22.33	0.07	0.021	0.092	0.019	0.00
269	22.42	0.07	0.021	0.091	0.019	0.00
270	22.50	0.07	0.021	0.091	0.019	0.00
271	22.58	0.07	0.021	0.091	0.019	0.00
272	22.67	0.07	0.021	0.090	0.019	0.00
273	22.75	0.07	0.021	0.090	0.019	0.00
274	22.83	0.07	0.021	0.090	0.019	0.00
275	22.92	0.07	0.021	0.090	0.019	0.00
276	23.00	0.07	0.021	0.090	0.019	0.00
277	23.08	0.07	0.021	0.089	0.019	0.00
278	23.17	0.07	0.021	0.089	0.019	0.00
279	23.25	0.07	0.021	0.089	0.019	0.00
280	23.33	0.07	0.021	0.089	0.019	0.00
281	23.42	0.07	0.021	0.089	0.019	0.00
282	23.50	0.07	0.021	0.088	0.019	0.00
283	23.58	0.07	0.021	0.088	0.019	0.00
284	23.67	0.07	0.021	0.088	0.019	0.00
285	23.75	0.07	0.021	0.088	0.019	0.00
286	23.83	0.07	0.021	0.088	0.019	0.00
287	23.92	0.07	0.021	0.088	0.019	0.00
288	24.00	0.07	0.021	0.088	0.019	0.00
Sum =		100.0			Sum =	7.7

Flood volume = Effective rainfall 0.64(In)
times area 126.1(Ac.)/[(In)/(Ft.)] = 6.7(Ac.Ft)
Total soil loss = 1.95(In)
Total soil loss = 20.482(Ac.Ft)
Total rainfall = 2.59(In)
Flood volume = 292044.7 Cubic Feet
Total soil loss = 892206.2 Cubic Feet

Peak flow rate of this hydrograph = 24.378(CFS)

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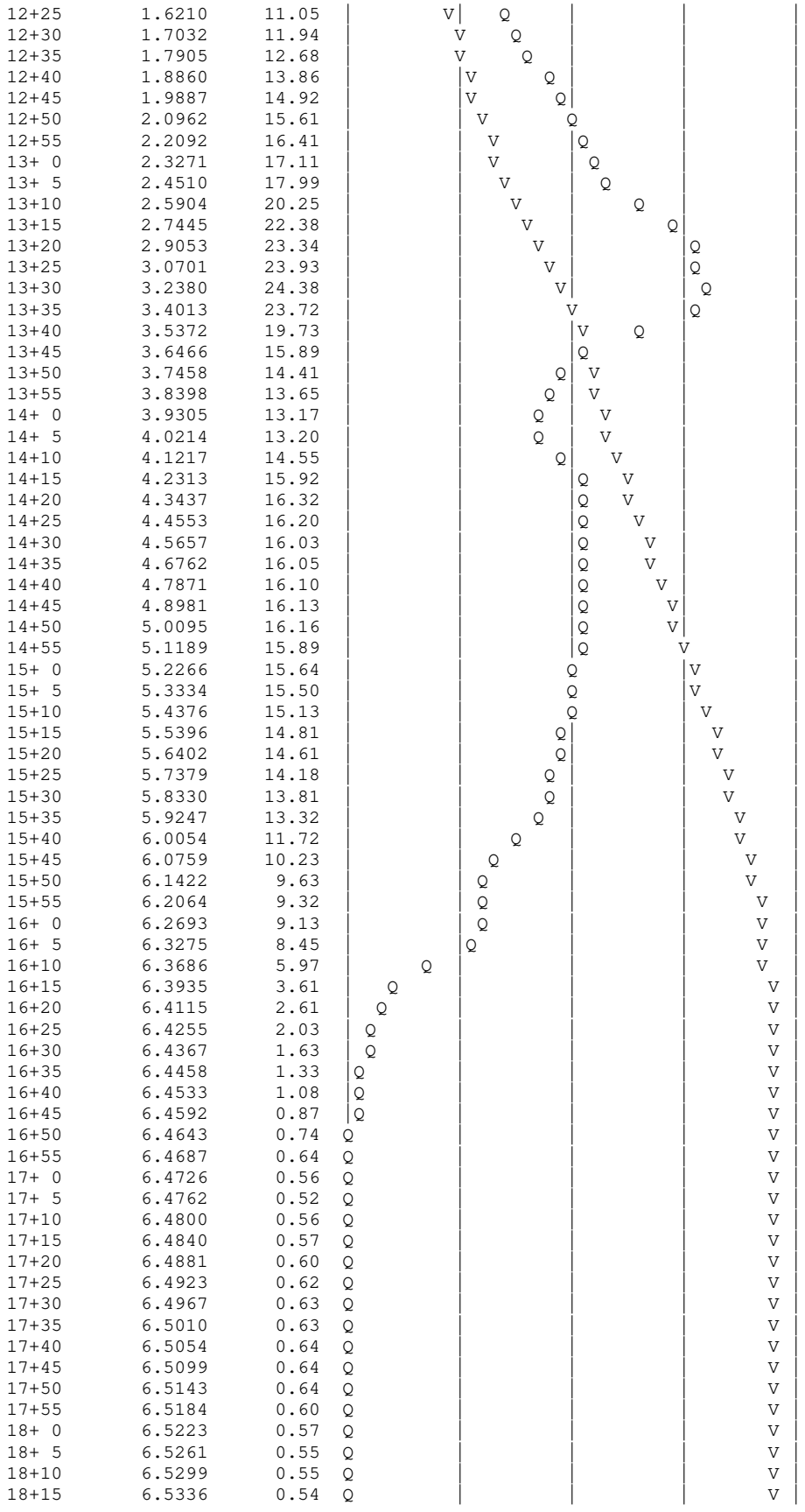
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5	30.0
0+ 5	0.0001	0.02	Q	|	|	|	|
0+10	0.0008	0.10	Q	|	|	|	|
0+15	0.0020	0.17	Q	|	|	|	|
0+20	0.0034	0.21	Q	|	|	|	|
0+25	0.0052	0.27	Q	|	|	|	|
0+30	0.0074	0.31	Q	|	|	|	|

0+35	0.0097	0.34	Q				
0+40	0.0122	0.35	Q				
0+45	0.0147	0.36	Q				
0+50	0.0173	0.38	Q				
0+55	0.0202	0.43	Q				
1+ 0	0.0235	0.47	Q				
1+ 5	0.0267	0.48	Q				
1+10	0.0298	0.45	Q				
1+15	0.0328	0.42	Q				
1+20	0.0356	0.41	Q				
1+25	0.0384	0.41	Q				
1+30	0.0412	0.40	Q				
1+35	0.0439	0.40	Q				
1+40	0.0467	0.40	Q				
1+45	0.0495	0.40	Q				
1+50	0.0523	0.41	Q				
1+55	0.0553	0.45	Q				
2+ 0	0.0587	0.48	Q				
2+ 5	0.0621	0.50	Q				
2+10	0.0655	0.50	Q				
2+15	0.0691	0.51	Q				
2+20	0.0726	0.51	Q				
2+25	0.0762	0.52	Q				
2+30	0.0797	0.52	Q				
2+35	0.0834	0.53	Q				
2+40	0.0873	0.57	Q				
2+45	0.0915	0.61	Q				
2+50	0.0958	0.63	Q				
2+55	0.1002	0.63	Q				
3+ 0	0.1046	0.64	Q				
3+ 5	0.1090	0.65	Q				
3+10	0.1135	0.65	Q				
3+15	0.1180	0.65	Q				
3+20	0.1225	0.65	Q				
3+25	0.1270	0.65	Q				
3+30	0.1315	0.66	Q				
3+35	0.1360	0.66	Q				
3+40	0.1406	0.66	Q				
3+45	0.1451	0.66	Q				
3+50	0.1497	0.67	Q				
3+55	0.1545	0.71	Q				
4+ 0	0.1597	0.74	Q				
4+ 5	0.1649	0.76	VQ				
4+10	0.1702	0.77	|Q				
4+15	0.1755	0.77	|Q				
4+20	0.1809	0.79	|Q				
4+25	0.1866	0.83	|Q				
4+30	0.1926	0.87	|Q				
4+35	0.1987	0.88	|Q				
4+40	0.2048	0.89	|Q				
4+45	0.2110	0.90	|Q				
4+50	0.2174	0.92	|Q				
4+55	0.2240	0.96	|Q				
5+ 0	0.2308	1.00	|Q				
5+ 5	0.2377	1.00	|Q				
5+10	0.2441	0.93	|Q				
5+15	0.2501	0.86	|Q				
5+20	0.2559	0.85	|Q				
5+25	0.2619	0.87	|Q				
5+30	0.2681	0.90	|Q				
5+35	0.2744	0.92	|Q				
5+40	0.2811	0.96	|Q				
5+45	0.2880	1.00	|Q				
5+50	0.2950	1.02	|Q				
5+55	0.3020	1.03	|Q				
6+ 0	0.3092	1.03	|Q				
6+ 5	0.3164	1.05	|Q				
6+10	0.3239	1.09	|Q				
6+15	0.3316	1.13	|Q				
6+20	0.3395	1.15	|QV				
6+25	0.3475	1.16	|QV				

6+30	0.3555	1.17	QV				
6+35	0.3637	1.18	QV				
6+40	0.3721	1.22	QV				
6+45	0.3808	1.26	QV				
6+50	0.3896	1.28	QV				
6+55	0.3985	1.29	QV				
7+ 0	0.4074	1.30	QV				
7+ 5	0.4164	1.30	QV				
7+10	0.4253	1.31	QV				
7+15	0.4344	1.31	QV				
7+20	0.4434	1.32	QV				
7+25	0.4528	1.36	QV				
7+30	0.4624	1.40	QV				
7+35	0.4722	1.42	QV				
7+40	0.4824	1.47	QV				
7+45	0.4928	1.52	Q				
7+50	0.5035	1.54	QV				
7+55	0.5144	1.59	QV				
8+ 0	0.5257	1.64	QV				
8+ 5	0.5373	1.68	QV				
8+10	0.5495	1.77	QV				
8+15	0.5623	1.85	QV				
8+20	0.5753	1.89	QV				
8+25	0.5885	1.91	QV				
8+30	0.6018	1.93	QV				
8+35	0.6152	1.95	QV				
8+40	0.6290	2.00	QV				
8+45	0.6431	2.04	QV				
8+50	0.6573	2.07	QV				
8+55	0.6719	2.12	Q V				
9+ 0	0.6869	2.17	Q V				
9+ 5	0.7010	2.04	Q V				
9+10	0.7109	1.45	Q V				
9+15	0.7172	0.91	Q V				
9+20	0.7229	0.84	Q V				
9+25	0.7311	1.19	Q V				
9+30	0.7419	1.56	Q V				
9+35	0.7546	1.85	Q V				
9+40	0.7710	2.38	QV				
9+45	0.7908	2.88	QV				
9+50	0.8132	3.25	Q				
9+55	0.8396	3.84	Q				
10+ 0	0.8698	4.39	Q				
10+ 5	0.9005	4.46	Q				
10+10	0.9256	3.65	QV				
10+15	0.9450	2.81	Q V				
10+20	0.9623	2.51	Q V				
10+25	0.9786	2.37	Q V				
10+30	0.9942	2.27	Q V				
10+35	1.0101	2.31	Q V				
10+40	1.0289	2.73	Q V				
10+45	1.0508	3.17	Q V				
10+50	1.0741	3.39	Q V				
10+55	1.0985	3.54	Q V				
11+ 0	1.1239	3.69	Q V				
11+ 5	1.1495	3.72	Q V				
11+10	1.1732	3.45	Q V				
11+15	1.1952	3.18	Q V				
11+20	1.2169	3.16	Q V				
11+25	1.2389	3.19	Q V				
11+30	1.2613	3.25	Q V				
11+35	1.2830	3.15	Q V				
11+40	1.2999	2.45	Q V				
11+45	1.3123	1.80	Q V				
11+50	1.3239	1.68	Q V				
11+55	1.3375	1.99	Q V				
12+ 0	1.3536	2.34	Q V				
12+ 5	1.3753	3.14	Q V				
12+10	1.4165	5.98	QV				
12+15	1.4763	8.69	V	Q			
12+20	1.5449	9.96	V	Q			



18+20	6.5374	0.54	Q				V
18+25	6.5410	0.54	Q				V
18+30	6.5447	0.53	Q				V
18+35	6.5483	0.52	Q				V
18+40	6.5516	0.48	Q				V
18+45	6.5547	0.44	Q				V
18+50	6.5576	0.42	Q				V
18+55	6.5601	0.37	Q				V
19+ 0	6.5624	0.33	Q				V
19+ 5	6.5646	0.32	Q				V
19+10	6.5669	0.34	Q				V
19+15	6.5695	0.37	Q				V
19+20	6.5722	0.39	Q				V
19+25	6.5752	0.43	Q				V
19+30	6.5784	0.47	Q				V
19+35	6.5817	0.48	Q				V
19+40	6.5848	0.45	Q				V
19+45	6.5877	0.42	Q				V
19+50	6.5905	0.40	Q				V
19+55	6.5929	0.36	Q				V
20+ 0	6.5951	0.32	Q				V
20+ 5	6.5972	0.31	Q				V
20+10	6.5996	0.34	Q				V
20+15	6.6021	0.37	Q				V
20+20	6.6047	0.38	Q				V
20+25	6.6074	0.38	Q				V
20+30	6.6101	0.39	Q				V
20+35	6.6127	0.39	Q				V
20+40	6.6154	0.39	Q				V
20+45	6.6181	0.39	Q				V
20+50	6.6207	0.38	Q				V
20+55	6.6231	0.34	Q				V
21+ 0	6.6252	0.31	Q				V
21+ 5	6.6273	0.30	Q				V
21+10	6.6296	0.33	Q				V
21+15	6.6321	0.37	Q				V
21+20	6.6346	0.37	Q				V
21+25	6.6369	0.33	Q				V
21+30	6.6390	0.30	Q				V
21+35	6.6410	0.30	Q				V
21+40	6.6433	0.33	Q				V
21+45	6.6458	0.36	Q				V
21+50	6.6483	0.36	Q				V
21+55	6.6506	0.33	Q				V
22+ 0	6.6526	0.30	Q				V
22+ 5	6.6546	0.29	Q				V
22+10	6.6569	0.33	Q				V
22+15	6.6594	0.36	Q				V
22+20	6.6619	0.36	Q				V
22+25	6.6641	0.33	Q				V
22+30	6.6662	0.30	Q				V
22+35	6.6682	0.29	Q				V
22+40	6.6701	0.28	Q				V
22+45	6.6720	0.28	Q				V
22+50	6.6739	0.27	Q				V
22+55	6.6757	0.27	Q				V
23+ 0	6.6776	0.27	Q				V
23+ 5	6.6794	0.27	Q				V
23+10	6.6812	0.27	Q				V
23+15	6.6831	0.27	Q				V
23+20	6.6849	0.26	Q				V
23+25	6.6867	0.26	Q				V
23+30	6.6885	0.26	Q				V
23+35	6.6903	0.26	Q				V
23+40	6.6921	0.26	Q				V
23+45	6.6939	0.26	Q				V
23+50	6.6958	0.26	Q				V
23+55	6.6976	0.26	Q				V
24+ 0	6.6994	0.26	Q				V
24+ 5	6.7011	0.24	Q				V
24+10	6.7022	0.17	Q				V

24+15	6.7029	0.09	Q	|	|	|	V|
24+20	6.7033	0.06	Q	|	|	|	V|
24+25	6.7036	0.05	Q	|	|	|	V|
24+30	6.7038	0.03	Q	|	|	|	V|
24+35	6.7040	0.03	Q	|	|	|	V|
24+40	6.7041	0.02	Q	|	|	|	V|
24+45	6.7042	0.01	Q	|	|	|	V|
24+50	6.7043	0.01	Q	|	|	|	V|
24+55	6.7044	0.01	Q	|	|	|	V|
25+ 0	6.7044	0.00	Q	|	|	|	V|
25+ 5	6.7044	0.00	Q	|	|	|	V|
25+10	6.7044	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930UHEX252425.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
25 YEAR STORM EVENT
1930UHEX25
DS

Drainage Area = 126.12(Ac.) = 0.197 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 126.12(Ac.) = 0.197 Sq. Mi.
Length along longest watercourse = 4770.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.903 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 15.30(Ft.)
Slope along watercourse = 16.9358 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.154 Hr.
Lag time = 9.24 Min.
25% of lag time = 2.31 Min.
40% of lag time = 3.69 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	1.60	201.79

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	4.00	504.48

STORM EVENT (YEAR) = 25.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 3.149(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
126.120	86.00	0.000

Total Area Entered = 126.12(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	86.0	0.176	0.000	0.176	1.000	0.176
					Sum (F) =	0.176

Area averaged mean soil loss (F) (In/Hr) = 0.176
Minimum soil loss rate ((In/Hr)) = 0.088
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	54.132	6.940	8.822
2	0.167	108.263	29.553	37.563
3	0.250	162.395	28.209	35.855
4	0.333	216.527	11.633	14.786
5	0.417	270.658	6.464	8.216
6	0.500	324.790	4.467	5.677
7	0.583	378.922	3.222	4.096
8	0.667	433.053	2.355	2.993
9	0.750	487.185	1.756	2.232
10	0.833	541.317	1.503	1.911
11	0.917	595.448	1.127	1.432
12	1.000	649.580	0.886	1.127
13	1.083	703.712	0.652	0.829
14	1.167	757.843	0.541	0.688
15	1.250	811.975	0.692	0.880
			Sum = 100.000	Sum= 127.105

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.025	0.311	0.023	0.00
2	0.17	0.07	0.025	0.310	0.023	0.00
3	0.25	0.07	0.025	0.309	0.023	0.00
4	0.33	0.10	0.038	0.308	0.034	0.00
5	0.42	0.10	0.038	0.306	0.034	0.00
6	0.50	0.10	0.038	0.305	0.034	0.00
7	0.58	0.10	0.038	0.304	0.034	0.00
8	0.67	0.10	0.038	0.303	0.034	0.00
9	0.75	0.10	0.038	0.302	0.034	0.00
10	0.83	0.13	0.050	0.301	0.045	0.01
11	0.92	0.13	0.050	0.299	0.045	0.01
12	1.00	0.13	0.050	0.298	0.045	0.01
13	1.08	0.10	0.038	0.297	0.034	0.00
14	1.17	0.10	0.038	0.296	0.034	0.00
15	1.25	0.10	0.038	0.295	0.034	0.00
16	1.33	0.10	0.038	0.293	0.034	0.00
17	1.42	0.10	0.038	0.292	0.034	0.00
18	1.50	0.10	0.038	0.291	0.034	0.00
19	1.58	0.10	0.038	0.290	0.034	0.00
20	1.67	0.10	0.038	0.289	0.034	0.00
21	1.75	0.10	0.038	0.288	0.034	0.00
22	1.83	0.13	0.050	0.287	0.045	0.01
23	1.92	0.13	0.050	0.285	0.045	0.01
24	2.00	0.13	0.050	0.284	0.045	0.01
25	2.08	0.13	0.050	0.283	0.045	0.01
26	2.17	0.13	0.050	0.282	0.045	0.01
27	2.25	0.13	0.050	0.281	0.045	0.01
28	2.33	0.13	0.050	0.280	0.045	0.01
29	2.42	0.13	0.050	0.278	0.045	0.01
30	2.50	0.13	0.050	0.277	0.045	0.01

31	2.58	0.17	0.063	0.276	0.057	0.01
32	2.67	0.17	0.063	0.275	0.057	0.01
33	2.75	0.17	0.063	0.274	0.057	0.01
34	2.83	0.17	0.063	0.273	0.057	0.01
35	2.92	0.17	0.063	0.272	0.057	0.01
36	3.00	0.17	0.063	0.271	0.057	0.01
37	3.08	0.17	0.063	0.269	0.057	0.01
38	3.17	0.17	0.063	0.268	0.057	0.01
39	3.25	0.17	0.063	0.267	0.057	0.01
40	3.33	0.17	0.063	0.266	0.057	0.01
41	3.42	0.17	0.063	0.265	0.057	0.01
42	3.50	0.17	0.063	0.264	0.057	0.01
43	3.58	0.17	0.063	0.263	0.057	0.01
44	3.67	0.17	0.063	0.262	0.057	0.01
45	3.75	0.17	0.063	0.261	0.057	0.01
46	3.83	0.20	0.076	0.259	0.068	0.01
47	3.92	0.20	0.076	0.258	0.068	0.01
48	4.00	0.20	0.076	0.257	0.068	0.01
49	4.08	0.20	0.076	0.256	0.068	0.01
50	4.17	0.20	0.076	0.255	0.068	0.01
51	4.25	0.20	0.076	0.254	0.068	0.01
52	4.33	0.23	0.088	0.253	0.079	0.01
53	4.42	0.23	0.088	0.252	0.079	0.01
54	4.50	0.23	0.088	0.251	0.079	0.01
55	4.58	0.23	0.088	0.250	0.079	0.01
56	4.67	0.23	0.088	0.249	0.079	0.01
57	4.75	0.23	0.088	0.248	0.079	0.01
58	4.83	0.27	0.101	0.246	0.091	0.01
59	4.92	0.27	0.101	0.245	0.091	0.01
60	5.00	0.27	0.101	0.244	0.091	0.01
61	5.08	0.20	0.076	0.243	0.068	0.01
62	5.17	0.20	0.076	0.242	0.068	0.01
63	5.25	0.20	0.076	0.241	0.068	0.01
64	5.33	0.23	0.088	0.240	0.079	0.01
65	5.42	0.23	0.088	0.239	0.079	0.01
66	5.50	0.23	0.088	0.238	0.079	0.01
67	5.58	0.27	0.101	0.237	0.091	0.01
68	5.67	0.27	0.101	0.236	0.091	0.01
69	5.75	0.27	0.101	0.235	0.091	0.01
70	5.83	0.27	0.101	0.234	0.091	0.01
71	5.92	0.27	0.101	0.233	0.091	0.01
72	6.00	0.27	0.101	0.232	0.091	0.01
73	6.08	0.30	0.113	0.231	0.102	0.01
74	6.17	0.30	0.113	0.230	0.102	0.01
75	6.25	0.30	0.113	0.229	0.102	0.01
76	6.33	0.30	0.113	0.228	0.102	0.01
77	6.42	0.30	0.113	0.227	0.102	0.01
78	6.50	0.30	0.113	0.226	0.102	0.01
79	6.58	0.33	0.126	0.225	0.113	0.01
80	6.67	0.33	0.126	0.224	0.113	0.01
81	6.75	0.33	0.126	0.223	0.113	0.01
82	6.83	0.33	0.126	0.222	0.113	0.01
83	6.92	0.33	0.126	0.221	0.113	0.01
84	7.00	0.33	0.126	0.220	0.113	0.01
85	7.08	0.33	0.126	0.219	0.113	0.01
86	7.17	0.33	0.126	0.218	0.113	0.01
87	7.25	0.33	0.126	0.217	0.113	0.01
88	7.33	0.37	0.139	0.216	0.125	0.01
89	7.42	0.37	0.139	0.215	0.125	0.01
90	7.50	0.37	0.139	0.214	0.125	0.01
91	7.58	0.40	0.151	0.213	0.136	0.02
92	7.67	0.40	0.151	0.212	0.136	0.02
93	7.75	0.40	0.151	0.211	0.136	0.02
94	7.83	0.43	0.164	0.210	0.147	0.02
95	7.92	0.43	0.164	0.209	0.147	0.02
96	8.00	0.43	0.164	0.208	0.147	0.02
97	8.08	0.50	0.189	0.207	0.170	0.02
98	8.17	0.50	0.189	0.206	0.170	0.02
99	8.25	0.50	0.189	0.205	0.170	0.02
100	8.33	0.50	0.189	0.204	0.170	0.02
101	8.42	0.50	0.189	0.203	0.170	0.02

102	8.50	0.50	0.189	0.202	0.170	0.02
103	8.58	0.53	0.202	0.201	---	0.00
104	8.67	0.53	0.202	0.200	---	0.00
105	8.75	0.53	0.202	0.199	---	0.00
106	8.83	0.57	0.214	0.198	---	0.02
107	8.92	0.57	0.214	0.197	---	0.02
108	9.00	0.57	0.214	0.196	---	0.02
109	9.08	0.63	0.239	0.195	---	0.04
110	9.17	0.63	0.239	0.195	---	0.04
111	9.25	0.63	0.239	0.194	---	0.05
112	9.33	0.67	0.252	0.193	---	0.06
113	9.42	0.67	0.252	0.192	---	0.06
114	9.50	0.67	0.252	0.191	---	0.06
115	9.58	0.70	0.264	0.190	---	0.07
116	9.67	0.70	0.264	0.189	---	0.08
117	9.75	0.70	0.264	0.188	---	0.08
118	9.83	0.73	0.277	0.187	---	0.09
119	9.92	0.73	0.277	0.186	---	0.09
120	10.00	0.73	0.277	0.185	---	0.09
121	10.08	0.50	0.189	0.185	---	0.00
122	10.17	0.50	0.189	0.184	---	0.01
123	10.25	0.50	0.189	0.183	---	0.01
124	10.33	0.50	0.189	0.182	---	0.01
125	10.42	0.50	0.189	0.181	---	0.01
126	10.50	0.50	0.189	0.180	---	0.01
127	10.58	0.67	0.252	0.179	---	0.07
128	10.67	0.67	0.252	0.178	---	0.07
129	10.75	0.67	0.252	0.177	---	0.07
130	10.83	0.67	0.252	0.177	---	0.08
131	10.92	0.67	0.252	0.176	---	0.08
132	11.00	0.67	0.252	0.175	---	0.08
133	11.08	0.63	0.239	0.174	---	0.07
134	11.17	0.63	0.239	0.173	---	0.07
135	11.25	0.63	0.239	0.172	---	0.07
136	11.33	0.63	0.239	0.171	---	0.07
137	11.42	0.63	0.239	0.171	---	0.07
138	11.50	0.63	0.239	0.170	---	0.07
139	11.58	0.57	0.214	0.169	---	0.05
140	11.67	0.57	0.214	0.168	---	0.05
141	11.75	0.57	0.214	0.167	---	0.05
142	11.83	0.60	0.227	0.166	---	0.06
143	11.92	0.60	0.227	0.166	---	0.06
144	12.00	0.60	0.227	0.165	---	0.06
145	12.08	0.83	0.315	0.164	---	0.15
146	12.17	0.83	0.315	0.163	---	0.15
147	12.25	0.83	0.315	0.162	---	0.15
148	12.33	0.87	0.327	0.161	---	0.17
149	12.42	0.87	0.327	0.161	---	0.17
150	12.50	0.87	0.327	0.160	---	0.17
151	12.58	0.93	0.353	0.159	---	0.19
152	12.67	0.93	0.353	0.158	---	0.19
153	12.75	0.93	0.353	0.157	---	0.20
154	12.83	0.97	0.365	0.157	---	0.21
155	12.92	0.97	0.365	0.156	---	0.21
156	13.00	0.97	0.365	0.155	---	0.21
157	13.08	1.13	0.428	0.154	---	0.27
158	13.17	1.13	0.428	0.154	---	0.27
159	13.25	1.13	0.428	0.153	---	0.28
160	13.33	1.13	0.428	0.152	---	0.28
161	13.42	1.13	0.428	0.151	---	0.28
162	13.50	1.13	0.428	0.150	---	0.28
163	13.58	0.77	0.290	0.150	---	0.14
164	13.67	0.77	0.290	0.149	---	0.14
165	13.75	0.77	0.290	0.148	---	0.14
166	13.83	0.77	0.290	0.147	---	0.14
167	13.92	0.77	0.290	0.147	---	0.14
168	14.00	0.77	0.290	0.146	---	0.14
169	14.08	0.90	0.340	0.145	---	0.19
170	14.17	0.90	0.340	0.144	---	0.20
171	14.25	0.90	0.340	0.144	---	0.20
172	14.33	0.87	0.327	0.143	---	0.18

173	14.42	0.87	0.327	0.142	---	0.19
174	14.50	0.87	0.327	0.141	---	0.19
175	14.58	0.87	0.327	0.141	---	0.19
176	14.67	0.87	0.327	0.140	---	0.19
177	14.75	0.87	0.327	0.139	---	0.19
178	14.83	0.83	0.315	0.139	---	0.18
179	14.92	0.83	0.315	0.138	---	0.18
180	15.00	0.83	0.315	0.137	---	0.18
181	15.08	0.80	0.302	0.136	---	0.17
182	15.17	0.80	0.302	0.136	---	0.17
183	15.25	0.80	0.302	0.135	---	0.17
184	15.33	0.77	0.290	0.134	---	0.16
185	15.42	0.77	0.290	0.134	---	0.16
186	15.50	0.77	0.290	0.133	---	0.16
187	15.58	0.63	0.239	0.132	---	0.11
188	15.67	0.63	0.239	0.132	---	0.11
189	15.75	0.63	0.239	0.131	---	0.11
190	15.83	0.63	0.239	0.130	---	0.11
191	15.92	0.63	0.239	0.130	---	0.11
192	16.00	0.63	0.239	0.129	---	0.11
193	16.08	0.13	0.050	0.128	0.045	0.01
194	16.17	0.13	0.050	0.128	0.045	0.01
195	16.25	0.13	0.050	0.127	0.045	0.01
196	16.33	0.13	0.050	0.126	0.045	0.01
197	16.42	0.13	0.050	0.126	0.045	0.01
198	16.50	0.13	0.050	0.125	0.045	0.01
199	16.58	0.10	0.038	0.124	0.034	0.00
200	16.67	0.10	0.038	0.124	0.034	0.00
201	16.75	0.10	0.038	0.123	0.034	0.00
202	16.83	0.10	0.038	0.123	0.034	0.00
203	16.92	0.10	0.038	0.122	0.034	0.00
204	17.00	0.10	0.038	0.121	0.034	0.00
205	17.08	0.17	0.063	0.121	0.057	0.01
206	17.17	0.17	0.063	0.120	0.057	0.01
207	17.25	0.17	0.063	0.119	0.057	0.01
208	17.33	0.17	0.063	0.119	0.057	0.01
209	17.42	0.17	0.063	0.118	0.057	0.01
210	17.50	0.17	0.063	0.118	0.057	0.01
211	17.58	0.17	0.063	0.117	0.057	0.01
212	17.67	0.17	0.063	0.117	0.057	0.01
213	17.75	0.17	0.063	0.116	0.057	0.01
214	17.83	0.13	0.050	0.115	0.045	0.01
215	17.92	0.13	0.050	0.115	0.045	0.01
216	18.00	0.13	0.050	0.114	0.045	0.01
217	18.08	0.13	0.050	0.114	0.045	0.01
218	18.17	0.13	0.050	0.113	0.045	0.01
219	18.25	0.13	0.050	0.113	0.045	0.01
220	18.33	0.13	0.050	0.112	0.045	0.01
221	18.42	0.13	0.050	0.111	0.045	0.01
222	18.50	0.13	0.050	0.111	0.045	0.01
223	18.58	0.10	0.038	0.110	0.034	0.00
224	18.67	0.10	0.038	0.110	0.034	0.00
225	18.75	0.10	0.038	0.109	0.034	0.00
226	18.83	0.07	0.025	0.109	0.023	0.00
227	18.92	0.07	0.025	0.108	0.023	0.00
228	19.00	0.07	0.025	0.108	0.023	0.00
229	19.08	0.10	0.038	0.107	0.034	0.00
230	19.17	0.10	0.038	0.107	0.034	0.00
231	19.25	0.10	0.038	0.106	0.034	0.00
232	19.33	0.13	0.050	0.106	0.045	0.01
233	19.42	0.13	0.050	0.105	0.045	0.01
234	19.50	0.13	0.050	0.105	0.045	0.01
235	19.58	0.10	0.038	0.104	0.034	0.00
236	19.67	0.10	0.038	0.104	0.034	0.00
237	19.75	0.10	0.038	0.103	0.034	0.00
238	19.83	0.07	0.025	0.103	0.023	0.00
239	19.92	0.07	0.025	0.102	0.023	0.00
240	20.00	0.07	0.025	0.102	0.023	0.00
241	20.08	0.10	0.038	0.102	0.034	0.00
242	20.17	0.10	0.038	0.101	0.034	0.00
243	20.25	0.10	0.038	0.101	0.034	0.00

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244  20.33     0.10      0.038         0.100     0.034         0.00
245  20.42     0.10      0.038         0.100     0.034         0.00
246  20.50     0.10      0.038         0.099     0.034         0.00
247  20.58     0.10      0.038         0.099     0.034         0.00
248  20.67     0.10      0.038         0.099     0.034         0.00
249  20.75     0.10      0.038         0.098     0.034         0.00
250  20.83     0.07      0.025         0.098     0.023         0.00
251  20.92     0.07      0.025         0.097     0.023         0.00
252  21.00     0.07      0.025         0.097     0.023         0.00
253  21.08     0.10      0.038         0.097     0.034         0.00
254  21.17     0.10      0.038         0.096     0.034         0.00
255  21.25     0.10      0.038         0.096     0.034         0.00
256  21.33     0.07      0.025         0.095     0.023         0.00
257  21.42     0.07      0.025         0.095     0.023         0.00
258  21.50     0.07      0.025         0.095     0.023         0.00
259  21.58     0.10      0.038         0.094     0.034         0.00
260  21.67     0.10      0.038         0.094     0.034         0.00
261  21.75     0.10      0.038         0.094     0.034         0.00
262  21.83     0.07      0.025         0.093     0.023         0.00
263  21.92     0.07      0.025         0.093     0.023         0.00
264  22.00     0.07      0.025         0.093     0.023         0.00
265  22.08     0.10      0.038         0.092     0.034         0.00
266  22.17     0.10      0.038         0.092     0.034         0.00
267  22.25     0.10      0.038         0.092     0.034         0.00
268  22.33     0.07      0.025         0.092     0.023         0.00
269  22.42     0.07      0.025         0.091     0.023         0.00
270  22.50     0.07      0.025         0.091     0.023         0.00
271  22.58     0.07      0.025         0.091     0.023         0.00
272  22.67     0.07      0.025         0.090     0.023         0.00
273  22.75     0.07      0.025         0.090     0.023         0.00
274  22.83     0.07      0.025         0.090     0.023         0.00
275  22.92     0.07      0.025         0.090     0.023         0.00
276  23.00     0.07      0.025         0.090     0.023         0.00
277  23.08     0.07      0.025         0.089     0.023         0.00
278  23.17     0.07      0.025         0.089     0.023         0.00
279  23.25     0.07      0.025         0.089     0.023         0.00
280  23.33     0.07      0.025         0.089     0.023         0.00
281  23.42     0.07      0.025         0.089     0.023         0.00
282  23.50     0.07      0.025         0.088     0.023         0.00
283  23.58     0.07      0.025         0.088     0.023         0.00
284  23.67     0.07      0.025         0.088     0.023         0.00
285  23.75     0.07      0.025         0.088     0.023         0.00
286  23.83     0.07      0.025         0.088     0.023         0.00
287  23.92     0.07      0.025         0.088     0.023         0.00
288  24.00     0.07      0.025         0.088     0.023         0.00
    Sum =     100.0                                 Sum =    11.9
      Flood volume = Effective rainfall      0.99(In)
       times area     126.1(Ac.)/[(In)/(Ft.)] =      10.4(Ac.Ft)
      Total soil loss =      2.16(In)
      Total soil loss =    22.703(Ac.Ft)
      Total rainfall =      3.15(In)
      Flood volume =      452605.0 Cubic Feet
      Total soil loss =      988938.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     33.890(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
 ---------------------------------------------------------------------
   0+ 5       0.0002      0.02  Q         |         |         |         |
   0+10       0.0010      0.12  Q         |         |         |         |
   0+15       0.0024      0.21  Q         |         |         |         |
   0+20       0.0041      0.26  Q         |         |         |         |
   0+25       0.0064      0.32  Q         |         |         |         |
   0+30       0.0090      0.38  Q         |         |         |         |
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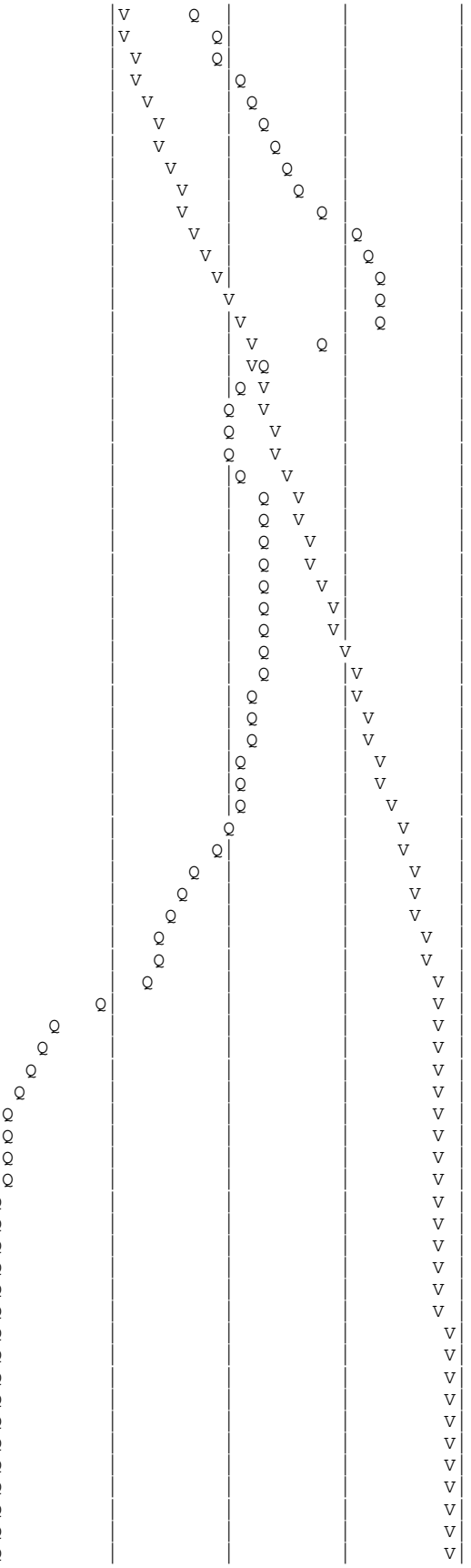
0+35	0.0119	0.41	Q				
0+40	0.0148	0.43	Q				
0+45	0.0179	0.44	Q				
0+50	0.0211	0.46	Q				
0+55	0.0246	0.52	Q				
1+ 0	0.0286	0.57	Q				
1+ 5	0.0326	0.58	Q				
1+10	0.0363	0.55	Q				
1+15	0.0399	0.51	Q				
1+20	0.0433	0.50	Q				
1+25	0.0467	0.50	Q				
1+30	0.0501	0.49	Q				
1+35	0.0535	0.49	Q				
1+40	0.0569	0.49	Q				
1+45	0.0602	0.49	Q				
1+50	0.0636	0.50	Q				
1+55	0.0674	0.54	Q				
2+ 0	0.0714	0.59	Q				
2+ 5	0.0756	0.60	Q				
2+10	0.0798	0.61	Q				
2+15	0.0841	0.62	Q				
2+20	0.0884	0.63	Q				
2+25	0.0927	0.63	Q				
2+30	0.0971	0.63	Q				
2+35	0.1015	0.65	Q				
2+40	0.1063	0.69	Q				
2+45	0.1114	0.74	Q				
2+50	0.1166	0.76	Q				
2+55	0.1220	0.77	Q				
3+ 0	0.1273	0.78	Q				
3+ 5	0.1327	0.79	Q				
3+10	0.1382	0.79	Q				
3+15	0.1436	0.79	Q				
3+20	0.1491	0.79	Q				
3+25	0.1546	0.80	Q				
3+30	0.1601	0.80	Q				
3+35	0.1656	0.80	Q				
3+40	0.1711	0.80	Q				
3+45	0.1766	0.80	Q				
3+50	0.1822	0.81	Q				
3+55	0.1881	0.86	Q				
4+ 0	0.1943	0.90	Q				
4+ 5	0.2007	0.92	Q				
4+10	0.2071	0.93	Q				
4+15	0.2136	0.94	Q				
4+20	0.2202	0.96	Q				
4+25	0.2271	1.01	VQ				
4+30	0.2344	1.06	VQ				
4+35	0.2418	1.08	VQ				
4+40	0.2493	1.09	VQ				
4+45	0.2569	1.10	VQ				
4+50	0.2646	1.12	|Q				
4+55	0.2726	1.17	|Q				
5+ 0	0.2810	1.22	|Q				
5+ 5	0.2894	1.21	|Q				
5+10	0.2972	1.13	|Q				
5+15	0.3044	1.05	|Q				
5+20	0.3115	1.03	|Q				
5+25	0.3188	1.06	|Q				
5+30	0.3264	1.10	|Q				
5+35	0.3341	1.12	|Q				
5+40	0.3421	1.17	|Q				
5+45	0.3505	1.22	|Q				
5+50	0.3590	1.24	|Q				
5+55	0.3677	1.25	|Q				
6+ 0	0.3763	1.26	|Q				
6+ 5	0.3851	1.27	|Q				
6+10	0.3942	1.33	|Q				
6+15	0.4037	1.37	|Q				
6+20	0.4133	1.40	|Q				
6+25	0.4230	1.41	|Q				

6+30	0.4328	1.42	Q			
6+35	0.4427	1.44	Q			
6+40	0.4529	1.49	Q			
6+45	0.4635	1.54	Q			
6+50	0.4742	1.56	Q			
6+55	0.4850	1.57	Q			
7+ 0	0.4959	1.58	Q			
7+ 5	0.5068	1.58	Q			
7+10	0.5178	1.59	Q			
7+15	0.5287	1.59	QV			
7+20	0.5398	1.61	QV			
7+25	0.5512	1.66	QV			
7+30	0.5629	1.70	QV			
7+35	0.5749	1.73	QV			
7+40	0.5872	1.79	QV			
7+45	0.5999	1.85	QV			
7+50	0.6128	1.88	QV			
7+55	0.6262	1.94	QV			
8+ 0	0.6400	2.00	QV			
8+ 5	0.6541	2.05	Q			
8+10	0.6689	2.16	Q			
8+15	0.6844	2.26	Q			
8+20	0.7003	2.30	Q			
8+25	0.7164	2.33	Q			
8+30	0.7325	2.35	Q			
8+35	0.7477	2.20	Q			
8+40	0.7582	1.52	QV			
8+45	0.7645	0.91	Q V			
8+50	0.7702	0.83	Q V			
8+55	0.7788	1.25	QV			
9+ 0	0.7906	1.70	Q V			
9+ 5	0.8053	2.14	QV			
9+10	0.8276	3.24	Q			
9+15	0.8572	4.29	VQ			
9+20	0.8909	4.90	VQ			
9+25	0.9302	5.71	V Q			
9+30	0.9745	6.42	V Q			
9+35	1.0223	6.95	V Q			
9+40	1.0755	7.72	V Q			
9+45	1.1335	8.41	V Q			
9+50	1.1950	8.94	V Q			
9+55	1.2619	9.71	V Q			
10+ 0	1.3337	10.42	V Q			
10+ 5	1.4028	10.04	V Q			
10+10	1.4511	7.02	V Q			
10+15	1.4794	4.10	QV			
10+20	1.5001	3.00	Q V			
10+25	1.5170	2.45	Q V			
10+30	1.5316	2.12	Q V			
10+35	1.5485	2.46	Q V			
10+40	1.5809	4.70	Q V			
10+45	1.6284	6.90	Q			
10+50	1.6821	7.79	VQ			
10+55	1.7392	8.30	V Q			
11+ 0	1.7990	8.68	V Q			
11+ 5	1.8601	8.86	VQ			
11+10	1.9195	8.63	VQ			
11+15	1.9770	8.35	VQ			
11+20	2.0348	8.39	VQ			
11+25	2.0933	8.49	Q			
11+30	2.1525	8.60	Q			
11+35	2.2109	8.48	Q			
11+40	2.2636	7.65	QV			
11+45	2.3110	6.88	Q V			
11+50	2.3571	6.70	Q V			
11+55	2.4057	7.06	Q V			
12+ 0	2.4571	7.46	Q V			
12+ 5	2.5151	8.42	QV			
12+10	2.5967	11.85	V Q			
12+15	2.7009	15.13	V Q			
12+20	2.8155	16.65	V Q			

12+25	2.9392	17.95	
12+30	3.0701	19.01	
12+35	3.2071	19.89	
12+40	3.3538	21.30	
12+45	3.5092	22.57	
12+50	3.6703	23.39	
12+55	3.8379	24.34	
13+ 0	4.0113	25.18	
13+ 5	4.1919	26.22	
13+10	4.3913	28.95	
13+15	4.6084	31.52	
13+20	4.8334	32.67	
13+25	5.0631	33.37	
13+30	5.2966	33.89	
13+35	5.5243	33.07	
13+40	5.7184	28.18	
13+45	5.8802	23.49	
13+50	6.0294	21.67	
13+55	6.1721	20.72	
14+ 0	6.3107	20.12	
14+ 5	6.4494	20.14	
14+10	6.5992	21.76	
14+15	6.7604	23.41	
14+20	6.9248	23.87	
14+25	7.0881	23.71	
14+30	7.2498	23.48	
14+35	7.4115	23.48	
14+40	7.5735	23.52	
14+45	7.7355	23.53	
14+50	7.8978	23.56	
14+55	8.0577	23.21	
15+ 0	8.2152	22.88	
15+ 5	8.3715	22.69	
15+10	8.5245	22.22	
15+15	8.6748	21.82	
15+20	8.8232	21.55	
15+25	8.9679	21.01	
15+30	9.1094	20.54	
15+35	9.2465	19.92	
15+40	9.3702	17.95	
15+45	9.4812	16.12	
15+50	9.5871	15.38	
15+55	9.6903	14.98	
16+ 0	9.7917	14.73	
16+ 5	9.8857	13.64	
16+10	9.9515	9.56	
16+15	9.9905	5.67	
16+20	10.0183	4.03	
16+25	10.0396	3.09	
16+30	10.0564	2.44	
16+35	10.0699	1.96	
16+40	10.0807	1.57	
16+45	10.0893	1.25	
16+50	10.0965	1.03	
16+55	10.1025	0.88	
17+ 0	10.1077	0.75	
17+ 5	10.1124	0.68	
17+10	10.1172	0.70	
17+15	10.1220	0.70	
17+20	10.1271	0.73	
17+25	10.1322	0.75	
17+30	10.1375	0.76	
17+35	10.1428	0.77	
17+40	10.1482	0.78	
17+45	10.1536	0.78	
17+50	10.1589	0.78	
17+55	10.1640	0.73	
18+ 0	10.1687	0.69	
18+ 5	10.1734	0.67	
18+10	10.1780	0.67	
18+15	10.1825	0.66	

18+20	10.1870	0.66	Q	|	|	|	V|
18+25	10.1915	0.65	Q	|	|	|	V|
18+30	10.1960	0.65	Q	|	|	|	V|
18+35	10.2004	0.64	Q	|	|	|	V|
18+40	10.2044	0.59	Q	|	|	|	V|
18+45	10.2081	0.54	Q	|	|	|	V|
18+50	10.2116	0.51	Q	|	|	|	V|
18+55	10.2147	0.45	Q	|	|	|	V|
19+ 0	10.2175	0.40	Q	|	|	|	V|
19+ 5	10.2201	0.38	Q	|	|	|	V|
19+10	10.2230	0.42	Q	|	|	|	V|
19+15	10.2261	0.45	Q	|	|	|	V|
19+20	10.2294	0.48	Q	|	|	|	V|
19+25	10.2330	0.53	Q	|	|	|	V|
19+30	10.2370	0.58	Q	|	|	|	V|
19+35	10.2410	0.58	Q	|	|	|	V|
19+40	10.2448	0.55	Q	|	|	|	V|
19+45	10.2483	0.51	Q	|	|	|	V|
19+50	10.2517	0.49	Q	|	|	|	V|
19+55	10.2547	0.43	Q	|	|	|	V|
20+ 0	10.2573	0.39	Q	|	|	|	V|
20+ 5	10.2599	0.38	Q	|	|	|	V|
20+10	10.2628	0.41	Q	|	|	|	V|
20+15	10.2659	0.45	Q	|	|	|	V|
20+20	10.2690	0.46	Q	|	|	|	V|
20+25	10.2723	0.47	Q	|	|	|	V|
20+30	10.2755	0.47	Q	|	|	|	V|
20+35	10.2788	0.47	Q	|	|	|	V|
20+40	10.2820	0.47	Q	|	|	|	V|
20+45	10.2853	0.47	Q	|	|	|	V|
20+50	10.2885	0.47	Q	|	|	|	V|
20+55	10.2914	0.42	Q	|	|	|	V|
21+ 0	10.2940	0.37	Q	|	|	|	V|
21+ 5	10.2965	0.37	Q	|	|	|	V|
21+10	10.2993	0.41	Q	|	|	|	V|
21+15	10.3023	0.44	Q	|	|	|	V|
21+20	10.3054	0.45	Q	|	|	|	V|
21+25	10.3082	0.41	Q	|	|	|	V|
21+30	10.3107	0.37	Q	|	|	|	V|
21+35	10.3132	0.36	Q	|	|	|	V|
21+40	10.3160	0.40	Q	|	|	|	V|
21+45	10.3190	0.44	Q	|	|	|	V|
21+50	10.3220	0.44	Q	|	|	|	V|
21+55	10.3248	0.40	Q	|	|	|	V|
22+ 0	10.3273	0.36	Q	|	|	|	V|
22+ 5	10.3298	0.36	Q	|	|	|	V|
22+10	10.3325	0.40	Q	|	|	|	V|
22+15	10.3355	0.44	Q	|	|	|	V|
22+20	10.3386	0.44	Q	|	|	|	V|
22+25	10.3414	0.40	Q	|	|	|	V|
22+30	10.3439	0.36	Q	|	|	|	V|
22+35	10.3462	0.35	Q	|	|	|	V|
22+40	10.3486	0.34	Q	|	|	|	V|
22+45	10.3509	0.34	Q	|	|	|	V|
22+50	10.3532	0.33	Q	|	|	|	V|
22+55	10.3554	0.33	Q	|	|	|	V|
23+ 0	10.3577	0.33	Q	|	|	|	V|
23+ 5	10.3599	0.32	Q	|	|	|	V|
23+10	10.3621	0.32	Q	|	|	|	V|
23+15	10.3644	0.32	Q	|	|	|	V|
23+20	10.3666	0.32	Q	|	|	|	V|
23+25	10.3688	0.32	Q	|	|	|	V|
23+30	10.3710	0.32	Q	|	|	|	V|
23+35	10.3732	0.32	Q	|	|	|	V|
23+40	10.3754	0.32	Q	|	|	|	V|
23+45	10.3776	0.32	Q	|	|	|	V|
23+50	10.3798	0.32	Q	|	|	|	V|
23+55	10.3820	0.32	Q	|	|	|	V|
24+ 0	10.3842	0.32	Q	|	|	|	V|
24+ 5	10.3863	0.30	Q	|	|	|	V|
24+10	10.3877	0.20	Q	|	|	|	V|

24+15	10.3885	0.11	Q	|	|	|	V|
24+20	10.3890	0.08	Q	|	|	|	V|
24+25	10.3894	0.06	Q	|	|	|	V|
24+30	10.3897	0.04	Q	|	|	|	V|
24+35	10.3899	0.03	Q	|	|	|	V|
24+40	10.3900	0.02	Q	|	|	|	V|
24+45	10.3902	0.02	Q	|	|	|	V|
24+50	10.3902	0.01	Q	|	|	|	V|
24+55	10.3903	0.01	Q	|	|	|	V|
25+ 0	10.3903	0.01	Q	|	|	|	V|
25+ 5	10.3904	0.00	Q	|	|	|	V|
25+10	10.3904	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930uhex10024100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWODD- APOLLO PROJECT
100 YEAR STORM EVENT EXISTING
1930UHEX100
DS

Drainage Area = 126.12(Ac.) = 0.197 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 126.12(Ac.) = 0.197 Sq. Mi.
Length along longest watercourse = 4770.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.903 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 15.30(Ft.)
Slope along watercourse = 16.9358 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.154 Hr.
Lag time = 9.24 Min.
25% of lag time = 2.31 Min.
40% of lag time = 3.69 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	1.60	201.79

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	4.00	504.48

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 4.000(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 3.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
126.120	86.00	0.000

Total Area Entered = 126.12(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	94.4	0.073	0.000	0.073	1.000	0.073
					Sum (F) =	0.073

Area averaged mean soil loss (F) (In/Hr) = 0.073
Minimum soil loss rate ((In/Hr)) = 0.036
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	54.132	6.940	8.822
2	0.167	108.263	29.553	37.563
3	0.250	162.395	28.209	35.855
4	0.333	216.527	11.633	14.786
5	0.417	270.658	6.464	8.216
6	0.500	324.790	4.467	5.677
7	0.583	378.922	3.222	4.096
8	0.667	433.053	2.355	2.993
9	0.750	487.185	1.756	2.232
10	0.833	541.317	1.503	1.911
11	0.917	595.448	1.127	1.432
12	1.000	649.580	0.886	1.127
13	1.083	703.712	0.652	0.829
14	1.167	757.843	0.541	0.688
15	1.250	811.975	0.692	0.880
			Sum = 100.000	Sum= 127.105

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.032	0.129	0.029	0.00
2	0.17	0.07	0.032	0.129	0.029	0.00
3	0.25	0.07	0.032	0.128	0.029	0.00
4	0.33	0.10	0.048	0.128	0.043	0.00
5	0.42	0.10	0.048	0.127	0.043	0.00
6	0.50	0.10	0.048	0.127	0.043	0.00
7	0.58	0.10	0.048	0.126	0.043	0.00
8	0.67	0.10	0.048	0.126	0.043	0.00
9	0.75	0.10	0.048	0.125	0.043	0.00
10	0.83	0.13	0.064	0.125	0.058	0.01
11	0.92	0.13	0.064	0.124	0.058	0.01
12	1.00	0.13	0.064	0.124	0.058	0.01
13	1.08	0.10	0.048	0.123	0.043	0.00
14	1.17	0.10	0.048	0.123	0.043	0.00
15	1.25	0.10	0.048	0.122	0.043	0.00
16	1.33	0.10	0.048	0.122	0.043	0.00
17	1.42	0.10	0.048	0.121	0.043	0.00
18	1.50	0.10	0.048	0.121	0.043	0.00
19	1.58	0.10	0.048	0.120	0.043	0.00
20	1.67	0.10	0.048	0.120	0.043	0.00
21	1.75	0.10	0.048	0.119	0.043	0.00
22	1.83	0.13	0.064	0.119	0.058	0.01
23	1.92	0.13	0.064	0.118	0.058	0.01
24	2.00	0.13	0.064	0.118	0.058	0.01
25	2.08	0.13	0.064	0.117	0.058	0.01
26	2.17	0.13	0.064	0.117	0.058	0.01
27	2.25	0.13	0.064	0.116	0.058	0.01
28	2.33	0.13	0.064	0.116	0.058	0.01
29	2.42	0.13	0.064	0.115	0.058	0.01
30	2.50	0.13	0.064	0.115	0.058	0.01

31	2.58	0.17	0.080	0.115	0.072	0.01
32	2.67	0.17	0.080	0.114	0.072	0.01
33	2.75	0.17	0.080	0.114	0.072	0.01
34	2.83	0.17	0.080	0.113	0.072	0.01
35	2.92	0.17	0.080	0.113	0.072	0.01
36	3.00	0.17	0.080	0.112	0.072	0.01
37	3.08	0.17	0.080	0.112	0.072	0.01
38	3.17	0.17	0.080	0.111	0.072	0.01
39	3.25	0.17	0.080	0.111	0.072	0.01
40	3.33	0.17	0.080	0.110	0.072	0.01
41	3.42	0.17	0.080	0.110	0.072	0.01
42	3.50	0.17	0.080	0.109	0.072	0.01
43	3.58	0.17	0.080	0.109	0.072	0.01
44	3.67	0.17	0.080	0.108	0.072	0.01
45	3.75	0.17	0.080	0.108	0.072	0.01
46	3.83	0.20	0.096	0.108	0.086	0.01
47	3.92	0.20	0.096	0.107	0.086	0.01
48	4.00	0.20	0.096	0.107	0.086	0.01
49	4.08	0.20	0.096	0.106	0.086	0.01
50	4.17	0.20	0.096	0.106	0.086	0.01
51	4.25	0.20	0.096	0.105	0.086	0.01
52	4.33	0.23	0.112	0.105	---	0.01
53	4.42	0.23	0.112	0.104	---	0.01
54	4.50	0.23	0.112	0.104	---	0.01
55	4.58	0.23	0.112	0.104	---	0.01
56	4.67	0.23	0.112	0.103	---	0.01
57	4.75	0.23	0.112	0.103	---	0.01
58	4.83	0.27	0.128	0.102	---	0.03
59	4.92	0.27	0.128	0.102	---	0.03
60	5.00	0.27	0.128	0.101	---	0.03
61	5.08	0.20	0.096	0.101	0.086	0.01
62	5.17	0.20	0.096	0.100	0.086	0.01
63	5.25	0.20	0.096	0.100	0.086	0.01
64	5.33	0.23	0.112	0.100	---	0.01
65	5.42	0.23	0.112	0.099	---	0.01
66	5.50	0.23	0.112	0.099	---	0.01
67	5.58	0.27	0.128	0.098	---	0.03
68	5.67	0.27	0.128	0.098	---	0.03
69	5.75	0.27	0.128	0.097	---	0.03
70	5.83	0.27	0.128	0.097	---	0.03
71	5.92	0.27	0.128	0.097	---	0.03
72	6.00	0.27	0.128	0.096	---	0.03
73	6.08	0.30	0.144	0.096	---	0.05
74	6.17	0.30	0.144	0.095	---	0.05
75	6.25	0.30	0.144	0.095	---	0.05
76	6.33	0.30	0.144	0.094	---	0.05
77	6.42	0.30	0.144	0.094	---	0.05
78	6.50	0.30	0.144	0.094	---	0.05
79	6.58	0.33	0.160	0.093	---	0.07
80	6.67	0.33	0.160	0.093	---	0.07
81	6.75	0.33	0.160	0.092	---	0.07
82	6.83	0.33	0.160	0.092	---	0.07
83	6.92	0.33	0.160	0.091	---	0.07
84	7.00	0.33	0.160	0.091	---	0.07
85	7.08	0.33	0.160	0.091	---	0.07
86	7.17	0.33	0.160	0.090	---	0.07
87	7.25	0.33	0.160	0.090	---	0.07
88	7.33	0.37	0.176	0.089	---	0.09
89	7.42	0.37	0.176	0.089	---	0.09
90	7.50	0.37	0.176	0.089	---	0.09
91	7.58	0.40	0.192	0.088	---	0.10
92	7.67	0.40	0.192	0.088	---	0.10
93	7.75	0.40	0.192	0.087	---	0.10
94	7.83	0.43	0.208	0.087	---	0.12
95	7.92	0.43	0.208	0.087	---	0.12
96	8.00	0.43	0.208	0.086	---	0.12
97	8.08	0.50	0.240	0.086	---	0.15
98	8.17	0.50	0.240	0.085	---	0.15
99	8.25	0.50	0.240	0.085	---	0.15
100	8.33	0.50	0.240	0.085	---	0.16
101	8.42	0.50	0.240	0.084	---	0.16

102	8.50	0.50	0.240	0.084	---	0.16
103	8.58	0.53	0.256	0.083	---	0.17
104	8.67	0.53	0.256	0.083	---	0.17
105	8.75	0.53	0.256	0.083	---	0.17
106	8.83	0.57	0.272	0.082	---	0.19
107	8.92	0.57	0.272	0.082	---	0.19
108	9.00	0.57	0.272	0.081	---	0.19
109	9.08	0.63	0.304	0.081	---	0.22
110	9.17	0.63	0.304	0.081	---	0.22
111	9.25	0.63	0.304	0.080	---	0.22
112	9.33	0.67	0.320	0.080	---	0.24
113	9.42	0.67	0.320	0.080	---	0.24
114	9.50	0.67	0.320	0.079	---	0.24
115	9.58	0.70	0.336	0.079	---	0.26
116	9.67	0.70	0.336	0.078	---	0.26
117	9.75	0.70	0.336	0.078	---	0.26
118	9.83	0.73	0.352	0.078	---	0.27
119	9.92	0.73	0.352	0.077	---	0.27
120	10.00	0.73	0.352	0.077	---	0.28
121	10.08	0.50	0.240	0.077	---	0.16
122	10.17	0.50	0.240	0.076	---	0.16
123	10.25	0.50	0.240	0.076	---	0.16
124	10.33	0.50	0.240	0.075	---	0.16
125	10.42	0.50	0.240	0.075	---	0.16
126	10.50	0.50	0.240	0.075	---	0.17
127	10.58	0.67	0.320	0.074	---	0.25
128	10.67	0.67	0.320	0.074	---	0.25
129	10.75	0.67	0.320	0.074	---	0.25
130	10.83	0.67	0.320	0.073	---	0.25
131	10.92	0.67	0.320	0.073	---	0.25
132	11.00	0.67	0.320	0.072	---	0.25
133	11.08	0.63	0.304	0.072	---	0.23
134	11.17	0.63	0.304	0.072	---	0.23
135	11.25	0.63	0.304	0.071	---	0.23
136	11.33	0.63	0.304	0.071	---	0.23
137	11.42	0.63	0.304	0.071	---	0.23
138	11.50	0.63	0.304	0.070	---	0.23
139	11.58	0.57	0.272	0.070	---	0.20
140	11.67	0.57	0.272	0.070	---	0.20
141	11.75	0.57	0.272	0.069	---	0.20
142	11.83	0.60	0.288	0.069	---	0.22
143	11.92	0.60	0.288	0.069	---	0.22
144	12.00	0.60	0.288	0.068	---	0.22
145	12.08	0.83	0.400	0.068	---	0.33
146	12.17	0.83	0.400	0.068	---	0.33
147	12.25	0.83	0.400	0.067	---	0.33
148	12.33	0.87	0.416	0.067	---	0.35
149	12.42	0.87	0.416	0.067	---	0.35
150	12.50	0.87	0.416	0.066	---	0.35
151	12.58	0.93	0.448	0.066	---	0.38
152	12.67	0.93	0.448	0.066	---	0.38
153	12.75	0.93	0.448	0.065	---	0.38
154	12.83	0.97	0.464	0.065	---	0.40
155	12.92	0.97	0.464	0.065	---	0.40
156	13.00	0.97	0.464	0.064	---	0.40
157	13.08	1.13	0.544	0.064	---	0.48
158	13.17	1.13	0.544	0.064	---	0.48
159	13.25	1.13	0.544	0.063	---	0.48
160	13.33	1.13	0.544	0.063	---	0.48
161	13.42	1.13	0.544	0.063	---	0.48
162	13.50	1.13	0.544	0.062	---	0.48
163	13.58	0.77	0.368	0.062	---	0.31
164	13.67	0.77	0.368	0.062	---	0.31
165	13.75	0.77	0.368	0.061	---	0.31
166	13.83	0.77	0.368	0.061	---	0.31
167	13.92	0.77	0.368	0.061	---	0.31
168	14.00	0.77	0.368	0.060	---	0.31
169	14.08	0.90	0.432	0.060	---	0.37
170	14.17	0.90	0.432	0.060	---	0.37
171	14.25	0.90	0.432	0.060	---	0.37
172	14.33	0.87	0.416	0.059	---	0.36

173	14.42	0.87	0.416	0.059	---	0.36
174	14.50	0.87	0.416	0.059	---	0.36
175	14.58	0.87	0.416	0.058	---	0.36
176	14.67	0.87	0.416	0.058	---	0.36
177	14.75	0.87	0.416	0.058	---	0.36
178	14.83	0.83	0.400	0.057	---	0.34
179	14.92	0.83	0.400	0.057	---	0.34
180	15.00	0.83	0.400	0.057	---	0.34
181	15.08	0.80	0.384	0.057	---	0.33
182	15.17	0.80	0.384	0.056	---	0.33
183	15.25	0.80	0.384	0.056	---	0.33
184	15.33	0.77	0.368	0.056	---	0.31
185	15.42	0.77	0.368	0.055	---	0.31
186	15.50	0.77	0.368	0.055	---	0.31
187	15.58	0.63	0.304	0.055	---	0.25
188	15.67	0.63	0.304	0.055	---	0.25
189	15.75	0.63	0.304	0.054	---	0.25
190	15.83	0.63	0.304	0.054	---	0.25
191	15.92	0.63	0.304	0.054	---	0.25
192	16.00	0.63	0.304	0.053	---	0.25
193	16.08	0.13	0.064	0.053	---	0.01
194	16.17	0.13	0.064	0.053	---	0.01
195	16.25	0.13	0.064	0.053	---	0.01
196	16.33	0.13	0.064	0.052	---	0.01
197	16.42	0.13	0.064	0.052	---	0.01
198	16.50	0.13	0.064	0.052	---	0.01
199	16.58	0.10	0.048	0.052	0.043	0.00
200	16.67	0.10	0.048	0.051	0.043	0.00
201	16.75	0.10	0.048	0.051	0.043	0.00
202	16.83	0.10	0.048	0.051	0.043	0.00
203	16.92	0.10	0.048	0.051	0.043	0.00
204	17.00	0.10	0.048	0.050	0.043	0.00
205	17.08	0.17	0.080	0.050	---	0.03
206	17.17	0.17	0.080	0.050	---	0.03
207	17.25	0.17	0.080	0.050	---	0.03
208	17.33	0.17	0.080	0.049	---	0.03
209	17.42	0.17	0.080	0.049	---	0.03
210	17.50	0.17	0.080	0.049	---	0.03
211	17.58	0.17	0.080	0.049	---	0.03
212	17.67	0.17	0.080	0.048	---	0.03
213	17.75	0.17	0.080	0.048	---	0.03
214	17.83	0.13	0.064	0.048	---	0.02
215	17.92	0.13	0.064	0.048	---	0.02
216	18.00	0.13	0.064	0.047	---	0.02
217	18.08	0.13	0.064	0.047	---	0.02
218	18.17	0.13	0.064	0.047	---	0.02
219	18.25	0.13	0.064	0.047	---	0.02
220	18.33	0.13	0.064	0.046	---	0.02
221	18.42	0.13	0.064	0.046	---	0.02
222	18.50	0.13	0.064	0.046	---	0.02
223	18.58	0.10	0.048	0.046	---	0.00
224	18.67	0.10	0.048	0.046	---	0.00
225	18.75	0.10	0.048	0.045	---	0.00
226	18.83	0.07	0.032	0.045	0.029	0.00
227	18.92	0.07	0.032	0.045	0.029	0.00
228	19.00	0.07	0.032	0.045	0.029	0.00
229	19.08	0.10	0.048	0.044	---	0.00
230	19.17	0.10	0.048	0.044	---	0.00
231	19.25	0.10	0.048	0.044	---	0.00
232	19.33	0.13	0.064	0.044	---	0.02
233	19.42	0.13	0.064	0.044	---	0.02
234	19.50	0.13	0.064	0.043	---	0.02
235	19.58	0.10	0.048	0.043	---	0.00
236	19.67	0.10	0.048	0.043	---	0.00
237	19.75	0.10	0.048	0.043	---	0.01
238	19.83	0.07	0.032	0.043	0.029	0.00
239	19.92	0.07	0.032	0.042	0.029	0.00
240	20.00	0.07	0.032	0.042	0.029	0.00
241	20.08	0.10	0.048	0.042	---	0.01
242	20.17	0.10	0.048	0.042	---	0.01
243	20.25	0.10	0.048	0.042	---	0.01

244	20.33	0.10	0.048	0.042	---	0.01
245	20.42	0.10	0.048	0.041	---	0.01
246	20.50	0.10	0.048	0.041	---	0.01
247	20.58	0.10	0.048	0.041	---	0.01
248	20.67	0.10	0.048	0.041	---	0.01
249	20.75	0.10	0.048	0.041	---	0.01
250	20.83	0.07	0.032	0.041	0.029	0.00
251	20.92	0.07	0.032	0.040	0.029	0.00
252	21.00	0.07	0.032	0.040	0.029	0.00
253	21.08	0.10	0.048	0.040	---	0.01
254	21.17	0.10	0.048	0.040	---	0.01
255	21.25	0.10	0.048	0.040	---	0.01
256	21.33	0.07	0.032	0.040	0.029	0.00
257	21.42	0.07	0.032	0.039	0.029	0.00
258	21.50	0.07	0.032	0.039	0.029	0.00
259	21.58	0.10	0.048	0.039	---	0.01
260	21.67	0.10	0.048	0.039	---	0.01
261	21.75	0.10	0.048	0.039	---	0.01
262	21.83	0.07	0.032	0.039	0.029	0.00
263	21.92	0.07	0.032	0.039	0.029	0.00
264	22.00	0.07	0.032	0.038	0.029	0.00
265	22.08	0.10	0.048	0.038	---	0.01
266	22.17	0.10	0.048	0.038	---	0.01
267	22.25	0.10	0.048	0.038	---	0.01
268	22.33	0.07	0.032	0.038	0.029	0.00
269	22.42	0.07	0.032	0.038	0.029	0.00
270	22.50	0.07	0.032	0.038	0.029	0.00
271	22.58	0.07	0.032	0.038	0.029	0.00
272	22.67	0.07	0.032	0.038	0.029	0.00
273	22.75	0.07	0.032	0.037	0.029	0.00
274	22.83	0.07	0.032	0.037	0.029	0.00
275	22.92	0.07	0.032	0.037	0.029	0.00
276	23.00	0.07	0.032	0.037	0.029	0.00
277	23.08	0.07	0.032	0.037	0.029	0.00
278	23.17	0.07	0.032	0.037	0.029	0.00
279	23.25	0.07	0.032	0.037	0.029	0.00
280	23.33	0.07	0.032	0.037	0.029	0.00
281	23.42	0.07	0.032	0.037	0.029	0.00
282	23.50	0.07	0.032	0.037	0.029	0.00
283	23.58	0.07	0.032	0.037	0.029	0.00
284	23.67	0.07	0.032	0.037	0.029	0.00
285	23.75	0.07	0.032	0.036	0.029	0.00
286	23.83	0.07	0.032	0.036	0.029	0.00
287	23.92	0.07	0.032	0.036	0.029	0.00
288	24.00	0.07	0.032	0.036	0.029	0.00
Sum =		100.0			Sum =	30.4

Flood volume = Effective rainfall 2.53(In)
times area 126.1(Ac.)/[(In)/(Ft.)] = 26.6(Ac.Ft)
Total soil loss = 1.47(In)
Total soil loss = 15.403(Ac.Ft)
Total rainfall = 4.00(In)
Flood volume = 1159857.2 Cubic Feet
Total soil loss = 670954.1 Cubic Feet

Peak flow rate of this hydrograph = 59.639(CFS)

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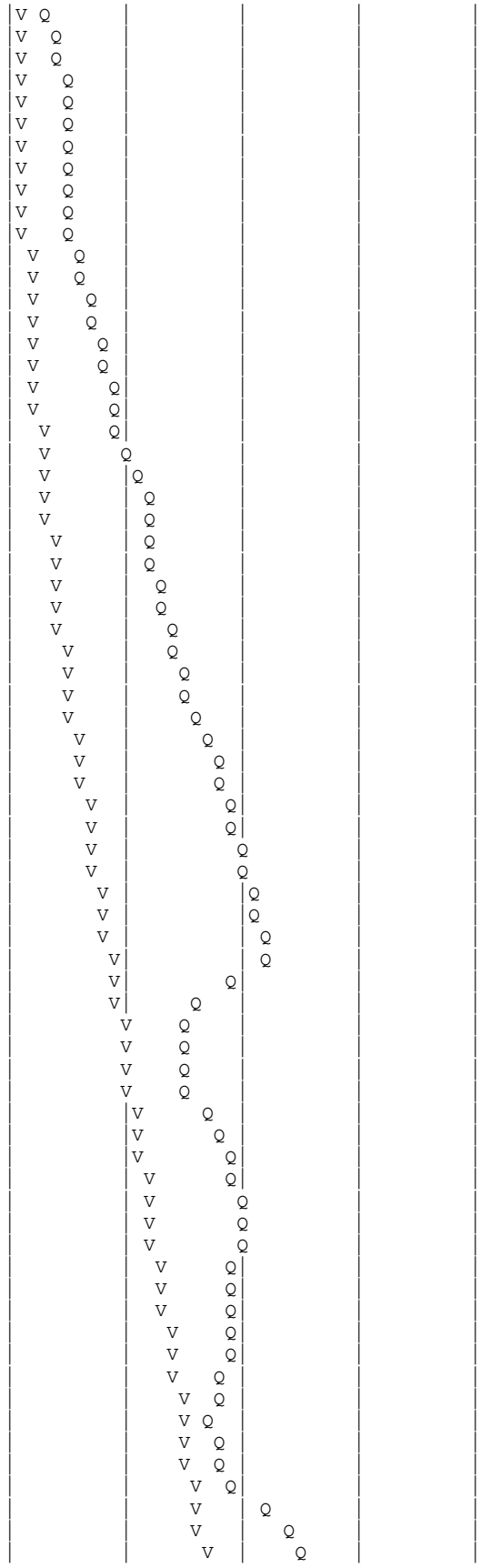
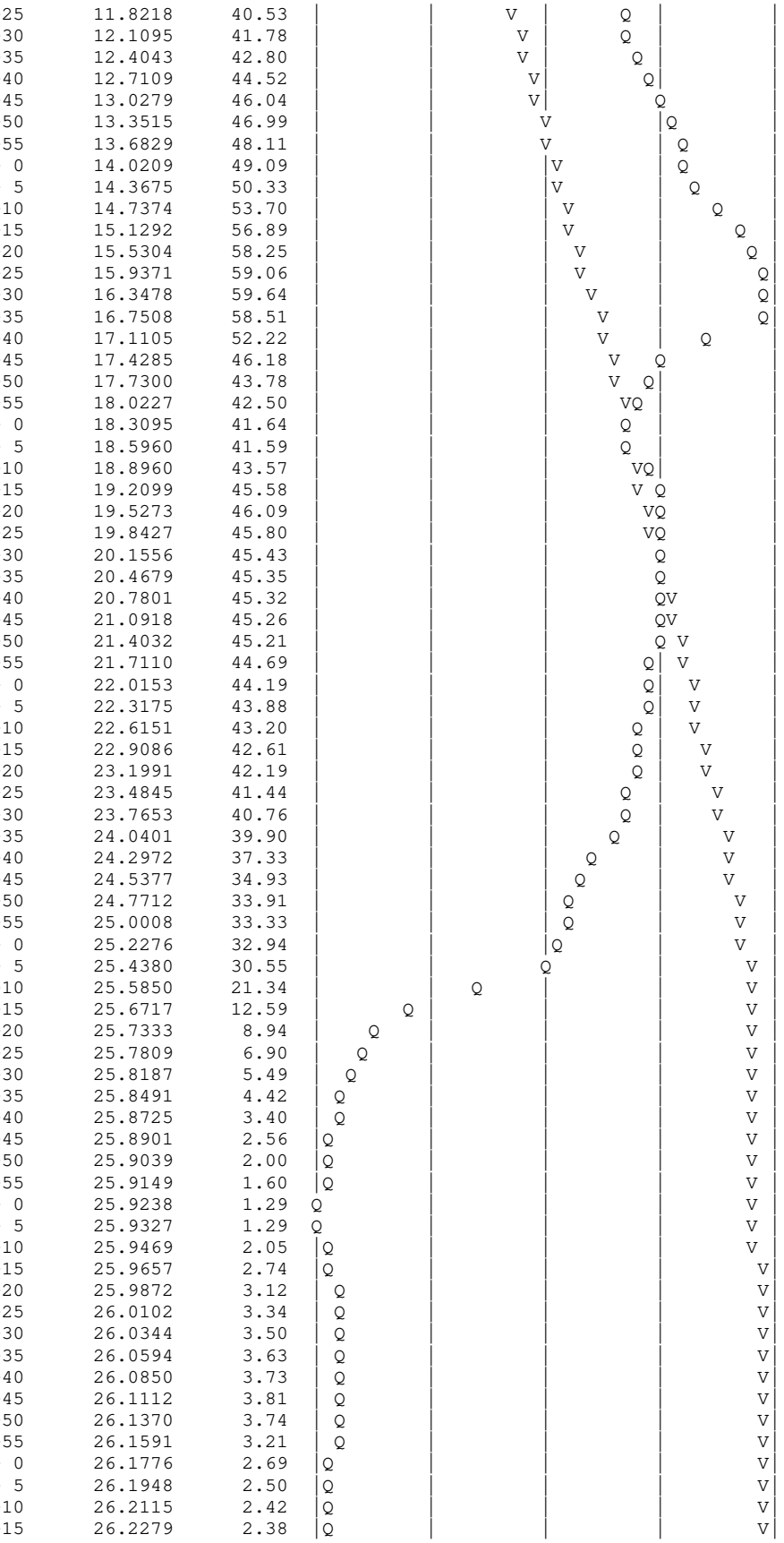
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	15.0	30.0	45.0	60.0
0+ 5	0.0002	0.03	Q	|	|	|	|
0+10	0.0012	0.15	Q	|	|	|	|
0+15	0.0030	0.26	Q	|	|	|	|
0+20	0.0053	0.32	Q	|	|	|	|
0+25	0.0081	0.41	Q	|	|	|	|
0+30	0.0114	0.49	Q	|	|	|	|

0+35	0.0151	0.52	Q	|	|	|	|
0+40	0.0188	0.55	Q	|	|	|	|
0+45	0.0227	0.56	Q	|	|	|	|
0+50	0.0267	0.59	Q	|	|	|	|
0+55	0.0313	0.66	Q	|	|	|	|
1+ 0	0.0363	0.72	Q	|	|	|	|
1+ 5	0.0413	0.74	Q	|	|	|	|
1+10	0.0461	0.70	Q	|	|	|	|
1+15	0.0506	0.65	Q	|	|	|	|
1+20	0.0550	0.64	Q	|	|	|	|
1+25	0.0594	0.63	Q	|	|	|	|
1+30	0.0637	0.63	Q	|	|	|	|
1+35	0.0679	0.62	Q	|	|	|	|
1+40	0.0722	0.62	Q	|	|	|	|
1+45	0.0765	0.62	Q	|	|	|	|
1+50	0.0808	0.63	Q	|	|	|	|
1+55	0.0855	0.69	Q	|	|	|	|
2+ 0	0.0907	0.75	Q	|	|	|	|
2+ 5	0.0960	0.77	Q	|	|	|	|
2+10	0.1013	0.78	Q	|	|	|	|
2+15	0.1068	0.79	Q	|	|	|	|
2+20	0.1122	0.79	Q	|	|	|	|
2+25	0.1177	0.80	Q	|	|	|	|
2+30	0.1233	0.80	Q	|	|	|	|
2+35	0.1289	0.82	Q	|	|	|	|
2+40	0.1350	0.88	Q	|	|	|	|
2+45	0.1415	0.94	Q	|	|	|	|
2+50	0.1481	0.97	Q	|	|	|	|
2+55	0.1549	0.98	Q	|	|	|	|
3+ 0	0.1617	0.99	Q	|	|	|	|
3+ 5	0.1686	1.00	Q	|	|	|	|
3+10	0.1755	1.00	Q	|	|	|	|
3+15	0.1824	1.01	Q	|	|	|	|
3+20	0.1894	1.01	Q	|	|	|	|
3+25	0.1963	1.01	Q	|	|	|	|
3+30	0.2033	1.01	Q	|	|	|	|
3+35	0.2103	1.01	Q	|	|	|	|
3+40	0.2173	1.02	Q	|	|	|	|
3+45	0.2243	1.02	Q	|	|	|	|
3+50	0.2314	1.03	Q	|	|	|	|
3+55	0.2389	1.09	Q	|	|	|	|
4+ 0	0.2468	1.15	Q	|	|	|	|
4+ 5	0.2549	1.17	Q	|	|	|	|
4+10	0.2631	1.19	Q	|	|	|	|
4+15	0.2713	1.19	Q	|	|	|	|
4+20	0.2794	1.18	Q	|	|	|	|
4+25	0.2870	1.09	Q	|	|	|	|
4+30	0.2940	1.03	Q	|	|	|	|
4+35	0.3012	1.03	Q	|	|	|	|
4+40	0.3085	1.06	Q	|	|	|	|
4+45	0.3160	1.09	Q	|	|	|	|
4+50	0.3248	1.27	Q	|	|	|	|
4+55	0.3380	1.92	VQ	|	|	|	|
5+ 0	0.3555	2.54	VQ	|	|	|	|
5+ 5	0.3739	2.67	VQ	|	|	|	|
5+10	0.3890	2.19	VQ	|	|	|	|
5+15	0.4006	1.69	VQ	|	|	|	|
5+20	0.4112	1.54	VQ	|	|	|	|
5+25	0.4220	1.56	VQ	|	|	|	|
5+30	0.4332	1.63	VQ	|	|	|	|
5+35	0.4456	1.81	VQ	|	|	|	|
5+40	0.4625	2.45	VQ	|	|	|	|
5+45	0.4837	3.07	V Q	|	|	|	|
5+50	0.5067	3.35	V Q	|	|	|	|
5+55	0.5310	3.53	V Q	|	|	|	|
6+ 0	0.5563	3.67	V Q	|	|	|	|
6+ 5	0.5833	3.92	V Q	|	|	|	|
6+10	0.6151	4.62	V Q	|	|	|	|
6+15	0.6514	5.27	V Q	|	|	|	|
6+20	0.6899	5.59	|V Q	|	|	|	|
6+25	0.7298	5.80	|V Q	|	|	|	|

6+30	0.7709	5.96	
6+35	0.8139	6.24	
6+40	0.8617	6.95	
6+45	0.9143	7.63	
6+50	0.9690	7.95	
6+55	1.0252	8.16	
7+ 0	1.0825	8.32	
7+ 5	1.1407	8.45	
7+10	1.1997	8.56	
7+15	1.2593	8.67	
7+20	1.3206	8.89	
7+25	1.3865	9.57	
7+30	1.4568	10.21	
7+35	1.5301	10.65	
7+40	1.6090	11.45	
7+45	1.6929	12.18	
7+50	1.7802	12.67	
7+55	1.8732	13.51	
8+ 0	1.9714	14.26	
8+ 5	2.0742	14.93	
8+10	2.1870	16.38	
8+15	2.3091	17.72	
8+20	2.4355	18.36	
8+25	2.5647	18.75	
8+30	2.6959	19.05	
8+35	2.8296	19.42	
8+40	2.9687	20.20	
8+45	3.1129	20.93	
8+50	3.2605	21.43	
8+55	3.4139	22.27	
9+ 0	3.5725	23.03	
9+ 5	3.7357	23.70	
9+10	3.9089	25.15	
9+15	4.0914	26.50	
9+20	4.2791	27.26	
9+25	4.4736	28.24	
9+30	4.6741	29.10	
9+35	4.8786	29.70	
9+40	5.0895	30.61	
9+45	5.3059	31.43	
9+50	5.5263	32.00	
9+55	5.7528	32.88	
10+ 0	5.9847	33.68	
10+ 5	6.2127	33.10	
10+10	6.4135	29.16	
10+15	6.5882	25.37	
10+20	6.7526	23.87	
10+25	6.9115	23.07	
10+30	7.0668	22.55	
10+35	7.2245	22.89	
10+40	7.4011	25.64	
10+45	7.5962	28.34	
10+50	7.7985	29.37	
10+55	8.0046	29.92	
11+ 0	8.2133	30.31	
11+ 5	8.4231	30.45	
11+10	8.6301	30.06	
11+15	8.8340	29.61	
11+20	9.0376	29.57	
11+25	9.2415	29.60	
11+30	9.4456	29.64	
11+35	9.6482	29.41	
11+40	9.8428	28.26	
11+45	10.0300	27.19	
11+50	10.2150	26.87	
11+55	10.4026	27.23	
12+ 0	10.5930	27.65	
12+ 5	10.7911	28.77	
12+10	11.0187	33.05	
12+15	11.2743	37.11	
12+20	11.5426	38.96	

12+25	11.8218	40.53	
12+30	12.1095	41.78	
12+35	12.4043	42.80	
12+40	12.7109	44.52	
12+45	13.0279	46.04	
12+50	13.3515	46.99	
12+55	13.6829	48.11	
13+ 0	14.0209	49.09	
13+ 5	14.3675	50.33	
13+10	14.7374	53.70	
13+15	15.1292	56.89	
13+20	15.5304	58.25	
13+25	15.9371	59.06	
13+30	16.3478	59.64	
13+35	16.7508	58.51	
13+40	17.1105	52.22	
13+45	17.4285	46.18	
13+50	17.7300	43.78	
13+55	18.0227	42.50	
14+ 0	18.3095	41.64	
14+ 5	18.5960	41.59	
14+10	18.8960	43.57	
14+15	19.2099	45.58	
14+20	19.5273	46.09	
14+25	19.8427	45.80	
14+30	20.1556	45.43	
14+35	20.4679	45.35	
14+40	20.7801	45.32	
14+45	21.0918	45.26	
14+50	21.4032	45.21	
14+55	21.7110	44.69	
15+ 0	22.0153	44.19	
15+ 5	22.3175	43.88	
15+10	22.6151	43.20	
15+15	22.9086	42.61	
15+20	23.1991	42.19	
15+25	23.4845	41.44	
15+30	23.7653	40.76	
15+35	24.0401	39.90	
15+40	24.2972	37.33	
15+45	24.5377	34.93	
15+50	24.7712	33.91	
15+55	25.0008	33.33	
16+ 0	25.2276	32.94	
16+ 5	25.4380	30.55	
16+10	25.5850	21.34	
16+15	25.6717	12.59	
16+20	25.7333	8.94	
16+25	25.7809	6.90	
16+30	25.8187	5.49	
16+35	25.8491	4.42	
16+40	25.8725	3.40	
16+45	25.8901	2.56	
16+50	25.9039	2.00	
16+55	25.9149	1.60	
17+ 0	25.9238	1.29	
17+ 5	25.9327	1.29	
17+10	25.9469	2.05	
17+15	25.9657	2.74	
17+20	25.9872	3.12	
17+25	26.0102	3.34	
17+30	26.0344	3.50	
17+35	26.0594	3.63	
17+40	26.0850	3.73	
17+45	26.1112	3.81	
17+50	26.1370	3.74	
17+55	26.1591	3.21	
18+ 0	26.1776	2.69	
18+ 5	26.1948	2.50	
18+10	26.2115	2.42	
18+15	26.2279	2.38	

18+20	26.2440	2.34	|Q	|	|	|	V|
18+25	26.2600	2.33	|Q	|	|	|	V|
18+30	26.2760	2.32	|Q	|	|	|	V|
18+35	26.2910	2.18	|Q	|	|	|	V|
18+40	26.3019	1.58	|Q	|	|	|	V|
18+45	26.3089	1.02	Q	|	|	|	V|
18+50	26.3144	0.80	Q	|	|	|	V|
18+55	26.3192	0.69	Q	|	|	|	V|
19+ 0	26.3234	0.62	Q	|	|	|	V|
19+ 5	26.3273	0.57	Q	|	|	|	V|
19+10	26.3311	0.55	Q	|	|	|	V|
19+15	26.3348	0.54	Q	|	|	|	V|
19+20	26.3394	0.67	Q	|	|	|	V|
19+25	26.3483	1.28	Q	|	|	|	V|
19+30	26.3611	1.86	|Q	|	|	|	V|
19+35	26.3746	1.97	|Q	|	|	|	V|
19+40	26.3851	1.51	|Q	|	|	|	V|
19+45	26.3922	1.04	Q	|	|	|	V|
19+50	26.3983	0.88	Q	|	|	|	V|
19+55	26.4034	0.74	Q	|	|	|	V|
20+ 0	26.4077	0.62	Q	|	|	|	V|
20+ 5	26.4117	0.59	Q	|	|	|	V|
20+10	26.4162	0.65	Q	|	|	|	V|
20+15	26.4213	0.73	Q	|	|	|	V|
20+20	26.4265	0.77	Q	|	|	|	V|
20+25	26.4320	0.79	Q	|	|	|	V|
20+30	26.4376	0.82	Q	|	|	|	V|
20+35	26.4433	0.83	Q	|	|	|	V|
20+40	26.4492	0.85	Q	|	|	|	V|
20+45	26.4551	0.86	Q	|	|	|	V|
20+50	26.4609	0.85	Q	|	|	|	V|
20+55	26.4658	0.71	Q	|	|	|	V|
21+ 0	26.4697	0.57	Q	|	|	|	V|
21+ 5	26.4735	0.56	Q	|	|	|	V|
21+10	26.4784	0.71	Q	|	|	|	V|
21+15	26.4844	0.87	Q	|	|	|	V|
21+20	26.4905	0.89	Q	|	|	|	V|
21+25	26.4955	0.74	Q	|	|	|	V|
21+30	26.4995	0.58	Q	|	|	|	V|
21+35	26.5034	0.57	Q	|	|	|	V|
21+40	26.5086	0.75	Q	|	|	|	V|
21+45	26.5150	0.94	Q	|	|	|	V|
21+50	26.5216	0.96	Q	|	|	|	V|
21+55	26.5270	0.78	Q	|	|	|	V|
22+ 0	26.5312	0.60	Q	|	|	|	V|
22+ 5	26.5352	0.59	Q	|	|	|	V|
22+10	26.5407	0.80	Q	|	|	|	V|
22+15	26.5477	1.01	Q	|	|	|	V|
22+20	26.5548	1.04	Q	|	|	|	V|
22+25	26.5606	0.84	Q	|	|	|	V|
22+30	26.5649	0.62	Q	|	|	|	V|
22+35	26.5686	0.55	Q	|	|	|	V|
22+40	26.5721	0.51	Q	|	|	|	V|
22+45	26.5755	0.48	Q	|	|	|	V|
22+50	26.5786	0.46	Q	|	|	|	V|
22+55	26.5817	0.45	Q	|	|	|	V|
23+ 0	26.5847	0.44	Q	|	|	|	V|
23+ 5	26.5877	0.43	Q	|	|	|	V|
23+10	26.5906	0.42	Q	|	|	|	V|
23+15	26.5935	0.42	Q	|	|	|	V|
23+20	26.5964	0.42	Q	|	|	|	V|
23+25	26.5993	0.41	Q	|	|	|	V|
23+30	26.6021	0.41	Q	|	|	|	V|
23+35	26.6049	0.41	Q	|	|	|	V|
23+40	26.6077	0.41	Q	|	|	|	V|
23+45	26.6105	0.41	Q	|	|	|	V|
23+50	26.6133	0.41	Q	|	|	|	V|
23+55	26.6161	0.41	Q	|	|	|	V|
24+ 0	26.6189	0.41	Q	|	|	|	V|
24+ 5	26.6215	0.38	Q	|	|	|	V|
24+10	26.6233	0.26	Q	|	|	|	V|

24+15	26.6242	0.14	Q				V
24+20	26.6249	0.10	Q				V
24+25	26.6254	0.07	Q				V
24+30	26.6257	0.05	Q				V
24+35	26.6260	0.04	Q				V
24+40	26.6262	0.03	Q				V
24+45	26.6264	0.02	Q				V
24+50	26.6265	0.02	Q				V
24+55	26.6265	0.01	Q				V
25+ 0	26.6266	0.01	Q				V
25+ 5	26.6266	0.01	Q				V
25+10	26.6267	0.00	Q				V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930PUH1241.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
1 YEAR STORM EVENT PROPOSED UH
1930PUH1
DS

Drainage Area = 127.12(Ac.) = 0.199 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 127.12(Ac.) = 0.199 Sq. Mi.
Length along longest watercourse = 5048.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.956 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 29.90(Ft.)
Slope along watercourse = 31.2742 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.140 Hr.
Lag time = 8.40 Min.
25% of lag time = 2.10 Min.
40% of lag time = 3.36 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	1.60	203.39

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	4.00	508.48

STORM EVENT (YEAR) = 1.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.175(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.174(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
127.120	69.00	0.900

Total Area Entered = 127.12(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	59.527	8.108	10.388
2	0.167	119.054	33.632	43.087
3	0.250	178.581	26.735	34.252
4	0.333	238.109	10.389	13.309
5	0.417	297.636	6.125	7.847
6	0.500	357.163	4.147	5.313
7	0.583	416.690	2.960	3.792
8	0.667	476.217	2.078	2.663
9	0.750	535.744	1.719	2.202
10	0.833	595.271	1.279	1.638
11	0.917	654.799	0.977	1.251
12	1.000	714.326	0.697	0.893
13	1.083	773.853	0.595	0.763
14	1.167	833.380	0.559	0.716
			Sum = 100.000 Sum=	128.113

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.009	0.193	0.002	0.01
2	0.17	0.07	0.009	0.193	0.002	0.01
3	0.25	0.07	0.009	0.192	0.002	0.01
4	0.33	0.10	0.014	0.191	0.003	0.01
5	0.42	0.10	0.014	0.190	0.003	0.01
6	0.50	0.10	0.014	0.190	0.003	0.01
7	0.58	0.10	0.014	0.189	0.003	0.01
8	0.67	0.10	0.014	0.188	0.003	0.01
9	0.75	0.10	0.014	0.187	0.003	0.01
10	0.83	0.13	0.019	0.187	0.003	0.02
11	0.92	0.13	0.019	0.186	0.003	0.02
12	1.00	0.13	0.019	0.185	0.003	0.02
13	1.08	0.10	0.014	0.184	0.003	0.01
14	1.17	0.10	0.014	0.184	0.003	0.01
15	1.25	0.10	0.014	0.183	0.003	0.01
16	1.33	0.10	0.014	0.182	0.003	0.01
17	1.42	0.10	0.014	0.182	0.003	0.01
18	1.50	0.10	0.014	0.181	0.003	0.01
19	1.58	0.10	0.014	0.180	0.003	0.01
20	1.67	0.10	0.014	0.179	0.003	0.01
21	1.75	0.10	0.014	0.179	0.003	0.01
22	1.83	0.13	0.019	0.178	0.003	0.02
23	1.92	0.13	0.019	0.177	0.003	0.02
24	2.00	0.13	0.019	0.176	0.003	0.02
25	2.08	0.13	0.019	0.176	0.003	0.02
26	2.17	0.13	0.019	0.175	0.003	0.02
27	2.25	0.13	0.019	0.174	0.003	0.02
28	2.33	0.13	0.019	0.174	0.003	0.02
29	2.42	0.13	0.019	0.173	0.003	0.02
30	2.50	0.13	0.019	0.172	0.003	0.02
31	2.58	0.17	0.023	0.172	0.004	0.02

32	2.67	0.17	0.023	0.171	0.004	0.02
33	2.75	0.17	0.023	0.170	0.004	0.02
34	2.83	0.17	0.023	0.169	0.004	0.02
35	2.92	0.17	0.023	0.169	0.004	0.02
36	3.00	0.17	0.023	0.168	0.004	0.02
37	3.08	0.17	0.023	0.167	0.004	0.02
38	3.17	0.17	0.023	0.167	0.004	0.02
39	3.25	0.17	0.023	0.166	0.004	0.02
40	3.33	0.17	0.023	0.165	0.004	0.02
41	3.42	0.17	0.023	0.165	0.004	0.02
42	3.50	0.17	0.023	0.164	0.004	0.02
43	3.58	0.17	0.023	0.163	0.004	0.02
44	3.67	0.17	0.023	0.162	0.004	0.02
45	3.75	0.17	0.023	0.162	0.004	0.02
46	3.83	0.20	0.028	0.161	0.005	0.02
47	3.92	0.20	0.028	0.160	0.005	0.02
48	4.00	0.20	0.028	0.160	0.005	0.02
49	4.08	0.20	0.028	0.159	0.005	0.02
50	4.17	0.20	0.028	0.158	0.005	0.02
51	4.25	0.20	0.028	0.158	0.005	0.02
52	4.33	0.23	0.033	0.157	0.006	0.03
53	4.42	0.23	0.033	0.156	0.006	0.03
54	4.50	0.23	0.033	0.156	0.006	0.03
55	4.58	0.23	0.033	0.155	0.006	0.03
56	4.67	0.23	0.033	0.154	0.006	0.03
57	4.75	0.23	0.033	0.154	0.006	0.03
58	4.83	0.27	0.038	0.153	0.007	0.03
59	4.92	0.27	0.038	0.152	0.007	0.03
60	5.00	0.27	0.038	0.152	0.007	0.03
61	5.08	0.20	0.028	0.151	0.005	0.02
62	5.17	0.20	0.028	0.150	0.005	0.02
63	5.25	0.20	0.028	0.150	0.005	0.02
64	5.33	0.23	0.033	0.149	0.006	0.03
65	5.42	0.23	0.033	0.148	0.006	0.03
66	5.50	0.23	0.033	0.148	0.006	0.03
67	5.58	0.27	0.038	0.147	0.007	0.03
68	5.67	0.27	0.038	0.147	0.007	0.03
69	5.75	0.27	0.038	0.146	0.007	0.03
70	5.83	0.27	0.038	0.145	0.007	0.03
71	5.92	0.27	0.038	0.145	0.007	0.03
72	6.00	0.27	0.038	0.144	0.007	0.03
73	6.08	0.30	0.042	0.143	0.008	0.03
74	6.17	0.30	0.042	0.143	0.008	0.03
75	6.25	0.30	0.042	0.142	0.008	0.03
76	6.33	0.30	0.042	0.141	0.008	0.03
77	6.42	0.30	0.042	0.141	0.008	0.03
78	6.50	0.30	0.042	0.140	0.008	0.03
79	6.58	0.33	0.047	0.140	0.008	0.04
80	6.67	0.33	0.047	0.139	0.008	0.04
81	6.75	0.33	0.047	0.138	0.008	0.04
82	6.83	0.33	0.047	0.138	0.008	0.04
83	6.92	0.33	0.047	0.137	0.008	0.04
84	7.00	0.33	0.047	0.136	0.008	0.04
85	7.08	0.33	0.047	0.136	0.008	0.04
86	7.17	0.33	0.047	0.135	0.008	0.04
87	7.25	0.33	0.047	0.135	0.008	0.04
88	7.33	0.37	0.052	0.134	0.009	0.04
89	7.42	0.37	0.052	0.133	0.009	0.04
90	7.50	0.37	0.052	0.133	0.009	0.04
91	7.58	0.40	0.056	0.132	0.010	0.05
92	7.67	0.40	0.056	0.131	0.010	0.05
93	7.75	0.40	0.056	0.131	0.010	0.05
94	7.83	0.43	0.061	0.130	0.011	0.05
95	7.92	0.43	0.061	0.130	0.011	0.05
96	8.00	0.43	0.061	0.129	0.011	0.05
97	8.08	0.50	0.070	0.128	0.013	0.06
98	8.17	0.50	0.070	0.128	0.013	0.06
99	8.25	0.50	0.070	0.127	0.013	0.06
100	8.33	0.50	0.070	0.127	0.013	0.06
101	8.42	0.50	0.070	0.126	0.013	0.06
102	8.50	0.50	0.070	0.125	0.013	0.06

103	8.58	0.53	0.075	0.125	0.014	0.06
104	8.67	0.53	0.075	0.124	0.014	0.06
105	8.75	0.53	0.075	0.124	0.014	0.06
106	8.83	0.57	0.080	0.123	0.014	0.07
107	8.92	0.57	0.080	0.123	0.014	0.07
108	9.00	0.57	0.080	0.122	0.014	0.07
109	9.08	0.63	0.089	0.121	0.016	0.07
110	9.17	0.63	0.089	0.121	0.016	0.07
111	9.25	0.63	0.089	0.120	0.016	0.07
112	9.33	0.67	0.094	0.120	0.017	0.08
113	9.42	0.67	0.094	0.119	0.017	0.08
114	9.50	0.67	0.094	0.119	0.017	0.08
115	9.58	0.70	0.099	0.118	0.018	0.08
116	9.67	0.70	0.099	0.117	0.018	0.08
117	9.75	0.70	0.099	0.117	0.018	0.08
118	9.83	0.73	0.103	0.116	0.019	0.08
119	9.92	0.73	0.103	0.116	0.019	0.08
120	10.00	0.73	0.103	0.115	0.019	0.08
121	10.08	0.50	0.070	0.115	0.013	0.06
122	10.17	0.50	0.070	0.114	0.013	0.06
123	10.25	0.50	0.070	0.113	0.013	0.06
124	10.33	0.50	0.070	0.113	0.013	0.06
125	10.42	0.50	0.070	0.112	0.013	0.06
126	10.50	0.50	0.070	0.112	0.013	0.06
127	10.58	0.67	0.094	0.111	0.017	0.08
128	10.67	0.67	0.094	0.111	0.017	0.08
129	10.75	0.67	0.094	0.110	0.017	0.08
130	10.83	0.67	0.094	0.110	0.017	0.08
131	10.92	0.67	0.094	0.109	0.017	0.08
132	11.00	0.67	0.094	0.109	0.017	0.08
133	11.08	0.63	0.089	0.108	0.016	0.07
134	11.17	0.63	0.089	0.108	0.016	0.07
135	11.25	0.63	0.089	0.107	0.016	0.07
136	11.33	0.63	0.089	0.106	0.016	0.07
137	11.42	0.63	0.089	0.106	0.016	0.07
138	11.50	0.63	0.089	0.105	0.016	0.07
139	11.58	0.57	0.080	0.105	0.014	0.07
140	11.67	0.57	0.080	0.104	0.014	0.07
141	11.75	0.57	0.080	0.104	0.014	0.07
142	11.83	0.60	0.085	0.103	0.015	0.07
143	11.92	0.60	0.085	0.103	0.015	0.07
144	12.00	0.60	0.085	0.102	0.015	0.07
145	12.08	0.83	0.117	0.102	---	0.02
146	12.17	0.83	0.117	0.101	---	0.02
147	12.25	0.83	0.117	0.101	---	0.02
148	12.33	0.87	0.122	0.100	---	0.02
149	12.42	0.87	0.122	0.100	---	0.02
150	12.50	0.87	0.122	0.099	---	0.02
151	12.58	0.93	0.132	0.099	---	0.03
152	12.67	0.93	0.132	0.098	---	0.03
153	12.75	0.93	0.132	0.098	---	0.03
154	12.83	0.97	0.136	0.097	---	0.04
155	12.92	0.97	0.136	0.097	---	0.04
156	13.00	0.97	0.136	0.096	---	0.04
157	13.08	1.13	0.160	0.096	---	0.06
158	13.17	1.13	0.160	0.095	---	0.06
159	13.25	1.13	0.160	0.095	---	0.06
160	13.33	1.13	0.160	0.094	---	0.07
161	13.42	1.13	0.160	0.094	---	0.07
162	13.50	1.13	0.160	0.093	---	0.07
163	13.58	0.77	0.108	0.093	---	0.02
164	13.67	0.77	0.108	0.092	---	0.02
165	13.75	0.77	0.108	0.092	---	0.02
166	13.83	0.77	0.108	0.092	---	0.02
167	13.92	0.77	0.108	0.091	---	0.02
168	14.00	0.77	0.108	0.091	---	0.02
169	14.08	0.90	0.127	0.090	---	0.04
170	14.17	0.90	0.127	0.090	---	0.04
171	14.25	0.90	0.127	0.089	---	0.04
172	14.33	0.87	0.122	0.089	---	0.03
173	14.42	0.87	0.122	0.088	---	0.03

174	14.50	0.87	0.122	0.088	---	0.03
175	14.58	0.87	0.122	0.087	---	0.03
176	14.67	0.87	0.122	0.087	---	0.04
177	14.75	0.87	0.122	0.086	---	0.04
178	14.83	0.83	0.117	0.086	---	0.03
179	14.92	0.83	0.117	0.086	---	0.03
180	15.00	0.83	0.117	0.085	---	0.03
181	15.08	0.80	0.113	0.085	---	0.03
182	15.17	0.80	0.113	0.084	---	0.03
183	15.25	0.80	0.113	0.084	---	0.03
184	15.33	0.77	0.108	0.083	---	0.02
185	15.42	0.77	0.108	0.083	---	0.03
186	15.50	0.77	0.108	0.083	---	0.03
187	15.58	0.63	0.089	0.082	---	0.01
188	15.67	0.63	0.089	0.082	---	0.01
189	15.75	0.63	0.089	0.081	---	0.01
190	15.83	0.63	0.089	0.081	---	0.01
191	15.92	0.63	0.089	0.080	---	0.01
192	16.00	0.63	0.089	0.080	---	0.01
193	16.08	0.13	0.019	0.080	0.003	0.02
194	16.17	0.13	0.019	0.079	0.003	0.02
195	16.25	0.13	0.019	0.079	0.003	0.02
196	16.33	0.13	0.019	0.078	0.003	0.02
197	16.42	0.13	0.019	0.078	0.003	0.02
198	16.50	0.13	0.019	0.078	0.003	0.02
199	16.58	0.10	0.014	0.077	0.003	0.01
200	16.67	0.10	0.014	0.077	0.003	0.01
201	16.75	0.10	0.014	0.076	0.003	0.01
202	16.83	0.10	0.014	0.076	0.003	0.01
203	16.92	0.10	0.014	0.076	0.003	0.01
204	17.00	0.10	0.014	0.075	0.003	0.01
205	17.08	0.17	0.023	0.075	0.004	0.02
206	17.17	0.17	0.023	0.075	0.004	0.02
207	17.25	0.17	0.023	0.074	0.004	0.02
208	17.33	0.17	0.023	0.074	0.004	0.02
209	17.42	0.17	0.023	0.073	0.004	0.02
210	17.50	0.17	0.023	0.073	0.004	0.02
211	17.58	0.17	0.023	0.073	0.004	0.02
212	17.67	0.17	0.023	0.072	0.004	0.02
213	17.75	0.17	0.023	0.072	0.004	0.02
214	17.83	0.13	0.019	0.072	0.003	0.02
215	17.92	0.13	0.019	0.071	0.003	0.02
216	18.00	0.13	0.019	0.071	0.003	0.02
217	18.08	0.13	0.019	0.071	0.003	0.02
218	18.17	0.13	0.019	0.070	0.003	0.02
219	18.25	0.13	0.019	0.070	0.003	0.02
220	18.33	0.13	0.019	0.070	0.003	0.02
221	18.42	0.13	0.019	0.069	0.003	0.02
222	18.50	0.13	0.019	0.069	0.003	0.02
223	18.58	0.10	0.014	0.069	0.003	0.01
224	18.67	0.10	0.014	0.068	0.003	0.01
225	18.75	0.10	0.014	0.068	0.003	0.01
226	18.83	0.07	0.009	0.068	0.002	0.01
227	18.92	0.07	0.009	0.067	0.002	0.01
228	19.00	0.07	0.009	0.067	0.002	0.01
229	19.08	0.10	0.014	0.067	0.003	0.01
230	19.17	0.10	0.014	0.066	0.003	0.01
231	19.25	0.10	0.014	0.066	0.003	0.01
232	19.33	0.13	0.019	0.066	0.003	0.02
233	19.42	0.13	0.019	0.065	0.003	0.02
234	19.50	0.13	0.019	0.065	0.003	0.02
235	19.58	0.10	0.014	0.065	0.003	0.01
236	19.67	0.10	0.014	0.064	0.003	0.01
237	19.75	0.10	0.014	0.064	0.003	0.01
238	19.83	0.07	0.009	0.064	0.002	0.01
239	19.92	0.07	0.009	0.064	0.002	0.01
240	20.00	0.07	0.009	0.063	0.002	0.01
241	20.08	0.10	0.014	0.063	0.003	0.01
242	20.17	0.10	0.014	0.063	0.003	0.01
243	20.25	0.10	0.014	0.062	0.003	0.01
244	20.33	0.10	0.014	0.062	0.003	0.01

245	20.42	0.10	0.014	0.062	0.003	0.01
246	20.50	0.10	0.014	0.062	0.003	0.01
247	20.58	0.10	0.014	0.061	0.003	0.01
248	20.67	0.10	0.014	0.061	0.003	0.01
249	20.75	0.10	0.014	0.061	0.003	0.01
250	20.83	0.07	0.009	0.061	0.002	0.01
251	20.92	0.07	0.009	0.060	0.002	0.01
252	21.00	0.07	0.009	0.060	0.002	0.01
253	21.08	0.10	0.014	0.060	0.003	0.01
254	21.17	0.10	0.014	0.060	0.003	0.01
255	21.25	0.10	0.014	0.059	0.003	0.01
256	21.33	0.07	0.009	0.059	0.002	0.01
257	21.42	0.07	0.009	0.059	0.002	0.01
258	21.50	0.07	0.009	0.059	0.002	0.01
259	21.58	0.10	0.014	0.059	0.003	0.01
260	21.67	0.10	0.014	0.058	0.003	0.01
261	21.75	0.10	0.014	0.058	0.003	0.01
262	21.83	0.07	0.009	0.058	0.002	0.01
263	21.92	0.07	0.009	0.058	0.002	0.01
264	22.00	0.07	0.009	0.058	0.002	0.01
265	22.08	0.10	0.014	0.057	0.003	0.01
266	22.17	0.10	0.014	0.057	0.003	0.01
267	22.25	0.10	0.014	0.057	0.003	0.01
268	22.33	0.07	0.009	0.057	0.002	0.01
269	22.42	0.07	0.009	0.057	0.002	0.01
270	22.50	0.07	0.009	0.057	0.002	0.01
271	22.58	0.07	0.009	0.056	0.002	0.01
272	22.67	0.07	0.009	0.056	0.002	0.01
273	22.75	0.07	0.009	0.056	0.002	0.01
274	22.83	0.07	0.009	0.056	0.002	0.01
275	22.92	0.07	0.009	0.056	0.002	0.01
276	23.00	0.07	0.009	0.056	0.002	0.01
277	23.08	0.07	0.009	0.055	0.002	0.01
278	23.17	0.07	0.009	0.055	0.002	0.01
279	23.25	0.07	0.009	0.055	0.002	0.01
280	23.33	0.07	0.009	0.055	0.002	0.01
281	23.42	0.07	0.009	0.055	0.002	0.01
282	23.50	0.07	0.009	0.055	0.002	0.01
283	23.58	0.07	0.009	0.055	0.002	0.01
284	23.67	0.07	0.009	0.055	0.002	0.01
285	23.75	0.07	0.009	0.055	0.002	0.01
286	23.83	0.07	0.009	0.055	0.002	0.01
287	23.92	0.07	0.009	0.055	0.002	0.01
288	24.00	0.07	0.009	0.055	0.002	0.01
Sum =		100.0			Sum =	8.3

Flood volume = Effective rainfall 0.69(In)
times area 127.1(Ac.)/[(In)/(Ft.)] = 7.3(Ac.Ft)
Total soil loss = 0.49(In)
Total soil loss = 5.156(Ac.Ft)
Total rainfall = 1.17(In)
Flood volume = 317346.2 Cubic Feet
Total soil loss = 224606.5 Cubic Feet

Peak flow rate of this hydrograph = 10.622(CFS)

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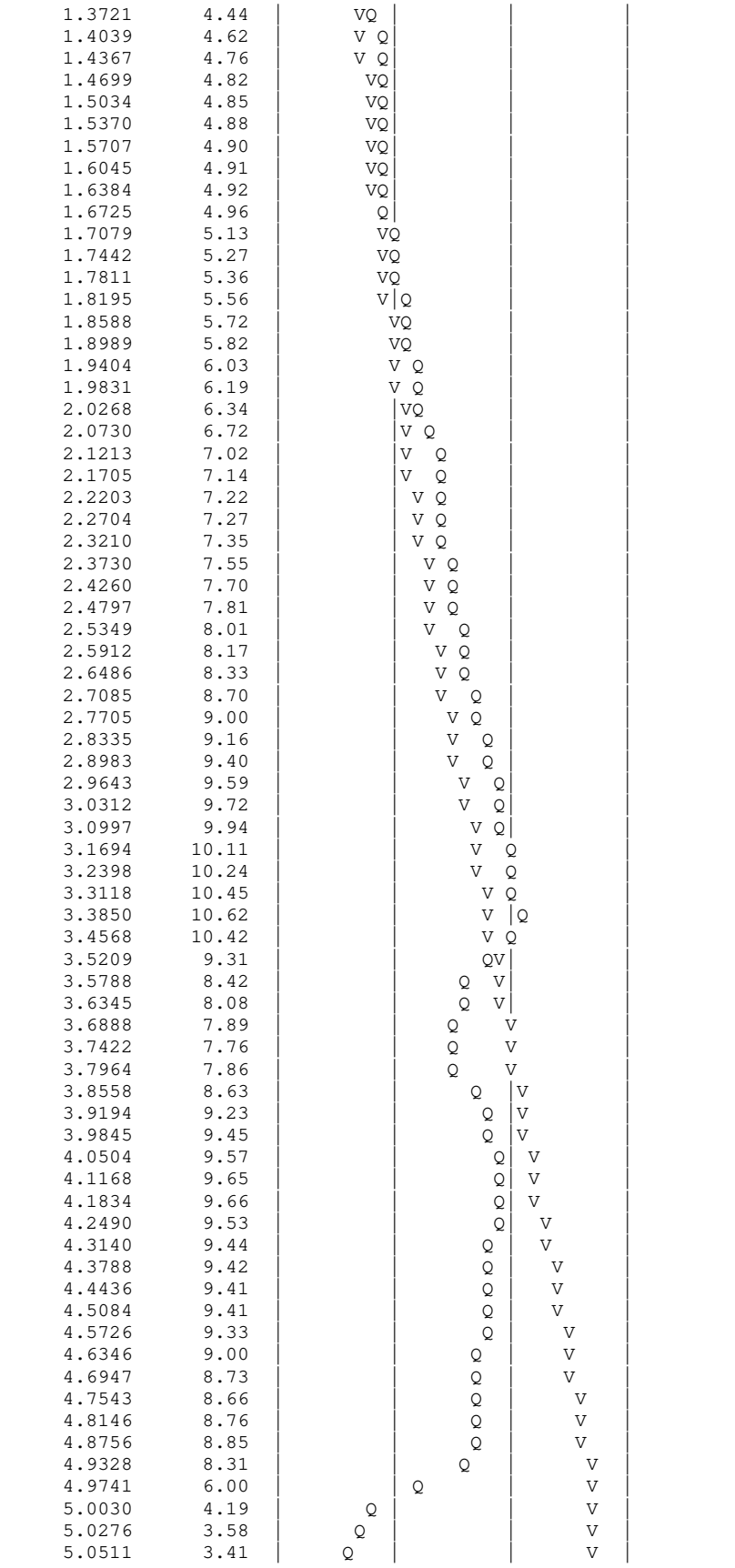
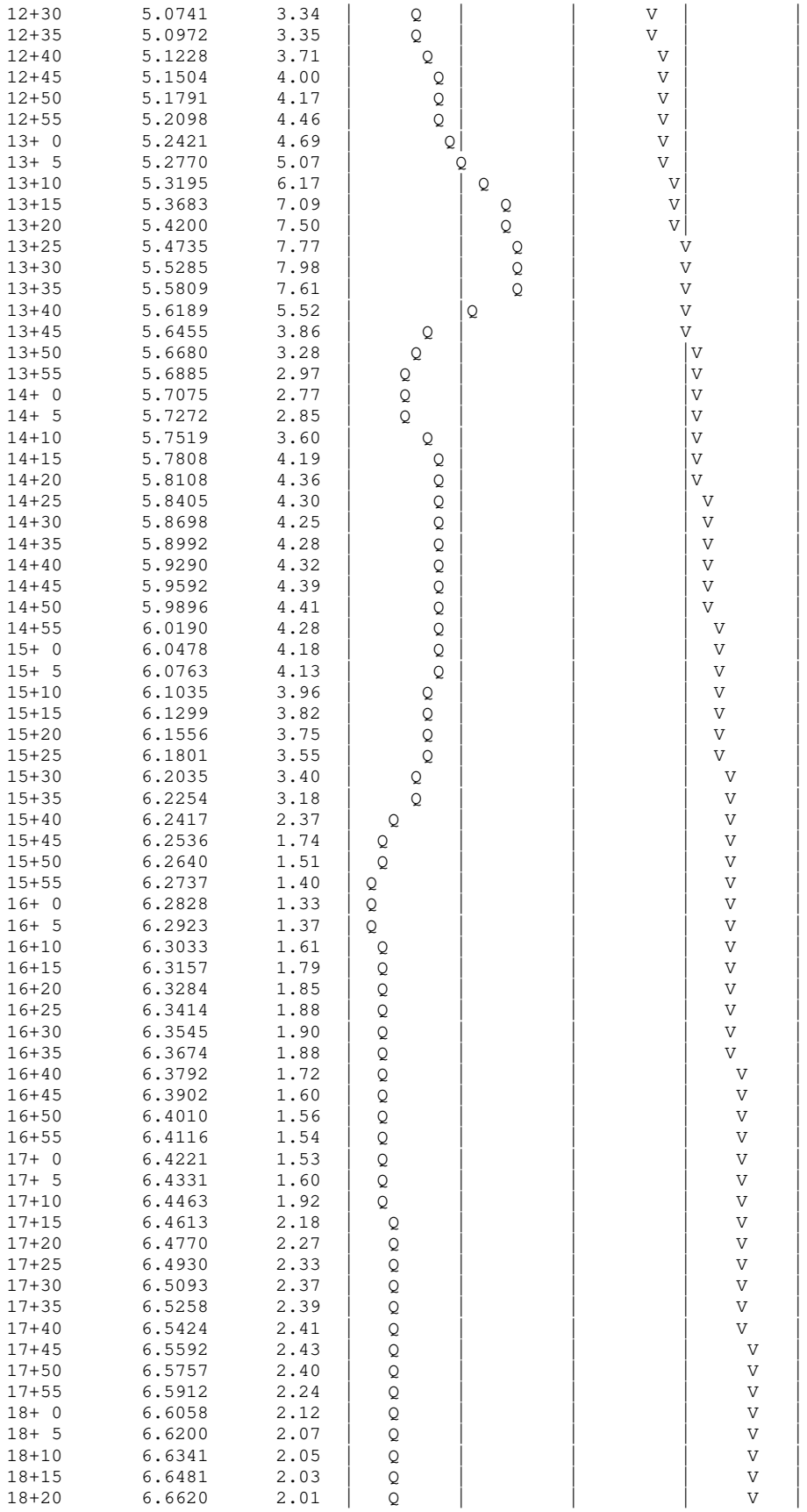
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0006	0.08	Q	|	|	|	|
0+10	0.0034	0.41	Q	|	|	|	|
0+15	0.0080	0.68	VQ	|	|	|	|
0+20	0.0137	0.82	VQ	|	|	|	|
0+25	0.0209	1.05	V Q	|	|	|	|
0+30	0.0293	1.22	V Q	|	|	|	|
0+35	0.0382	1.30	V Q	|	|	|	|

0+40	0.0475	1.35	V Q	|	|	|	|
0+45	0.0571	1.39	V Q	|	|	|	|
0+50	0.0671	1.45	V Q	|	|	|	|
0+55	0.0784	1.64	V Q	|	|	|	|
1+ 0	0.0907	1.79	V Q	|	|	|	|
1+ 5	0.1032	1.81	V Q	|	|	|	|
1+10	0.1148	1.69	V Q	|	|	|	|
1+15	0.1256	1.58	V Q	|	|	|	|
1+20	0.1363	1.54	V Q	|	|	|	|
1+25	0.1468	1.53	V Q	|	|	|	|
1+30	0.1572	1.51	V Q	|	|	|	|
1+35	0.1676	1.51	V Q	|	|	|	|
1+40	0.1779	1.50	V Q	|	|	|	|
1+45	0.1882	1.50	VQ	|	|	|	|
1+50	0.1988	1.53	V Q	|	|	|	|
1+55	0.2105	1.70	V Q	|	|	|	|
2+ 0	0.2231	1.83	V Q	|	|	|	|
2+ 5	0.2360	1.87	V Q	|	|	|	|
2+10	0.2490	1.90	V Q	|	|	|	|
2+15	0.2623	1.92	V Q	|	|	|	|
2+20	0.2756	1.94	V Q	|	|	|	|
2+25	0.2890	1.95	V Q	|	|	|	|
2+30	0.3025	1.95	V Q	|	|	|	|
2+35	0.3163	2.00	V Q	|	|	|	|
2+40	0.3312	2.17	V Q	|	|	|	|
2+45	0.3471	2.31	V Q	|	|	|	|
2+50	0.3634	2.36	V Q	|	|	|	|
2+55	0.3799	2.39	V Q	|	|	|	|
3+ 0	0.3965	2.42	V Q	|	|	|	|
3+ 5	0.4132	2.43	V Q	|	|	|	|
3+10	0.4300	2.44	V Q	|	|	|	|
3+15	0.4469	2.45	V Q	|	|	|	|
3+20	0.4638	2.45	V Q	|	|	|	|
3+25	0.4808	2.46	V Q	|	|	|	|
3+30	0.4977	2.46	V Q	|	|	|	|
3+35	0.5147	2.47	V Q	|	|	|	|
3+40	0.5317	2.47	V Q	|	|	|	|
3+45	0.5487	2.47	VQ	|	|	|	|
3+50	0.5660	2.51	V Q	|	|	|	|
3+55	0.5844	2.68	V Q	|	|	|	|
4+ 0	0.6037	2.81	V Q	|	|	|	|
4+ 5	0.6234	2.86	V Q	|	|	|	|
4+10	0.6433	2.89	V Q	|	|	|	|
4+15	0.6634	2.91	V Q	|	|	|	|
4+20	0.6838	2.96	V Q	|	|	|	|
4+25	0.7054	3.14	V Q	|	|	|	|
4+30	0.7280	3.28	V Q	|	|	|	|
4+35	0.7510	3.34	V Q	|	|	|	|
4+40	0.7742	3.37	V Q	|	|	|	|
4+45	0.7976	3.40	V Q	|	|	|	|
4+50	0.8214	3.45	V Q	|	|	|	|
4+55	0.8464	3.63	V Q	|	|	|	|
5+ 0	0.8724	3.77	V Q	|	|	|	|
5+ 5	0.8983	3.75	V Q	|	|	|	|
5+10	0.9221	3.45	VQ	|	|	|	|
5+15	0.9442	3.21	VQ	|	|	|	|
5+20	0.9660	3.17	VQ	|	|	|	|
5+25	0.9887	3.29	VQ	|	|	|	|
5+30	1.0120	3.39	VQ	|	|	|	|
5+35	1.0358	3.46	VQ	|	|	|	|
5+40	1.0609	3.64	V Q	|	|	|	|
5+45	1.0869	3.78	V Q	|	|	|	|
5+50	1.1132	3.83	VQ	|	|	|	|
5+55	1.1399	3.87	VQ	|	|	|	|
6+ 0	1.1666	3.89	VQ	|	|	|	|
6+ 5	1.1938	3.94	VQ	|	|	|	|
6+10	1.2222	4.12	V Q	|	|	|	|
6+15	1.2515	4.26	V Q	|	|	|	|
6+20	1.2813	4.32	VQ	|	|	|	|
6+25	1.3113	4.36	VQ	|	|	|	|
6+30	1.3415	4.38	VQ	|	|	|	|

6+35	1.3721	4.44	
6+40	1.4039	4.62	
6+45	1.4367	4.76	
6+50	1.4699	4.82	
6+55	1.5034	4.85	
7+ 0	1.5370	4.88	
7+ 5	1.5707	4.90	
7+10	1.6045	4.91	
7+15	1.6384	4.92	
7+20	1.6725	4.96	
7+25	1.7079	5.13	
7+30	1.7442	5.27	
7+35	1.7811	5.36	
7+40	1.8195	5.56	
7+45	1.8588	5.72	
7+50	1.8989	5.82	
7+55	1.9404	6.03	
8+ 0	1.9831	6.19	
8+ 5	2.0268	6.34	
8+10	2.0730	6.72	
8+15	2.1213	7.02	
8+20	2.1705	7.14	
8+25	2.2203	7.22	
8+30	2.2704	7.27	
8+35	2.3210	7.35	
8+40	2.3730	7.55	
8+45	2.4260	7.70	
8+50	2.4797	7.81	
8+55	2.5349	8.01	
9+ 0	2.5912	8.17	
9+ 5	2.6486	8.33	
9+10	2.7085	8.70	
9+15	2.7705	9.00	
9+20	2.8335	9.16	
9+25	2.8983	9.40	
9+30	2.9643	9.59	
9+35	3.0312	9.72	
9+40	3.0997	9.94	
9+45	3.1694	10.11	
9+50	3.2398	10.24	
9+55	3.3118	10.45	
10+ 0	3.3850	10.62	
10+ 5	3.4568	10.42	
10+10	3.5209	9.31	
10+15	3.5788	8.42	
10+20	3.6345	8.08	
10+25	3.6888	7.89	
10+30	3.7422	7.76	
10+35	3.7964	7.86	
10+40	3.8558	8.63	
10+45	3.9194	9.23	
10+50	3.9845	9.45	
10+55	4.0504	9.57	
11+ 0	4.1168	9.65	
11+ 5	4.1834	9.66	
11+10	4.2490	9.53	
11+15	4.3140	9.44	
11+20	4.3788	9.42	
11+25	4.4436	9.41	
11+30	4.5084	9.41	
11+35	4.5726	9.33	
11+40	4.6346	9.00	
11+45	4.6947	8.73	
11+50	4.7543	8.66	
11+55	4.8146	8.76	
12+ 0	4.8756	8.85	
12+ 5	4.9328	8.31	
12+10	4.9741	6.00	
12+15	5.0030	4.19	
12+20	5.0276	3.58	
12+25	5.0511	3.41	



18+25	6.6758	2.00		Q			V
18+30	6.6895	2.00		Q			V
18+35	6.7030	1.95		Q			V
18+40	6.7152	1.78		Q			V
18+45	6.7265	1.64		Q			V
18+50	6.7372	1.55		Q			V
18+55	6.7465	1.35	Q				V
19+ 0	6.7547	1.20	Q				V
19+ 5	6.7628	1.17	Q				V
19+10	6.7717	1.30	Q				V
19+15	6.7813	1.40	Q				V
19+20	6.7915	1.47	Q				V
19+25	6.8028	1.65		Q			V
19+30	6.8152	1.79		Q			V
19+35	6.8276	1.81		Q			V
19+40	6.8392	1.68		Q			V
19+45	6.8500	1.57		Q			V
19+50	6.8603	1.50	Q				V
19+55	6.8693	1.31	Q				V
20+ 0	6.8774	1.17	Q				V
20+ 5	6.8853	1.15	Q				V
20+10	6.8942	1.29	Q				V
20+15	6.9038	1.39	Q				V
20+20	6.9136	1.43	Q				V
20+25	6.9236	1.45	Q				V
20+30	6.9336	1.45	Q				V
20+35	6.9436	1.46	Q				V
20+40	6.9537	1.46	Q				V
20+45	6.9638	1.47	Q				V
20+50	6.9737	1.43	Q				V
20+55	6.9824	1.27	Q				V
21+ 0	6.9902	1.14	Q				V
21+ 5	6.9980	1.13	Q				V
21+10	7.0067	1.27	Q				V
21+15	7.0162	1.38	Q				V
21+20	7.0257	1.38	Q				V
21+25	7.0342	1.23	Q				V
21+30	7.0418	1.11	Q				V
21+35	7.0494	1.11	Q				V
21+40	7.0580	1.25	Q				V
21+45	7.0674	1.36	Q				V
21+50	7.0768	1.36	Q				V
21+55	7.0852	1.22	Q				V
22+ 0	7.0928	1.10	Q				V
22+ 5	7.1004	1.10	Q				V
22+10	7.1090	1.25	Q				V
22+15	7.1184	1.36	Q				V
22+20	7.1278	1.36	Q				V
22+25	7.1362	1.22	Q				V
22+30	7.1438	1.10	Q				V
22+35	7.1512	1.06	Q				V
22+40	7.1583	1.04	Q				V
22+45	7.1654	1.03	Q				V
22+50	7.1724	1.02	Q				V
22+55	7.1793	1.01	Q				V
23+ 0	7.1863	1.00	Q				V
23+ 5	7.1931	1.00	Q				V
23+10	7.2000	1.00	Q				V
23+15	7.2068	0.99	Q				V
23+20	7.2137	0.99	Q				V
23+25	7.2205	0.99	Q				V
23+30	7.2273	0.99	Q				V
23+35	7.2341	0.99	Q				V
23+40	7.2409	0.99	Q				V
23+45	7.2477	0.99	Q				V
23+50	7.2545	0.99	Q				V
23+55	7.2613	0.99	Q				V
24+ 0	7.2681	0.99	Q				V
24+ 5	7.2743	0.91	Q				V
24+10	7.2783	0.58	Q				V
24+15	7.2804	0.31	Q				V

24+20	7.2819	0.21	Q				V
24+25	7.2829	0.15	Q				V
24+30	7.2836	0.11	Q				V
24+35	7.2842	0.08	Q				V
24+40	7.2846	0.06	Q				V
24+45	7.2848	0.04	Q				V
24+50	7.2850	0.03	Q				V
24+55	7.2852	0.02	Q				V
25+ 0	7.2852	0.01	Q				V
25+ 5	7.2853	0.01	Q				V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930PUH2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
2 YEAR STORM EVENT PROPOSED UH
1930PUH2
DS

Drainage Area = 127.12(Ac.) = 0.199 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 127.12(Ac.) = 0.199 Sq. Mi.
Length along longest watercourse = 5048.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.956 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 29.90(Ft.)
Slope along watercourse = 31.2742 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.140 Hr.
Lag time = 8.40 Min.
25% of lag time = 2.10 Min.
40% of lag time = 3.36 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	1.60	203.39

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	4.00	508.48

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
127.120	69.00	0.900

Total Area Entered = 127.12(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	59.527	8.108	10.388
2	0.167	119.054	33.632	43.087
3	0.250	178.581	26.735	34.252
4	0.333	238.109	10.389	13.309
5	0.417	297.636	6.125	7.847
6	0.500	357.163	4.147	5.313
7	0.583	416.690	2.960	3.792
8	0.667	476.217	2.078	2.663
9	0.750	535.744	1.719	2.202
10	0.833	595.271	1.279	1.638
11	0.917	654.799	0.977	1.251
12	1.000	714.326	0.697	0.893
13	1.083	773.853	0.595	0.763
14	1.167	833.380	0.559	0.716
			Sum = 100.000 Sum=	128.113

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.013	0.193	0.002	0.01
2	0.17	0.07	0.013	0.193	0.002	0.01
3	0.25	0.07	0.013	0.192	0.002	0.01
4	0.33	0.10	0.019	0.191	0.003	0.02
5	0.42	0.10	0.019	0.190	0.003	0.02
6	0.50	0.10	0.019	0.190	0.003	0.02
7	0.58	0.10	0.019	0.189	0.003	0.02
8	0.67	0.10	0.019	0.188	0.003	0.02
9	0.75	0.10	0.019	0.187	0.003	0.02
10	0.83	0.13	0.026	0.187	0.005	0.02
11	0.92	0.13	0.026	0.186	0.005	0.02
12	1.00	0.13	0.026	0.185	0.005	0.02
13	1.08	0.10	0.019	0.184	0.003	0.02
14	1.17	0.10	0.019	0.184	0.003	0.02
15	1.25	0.10	0.019	0.183	0.003	0.02
16	1.33	0.10	0.019	0.182	0.003	0.02
17	1.42	0.10	0.019	0.182	0.003	0.02
18	1.50	0.10	0.019	0.181	0.003	0.02
19	1.58	0.10	0.019	0.180	0.003	0.02
20	1.67	0.10	0.019	0.179	0.003	0.02
21	1.75	0.10	0.019	0.179	0.003	0.02
22	1.83	0.13	0.026	0.178	0.005	0.02
23	1.92	0.13	0.026	0.177	0.005	0.02
24	2.00	0.13	0.026	0.176	0.005	0.02
25	2.08	0.13	0.026	0.176	0.005	0.02
26	2.17	0.13	0.026	0.175	0.005	0.02
27	2.25	0.13	0.026	0.174	0.005	0.02
28	2.33	0.13	0.026	0.174	0.005	0.02
29	2.42	0.13	0.026	0.173	0.005	0.02
30	2.50	0.13	0.026	0.172	0.005	0.02
31	2.58	0.17	0.032	0.172	0.006	0.03

32	2.67	0.17	0.032	0.171	0.006	0.03
33	2.75	0.17	0.032	0.170	0.006	0.03
34	2.83	0.17	0.032	0.169	0.006	0.03
35	2.92	0.17	0.032	0.169	0.006	0.03
36	3.00	0.17	0.032	0.168	0.006	0.03
37	3.08	0.17	0.032	0.167	0.006	0.03
38	3.17	0.17	0.032	0.167	0.006	0.03
39	3.25	0.17	0.032	0.166	0.006	0.03
40	3.33	0.17	0.032	0.165	0.006	0.03
41	3.42	0.17	0.032	0.165	0.006	0.03
42	3.50	0.17	0.032	0.164	0.006	0.03
43	3.58	0.17	0.032	0.163	0.006	0.03
44	3.67	0.17	0.032	0.162	0.006	0.03
45	3.75	0.17	0.032	0.162	0.006	0.03
46	3.83	0.20	0.038	0.161	0.007	0.03
47	3.92	0.20	0.038	0.160	0.007	0.03
48	4.00	0.20	0.038	0.160	0.007	0.03
49	4.08	0.20	0.038	0.159	0.007	0.03
50	4.17	0.20	0.038	0.158	0.007	0.03
51	4.25	0.20	0.038	0.158	0.007	0.03
52	4.33	0.23	0.045	0.157	0.008	0.04
53	4.42	0.23	0.045	0.156	0.008	0.04
54	4.50	0.23	0.045	0.156	0.008	0.04
55	4.58	0.23	0.045	0.155	0.008	0.04
56	4.67	0.23	0.045	0.154	0.008	0.04
57	4.75	0.23	0.045	0.154	0.008	0.04
58	4.83	0.27	0.051	0.153	0.009	0.04
59	4.92	0.27	0.051	0.152	0.009	0.04
60	5.00	0.27	0.051	0.152	0.009	0.04
61	5.08	0.20	0.038	0.151	0.007	0.03
62	5.17	0.20	0.038	0.150	0.007	0.03
63	5.25	0.20	0.038	0.150	0.007	0.03
64	5.33	0.23	0.045	0.149	0.008	0.04
65	5.42	0.23	0.045	0.148	0.008	0.04
66	5.50	0.23	0.045	0.148	0.008	0.04
67	5.58	0.27	0.051	0.147	0.009	0.04
68	5.67	0.27	0.051	0.147	0.009	0.04
69	5.75	0.27	0.051	0.146	0.009	0.04
70	5.83	0.27	0.051	0.145	0.009	0.04
71	5.92	0.27	0.051	0.145	0.009	0.04
72	6.00	0.27	0.051	0.144	0.009	0.04
73	6.08	0.30	0.058	0.143	0.010	0.05
74	6.17	0.30	0.058	0.143	0.010	0.05
75	6.25	0.30	0.058	0.142	0.010	0.05
76	6.33	0.30	0.058	0.141	0.010	0.05
77	6.42	0.30	0.058	0.141	0.010	0.05
78	6.50	0.30	0.058	0.140	0.010	0.05
79	6.58	0.33	0.064	0.140	0.012	0.05
80	6.67	0.33	0.064	0.139	0.012	0.05
81	6.75	0.33	0.064	0.138	0.012	0.05
82	6.83	0.33	0.064	0.138	0.012	0.05
83	6.92	0.33	0.064	0.137	0.012	0.05
84	7.00	0.33	0.064	0.136	0.012	0.05
85	7.08	0.33	0.064	0.136	0.012	0.05
86	7.17	0.33	0.064	0.135	0.012	0.05
87	7.25	0.33	0.064	0.135	0.012	0.05
88	7.33	0.37	0.070	0.134	0.013	0.06
89	7.42	0.37	0.070	0.133	0.013	0.06
90	7.50	0.37	0.070	0.133	0.013	0.06
91	7.58	0.40	0.077	0.132	0.014	0.06
92	7.67	0.40	0.077	0.131	0.014	0.06
93	7.75	0.40	0.077	0.131	0.014	0.06
94	7.83	0.43	0.083	0.130	0.015	0.07
95	7.92	0.43	0.083	0.130	0.015	0.07
96	8.00	0.43	0.083	0.129	0.015	0.07
97	8.08	0.50	0.096	0.128	0.017	0.08
98	8.17	0.50	0.096	0.128	0.017	0.08
99	8.25	0.50	0.096	0.127	0.017	0.08
100	8.33	0.50	0.096	0.127	0.017	0.08
101	8.42	0.50	0.096	0.126	0.017	0.08
102	8.50	0.50	0.096	0.125	0.017	0.08

103	8.58	0.53	0.102	0.125	0.018	0.08
104	8.67	0.53	0.102	0.124	0.018	0.08
105	8.75	0.53	0.102	0.124	0.018	0.08
106	8.83	0.57	0.109	0.123	0.020	0.09
107	8.92	0.57	0.109	0.123	0.020	0.09
108	9.00	0.57	0.109	0.122	0.020	0.09
109	9.08	0.63	0.122	0.121	---	0.00
110	9.17	0.63	0.122	0.121	---	0.00
111	9.25	0.63	0.122	0.120	---	0.00
112	9.33	0.67	0.128	0.120	---	0.01
113	9.42	0.67	0.128	0.119	---	0.01
114	9.50	0.67	0.128	0.119	---	0.01
115	9.58	0.70	0.134	0.118	---	0.02
116	9.67	0.70	0.134	0.117	---	0.02
117	9.75	0.70	0.134	0.117	---	0.02
118	9.83	0.73	0.141	0.116	---	0.02
119	9.92	0.73	0.141	0.116	---	0.03
120	10.00	0.73	0.141	0.115	---	0.03
121	10.08	0.50	0.096	0.115	0.017	0.08
122	10.17	0.50	0.096	0.114	0.017	0.08
123	10.25	0.50	0.096	0.113	0.017	0.08
124	10.33	0.50	0.096	0.113	0.017	0.08
125	10.42	0.50	0.096	0.112	0.017	0.08
126	10.50	0.50	0.096	0.112	0.017	0.08
127	10.58	0.67	0.128	0.111	---	0.02
128	10.67	0.67	0.128	0.111	---	0.02
129	10.75	0.67	0.128	0.110	---	0.02
130	10.83	0.67	0.128	0.110	---	0.02
131	10.92	0.67	0.128	0.109	---	0.02
132	11.00	0.67	0.128	0.109	---	0.02
133	11.08	0.63	0.122	0.108	---	0.01
134	11.17	0.63	0.122	0.108	---	0.01
135	11.25	0.63	0.122	0.107	---	0.01
136	11.33	0.63	0.122	0.106	---	0.02
137	11.42	0.63	0.122	0.106	---	0.02
138	11.50	0.63	0.122	0.105	---	0.02
139	11.58	0.57	0.109	0.105	---	0.00
140	11.67	0.57	0.109	0.104	---	0.00
141	11.75	0.57	0.109	0.104	---	0.00
142	11.83	0.60	0.115	0.103	---	0.01
143	11.92	0.60	0.115	0.103	---	0.01
144	12.00	0.60	0.115	0.102	---	0.01
145	12.08	0.83	0.160	0.102	---	0.06
146	12.17	0.83	0.160	0.101	---	0.06
147	12.25	0.83	0.160	0.101	---	0.06
148	12.33	0.87	0.166	0.100	---	0.07
149	12.42	0.87	0.166	0.100	---	0.07
150	12.50	0.87	0.166	0.099	---	0.07
151	12.58	0.93	0.179	0.099	---	0.08
152	12.67	0.93	0.179	0.098	---	0.08
153	12.75	0.93	0.179	0.098	---	0.08
154	12.83	0.97	0.186	0.097	---	0.09
155	12.92	0.97	0.186	0.097	---	0.09
156	13.00	0.97	0.186	0.096	---	0.09
157	13.08	1.13	0.218	0.096	---	0.12
158	13.17	1.13	0.218	0.095	---	0.12
159	13.25	1.13	0.218	0.095	---	0.12
160	13.33	1.13	0.218	0.094	---	0.12
161	13.42	1.13	0.218	0.094	---	0.12
162	13.50	1.13	0.218	0.093	---	0.12
163	13.58	0.77	0.147	0.093	---	0.05
164	13.67	0.77	0.147	0.092	---	0.05
165	13.75	0.77	0.147	0.092	---	0.06
166	13.83	0.77	0.147	0.092	---	0.06
167	13.92	0.77	0.147	0.091	---	0.06
168	14.00	0.77	0.147	0.091	---	0.06
169	14.08	0.90	0.173	0.090	---	0.08
170	14.17	0.90	0.173	0.090	---	0.08
171	14.25	0.90	0.173	0.089	---	0.08
172	14.33	0.87	0.166	0.089	---	0.08
173	14.42	0.87	0.166	0.088	---	0.08

174	14.50	0.87	0.166	0.088	---	0.08
175	14.58	0.87	0.166	0.087	---	0.08
176	14.67	0.87	0.166	0.087	---	0.08
177	14.75	0.87	0.166	0.086	---	0.08
178	14.83	0.83	0.160	0.086	---	0.07
179	14.92	0.83	0.160	0.086	---	0.07
180	15.00	0.83	0.160	0.085	---	0.07
181	15.08	0.80	0.154	0.085	---	0.07
182	15.17	0.80	0.154	0.084	---	0.07
183	15.25	0.80	0.154	0.084	---	0.07
184	15.33	0.77	0.147	0.083	---	0.06
185	15.42	0.77	0.147	0.083	---	0.06
186	15.50	0.77	0.147	0.083	---	0.06
187	15.58	0.63	0.122	0.082	---	0.04
188	15.67	0.63	0.122	0.082	---	0.04
189	15.75	0.63	0.122	0.081	---	0.04
190	15.83	0.63	0.122	0.081	---	0.04
191	15.92	0.63	0.122	0.080	---	0.04
192	16.00	0.63	0.122	0.080	---	0.04
193	16.08	0.13	0.026	0.080	0.005	0.02
194	16.17	0.13	0.026	0.079	0.005	0.02
195	16.25	0.13	0.026	0.079	0.005	0.02
196	16.33	0.13	0.026	0.078	0.005	0.02
197	16.42	0.13	0.026	0.078	0.005	0.02
198	16.50	0.13	0.026	0.078	0.005	0.02
199	16.58	0.10	0.019	0.077	0.003	0.02
200	16.67	0.10	0.019	0.077	0.003	0.02
201	16.75	0.10	0.019	0.076	0.003	0.02
202	16.83	0.10	0.019	0.076	0.003	0.02
203	16.92	0.10	0.019	0.076	0.003	0.02
204	17.00	0.10	0.019	0.075	0.003	0.02
205	17.08	0.17	0.032	0.075	0.006	0.03
206	17.17	0.17	0.032	0.075	0.006	0.03
207	17.25	0.17	0.032	0.074	0.006	0.03
208	17.33	0.17	0.032	0.074	0.006	0.03
209	17.42	0.17	0.032	0.073	0.006	0.03
210	17.50	0.17	0.032	0.073	0.006	0.03
211	17.58	0.17	0.032	0.073	0.006	0.03
212	17.67	0.17	0.032	0.072	0.006	0.03
213	17.75	0.17	0.032	0.072	0.006	0.03
214	17.83	0.13	0.026	0.072	0.005	0.02
215	17.92	0.13	0.026	0.071	0.005	0.02
216	18.00	0.13	0.026	0.071	0.005	0.02
217	18.08	0.13	0.026	0.071	0.005	0.02
218	18.17	0.13	0.026	0.070	0.005	0.02
219	18.25	0.13	0.026	0.070	0.005	0.02
220	18.33	0.13	0.026	0.070	0.005	0.02
221	18.42	0.13	0.026	0.069	0.005	0.02
222	18.50	0.13	0.026	0.069	0.005	0.02
223	18.58	0.10	0.019	0.069	0.003	0.02
224	18.67	0.10	0.019	0.068	0.003	0.02
225	18.75	0.10	0.019	0.068	0.003	0.02
226	18.83	0.07	0.013	0.068	0.002	0.01
227	18.92	0.07	0.013	0.067	0.002	0.01
228	19.00	0.07	0.013	0.067	0.002	0.01
229	19.08	0.10	0.019	0.067	0.003	0.02
230	19.17	0.10	0.019	0.066	0.003	0.02
231	19.25	0.10	0.019	0.066	0.003	0.02
232	19.33	0.13	0.026	0.066	0.005	0.02
233	19.42	0.13	0.026	0.065	0.005	0.02
234	19.50	0.13	0.026	0.065	0.005	0.02
235	19.58	0.10	0.019	0.065	0.003	0.02
236	19.67	0.10	0.019	0.064	0.003	0.02
237	19.75	0.10	0.019	0.064	0.003	0.02
238	19.83	0.07	0.013	0.064	0.002	0.01
239	19.92	0.07	0.013	0.064	0.002	0.01
240	20.00	0.07	0.013	0.063	0.002	0.01
241	20.08	0.10	0.019	0.063	0.003	0.02
242	20.17	0.10	0.019	0.063	0.003	0.02
243	20.25	0.10	0.019	0.062	0.003	0.02
244	20.33	0.10	0.019	0.062	0.003	0.02

245	20.42	0.10	0.019	0.062	0.003	0.02
246	20.50	0.10	0.019	0.062	0.003	0.02
247	20.58	0.10	0.019	0.061	0.003	0.02
248	20.67	0.10	0.019	0.061	0.003	0.02
249	20.75	0.10	0.019	0.061	0.003	0.02
250	20.83	0.07	0.013	0.061	0.002	0.01
251	20.92	0.07	0.013	0.060	0.002	0.01
252	21.00	0.07	0.013	0.060	0.002	0.01
253	21.08	0.10	0.019	0.060	0.003	0.02
254	21.17	0.10	0.019	0.060	0.003	0.02
255	21.25	0.10	0.019	0.059	0.003	0.02
256	21.33	0.07	0.013	0.059	0.002	0.01
257	21.42	0.07	0.013	0.059	0.002	0.01
258	21.50	0.07	0.013	0.059	0.002	0.01
259	21.58	0.10	0.019	0.059	0.003	0.02
260	21.67	0.10	0.019	0.058	0.003	0.02
261	21.75	0.10	0.019	0.058	0.003	0.02
262	21.83	0.07	0.013	0.058	0.002	0.01
263	21.92	0.07	0.013	0.058	0.002	0.01
264	22.00	0.07	0.013	0.058	0.002	0.01
265	22.08	0.10	0.019	0.057	0.003	0.02
266	22.17	0.10	0.019	0.057	0.003	0.02
267	22.25	0.10	0.019	0.057	0.003	0.02
268	22.33	0.07	0.013	0.057	0.002	0.01
269	22.42	0.07	0.013	0.057	0.002	0.01
270	22.50	0.07	0.013	0.057	0.002	0.01
271	22.58	0.07	0.013	0.056	0.002	0.01
272	22.67	0.07	0.013	0.056	0.002	0.01
273	22.75	0.07	0.013	0.056	0.002	0.01
274	22.83	0.07	0.013	0.056	0.002	0.01
275	22.92	0.07	0.013	0.056	0.002	0.01
276	23.00	0.07	0.013	0.056	0.002	0.01
277	23.08	0.07	0.013	0.055	0.002	0.01
278	23.17	0.07	0.013	0.055	0.002	0.01
279	23.25	0.07	0.013	0.055	0.002	0.01
280	23.33	0.07	0.013	0.055	0.002	0.01
281	23.42	0.07	0.013	0.055	0.002	0.01
282	23.50	0.07	0.013	0.055	0.002	0.01
283	23.58	0.07	0.013	0.055	0.002	0.01
284	23.67	0.07	0.013	0.055	0.002	0.01
285	23.75	0.07	0.013	0.055	0.002	0.01
286	23.83	0.07	0.013	0.055	0.002	0.01
287	23.92	0.07	0.013	0.055	0.002	0.01
288	24.00	0.07	0.013	0.055	0.002	0.01
Sum =		100.0			Sum =	10.1

Flood volume = Effective rainfall 0.85(In)
times area 127.1(Ac.)/[(In)/(Ft.)] = 9.0(Ac.Ft)
Total soil loss = 0.75(In)
Total soil loss = 7.988(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 390162.9 Cubic Feet
Total soil loss = 347966.8 Cubic Feet

Peak flow rate of this hydrograph = 15.258(CFS)

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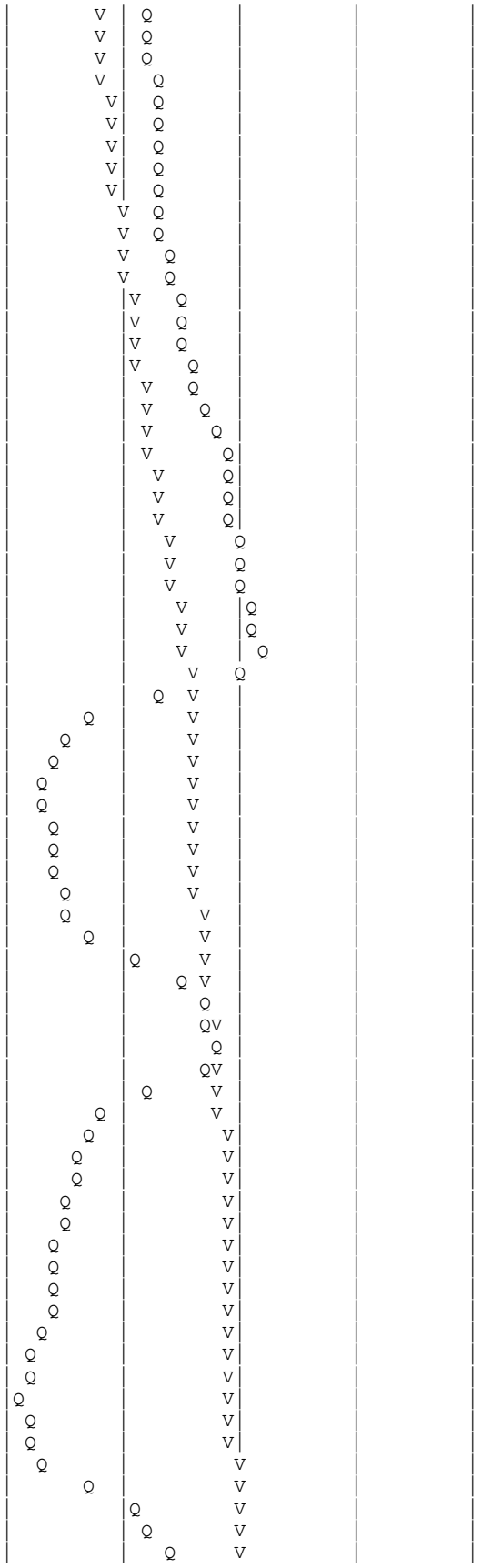
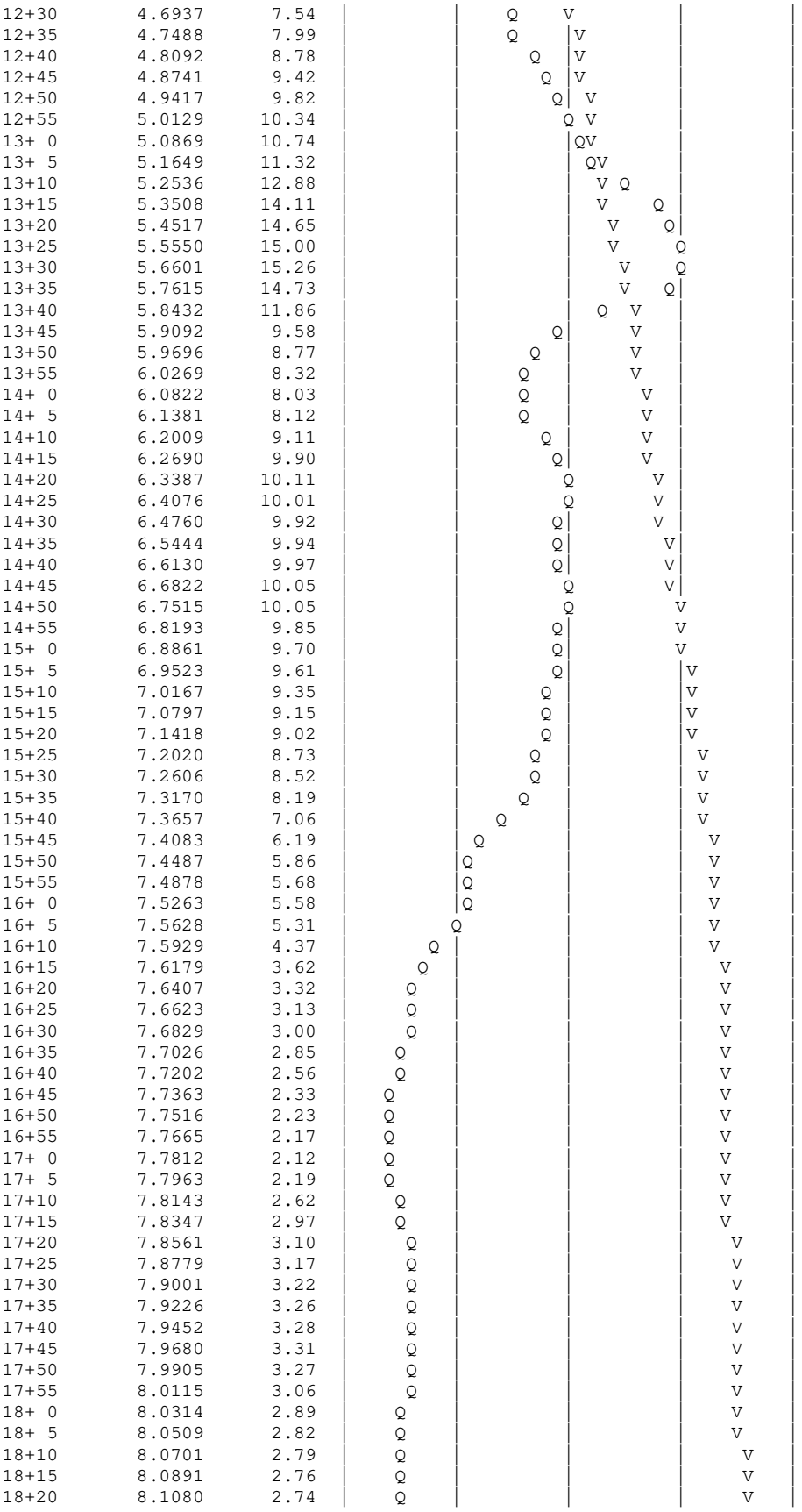
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0008	0.11	Q	|	|	|	|
0+10	0.0046	0.56	VQ	|	|	|	|
0+15	0.0110	0.92	VQ	|	|	|	|
0+20	0.0186	1.12	V Q	|	|	|	|
0+25	0.0284	1.42	V Q	|	|	|	|
0+30	0.0399	1.66	V Q	|	|	|	|
0+35	0.0521	1.77	V Q	|	|	|	|

0+40	0.0647	1.84	V Q	|	|	|	|
0+45	0.0777	1.89	V Q	|	|	|	|
0+50	0.0914	1.98	V Q	|	|	|	|
0+55	0.1068	2.23	V Q	|	|	|	|
1+ 0	0.1235	2.43	V Q	|	|	|	|
1+ 5	0.1405	2.47	V Q	|	|	|	|
1+10	0.1563	2.30	V Q	|	|	|	|
1+15	0.1711	2.15	V Q	|	|	|	|
1+20	0.1856	2.10	V Q	|	|	|	|
1+25	0.1999	2.08	V Q	|	|	|	|
1+30	0.2141	2.06	V Q	|	|	|	|
1+35	0.2283	2.05	|V Q	|	|	|	|
1+40	0.2424	2.04	|V Q	|	|	|	|
1+45	0.2564	2.04	|V Q	|	|	|	|
1+50	0.2708	2.09	|V Q	|	|	|	|
1+55	0.2867	2.31	|V Q	|	|	|	|
2+ 0	0.3038	2.49	|V Q	|	|	|	|
2+ 5	0.3214	2.55	|V Q	|	|	|	|
2+10	0.3392	2.59	|V Q	|	|	|	|
2+15	0.3572	2.62	|V Q	|	|	|	|
2+20	0.3754	2.64	|V Q	|	|	|	|
2+25	0.3936	2.65	|V Q	|	|	|	|
2+30	0.4120	2.66	|V Q	|	|	|	|
2+35	0.4307	2.73	|V Q	|	|	|	|
2+40	0.4511	2.96	| V Q	|	|	|	|
2+45	0.4728	3.14	| V Q	|	|	|	|
2+50	0.4949	3.22	| V Q	|	|	|	|
2+55	0.5174	3.26	| V Q	|	|	|	|
3+ 0	0.5400	3.29	| V Q	|	|	|	|
3+ 5	0.5628	3.31	| V Q	|	|	|	|
3+10	0.5857	3.32	| V Q	|	|	|	|
3+15	0.6087	3.33	| V Q	|	|	|	|
3+20	0.6317	3.34	| V Q	|	|	|	|
3+25	0.6548	3.35	| V Q	|	|	|	|
3+30	0.6779	3.35	| V Q	|	|	|	|
3+35	0.7010	3.36	| V Q	|	|	|	|
3+40	0.7242	3.36	| V Q	|	|	|	|
3+45	0.7473	3.36	| V Q	|	|	|	|
3+50	0.7709	3.42	| V Q	|	|	|	|
3+55	0.7960	3.64	| V Q	|	|	|	|
4+ 0	0.8223	3.82	| V Q	|	|	|	|
4+ 5	0.8491	3.89	| V Q	|	|	|	|
4+10	0.8762	3.93	| V Q	|	|	|	|
4+15	0.9035	3.96	| V Q	|	|	|	|
4+20	0.9313	4.04	| V Q	|	|	|	|
4+25	0.9607	4.28	| V Q	|	|	|	|
4+30	0.9915	4.47	| V Q	|	|	|	|
4+35	1.0228	4.55	| V Q|	|	|	|	|
4+40	1.0545	4.59	| V Q|	|	|	|	|
4+45	1.0863	4.63	| V Q|	|	|	|	|
4+50	1.1187	4.71	| V Q|	|	|	|	|
4+55	1.1528	4.95	| V Q|	|	|	|	|
5+ 0	1.1882	5.14	| V Q	|	|	|	|
5+ 5	1.2234	5.11	| V Q	|	|	|	|
5+10	1.2558	4.71	| V Q|	|	|	|	|
5+15	1.2860	4.38	| V Q	|	|	|	|
5+20	1.3157	4.32	| V Q	|	|	|	|
5+25	1.3466	4.48	| V Q	|	|	|	|
5+30	1.3783	4.61	| V Q|	|	|	|	|
5+35	1.4107	4.71	| V Q|	|	|	|	|
5+40	1.4449	4.95	| V Q|	|	|	|	|
5+45	1.4803	5.14	| V Q	|	|	|	|
5+50	1.5162	5.22	| V Q	|	|	|	|
5+55	1.5525	5.26	| V Q	|	|	|	|
6+ 0	1.5889	5.29	| V Q	|	|	|	|
6+ 5	1.6259	5.37	| V Q	|	|	|	|
6+10	1.6646	5.61	| V |Q	|	|	|	|
6+15	1.7045	5.81	| V |Q	|	|	|	|
6+20	1.7451	5.89	| V |Q	|	|	|	|
6+25	1.7860	5.94	| V |Q	|	|	|	|
6+30	1.8271	5.97	| V |Q	|	|	|	|

6+35	1.8688	6.05	
6+40	1.9121	6.29	
6+45	1.9568	6.49	
6+50	2.0020	6.56	
6+55	2.0476	6.61	
7+ 0	2.0933	6.64	
7+ 5	2.1392	6.67	
7+10	2.1853	6.69	
7+15	2.2314	6.70	
7+20	2.2780	6.76	
7+25	2.3261	6.99	
7+30	2.3756	7.18	
7+35	2.4259	7.31	
7+40	2.4781	7.58	
7+45	2.5317	7.79	
7+50	2.5863	7.93	
7+55	2.6429	8.21	
8+ 0	2.7009	8.43	
8+ 5	2.7604	8.64	
8+10	2.8234	9.15	
8+15	2.8892	9.56	
8+20	2.9562	9.73	
8+25	3.0240	9.83	
8+30	3.0922	9.91	
8+35	3.1611	10.01	
8+40	3.2319	10.28	
8+45	3.3041	10.49	
8+50	3.3774	10.63	
8+55	3.4525	10.92	
9+ 0	3.5292	11.13	
9+ 5	3.6002	10.30	
9+10	3.6452	6.54	
9+15	3.6697	3.55	
9+20	3.6870	2.51	
9+25	3.7019	2.17	
9+30	3.7157	1.99	
9+35	3.7287	1.89	
9+40	3.7428	2.05	
9+45	3.7578	2.18	
9+50	3.7736	2.29	
9+55	3.7914	2.59	
10+ 0	3.8111	2.85	
10+ 5	3.8353	3.52	
10+10	3.8757	5.86	
10+15	3.9291	7.76	
10+20	3.9878	8.52	
10+25	4.0497	8.98	
10+30	4.1136	9.29	
10+35	4.1747	8.87	
10+40	4.2184	6.36	
10+45	4.2486	4.38	
10+50	4.2741	3.70	
10+55	4.2971	3.34	
11+ 0	4.3186	3.12	
11+ 5	4.3387	2.92	
11+10	4.3564	2.58	
11+15	4.3722	2.29	
11+20	4.3871	2.17	
11+25	4.4016	2.10	
11+30	4.4159	2.08	
11+35	4.4293	1.94	
11+40	4.4389	1.40	
11+45	4.4459	1.01	
11+50	4.4525	0.96	
11+55	4.4608	1.20	
12+ 0	4.4705	1.41	
12+ 5	4.4841	1.97	
12+10	4.5115	3.98	
12+15	4.5500	5.59	
12+20	4.5935	6.32	
12+25	4.6418	7.01	

12+30	4.6937	7.54	
12+35	4.7488	7.99	
12+40	4.8092	8.78	
12+45	4.8741	9.42	
12+50	4.9417	9.82	
12+55	5.0129	10.34	
13+ 0	5.0869	10.74	
13+ 5	5.1649	11.32	
13+10	5.2536	12.88	
13+15	5.3508	14.11	
13+20	5.4517	14.65	
13+25	5.5550	15.00	
13+30	5.6601	15.26	
13+35	5.7615	14.73	
13+40	5.8432	11.86	
13+45	5.9092	9.58	
13+50	5.9696	8.77	
13+55	6.0269	8.32	
14+ 0	6.0822	8.03	
14+ 5	6.1381	8.12	
14+10	6.2009	9.11	
14+15	6.2690	9.90	
14+20	6.3387	10.11	
14+25	6.4076	10.01	
14+30	6.4760	9.92	
14+35	6.5444	9.94	
14+40	6.6130	9.97	
14+45	6.6822	10.05	
14+50	6.7515	10.05	
14+55	6.8193	9.85	
15+ 0	6.8861	9.70	
15+ 5	6.9523	9.61	
15+10	7.0167	9.35	
15+15	7.0797	9.15	
15+20	7.1418	9.02	
15+25	7.2020	8.73	
15+30	7.2606	8.52	
15+35	7.3170	8.19	
15+40	7.3657	7.06	
15+45	7.4083	6.19	
15+50	7.4487	5.86	
15+55	7.4878	5.68	
16+ 0	7.5263	5.58	
16+ 5	7.5628	5.31	
16+10	7.5929	4.37	
16+15	7.6179	3.62	
16+20	7.6407	3.32	
16+25	7.6623	3.13	
16+30	7.6829	3.00	
16+35	7.7026	2.85	
16+40	7.7202	2.56	
16+45	7.7363	2.33	
16+50	7.7516	2.23	
16+55	7.7665	2.17	
17+ 0	7.7812	2.12	
17+ 5	7.7963	2.19	
17+10	7.8143	2.62	
17+15	7.8347	2.97	
17+20	7.8561	3.10	
17+25	7.8779	3.17	
17+30	7.9001	3.22	
17+35	7.9226	3.26	
17+40	7.9452	3.28	
17+45	7.9680	3.31	
17+50	7.9905	3.27	
17+55	8.0115	3.06	
18+ 0	8.0314	2.89	
18+ 5	8.0509	2.82	
18+10	8.0701	2.79	
18+15	8.0891	2.76	
18+20	8.1080	2.74	

18+25	8.1268	2.73		Q			V
18+30	8.1455	2.72		Q			V
18+35	8.1638	2.65		Q			V
18+40	8.1805	2.42		Q			V
18+45	8.1959	2.24		Q			V
18+50	8.2104	2.11		Q			V
18+55	8.2231	1.84		Q			V
19+ 0	8.2343	1.63		Q			V
19+ 5	8.2453	1.59		Q			V
19+10	8.2575	1.77		Q			V
19+15	8.2706	1.91		Q			V
19+20	8.2844	2.00		Q			V
19+25	8.2999	2.25		Q			V
19+30	8.3167	2.44		Q			V
19+35	8.3336	2.46		Q			V
19+40	8.3493	2.28		Q			V
19+45	8.3641	2.14		Q			V
19+50	8.3781	2.04		Q			V
19+55	8.3904	1.79		Q			V
20+ 0	8.4014	1.59		Q			V
20+ 5	8.4122	1.57		Q			V
20+10	8.4243	1.75		Q			V
20+15	8.4373	1.90		Q			V
20+20	8.4507	1.94		Q			V
20+25	8.4643	1.97		Q			V
20+30	8.4779	1.98		Q			V
20+35	8.4916	1.99		Q			V
20+40	8.5053	1.99		Q			V
20+45	8.5191	2.00		Q			V
20+50	8.5325	1.95		Q			V
20+55	8.5444	1.72		Q			V
21+ 0	8.5550	1.55		Q			V
21+ 5	8.5656	1.54		Q			V
21+10	8.5775	1.73		Q			V
21+15	8.5905	1.88		Q			V
21+20	8.6034	1.87		Q			V
21+25	8.6149	1.68		Q			V
21+30	8.6253	1.51		Q			V
21+35	8.6357	1.51		Q			V
21+40	8.6474	1.70		Q			V
21+45	8.6602	1.86		Q			V
21+50	8.6730	1.86		Q			V
21+55	8.6845	1.66		Q			V
22+ 0	8.6948	1.50		Q			V
22+ 5	8.7052	1.50		Q			V
22+10	8.7169	1.70		Q			V
22+15	8.7297	1.86		Q			V
22+20	8.7425	1.86		Q			V
22+25	8.7539	1.66		Q			V
22+30	8.7643	1.50		Q			V
22+35	8.7743	1.45		Q			V
22+40	8.7840	1.42		Q			V
22+45	8.7937	1.40		Q			V
22+50	8.8032	1.38		Q			V
22+55	8.8126	1.37		Q			V
23+ 0	8.8220	1.36		Q			V
23+ 5	8.8314	1.36		Q			V
23+10	8.8408	1.36		Q			V
23+15	8.8501	1.35		Q			V
23+20	8.8594	1.35		Q			V
23+25	8.8686	1.35		Q			V
23+30	8.8779	1.35		Q			V
23+35	8.8872	1.35		Q			V
23+40	8.8964	1.35		Q			V
23+45	8.9057	1.35		Q			V
23+50	8.9150	1.35		Q			V
23+55	8.9242	1.35		Q			V
24+ 0	8.9335	1.35		Q			V
24+ 5	8.9420	1.24		Q			V
24+10	8.9474	0.78		Q			V
24+15	8.9503	0.42		Q			V

24+20	8.9523	0.28	Q				V
24+25	8.9537	0.20	Q				V
24+30	8.9547	0.15	Q				V
24+35	8.9554	0.11	Q				V
24+40	8.9559	0.08	Q				V
24+45	8.9563	0.06	Q				V
24+50	8.9566	0.04	Q				V
24+55	8.9567	0.02	Q				V
25+ 0	8.9569	0.02	Q				V
25+ 5	8.9569	0.01	Q				V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930PUH5245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
5 YEAR STORM EVENT PROPOSED UH
1930PUH5
DS

Drainage Area = 127.12(Ac.) = 0.199 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 127.12(Ac.) = 0.199 Sq. Mi.
Length along longest watercourse = 5048.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.956 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 29.90(Ft.)
Slope along watercourse = 31.2742 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.140 Hr.
Lag time = 8.40 Min.
25% of lag time = 2.10 Min.
40% of lag time = 3.36 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	1.60	203.39

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	4.00	508.48

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.162(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.162(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
127.120	69.00	0.900

Total Area Entered = 127.12(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	59.527	8.108	10.388
2	0.167	119.054	33.632	43.087
3	0.250	178.581	26.735	34.252
4	0.333	238.109	10.389	13.309
5	0.417	297.636	6.125	7.847
6	0.500	357.163	4.147	5.313
7	0.583	416.690	2.960	3.792
8	0.667	476.217	2.078	2.663
9	0.750	535.744	1.719	2.202
10	0.833	595.271	1.279	1.638
11	0.917	654.799	0.977	1.251
12	1.000	714.326	0.697	0.893
13	1.083	773.853	0.595	0.763
14	1.167	833.380	0.559	0.716
			Sum = 100.000 Sum=	128.113

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.017	0.193	0.003	0.01
2	0.17	0.07	0.017	0.193	0.003	0.01
3	0.25	0.07	0.017	0.192	0.003	0.01
4	0.33	0.10	0.026	0.191	0.005	0.02
5	0.42	0.10	0.026	0.190	0.005	0.02
6	0.50	0.10	0.026	0.190	0.005	0.02
7	0.58	0.10	0.026	0.189	0.005	0.02
8	0.67	0.10	0.026	0.188	0.005	0.02
9	0.75	0.10	0.026	0.187	0.005	0.02
10	0.83	0.13	0.035	0.187	0.006	0.03
11	0.92	0.13	0.035	0.186	0.006	0.03
12	1.00	0.13	0.035	0.185	0.006	0.03
13	1.08	0.10	0.026	0.184	0.005	0.02
14	1.17	0.10	0.026	0.184	0.005	0.02
15	1.25	0.10	0.026	0.183	0.005	0.02
16	1.33	0.10	0.026	0.182	0.005	0.02
17	1.42	0.10	0.026	0.182	0.005	0.02
18	1.50	0.10	0.026	0.181	0.005	0.02
19	1.58	0.10	0.026	0.180	0.005	0.02
20	1.67	0.10	0.026	0.179	0.005	0.02
21	1.75	0.10	0.026	0.179	0.005	0.02
22	1.83	0.13	0.035	0.178	0.006	0.03
23	1.92	0.13	0.035	0.177	0.006	0.03
24	2.00	0.13	0.035	0.176	0.006	0.03
25	2.08	0.13	0.035	0.176	0.006	0.03
26	2.17	0.13	0.035	0.175	0.006	0.03
27	2.25	0.13	0.035	0.174	0.006	0.03
28	2.33	0.13	0.035	0.174	0.006	0.03
29	2.42	0.13	0.035	0.173	0.006	0.03
30	2.50	0.13	0.035	0.172	0.006	0.03
31	2.58	0.17	0.043	0.172	0.008	0.04

32	2.67	0.17	0.043	0.171	0.008	0.04
33	2.75	0.17	0.043	0.170	0.008	0.04
34	2.83	0.17	0.043	0.169	0.008	0.04
35	2.92	0.17	0.043	0.169	0.008	0.04
36	3.00	0.17	0.043	0.168	0.008	0.04
37	3.08	0.17	0.043	0.167	0.008	0.04
38	3.17	0.17	0.043	0.167	0.008	0.04
39	3.25	0.17	0.043	0.166	0.008	0.04
40	3.33	0.17	0.043	0.165	0.008	0.04
41	3.42	0.17	0.043	0.165	0.008	0.04
42	3.50	0.17	0.043	0.164	0.008	0.04
43	3.58	0.17	0.043	0.163	0.008	0.04
44	3.67	0.17	0.043	0.162	0.008	0.04
45	3.75	0.17	0.043	0.162	0.008	0.04
46	3.83	0.20	0.052	0.161	0.009	0.04
47	3.92	0.20	0.052	0.160	0.009	0.04
48	4.00	0.20	0.052	0.160	0.009	0.04
49	4.08	0.20	0.052	0.159	0.009	0.04
50	4.17	0.20	0.052	0.158	0.009	0.04
51	4.25	0.20	0.052	0.158	0.009	0.04
52	4.33	0.23	0.061	0.157	0.011	0.05
53	4.42	0.23	0.061	0.156	0.011	0.05
54	4.50	0.23	0.061	0.156	0.011	0.05
55	4.58	0.23	0.061	0.155	0.011	0.05
56	4.67	0.23	0.061	0.154	0.011	0.05
57	4.75	0.23	0.061	0.154	0.011	0.05
58	4.83	0.27	0.069	0.153	0.012	0.06
59	4.92	0.27	0.069	0.152	0.012	0.06
60	5.00	0.27	0.069	0.152	0.012	0.06
61	5.08	0.20	0.052	0.151	0.009	0.04
62	5.17	0.20	0.052	0.150	0.009	0.04
63	5.25	0.20	0.052	0.150	0.009	0.04
64	5.33	0.23	0.061	0.149	0.011	0.05
65	5.42	0.23	0.061	0.148	0.011	0.05
66	5.50	0.23	0.061	0.148	0.011	0.05
67	5.58	0.27	0.069	0.147	0.012	0.06
68	5.67	0.27	0.069	0.147	0.012	0.06
69	5.75	0.27	0.069	0.146	0.012	0.06
70	5.83	0.27	0.069	0.145	0.012	0.06
71	5.92	0.27	0.069	0.145	0.012	0.06
72	6.00	0.27	0.069	0.144	0.012	0.06
73	6.08	0.30	0.078	0.143	0.014	0.06
74	6.17	0.30	0.078	0.143	0.014	0.06
75	6.25	0.30	0.078	0.142	0.014	0.06
76	6.33	0.30	0.078	0.141	0.014	0.06
77	6.42	0.30	0.078	0.141	0.014	0.06
78	6.50	0.30	0.078	0.140	0.014	0.06
79	6.58	0.33	0.086	0.140	0.016	0.07
80	6.67	0.33	0.086	0.139	0.016	0.07
81	6.75	0.33	0.086	0.138	0.016	0.07
82	6.83	0.33	0.086	0.138	0.016	0.07
83	6.92	0.33	0.086	0.137	0.016	0.07
84	7.00	0.33	0.086	0.136	0.016	0.07
85	7.08	0.33	0.086	0.136	0.016	0.07
86	7.17	0.33	0.086	0.135	0.016	0.07
87	7.25	0.33	0.086	0.135	0.016	0.07
88	7.33	0.37	0.095	0.134	0.017	0.08
89	7.42	0.37	0.095	0.133	0.017	0.08
90	7.50	0.37	0.095	0.133	0.017	0.08
91	7.58	0.40	0.104	0.132	0.019	0.09
92	7.67	0.40	0.104	0.131	0.019	0.09
93	7.75	0.40	0.104	0.131	0.019	0.09
94	7.83	0.43	0.112	0.130	0.020	0.09
95	7.92	0.43	0.112	0.130	0.020	0.09
96	8.00	0.43	0.112	0.129	0.020	0.09
97	8.08	0.50	0.130	0.128	---	0.00
98	8.17	0.50	0.130	0.128	---	0.00
99	8.25	0.50	0.130	0.127	---	0.00
100	8.33	0.50	0.130	0.127	---	0.00
101	8.42	0.50	0.130	0.126	---	0.00
102	8.50	0.50	0.130	0.125	---	0.00

103	8.58	0.53	0.138	0.125	---	0.01
104	8.67	0.53	0.138	0.124	---	0.01
105	8.75	0.53	0.138	0.124	---	0.01
106	8.83	0.57	0.147	0.123	---	0.02
107	8.92	0.57	0.147	0.123	---	0.02
108	9.00	0.57	0.147	0.122	---	0.03
109	9.08	0.63	0.164	0.121	---	0.04
110	9.17	0.63	0.164	0.121	---	0.04
111	9.25	0.63	0.164	0.120	---	0.04
112	9.33	0.67	0.173	0.120	---	0.05
113	9.42	0.67	0.173	0.119	---	0.05
114	9.50	0.67	0.173	0.119	---	0.05
115	9.58	0.70	0.182	0.118	---	0.06
116	9.67	0.70	0.182	0.117	---	0.06
117	9.75	0.70	0.182	0.117	---	0.06
118	9.83	0.73	0.190	0.116	---	0.07
119	9.92	0.73	0.190	0.116	---	0.07
120	10.00	0.73	0.190	0.115	---	0.08
121	10.08	0.50	0.130	0.115	---	0.02
122	10.17	0.50	0.130	0.114	---	0.02
123	10.25	0.50	0.130	0.113	---	0.02
124	10.33	0.50	0.130	0.113	---	0.02
125	10.42	0.50	0.130	0.112	---	0.02
126	10.50	0.50	0.130	0.112	---	0.02
127	10.58	0.67	0.173	0.111	---	0.06
128	10.67	0.67	0.173	0.111	---	0.06
129	10.75	0.67	0.173	0.110	---	0.06
130	10.83	0.67	0.173	0.110	---	0.06
131	10.92	0.67	0.173	0.109	---	0.06
132	11.00	0.67	0.173	0.109	---	0.06
133	11.08	0.63	0.164	0.108	---	0.06
134	11.17	0.63	0.164	0.108	---	0.06
135	11.25	0.63	0.164	0.107	---	0.06
136	11.33	0.63	0.164	0.106	---	0.06
137	11.42	0.63	0.164	0.106	---	0.06
138	11.50	0.63	0.164	0.105	---	0.06
139	11.58	0.57	0.147	0.105	---	0.04
140	11.67	0.57	0.147	0.104	---	0.04
141	11.75	0.57	0.147	0.104	---	0.04
142	11.83	0.60	0.156	0.103	---	0.05
143	11.92	0.60	0.156	0.103	---	0.05
144	12.00	0.60	0.156	0.102	---	0.05
145	12.08	0.83	0.216	0.102	---	0.11
146	12.17	0.83	0.216	0.101	---	0.11
147	12.25	0.83	0.216	0.101	---	0.12
148	12.33	0.87	0.225	0.100	---	0.12
149	12.42	0.87	0.225	0.100	---	0.13
150	12.50	0.87	0.225	0.099	---	0.13
151	12.58	0.93	0.242	0.099	---	0.14
152	12.67	0.93	0.242	0.098	---	0.14
153	12.75	0.93	0.242	0.098	---	0.14
154	12.83	0.97	0.251	0.097	---	0.15
155	12.92	0.97	0.251	0.097	---	0.15
156	13.00	0.97	0.251	0.096	---	0.15
157	13.08	1.13	0.294	0.096	---	0.20
158	13.17	1.13	0.294	0.095	---	0.20
159	13.25	1.13	0.294	0.095	---	0.20
160	13.33	1.13	0.294	0.094	---	0.20
161	13.42	1.13	0.294	0.094	---	0.20
162	13.50	1.13	0.294	0.093	---	0.20
163	13.58	0.77	0.199	0.093	---	0.11
164	13.67	0.77	0.199	0.092	---	0.11
165	13.75	0.77	0.199	0.092	---	0.11
166	13.83	0.77	0.199	0.092	---	0.11
167	13.92	0.77	0.199	0.091	---	0.11
168	14.00	0.77	0.199	0.091	---	0.11
169	14.08	0.90	0.233	0.090	---	0.14
170	14.17	0.90	0.233	0.090	---	0.14
171	14.25	0.90	0.233	0.089	---	0.14
172	14.33	0.87	0.225	0.089	---	0.14
173	14.42	0.87	0.225	0.088	---	0.14

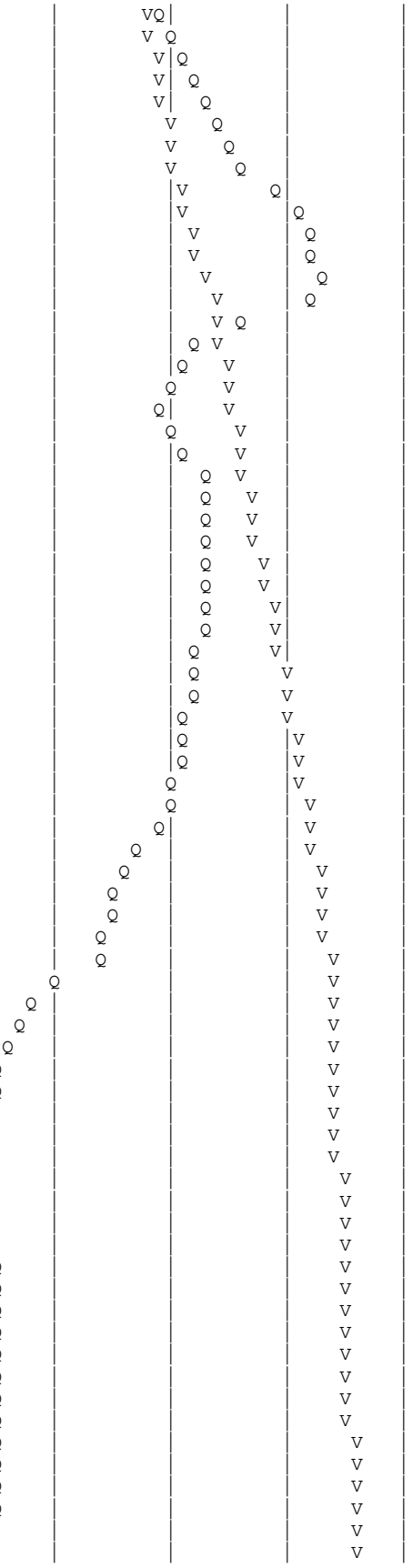
174	14.50	0.87	0.225	0.088	---	0.14
175	14.58	0.87	0.225	0.087	---	0.14
176	14.67	0.87	0.225	0.087	---	0.14
177	14.75	0.87	0.225	0.086	---	0.14
178	14.83	0.83	0.216	0.086	---	0.13
179	14.92	0.83	0.216	0.086	---	0.13
180	15.00	0.83	0.216	0.085	---	0.13
181	15.08	0.80	0.208	0.085	---	0.12
182	15.17	0.80	0.208	0.084	---	0.12
183	15.25	0.80	0.208	0.084	---	0.12
184	15.33	0.77	0.199	0.083	---	0.12
185	15.42	0.77	0.199	0.083	---	0.12
186	15.50	0.77	0.199	0.083	---	0.12
187	15.58	0.63	0.164	0.082	---	0.08
188	15.67	0.63	0.164	0.082	---	0.08
189	15.75	0.63	0.164	0.081	---	0.08
190	15.83	0.63	0.164	0.081	---	0.08
191	15.92	0.63	0.164	0.080	---	0.08
192	16.00	0.63	0.164	0.080	---	0.08
193	16.08	0.13	0.035	0.080	0.006	0.03
194	16.17	0.13	0.035	0.079	0.006	0.03
195	16.25	0.13	0.035	0.079	0.006	0.03
196	16.33	0.13	0.035	0.078	0.006	0.03
197	16.42	0.13	0.035	0.078	0.006	0.03
198	16.50	0.13	0.035	0.078	0.006	0.03
199	16.58	0.10	0.026	0.077	0.005	0.02
200	16.67	0.10	0.026	0.077	0.005	0.02
201	16.75	0.10	0.026	0.076	0.005	0.02
202	16.83	0.10	0.026	0.076	0.005	0.02
203	16.92	0.10	0.026	0.076	0.005	0.02
204	17.00	0.10	0.026	0.075	0.005	0.02
205	17.08	0.17	0.043	0.075	0.008	0.04
206	17.17	0.17	0.043	0.075	0.008	0.04
207	17.25	0.17	0.043	0.074	0.008	0.04
208	17.33	0.17	0.043	0.074	0.008	0.04
209	17.42	0.17	0.043	0.073	0.008	0.04
210	17.50	0.17	0.043	0.073	0.008	0.04
211	17.58	0.17	0.043	0.073	0.008	0.04
212	17.67	0.17	0.043	0.072	0.008	0.04
213	17.75	0.17	0.043	0.072	0.008	0.04
214	17.83	0.13	0.035	0.072	0.006	0.03
215	17.92	0.13	0.035	0.071	0.006	0.03
216	18.00	0.13	0.035	0.071	0.006	0.03
217	18.08	0.13	0.035	0.071	0.006	0.03
218	18.17	0.13	0.035	0.070	0.006	0.03
219	18.25	0.13	0.035	0.070	0.006	0.03
220	18.33	0.13	0.035	0.070	0.006	0.03
221	18.42	0.13	0.035	0.069	0.006	0.03
222	18.50	0.13	0.035	0.069	0.006	0.03
223	18.58	0.10	0.026	0.069	0.005	0.02
224	18.67	0.10	0.026	0.068	0.005	0.02
225	18.75	0.10	0.026	0.068	0.005	0.02
226	18.83	0.07	0.017	0.068	0.003	0.01
227	18.92	0.07	0.017	0.067	0.003	0.01
228	19.00	0.07	0.017	0.067	0.003	0.01
229	19.08	0.10	0.026	0.067	0.005	0.02
230	19.17	0.10	0.026	0.066	0.005	0.02
231	19.25	0.10	0.026	0.066	0.005	0.02
232	19.33	0.13	0.035	0.066	0.006	0.03
233	19.42	0.13	0.035	0.065	0.006	0.03
234	19.50	0.13	0.035	0.065	0.006	0.03
235	19.58	0.10	0.026	0.065	0.005	0.02
236	19.67	0.10	0.026	0.064	0.005	0.02
237	19.75	0.10	0.026	0.064	0.005	0.02
238	19.83	0.07	0.017	0.064	0.003	0.01
239	19.92	0.07	0.017	0.064	0.003	0.01
240	20.00	0.07	0.017	0.063	0.003	0.01
241	20.08	0.10	0.026	0.063	0.005	0.02
242	20.17	0.10	0.026	0.063	0.005	0.02
243	20.25	0.10	0.026	0.062	0.005	0.02
244	20.33	0.10	0.026	0.062	0.005	0.02

```
245  20.42     0.10      0.026         0.062     0.005         0.02
246  20.50     0.10      0.026         0.062     0.005         0.02
247  20.58     0.10      0.026         0.061     0.005         0.02
248  20.67     0.10      0.026         0.061     0.005         0.02
249  20.75     0.10      0.026         0.061     0.005         0.02
250  20.83     0.07      0.017         0.061     0.003         0.01
251  20.92     0.07      0.017         0.060     0.003         0.01
252  21.00     0.07      0.017         0.060     0.003         0.01
253  21.08     0.10      0.026         0.060     0.005         0.02
254  21.17     0.10      0.026         0.060     0.005         0.02
255  21.25     0.10      0.026         0.059     0.005         0.02
256  21.33     0.07      0.017         0.059     0.003         0.01
257  21.42     0.07      0.017         0.059     0.003         0.01
258  21.50     0.07      0.017         0.059     0.003         0.01
259  21.58     0.10      0.026         0.059     0.005         0.02
260  21.67     0.10      0.026         0.058     0.005         0.02
261  21.75     0.10      0.026         0.058     0.005         0.02
262  21.83     0.07      0.017         0.058     0.003         0.01
263  21.92     0.07      0.017         0.058     0.003         0.01
264  22.00     0.07      0.017         0.058     0.003         0.01
265  22.08     0.10      0.026         0.057     0.005         0.02
266  22.17     0.10      0.026         0.057     0.005         0.02
267  22.25     0.10      0.026         0.057     0.005         0.02
268  22.33     0.07      0.017         0.057     0.003         0.01
269  22.42     0.07      0.017         0.057     0.003         0.01
270  22.50     0.07      0.017         0.057     0.003         0.01
271  22.58     0.07      0.017         0.056     0.003         0.01
272  22.67     0.07      0.017         0.056     0.003         0.01
273  22.75     0.07      0.017         0.056     0.003         0.01
274  22.83     0.07      0.017         0.056     0.003         0.01
275  22.92     0.07      0.017         0.056     0.003         0.01
276  23.00     0.07      0.017         0.056     0.003         0.01
277  23.08     0.07      0.017         0.055     0.003         0.01
278  23.17     0.07      0.017         0.055     0.003         0.01
279  23.25     0.07      0.017         0.055     0.003         0.01
280  23.33     0.07      0.017         0.055     0.003         0.01
281  23.42     0.07      0.017         0.055     0.003         0.01
282  23.50     0.07      0.017         0.055     0.003         0.01
283  23.58     0.07      0.017         0.055     0.003         0.01
284  23.67     0.07      0.017         0.055     0.003         0.01
285  23.75     0.07      0.017         0.055     0.003         0.01
286  23.83     0.07      0.017         0.055     0.003         0.01
287  23.92     0.07      0.017         0.055     0.003         0.01
288  24.00     0.07      0.017         0.055     0.003         0.01
    Sum =     100.0                                 Sum =    14.7
      Flood volume = Effective rainfall      1.22(In)
       times area     127.1(Ac.)/[(In)/(Ft.)] =      12.9(Ac.Ft)
      Total soil loss =      0.94(In)
      Total soil loss =     9.953(Ac.Ft)
      Total rainfall =      2.16(In)
      Flood volume =      563902.4 Cubic Feet
      Total soil loss =      433559.1 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     24.880(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
 ------------------------------------------------------------------------
   0+ 5       0.0010      0.15  Q         |         |         |         |
   0+10       0.0062      0.76  VQ        |         |         |         |
   0+15       0.0148      1.24  VQ        |         |         |         |
   0+20       0.0252      1.51  V Q       |         |         |         |
   0+25       0.0384      1.92  V Q       |         |         |         |
   0+30       0.0539      2.24  V Q       |         |         |         |
   0+35       0.0704      2.39  V  Q      |         |         |         |
```

0+40	0.0875	2.48	V Q	|	|	|	|
0+45	0.1050	2.55	V Q	|	|	|	|
0+50	0.1235	2.68	V Q	|	|	|	|
0+55	0.1443	3.02	V Q	|	|	|	|
1+ 0	0.1669	3.29	V Q	|	|	|	|
1+ 5	0.1899	3.33	V Q	|	|	|	|
1+10	0.2113	3.10	V Q	|	|	|	|
1+15	0.2313	2.90	V Q	|	|	|	|
1+20	0.2508	2.84	V Q	|	|	|	|
1+25	0.2702	2.81	V Q	|	|	|	|
1+30	0.2894	2.79	V Q	|	|	|	|
1+35	0.3085	2.77	V Q	|	|	|	|
1+40	0.3275	2.76	V Q	|	|	|	|
1+45	0.3465	2.75	V Q	|	|	|	|
1+50	0.3659	2.82	V Q	|	|	|	|
1+55	0.3874	3.12	V Q	|	|	|	|
2+ 0	0.4105	3.36	V Q	|	|	|	|
2+ 5	0.4343	3.45	V Q	|	|	|	|
2+10	0.4584	3.50	V Q	|	|	|	|
2+15	0.4827	3.54	V Q	|	|	|	|
2+20	0.5073	3.56	V Q	|	|	|	|
2+25	0.5319	3.58	V Q	|	|	|	|
2+30	0.5567	3.60	V Q	|	|	|	|
2+35	0.5821	3.68	V Q	|	|	|	|
2+40	0.6096	4.00	V Q	|	|	|	|
2+45	0.6389	4.25	V Q	|	|	|	|
2+50	0.6688	4.35	V Q	|	|	|	|
2+55	0.6992	4.41	V Q	|	|	|	|
3+ 0	0.7298	4.45	V Q	|	|	|	|
3+ 5	0.7606	4.47	V Q	|	|	|	|
3+10	0.7915	4.49	V Q	|	|	|	|
3+15	0.8225	4.51	V Q	|	|	|	|
3+20	0.8537	4.52	V Q	|	|	|	|
3+25	0.8848	4.53	V Q	|	|	|	|
3+30	0.9161	4.53	V Q	|	|	|	|
3+35	0.9473	4.54	V Q	|	|	|	|
3+40	0.9786	4.54	V Q	|	|	|	|
3+45	1.0099	4.54	V Q	|	|	|	|
3+50	1.0417	4.62	V Q	|	|	|	|
3+55	1.0756	4.92	V Q	|	|	|	|
4+ 0	1.1112	5.17	V Q	|	|	|	|
4+ 5	1.1474	5.26	V Q	|	|	|	|
4+10	1.1840	5.32	V Q	|	|	|	|
4+15	1.2209	5.35	V Q	|	|	|	|
4+20	1.2585	5.45	V Q	|	|	|	|
4+25	1.2983	5.78	V Q	|	|	|	|
4+30	1.3399	6.04	V Q	|	|	|	|
4+35	1.3822	6.14	V Q	|	|	|	|
4+40	1.4249	6.21	V Q	|	|	|	|
4+45	1.4680	6.25	V Q	|	|	|	|
4+50	1.5118	6.36	V Q	|	|	|	|
4+55	1.5578	6.69	V Q	|	|	|	|
5+ 0	1.6057	6.95	V Q	|	|	|	|
5+ 5	1.6532	6.91	V Q	|	|	|	|
5+10	1.6970	6.36	V Q	|	|	|	|
5+15	1.7378	5.92	V Q	|	|	|	|
5+20	1.7780	5.83	V Q	|	|	|	|
5+25	1.8196	6.05	V Q	|	|	|	|
5+30	1.8626	6.24	V Q	|	|	|	|
5+35	1.9064	6.36	V Q	|	|	|	|
5+40	1.9525	6.69	V Q	|	|	|	|
5+45	2.0004	6.95	V Q	|	|	|	|
5+50	2.0489	7.05	V Q	|	|	|	|
5+55	2.0979	7.11	V Q	|	|	|	|
6+ 0	2.1472	7.16	V Q	|	|	|	|
6+ 5	2.1972	7.26	V Q	|	|	|	|
6+10	2.2494	7.58	V Q	|	|	|	|
6+15	2.3034	7.84	V Q	|	|	|	|
6+20	2.3582	7.96	V Q	|	|	|	|
6+25	2.4135	8.03	V Q	|	|	|	|
6+30	2.4691	8.07	V Q	|	|	|	|

6+35	2.5254	8.18				
6+40	2.5840	8.51				
6+45	2.6443	8.76				
6+50	2.7054	8.87				
6+55	2.7669	8.93				
7+ 0	2.8288	8.98				
7+ 5	2.8908	9.01				
7+10	2.9531	9.04				
7+15	3.0154	9.05				
7+20	3.0783	9.14				
7+25	3.1434	9.45				
7+30	3.2102	9.70				
7+35	3.2782	9.87				
7+40	3.3487	10.24				
7+45	3.4212	10.52				
7+50	3.4950	10.72				
7+55	3.5714	11.10				
8+ 0	3.6498	11.39				
8+ 5	3.7227	10.58				
8+10	3.7692	6.75				
8+15	3.7948	3.72				
8+20	3.8128	2.61				
8+25	3.8265	1.99				
8+30	3.8375	1.59				
8+35	3.8473	1.42				
8+40	3.8585	1.64				
8+45	3.8710	1.81				
8+50	3.8844	1.94				
8+55	3.9005	2.35				
9+ 0	3.9190	2.68				
9+ 5	3.9398	3.01				
9+10	3.9664	3.86				
9+15	3.9980	4.59				
9+20	4.0326	5.03				
9+25	4.0715	5.65				
9+30	4.1138	6.14				
9+35	4.1586	6.50				
9+40	4.2073	7.08				
9+45	4.2593	7.54				
9+50	4.3136	7.89				
9+55	4.3718	8.45				
10+ 0	4.4331	8.90				
10+ 5	4.4917	8.52				
10+10	4.5337	6.09				
10+15	4.5623	4.16				
10+20	4.5863	3.48				
10+25	4.6078	3.12				
10+30	4.6277	2.89				
10+35	4.6498	3.20				
10+40	4.6842	4.99				
10+45	4.7284	6.42				
10+50	4.7764	6.97				
10+55	4.8268	7.31				
11+ 0	4.8789	7.56				
11+ 5	4.9316	7.66				
11+10	4.9827	7.42				
11+15	5.0329	7.29				
11+20	5.0833	7.31				
11+25	5.1341	7.37				
11+30	5.1852	7.43				
11+35	5.2356	7.32				
11+40	5.2814	6.65				
11+45	5.3234	6.10				
11+50	5.3649	6.02				
11+55	5.4083	6.31				
12+ 0	5.4536	6.57				
12+ 5	5.5039	7.31				
12+10	5.5728	10.00				
12+15	5.6565	12.15				
12+20	5.7468	13.11				
12+25	5.8434	14.03				

12+30	5.9448	14.72	
12+35	6.0502	15.31	
12+40	6.1627	16.34	
12+45	6.2811	17.19	
12+50	6.4030	17.71	
12+55	6.5297	18.39	
13+ 0	6.6599	18.91	
13+ 5	6.7954	19.66	
13+10	6.9452	21.76	
13+15	7.1063	23.40	
13+20	7.2723	24.10	
13+25	7.4414	24.55	
13+30	7.6128	24.88	
13+35	7.7791	24.14	
13+40	7.9185	20.24	
13+45	8.0366	17.15	
13+50	8.1469	16.02	
13+55	8.2530	15.39	
14+ 0	8.3562	14.99	
14+ 5	8.4600	15.08	
14+10	8.5730	16.41	
14+15	8.6932	17.44	
14+20	8.8152	17.72	
14+25	8.9361	17.56	
14+30	9.0560	17.42	
14+35	9.1760	17.42	
14+40	9.2961	17.43	
14+45	9.4167	17.52	
14+50	9.5373	17.51	
14+55	9.6559	17.22	
15+ 0	9.7729	16.99	
15+ 5	9.8890	16.85	
15+10	10.0025	16.48	
15+15	10.1140	16.19	
15+20	10.2242	16.00	
15+25	10.3316	15.59	
15+30	10.4368	15.28	
15+35	10.5388	14.81	
15+40	10.6303	13.28	
15+45	10.7134	12.07	
15+50	10.7934	11.61	
15+55	10.8716	11.35	
16+ 0	10.9487	11.20	
16+ 5	11.0211	10.51	
16+10	11.0764	8.03	
16+15	11.1181	6.05	
16+20	11.1542	5.25	
16+25	11.1871	4.77	
16+30	11.2178	4.45	
16+35	11.2463	4.14	
16+40	11.2716	3.67	
16+45	11.2943	3.30	
16+50	11.3158	3.12	
16+55	11.3364	2.99	
17+ 0	11.3564	2.91	
17+ 5	11.3770	2.99	
17+10	11.4014	3.54	
17+15	11.4290	4.01	
17+20	11.4578	4.19	
17+25	11.4873	4.29	
17+30	11.5173	4.36	
17+35	11.5477	4.41	
17+40	11.5782	4.44	
17+45	11.6090	4.47	
17+50	11.6395	4.42	
17+55	11.6679	4.13	
18+ 0	11.6948	3.90	
18+ 5	11.7211	3.82	
18+10	11.7470	3.77	
18+15	11.7728	3.73	
18+20	11.7983	3.71	

18+25	11.8237	3.69		Q			V
18+30	11.8490	3.67		Q			V
18+35	11.8737	3.59		Q			V
18+40	11.8962	3.27		Q			V
18+45	11.9170	3.02		Q			V
18+50	11.9367	2.85		Q			V
18+55	11.9538	2.48		Q			V
19+ 0	11.9689	2.20	Q				V
19+ 5	11.9838	2.16	Q				V
19+10	12.0002	2.39		Q			V
19+15	12.0180	2.58		Q			V
19+20	12.0366	2.71		Q			V
19+25	12.0575	3.04		Q			V
19+30	12.0802	3.30		Q			V
19+35	12.1032	3.33		Q			V
19+40	12.1244	3.08		Q			V
19+45	12.1443	2.89		Q			V
19+50	12.1632	2.75		Q			V
19+55	12.1799	2.41		Q			V
20+ 0	12.1947	2.16	Q				V
20+ 5	12.2093	2.12	Q				V
20+10	12.2256	2.37		Q			V
20+15	12.2433	2.57		Q			V
20+20	12.2614	2.63		Q			V
20+25	12.2797	2.66		Q			V
20+30	12.2982	2.68		Q			V
20+35	12.3166	2.69		Q			V
20+40	12.3352	2.69		Q			V
20+45	12.3538	2.70		Q			V
20+50	12.3719	2.63		Q			V
20+55	12.3879	2.33		Q			V
21+ 0	12.4024	2.09	Q				V
21+ 5	12.4167	2.08	Q				V
21+10	12.4327	2.33		Q			V
21+15	12.4502	2.54		Q			V
21+20	12.4677	2.53		Q			V
21+25	12.4833	2.26		Q			V
21+30	12.4973	2.04	Q				V
21+35	12.5114	2.04	Q				V
21+40	12.5272	2.30		Q			V
21+45	12.5445	2.51		Q			V
21+50	12.5618	2.51		Q			V
21+55	12.5772	2.25	Q				V
22+ 0	12.5912	2.03	Q				V
22+ 5	12.6052	2.03	Q				V
22+10	12.6211	2.30		Q			V
22+15	12.6384	2.51		Q			V
22+20	12.6557	2.51		Q			V
22+25	12.6711	2.25	Q				V
22+30	12.6851	2.03	Q				V
22+35	12.6986	1.96	Q				V
22+40	12.7118	1.92	Q				V
22+45	12.7248	1.89	Q				V
22+50	12.7377	1.87	Q				V
22+55	12.7505	1.85	Q				V
23+ 0	12.7632	1.84	Q				V
23+ 5	12.7758	1.84	Q				V
23+10	12.7885	1.83	Q				V
23+15	12.8011	1.83	Q				V
23+20	12.8136	1.82	Q				V
23+25	12.8261	1.82	Q				V
23+30	12.8387	1.82	Q				V
23+35	12.8512	1.82	Q				V
23+40	12.8637	1.82	Q				V
23+45	12.8762	1.82	Q				V
23+50	12.8887	1.82	Q				V
23+55	12.9012	1.82	Q				V
24+ 0	12.9138	1.82	Q				V
24+ 5	12.9253	1.67	Q				V
24+10	12.9326	1.06	Q				V
24+15	12.9365	0.57	Q				V

```
   24+20      12.9391      0.38  Q          |          |          |         V|
   24+25      12.9410      0.27  Q          |          |          |         V|
   24+30      12.9424      0.20  Q          |          |          |         V|
   24+35      12.9434      0.14  Q          |          |          |         V|
   24+40      12.9441      0.11  Q          |          |          |         V|
   24+45      12.9446      0.07  Q          |          |          |         V|
   24+50      12.9450      0.05  Q          |          |          |         V|
   24+55      12.9452      0.03  Q          |          |          |         V|
   25+ 0      12.9453      0.02  Q          |          |          |         V|
   25+ 5      12.9454      0.01  Q          |          |          |          V
--------------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2004, Version 7.0
Study date 01/06/20 File: 1930PUH102410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
10 YEAR STORM EVENT PROPOSED UH
1930PUH10
DS

Drainage Area = 127.12(Ac.) = 0.199 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 127.12(Ac.) = 0.199 Sq. Mi.
Length along longest watercourse = 5048.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.956 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 29.90(Ft.)
Slope along watercourse = 31.2742 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.140 Hr.
Lag time = 8.40 Min.
25% of lag time = 2.10 Min.
40% of lag time = 3.36 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	1.60	203.39

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	4.00	508.48

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 2.587(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.587(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
127.120	69.00	0.900

Total Area Entered = 127.12(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	59.527	8.108	10.388
2	0.167	119.054	33.632	43.087
3	0.250	178.581	26.735	34.252
4	0.333	238.109	10.389	13.309
5	0.417	297.636	6.125	7.847
6	0.500	357.163	4.147	5.313
7	0.583	416.690	2.960	3.792
8	0.667	476.217	2.078	2.663
9	0.750	535.744	1.719	2.202
10	0.833	595.271	1.279	1.638
11	0.917	654.799	0.977	1.251
12	1.000	714.326	0.697	0.893
13	1.083	773.853	0.595	0.763
14	1.167	833.380	0.559	0.716
			Sum = 100.000 Sum=	128.113

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.021	0.126	0.004	0.02
2	0.17	0.07	0.021	0.125	0.004	0.02
3	0.25	0.07	0.021	0.125	0.004	0.02
4	0.33	0.10	0.031	0.124	0.006	0.03
5	0.42	0.10	0.031	0.124	0.006	0.03
6	0.50	0.10	0.031	0.123	0.006	0.03
7	0.58	0.10	0.031	0.123	0.006	0.03
8	0.67	0.10	0.031	0.122	0.006	0.03
9	0.75	0.10	0.031	0.122	0.006	0.03
10	0.83	0.13	0.041	0.121	0.007	0.03
11	0.92	0.13	0.041	0.121	0.007	0.03
12	1.00	0.13	0.041	0.120	0.007	0.03
13	1.08	0.10	0.031	0.120	0.006	0.03
14	1.17	0.10	0.031	0.119	0.006	0.03
15	1.25	0.10	0.031	0.119	0.006	0.03
16	1.33	0.10	0.031	0.118	0.006	0.03
17	1.42	0.10	0.031	0.118	0.006	0.03
18	1.50	0.10	0.031	0.117	0.006	0.03
19	1.58	0.10	0.031	0.117	0.006	0.03
20	1.67	0.10	0.031	0.117	0.006	0.03
21	1.75	0.10	0.031	0.116	0.006	0.03
22	1.83	0.13	0.041	0.116	0.007	0.03
23	1.92	0.13	0.041	0.115	0.007	0.03
24	2.00	0.13	0.041	0.115	0.007	0.03
25	2.08	0.13	0.041	0.114	0.007	0.03
26	2.17	0.13	0.041	0.114	0.007	0.03
27	2.25	0.13	0.041	0.113	0.007	0.03
28	2.33	0.13	0.041	0.113	0.007	0.03
29	2.42	0.13	0.041	0.112	0.007	0.03
30	2.50	0.13	0.041	0.112	0.007	0.03
31	2.58	0.17	0.052	0.111	0.009	0.04

32	2.67	0.17	0.052	0.111	0.009	0.04
33	2.75	0.17	0.052	0.110	0.009	0.04
34	2.83	0.17	0.052	0.110	0.009	0.04
35	2.92	0.17	0.052	0.110	0.009	0.04
36	3.00	0.17	0.052	0.109	0.009	0.04
37	3.08	0.17	0.052	0.109	0.009	0.04
38	3.17	0.17	0.052	0.108	0.009	0.04
39	3.25	0.17	0.052	0.108	0.009	0.04
40	3.33	0.17	0.052	0.107	0.009	0.04
41	3.42	0.17	0.052	0.107	0.009	0.04
42	3.50	0.17	0.052	0.106	0.009	0.04
43	3.58	0.17	0.052	0.106	0.009	0.04
44	3.67	0.17	0.052	0.106	0.009	0.04
45	3.75	0.17	0.052	0.105	0.009	0.04
46	3.83	0.20	0.062	0.105	0.011	0.05
47	3.92	0.20	0.062	0.104	0.011	0.05
48	4.00	0.20	0.062	0.104	0.011	0.05
49	4.08	0.20	0.062	0.103	0.011	0.05
50	4.17	0.20	0.062	0.103	0.011	0.05
51	4.25	0.20	0.062	0.102	0.011	0.05
52	4.33	0.23	0.072	0.102	0.013	0.06
53	4.42	0.23	0.072	0.102	0.013	0.06
54	4.50	0.23	0.072	0.101	0.013	0.06
55	4.58	0.23	0.072	0.101	0.013	0.06
56	4.67	0.23	0.072	0.100	0.013	0.06
57	4.75	0.23	0.072	0.100	0.013	0.06
58	4.83	0.27	0.083	0.099	0.015	0.07
59	4.92	0.27	0.083	0.099	0.015	0.07
60	5.00	0.27	0.083	0.099	0.015	0.07
61	5.08	0.20	0.062	0.098	0.011	0.05
62	5.17	0.20	0.062	0.098	0.011	0.05
63	5.25	0.20	0.062	0.097	0.011	0.05
64	5.33	0.23	0.072	0.097	0.013	0.06
65	5.42	0.23	0.072	0.096	0.013	0.06
66	5.50	0.23	0.072	0.096	0.013	0.06
67	5.58	0.27	0.083	0.096	0.015	0.07
68	5.67	0.27	0.083	0.095	0.015	0.07
69	5.75	0.27	0.083	0.095	0.015	0.07
70	5.83	0.27	0.083	0.094	0.015	0.07
71	5.92	0.27	0.083	0.094	0.015	0.07
72	6.00	0.27	0.083	0.093	0.015	0.07
73	6.08	0.30	0.093	0.093	---	0.00
74	6.17	0.30	0.093	0.093	---	0.00
75	6.25	0.30	0.093	0.092	---	0.00
76	6.33	0.30	0.093	0.092	---	0.00
77	6.42	0.30	0.093	0.091	---	0.00
78	6.50	0.30	0.093	0.091	---	0.00
79	6.58	0.33	0.103	0.091	---	0.01
80	6.67	0.33	0.103	0.090	---	0.01
81	6.75	0.33	0.103	0.090	---	0.01
82	6.83	0.33	0.103	0.089	---	0.01
83	6.92	0.33	0.103	0.089	---	0.01
84	7.00	0.33	0.103	0.089	---	0.01
85	7.08	0.33	0.103	0.088	---	0.02
86	7.17	0.33	0.103	0.088	---	0.02
87	7.25	0.33	0.103	0.087	---	0.02
88	7.33	0.37	0.114	0.087	---	0.03
89	7.42	0.37	0.114	0.087	---	0.03
90	7.50	0.37	0.114	0.086	---	0.03
91	7.58	0.40	0.124	0.086	---	0.04
92	7.67	0.40	0.124	0.085	---	0.04
93	7.75	0.40	0.124	0.085	---	0.04
94	7.83	0.43	0.135	0.085	---	0.05
95	7.92	0.43	0.135	0.084	---	0.05
96	8.00	0.43	0.135	0.084	---	0.05
97	8.08	0.50	0.155	0.083	---	0.07
98	8.17	0.50	0.155	0.083	---	0.07
99	8.25	0.50	0.155	0.083	---	0.07
100	8.33	0.50	0.155	0.082	---	0.07
101	8.42	0.50	0.155	0.082	---	0.07
102	8.50	0.50	0.155	0.082	---	0.07

103	8.58	0.53	0.166	0.081	---	0.08
104	8.67	0.53	0.166	0.081	---	0.08
105	8.75	0.53	0.166	0.080	---	0.09
106	8.83	0.57	0.176	0.080	---	0.10
107	8.92	0.57	0.176	0.080	---	0.10
108	9.00	0.57	0.176	0.079	---	0.10
109	9.08	0.63	0.197	0.079	---	0.12
110	9.17	0.63	0.197	0.078	---	0.12
111	9.25	0.63	0.197	0.078	---	0.12
112	9.33	0.67	0.207	0.078	---	0.13
113	9.42	0.67	0.207	0.077	---	0.13
114	9.50	0.67	0.207	0.077	---	0.13
115	9.58	0.70	0.217	0.077	---	0.14
116	9.67	0.70	0.217	0.076	---	0.14
117	9.75	0.70	0.217	0.076	---	0.14
118	9.83	0.73	0.228	0.076	---	0.15
119	9.92	0.73	0.228	0.075	---	0.15
120	10.00	0.73	0.228	0.075	---	0.15
121	10.08	0.50	0.155	0.074	---	0.08
122	10.17	0.50	0.155	0.074	---	0.08
123	10.25	0.50	0.155	0.074	---	0.08
124	10.33	0.50	0.155	0.073	---	0.08
125	10.42	0.50	0.155	0.073	---	0.08
126	10.50	0.50	0.155	0.073	---	0.08
127	10.58	0.67	0.207	0.072	---	0.13
128	10.67	0.67	0.207	0.072	---	0.14
129	10.75	0.67	0.207	0.072	---	0.14
130	10.83	0.67	0.207	0.071	---	0.14
131	10.92	0.67	0.207	0.071	---	0.14
132	11.00	0.67	0.207	0.071	---	0.14
133	11.08	0.63	0.197	0.070	---	0.13
134	11.17	0.63	0.197	0.070	---	0.13
135	11.25	0.63	0.197	0.069	---	0.13
136	11.33	0.63	0.197	0.069	---	0.13
137	11.42	0.63	0.197	0.069	---	0.13
138	11.50	0.63	0.197	0.068	---	0.13
139	11.58	0.57	0.176	0.068	---	0.11
140	11.67	0.57	0.176	0.068	---	0.11
141	11.75	0.57	0.176	0.067	---	0.11
142	11.83	0.60	0.186	0.067	---	0.12
143	11.92	0.60	0.186	0.067	---	0.12
144	12.00	0.60	0.186	0.066	---	0.12
145	12.08	0.83	0.259	0.066	---	0.19
146	12.17	0.83	0.259	0.066	---	0.19
147	12.25	0.83	0.259	0.065	---	0.19
148	12.33	0.87	0.269	0.065	---	0.20
149	12.42	0.87	0.269	0.065	---	0.20
150	12.50	0.87	0.269	0.064	---	0.20
151	12.58	0.93	0.290	0.064	---	0.23
152	12.67	0.93	0.290	0.064	---	0.23
153	12.75	0.93	0.290	0.064	---	0.23
154	12.83	0.97	0.300	0.063	---	0.24
155	12.92	0.97	0.300	0.063	---	0.24
156	13.00	0.97	0.300	0.063	---	0.24
157	13.08	1.13	0.352	0.062	---	0.29
158	13.17	1.13	0.352	0.062	---	0.29
159	13.25	1.13	0.352	0.062	---	0.29
160	13.33	1.13	0.352	0.061	---	0.29
161	13.42	1.13	0.352	0.061	---	0.29
162	13.50	1.13	0.352	0.061	---	0.29
163	13.58	0.77	0.238	0.060	---	0.18
164	13.67	0.77	0.238	0.060	---	0.18
165	13.75	0.77	0.238	0.060	---	0.18
166	13.83	0.77	0.238	0.059	---	0.18
167	13.92	0.77	0.238	0.059	---	0.18
168	14.00	0.77	0.238	0.059	---	0.18
169	14.08	0.90	0.279	0.059	---	0.22
170	14.17	0.90	0.279	0.058	---	0.22
171	14.25	0.90	0.279	0.058	---	0.22
172	14.33	0.87	0.269	0.058	---	0.21
173	14.42	0.87	0.269	0.057	---	0.21

174	14.50	0.87	0.269	0.057	---	0.21
175	14.58	0.87	0.269	0.057	---	0.21
176	14.67	0.87	0.269	0.056	---	0.21
177	14.75	0.87	0.269	0.056	---	0.21
178	14.83	0.83	0.259	0.056	---	0.20
179	14.92	0.83	0.259	0.056	---	0.20
180	15.00	0.83	0.259	0.055	---	0.20
181	15.08	0.80	0.248	0.055	---	0.19
182	15.17	0.80	0.248	0.055	---	0.19
183	15.25	0.80	0.248	0.054	---	0.19
184	15.33	0.77	0.238	0.054	---	0.18
185	15.42	0.77	0.238	0.054	---	0.18
186	15.50	0.77	0.238	0.054	---	0.18
187	15.58	0.63	0.197	0.053	---	0.14
188	15.67	0.63	0.197	0.053	---	0.14
189	15.75	0.63	0.197	0.053	---	0.14
190	15.83	0.63	0.197	0.053	---	0.14
191	15.92	0.63	0.197	0.052	---	0.14
192	16.00	0.63	0.197	0.052	---	0.14
193	16.08	0.13	0.041	0.052	0.007	0.03
194	16.17	0.13	0.041	0.051	0.007	0.03
195	16.25	0.13	0.041	0.051	0.007	0.03
196	16.33	0.13	0.041	0.051	0.007	0.03
197	16.42	0.13	0.041	0.051	0.007	0.03
198	16.50	0.13	0.041	0.050	0.007	0.03
199	16.58	0.10	0.031	0.050	0.006	0.03
200	16.67	0.10	0.031	0.050	0.006	0.03
201	16.75	0.10	0.031	0.050	0.006	0.03
202	16.83	0.10	0.031	0.049	0.006	0.03
203	16.92	0.10	0.031	0.049	0.006	0.03
204	17.00	0.10	0.031	0.049	0.006	0.03
205	17.08	0.17	0.052	0.049	---	0.00
206	17.17	0.17	0.052	0.048	---	0.00
207	17.25	0.17	0.052	0.048	---	0.00
208	17.33	0.17	0.052	0.048	---	0.00
209	17.42	0.17	0.052	0.048	---	0.00
210	17.50	0.17	0.052	0.047	---	0.00
211	17.58	0.17	0.052	0.047	---	0.00
212	17.67	0.17	0.052	0.047	---	0.00
213	17.75	0.17	0.052	0.047	---	0.00
214	17.83	0.13	0.041	0.047	0.007	0.03
215	17.92	0.13	0.041	0.046	0.007	0.03
216	18.00	0.13	0.041	0.046	0.007	0.03
217	18.08	0.13	0.041	0.046	0.007	0.03
218	18.17	0.13	0.041	0.046	0.007	0.03
219	18.25	0.13	0.041	0.045	0.007	0.03
220	18.33	0.13	0.041	0.045	0.007	0.03
221	18.42	0.13	0.041	0.045	0.007	0.03
222	18.50	0.13	0.041	0.045	0.007	0.03
223	18.58	0.10	0.031	0.045	0.006	0.03
224	18.67	0.10	0.031	0.044	0.006	0.03
225	18.75	0.10	0.031	0.044	0.006	0.03
226	18.83	0.07	0.021	0.044	0.004	0.02
227	18.92	0.07	0.021	0.044	0.004	0.02
228	19.00	0.07	0.021	0.043	0.004	0.02
229	19.08	0.10	0.031	0.043	0.006	0.03
230	19.17	0.10	0.031	0.043	0.006	0.03
231	19.25	0.10	0.031	0.043	0.006	0.03
232	19.33	0.13	0.041	0.043	0.007	0.03
233	19.42	0.13	0.041	0.042	0.007	0.03
234	19.50	0.13	0.041	0.042	0.007	0.03
235	19.58	0.10	0.031	0.042	0.006	0.03
236	19.67	0.10	0.031	0.042	0.006	0.03
237	19.75	0.10	0.031	0.042	0.006	0.03
238	19.83	0.07	0.021	0.041	0.004	0.02
239	19.92	0.07	0.021	0.041	0.004	0.02
240	20.00	0.07	0.021	0.041	0.004	0.02
241	20.08	0.10	0.031	0.041	0.006	0.03
242	20.17	0.10	0.031	0.041	0.006	0.03
243	20.25	0.10	0.031	0.041	0.006	0.03
244	20.33	0.10	0.031	0.040	0.006	0.03

245	20.42	0.10	0.031	0.040	0.006	0.03
246	20.50	0.10	0.031	0.040	0.006	0.03
247	20.58	0.10	0.031	0.040	0.006	0.03
248	20.67	0.10	0.031	0.040	0.006	0.03
249	20.75	0.10	0.031	0.040	0.006	0.03
250	20.83	0.07	0.021	0.039	0.004	0.02
251	20.92	0.07	0.021	0.039	0.004	0.02
252	21.00	0.07	0.021	0.039	0.004	0.02
253	21.08	0.10	0.031	0.039	0.006	0.03
254	21.17	0.10	0.031	0.039	0.006	0.03
255	21.25	0.10	0.031	0.039	0.006	0.03
256	21.33	0.07	0.021	0.038	0.004	0.02
257	21.42	0.07	0.021	0.038	0.004	0.02
258	21.50	0.07	0.021	0.038	0.004	0.02
259	21.58	0.10	0.031	0.038	0.006	0.03
260	21.67	0.10	0.031	0.038	0.006	0.03
261	21.75	0.10	0.031	0.038	0.006	0.03
262	21.83	0.07	0.021	0.038	0.004	0.02
263	21.92	0.07	0.021	0.038	0.004	0.02
264	22.00	0.07	0.021	0.037	0.004	0.02
265	22.08	0.10	0.031	0.037	0.006	0.03
266	22.17	0.10	0.031	0.037	0.006	0.03
267	22.25	0.10	0.031	0.037	0.006	0.03
268	22.33	0.07	0.021	0.037	0.004	0.02
269	22.42	0.07	0.021	0.037	0.004	0.02
270	22.50	0.07	0.021	0.037	0.004	0.02
271	22.58	0.07	0.021	0.037	0.004	0.02
272	22.67	0.07	0.021	0.036	0.004	0.02
273	22.75	0.07	0.021	0.036	0.004	0.02
274	22.83	0.07	0.021	0.036	0.004	0.02
275	22.92	0.07	0.021	0.036	0.004	0.02
276	23.00	0.07	0.021	0.036	0.004	0.02
277	23.08	0.07	0.021	0.036	0.004	0.02
278	23.17	0.07	0.021	0.036	0.004	0.02
279	23.25	0.07	0.021	0.036	0.004	0.02
280	23.33	0.07	0.021	0.036	0.004	0.02
281	23.42	0.07	0.021	0.036	0.004	0.02
282	23.50	0.07	0.021	0.036	0.004	0.02
283	23.58	0.07	0.021	0.036	0.004	0.02
284	23.67	0.07	0.021	0.036	0.004	0.02
285	23.75	0.07	0.021	0.036	0.004	0.02
286	23.83	0.07	0.021	0.035	0.004	0.02
287	23.92	0.07	0.021	0.035	0.004	0.02
288	24.00	0.07	0.021	0.035	0.004	0.02
Sum =		100.0			Sum =	21.0

Flood volume = Effective rainfall 1.75(In)
times area 127.1(Ac.)/[(In)/(Ft.)] = 18.5(Ac.Ft)
Total soil loss = 0.84(In)
Total soil loss = 8.907(Ac.Ft)
Total rainfall = 2.59(In)
Flood volume = 805628.5 Cubic Feet
Total soil loss = 388009.9 Cubic Feet

Peak flow rate of this hydrograph = 36.410(CFS)

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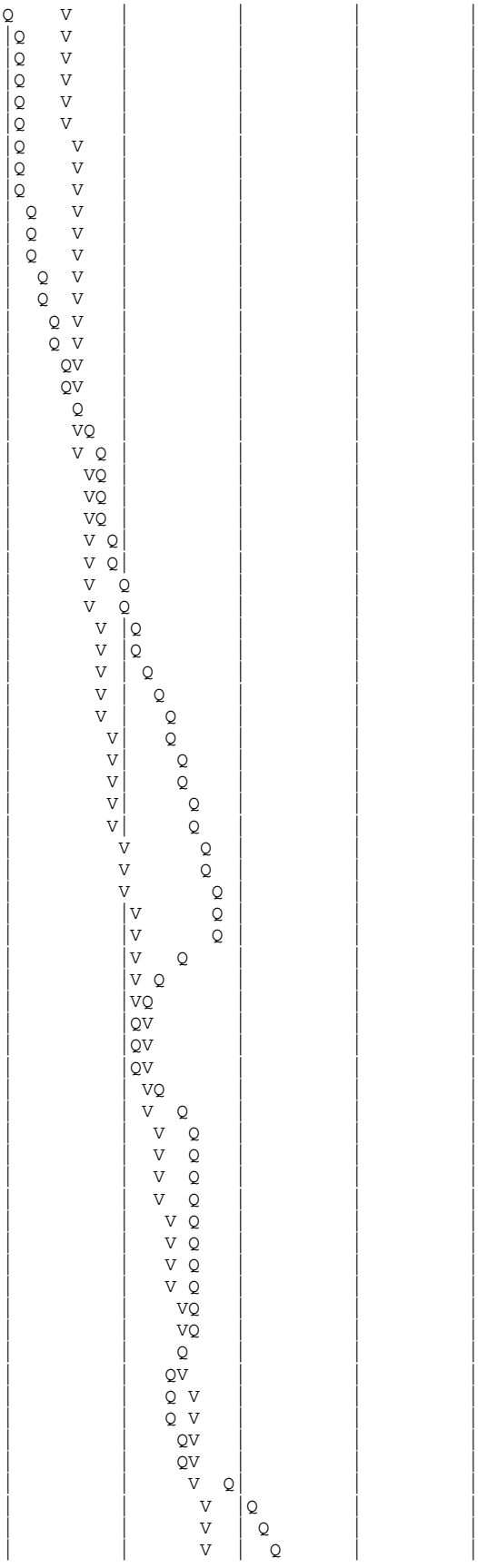
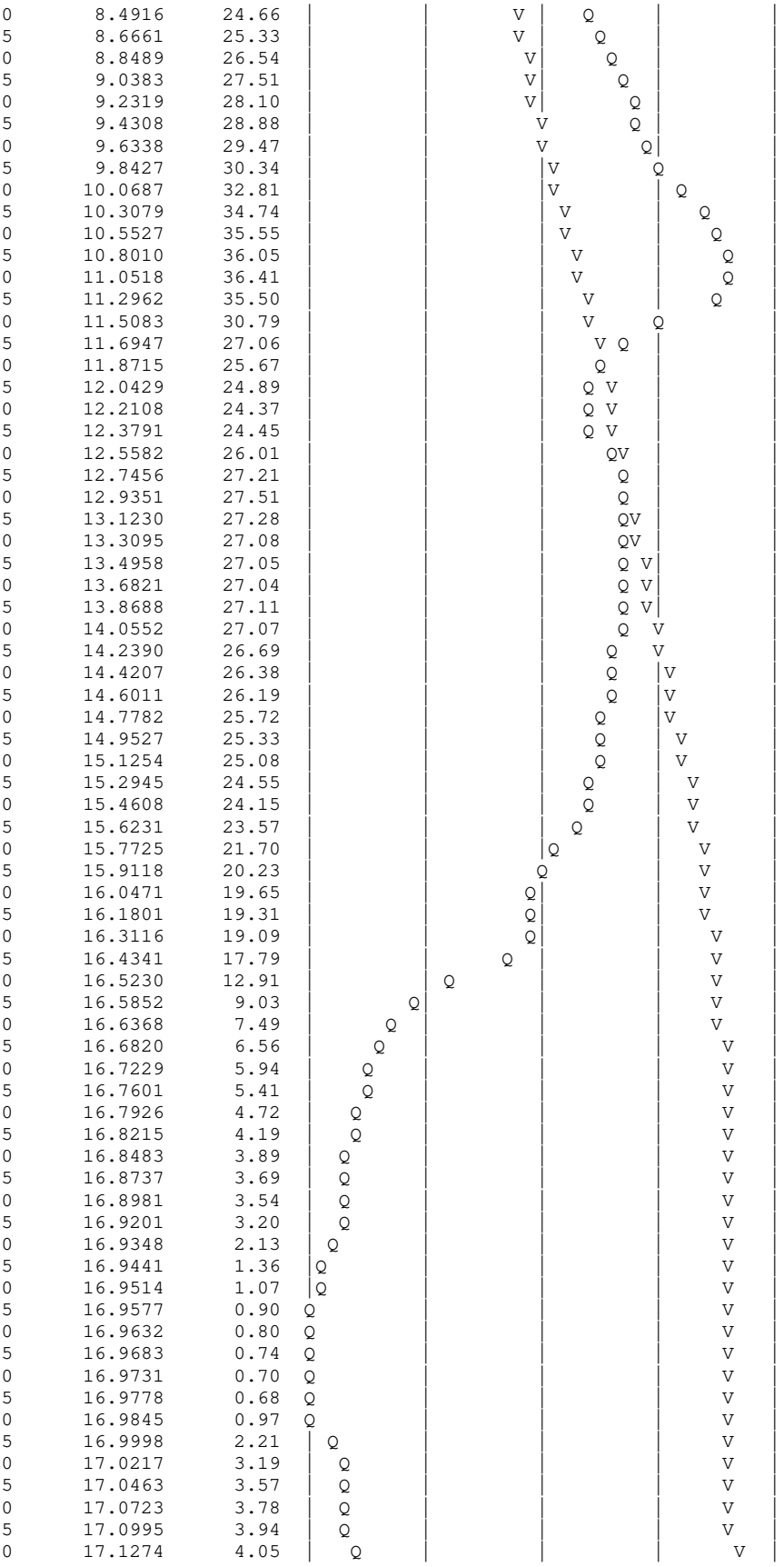
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	10.0	20.0	30.0	40.0
0+ 5	0.0012	0.18	Q	|	|	|	|
0+10	0.0075	0.91	Q	|	|	|	|
0+15	0.0177	1.49	VQ	|	|	|	|
0+20	0.0301	1.80	VQ	|	|	|	|
0+25	0.0460	2.30	V Q	|	|	|	|
0+30	0.0645	2.68	V Q	|	|	|	|
0+35	0.0842	2.86	V Q	|	|	|	|

0+40	0.1047	2.97	V Q				
0+45	0.1257	3.06	V Q				
0+50	0.1478	3.20	V Q				
0+55	0.1726	3.61	V Q				
1+ 0	0.1998	3.94	V Q				
1+ 5	0.2272	3.99	V Q				
1+10	0.2528	3.71	V Q				
1+15	0.2767	3.47	V Q				
1+20	0.3002	3.40	V Q				
1+25	0.3233	3.36	V Q				
1+30	0.3463	3.34	V Q				
1+35	0.3691	3.32	V Q				
1+40	0.3919	3.31	V Q				
1+45	0.4146	3.29	V Q				
1+50	0.4378	3.38	V Q				
1+55	0.4636	3.74	V Q				
2+ 0	0.4913	4.02	V Q				
2+ 5	0.5197	4.13	V Q				
2+10	0.5485	4.19	V Q				
2+15	0.5777	4.23	V Q				
2+20	0.6070	4.26	V Q				
2+25	0.6366	4.29	V Q				
2+30	0.6662	4.31	V Q				
2+35	0.6966	4.41	V Q				
2+40	0.7295	4.78	V Q				
2+45	0.7645	5.08	V Q				
2+50	0.8003	5.20	V Q				
2+55	0.8367	5.27	V Q				
3+ 0	0.8733	5.32	V Q				
3+ 5	0.9102	5.35	V Q				
3+10	0.9472	5.37	V Q				
3+15	0.9843	5.39	V Q				
3+20	1.0216	5.41	V Q				
3+25	1.0589	5.42	V Q				
3+30	1.0962	5.43	V Q				
3+35	1.1336	5.43	V Q				
3+40	1.1711	5.44	V Q				
3+45	1.2085	5.44	V Q				
3+50	1.2466	5.53	V Q				
3+55	1.2872	5.89	V Q				
4+ 0	1.3297	6.18	V Q				
4+ 5	1.3731	6.30	V Q				
4+10	1.4169	6.36	V Q				
4+15	1.4610	6.41	V Q				
4+20	1.5060	6.53	V Q				
4+25	1.5536	6.92	V Q				
4+30	1.6034	7.23	V Q				
4+35	1.6540	7.35	V Q				
4+40	1.7052	7.43	V Q				
4+45	1.7567	7.48	V Q				
4+50	1.8091	7.61	V Q				
4+55	1.8642	8.00	V Q				
5+ 0	1.9215	8.31	V Q				
5+ 5	1.9784	8.26	V Q				
5+10	2.0308	7.61	V Q				
5+15	2.0796	7.08	V Q				
5+20	2.1276	6.98	V Q				
5+25	2.1775	7.24	V Q				
5+30	2.2289	7.46	V Q				
5+35	2.2813	7.61	V Q				
5+40	2.3365	8.01	V Q				
5+45	2.3938	8.32	V Q				
5+50	2.4519	8.44	V Q				
5+55	2.5105	8.51	V Q				
6+ 0	2.5695	8.56	V Q				
6+ 5	2.6239	7.89	V Q				
6+10	2.6582	4.99	QV				
6+15	2.6769	2.72	Q V				
6+20	2.6898	1.87	Q V				
6+25	2.6994	1.39	Q V				
6+30	2.7069	1.09	Q V				

6+35	2.7137	0.99	
6+40	2.7227	1.31	
6+45	2.7335	1.56	
6+50	2.7448	1.64	
6+55	2.7564	1.69	
7+ 0	2.7684	1.73	
7+ 5	2.7806	1.77	
7+10	2.7930	1.80	
7+15	2.8059	1.88	
7+20	2.8201	2.05	
7+25	2.8377	2.56	
7+30	2.8583	2.98	
7+35	2.8809	3.28	
7+40	2.9075	3.87	
7+45	2.9373	4.33	
7+50	2.9694	4.66	
7+55	3.0057	5.27	
8+ 0	3.0454	5.75	
8+ 5	3.0881	6.21	
8+10	3.1383	7.28	
8+15	3.1942	8.12	
8+20	3.2528	8.51	
8+25	3.3132	8.77	
8+30	3.3750	8.96	
8+35	3.4385	9.22	
8+40	3.5059	9.79	
8+45	3.5765	10.25	
8+50	3.6495	10.59	
8+55	3.7266	11.20	
9+ 0	3.8070	11.68	
9+ 5	3.8906	12.13	
9+10	3.9814	13.20	
9+15	4.0781	14.03	
9+20	4.1781	14.52	
9+25	4.2828	15.22	
9+30	4.3914	15.76	
9+35	4.5027	16.16	
9+40	4.6184	16.81	
9+45	4.7377	17.32	
9+50	4.8595	17.69	
9+55	4.9857	18.33	
10+ 0	5.1154	18.82	
10+ 5	5.2416	18.33	
10+10	5.3476	15.39	
10+15	5.4374	13.04	
10+20	5.5213	12.19	
10+25	5.6020	11.71	
10+30	5.6805	11.40	
10+35	5.7614	11.74	
10+40	5.8567	13.84	
10+45	5.9635	15.51	
10+50	6.0746	16.13	
10+55	6.1883	16.50	
11+ 0	6.3037	16.76	
11+ 5	6.4196	16.84	
11+10	6.5334	16.52	
11+15	6.6458	16.32	
11+20	6.7582	16.32	
11+25	6.8708	16.34	
11+30	6.9836	16.38	
11+35	7.0952	16.21	
11+40	7.2010	15.37	
11+45	7.3021	14.68	
11+50	7.4023	14.54	
11+55	7.5045	14.85	
12+ 0	7.6088	15.13	
12+ 5	7.7188	15.98	
12+10	7.8508	19.16	
12+15	8.0002	21.70	
12+20	8.1573	22.82	
12+25	8.3218	23.88	

12+30	8.4916	24.66	
12+35	8.6661	25.33	
12+40	8.8489	26.54	
12+45	9.0383	27.51	
12+50	9.2319	28.10	
12+55	9.4308	28.88	
13+ 0	9.6338	29.47	
13+ 5	9.8427	30.34	
13+10	10.0687	32.81	
13+15	10.3079	34.74	
13+20	10.5527	35.55	
13+25	10.8010	36.05	
13+30	11.0518	36.41	
13+35	11.2962	35.50	
13+40	11.5083	30.79	
13+45	11.6947	27.06	
13+50	11.8715	25.67	
13+55	12.0429	24.89	
14+ 0	12.2108	24.37	
14+ 5	12.3791	24.45	
14+10	12.5582	26.01	
14+15	12.7456	27.21	
14+20	12.9351	27.51	
14+25	13.1230	27.28	
14+30	13.3095	27.08	
14+35	13.4958	27.05	
14+40	13.6821	27.04	
14+45	13.8688	27.11	
14+50	14.0552	27.07	
14+55	14.2390	26.69	
15+ 0	14.4207	26.38	
15+ 5	14.6011	26.19	
15+10	14.7782	25.72	
15+15	14.9527	25.33	
15+20	15.1254	25.08	
15+25	15.2945	24.55	
15+30	15.4608	24.15	
15+35	15.6231	23.57	
15+40	15.7725	21.70	
15+45	15.9118	20.23	
15+50	16.0471	19.65	
15+55	16.1801	19.31	
16+ 0	16.3116	19.09	
16+ 5	16.4341	17.79	
16+10	16.5230	12.91	
16+15	16.5852	9.03	
16+20	16.6368	7.49	
16+25	16.6820	6.56	
16+30	16.7229	5.94	
16+35	16.7601	5.41	
16+40	16.7926	4.72	
16+45	16.8215	4.19	
16+50	16.8483	3.89	
16+55	16.8737	3.69	
17+ 0	16.8981	3.54	
17+ 5	16.9201	3.20	
17+10	16.9348	2.13	
17+15	16.9441	1.36	
17+20	16.9514	1.07	
17+25	16.9577	0.90	
17+30	16.9632	0.80	
17+35	16.9683	0.74	
17+40	16.9731	0.70	
17+45	16.9778	0.68	
17+50	16.9845	0.97	
17+55	16.9998	2.21	
18+ 0	17.0217	3.19	
18+ 5	17.0463	3.57	
18+10	17.0723	3.78	
18+15	17.0995	3.94	
18+20	17.1274	4.05	

18+25	17.1558	4.13		Q			V
18+30	17.1847	4.20		Q			V
18+35	17.2133	4.16		Q			V
18+40	17.2397	3.83		Q			V
18+45	17.2642	3.56		Q			V
18+50	17.2875	3.38		Q			V
18+55	17.3080	2.97	Q				V
19+ 0	17.3262	2.64	Q				V
19+ 5	17.3439	2.58	Q				V
19+10	17.3636	2.86	Q				V
19+15	17.3848	3.08		Q			V
19+20	17.4071	3.24		Q			V
19+25	17.4322	3.64		Q			V
19+30	17.4593	3.95		Q			V
19+35	17.4868	3.98		Q			V
19+40	17.5122	3.69		Q			V
19+45	17.5360	3.46		Q			V
19+50	17.5587	3.29		Q			V
19+55	17.5786	2.89	Q				V
20+ 0	17.5963	2.58	Q				V
20+ 5	17.6138	2.54	Q				V
20+10	17.6334	2.84	Q				V
20+15	17.6545	3.07		Q			V
20+20	17.6761	3.14		Q			V
20+25	17.6981	3.18		Q			V
20+30	17.7201	3.20		Q			V
20+35	17.7423	3.21		Q			V
20+40	17.7644	3.22		Q			V
20+45	17.7867	3.23		Q			V
20+50	17.8084	3.15		Q			V
20+55	17.8276	2.79	Q				V
21+ 0	17.8448	2.51	Q				V
21+ 5	17.8620	2.49	Q				V
21+10	17.8812	2.79	Q				V
21+15	17.9021	3.04		Q			V
21+20	17.9230	3.03		Q			V
21+25	17.9416	2.71	Q				V
21+30	17.9585	2.44	Q				V
21+35	17.9753	2.44	Q				V
21+40	17.9942	2.75	Q				V
21+45	18.0149	3.01		Q			V
21+50	18.0356	3.01		Q			V
21+55	18.0541	2.69	Q				V
22+ 0	18.0709	2.43	Q				V
22+ 5	18.0876	2.43	Q				V
22+10	18.1065	2.75	Q				V
22+15	18.1272	3.01		Q			V
22+20	18.1479	3.01		Q			V
22+25	18.1665	2.69	Q				V
22+30	18.1832	2.43	Q				V
22+35	18.1993	2.34	Q				V
22+40	18.2152	2.30	Q				V
22+45	18.2307	2.26	Q				V
22+50	18.2461	2.24	Q				V
22+55	18.2614	2.22	Q				V
23+ 0	18.2766	2.21	Q				V
23+ 5	18.2918	2.20	Q				V
23+10	18.3069	2.20	Q				V
23+15	18.3219	2.19	Q				V
23+20	18.3370	2.18	Q				V
23+25	18.3519	2.18	Q				V
23+30	18.3669	2.18	Q				V
23+35	18.3819	2.18	Q				V
23+40	18.3969	2.18	Q				V
23+45	18.4119	2.18	Q				V
23+50	18.4268	2.18	Q				V
23+55	18.4418	2.18	Q				V
24+ 0	18.4568	2.18	Q				V
24+ 5	18.4706	2.00	Q				V
24+10	18.4793	1.27	Q				V
24+15	18.4840	0.69	Q				V

24+20	18.4872	0.46	Q				V
24+25	18.4894	0.33	Q				V
24+30	18.4911	0.24	Q				V
24+35	18.4922	0.17	Q				V
24+40	18.4931	0.13	Q				V
24+45	18.4937	0.09	Q				V
24+50	18.4942	0.06	Q				V
24+55	18.4944	0.04	Q				V
25+ 0	18.4946	0.03	Q				V
25+ 5	18.4947	0.01	Q				V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930PUH252425.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
25 YEAR STORM EVENT PROPOSED UH
1930PUH25
DS

Drainage Area = 127.12(Ac.) = 0.199 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 127.12(Ac.) = 0.199 Sq. Mi.
Length along longest watercourse = 5048.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.956 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 29.90(Ft.)
Slope along watercourse = 31.2742 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.140 Hr.
Lag time = 8.40 Min.
25% of lag time = 2.10 Min.
40% of lag time = 3.36 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	1.60	203.39

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	4.00	508.48

STORM EVENT (YEAR) = 25.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 3.149(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
127.120	69.00	0.900

Total Area Entered = 127.12(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	59.527	8.108	10.388
2	0.167	119.054	33.632	43.087
3	0.250	178.581	26.735	34.252
4	0.333	238.109	10.389	13.309
5	0.417	297.636	6.125	7.847
6	0.500	357.163	4.147	5.313
7	0.583	416.690	2.960	3.792
8	0.667	476.217	2.078	2.663
9	0.750	535.744	1.719	2.202
10	0.833	595.271	1.279	1.638
11	0.917	654.799	0.977	1.251
12	1.000	714.326	0.697	0.893
13	1.083	773.853	0.595	0.763
14	1.167	833.380	0.559	0.716
			Sum = 100.000 Sum=	128.113

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.025	0.126	0.005	0.02
2	0.17	0.07	0.025	0.125	0.005	0.02
3	0.25	0.07	0.025	0.125	0.005	0.02
4	0.33	0.10	0.038	0.124	0.007	0.03
5	0.42	0.10	0.038	0.124	0.007	0.03
6	0.50	0.10	0.038	0.123	0.007	0.03
7	0.58	0.10	0.038	0.123	0.007	0.03
8	0.67	0.10	0.038	0.122	0.007	0.03
9	0.75	0.10	0.038	0.122	0.007	0.03
10	0.83	0.13	0.050	0.121	0.009	0.04
11	0.92	0.13	0.050	0.121	0.009	0.04
12	1.00	0.13	0.050	0.120	0.009	0.04
13	1.08	0.10	0.038	0.120	0.007	0.03
14	1.17	0.10	0.038	0.119	0.007	0.03
15	1.25	0.10	0.038	0.119	0.007	0.03
16	1.33	0.10	0.038	0.118	0.007	0.03
17	1.42	0.10	0.038	0.118	0.007	0.03
18	1.50	0.10	0.038	0.117	0.007	0.03
19	1.58	0.10	0.038	0.117	0.007	0.03
20	1.67	0.10	0.038	0.117	0.007	0.03
21	1.75	0.10	0.038	0.116	0.007	0.03
22	1.83	0.13	0.050	0.116	0.009	0.04
23	1.92	0.13	0.050	0.115	0.009	0.04
24	2.00	0.13	0.050	0.115	0.009	0.04
25	2.08	0.13	0.050	0.114	0.009	0.04
26	2.17	0.13	0.050	0.114	0.009	0.04
27	2.25	0.13	0.050	0.113	0.009	0.04
28	2.33	0.13	0.050	0.113	0.009	0.04
29	2.42	0.13	0.050	0.112	0.009	0.04
30	2.50	0.13	0.050	0.112	0.009	0.04
31	2.58	0.17	0.063	0.111	0.011	0.05

32	2.67	0.17	0.063	0.111	0.011	0.05
33	2.75	0.17	0.063	0.110	0.011	0.05
34	2.83	0.17	0.063	0.110	0.011	0.05
35	2.92	0.17	0.063	0.110	0.011	0.05
36	3.00	0.17	0.063	0.109	0.011	0.05
37	3.08	0.17	0.063	0.109	0.011	0.05
38	3.17	0.17	0.063	0.108	0.011	0.05
39	3.25	0.17	0.063	0.108	0.011	0.05
40	3.33	0.17	0.063	0.107	0.011	0.05
41	3.42	0.17	0.063	0.107	0.011	0.05
42	3.50	0.17	0.063	0.106	0.011	0.05
43	3.58	0.17	0.063	0.106	0.011	0.05
44	3.67	0.17	0.063	0.106	0.011	0.05
45	3.75	0.17	0.063	0.105	0.011	0.05
46	3.83	0.20	0.076	0.105	0.014	0.06
47	3.92	0.20	0.076	0.104	0.014	0.06
48	4.00	0.20	0.076	0.104	0.014	0.06
49	4.08	0.20	0.076	0.103	0.014	0.06
50	4.17	0.20	0.076	0.103	0.014	0.06
51	4.25	0.20	0.076	0.102	0.014	0.06
52	4.33	0.23	0.088	0.102	0.016	0.07
53	4.42	0.23	0.088	0.102	0.016	0.07
54	4.50	0.23	0.088	0.101	0.016	0.07
55	4.58	0.23	0.088	0.101	0.016	0.07
56	4.67	0.23	0.088	0.100	0.016	0.07
57	4.75	0.23	0.088	0.100	0.016	0.07
58	4.83	0.27	0.101	0.099	---	0.00
59	4.92	0.27	0.101	0.099	---	0.00
60	5.00	0.27	0.101	0.099	---	0.00
61	5.08	0.20	0.076	0.098	0.014	0.06
62	5.17	0.20	0.076	0.098	0.014	0.06
63	5.25	0.20	0.076	0.097	0.014	0.06
64	5.33	0.23	0.088	0.097	0.016	0.07
65	5.42	0.23	0.088	0.096	0.016	0.07
66	5.50	0.23	0.088	0.096	0.016	0.07
67	5.58	0.27	0.101	0.096	---	0.01
68	5.67	0.27	0.101	0.095	---	0.01
69	5.75	0.27	0.101	0.095	---	0.01
70	5.83	0.27	0.101	0.094	---	0.01
71	5.92	0.27	0.101	0.094	---	0.01
72	6.00	0.27	0.101	0.093	---	0.01
73	6.08	0.30	0.113	0.093	---	0.02
74	6.17	0.30	0.113	0.093	---	0.02
75	6.25	0.30	0.113	0.092	---	0.02
76	6.33	0.30	0.113	0.092	---	0.02
77	6.42	0.30	0.113	0.091	---	0.02
78	6.50	0.30	0.113	0.091	---	0.02
79	6.58	0.33	0.126	0.091	---	0.04
80	6.67	0.33	0.126	0.090	---	0.04
81	6.75	0.33	0.126	0.090	---	0.04
82	6.83	0.33	0.126	0.089	---	0.04
83	6.92	0.33	0.126	0.089	---	0.04
84	7.00	0.33	0.126	0.089	---	0.04
85	7.08	0.33	0.126	0.088	---	0.04
86	7.17	0.33	0.126	0.088	---	0.04
87	7.25	0.33	0.126	0.087	---	0.04
88	7.33	0.37	0.139	0.087	---	0.05
89	7.42	0.37	0.139	0.087	---	0.05
90	7.50	0.37	0.139	0.086	---	0.05
91	7.58	0.40	0.151	0.086	---	0.07
92	7.67	0.40	0.151	0.085	---	0.07
93	7.75	0.40	0.151	0.085	---	0.07
94	7.83	0.43	0.164	0.085	---	0.08
95	7.92	0.43	0.164	0.084	---	0.08
96	8.00	0.43	0.164	0.084	---	0.08
97	8.08	0.50	0.189	0.083	---	0.11
98	8.17	0.50	0.189	0.083	---	0.11
99	8.25	0.50	0.189	0.083	---	0.11
100	8.33	0.50	0.189	0.082	---	0.11
101	8.42	0.50	0.189	0.082	---	0.11
102	8.50	0.50	0.189	0.082	---	0.11

103	8.58	0.53	0.202	0.081	---	0.12
104	8.67	0.53	0.202	0.081	---	0.12
105	8.75	0.53	0.202	0.080	---	0.12
106	8.83	0.57	0.214	0.080	---	0.13
107	8.92	0.57	0.214	0.080	---	0.13
108	9.00	0.57	0.214	0.079	---	0.13
109	9.08	0.63	0.239	0.079	---	0.16
110	9.17	0.63	0.239	0.078	---	0.16
111	9.25	0.63	0.239	0.078	---	0.16
112	9.33	0.67	0.252	0.078	---	0.17
113	9.42	0.67	0.252	0.077	---	0.17
114	9.50	0.67	0.252	0.077	---	0.17
115	9.58	0.70	0.264	0.077	---	0.19
116	9.67	0.70	0.264	0.076	---	0.19
117	9.75	0.70	0.264	0.076	---	0.19
118	9.83	0.73	0.277	0.076	---	0.20
119	9.92	0.73	0.277	0.075	---	0.20
120	10.00	0.73	0.277	0.075	---	0.20
121	10.08	0.50	0.189	0.074	---	0.11
122	10.17	0.50	0.189	0.074	---	0.11
123	10.25	0.50	0.189	0.074	---	0.12
124	10.33	0.50	0.189	0.073	---	0.12
125	10.42	0.50	0.189	0.073	---	0.12
126	10.50	0.50	0.189	0.073	---	0.12
127	10.58	0.67	0.252	0.072	---	0.18
128	10.67	0.67	0.252	0.072	---	0.18
129	10.75	0.67	0.252	0.072	---	0.18
130	10.83	0.67	0.252	0.071	---	0.18
131	10.92	0.67	0.252	0.071	---	0.18
132	11.00	0.67	0.252	0.071	---	0.18
133	11.08	0.63	0.239	0.070	---	0.17
134	11.17	0.63	0.239	0.070	---	0.17
135	11.25	0.63	0.239	0.069	---	0.17
136	11.33	0.63	0.239	0.069	---	0.17
137	11.42	0.63	0.239	0.069	---	0.17
138	11.50	0.63	0.239	0.068	---	0.17
139	11.58	0.57	0.214	0.068	---	0.15
140	11.67	0.57	0.214	0.068	---	0.15
141	11.75	0.57	0.214	0.067	---	0.15
142	11.83	0.60	0.227	0.067	---	0.16
143	11.92	0.60	0.227	0.067	---	0.16
144	12.00	0.60	0.227	0.066	---	0.16
145	12.08	0.83	0.315	0.066	---	0.25
146	12.17	0.83	0.315	0.066	---	0.25
147	12.25	0.83	0.315	0.065	---	0.25
148	12.33	0.87	0.327	0.065	---	0.26
149	12.42	0.87	0.327	0.065	---	0.26
150	12.50	0.87	0.327	0.064	---	0.26
151	12.58	0.93	0.353	0.064	---	0.29
152	12.67	0.93	0.353	0.064	---	0.29
153	12.75	0.93	0.353	0.064	---	0.29
154	12.83	0.97	0.365	0.063	---	0.30
155	12.92	0.97	0.365	0.063	---	0.30
156	13.00	0.97	0.365	0.063	---	0.30
157	13.08	1.13	0.428	0.062	---	0.37
158	13.17	1.13	0.428	0.062	---	0.37
159	13.25	1.13	0.428	0.062	---	0.37
160	13.33	1.13	0.428	0.061	---	0.37
161	13.42	1.13	0.428	0.061	---	0.37
162	13.50	1.13	0.428	0.061	---	0.37
163	13.58	0.77	0.290	0.060	---	0.23
164	13.67	0.77	0.290	0.060	---	0.23
165	13.75	0.77	0.290	0.060	---	0.23
166	13.83	0.77	0.290	0.059	---	0.23
167	13.92	0.77	0.290	0.059	---	0.23
168	14.00	0.77	0.290	0.059	---	0.23
169	14.08	0.90	0.340	0.059	---	0.28
170	14.17	0.90	0.340	0.058	---	0.28
171	14.25	0.90	0.340	0.058	---	0.28
172	14.33	0.87	0.327	0.058	---	0.27
173	14.42	0.87	0.327	0.057	---	0.27

174	14.50	0.87	0.327	0.057	---	0.27
175	14.58	0.87	0.327	0.057	---	0.27
176	14.67	0.87	0.327	0.056	---	0.27
177	14.75	0.87	0.327	0.056	---	0.27
178	14.83	0.83	0.315	0.056	---	0.26
179	14.92	0.83	0.315	0.056	---	0.26
180	15.00	0.83	0.315	0.055	---	0.26
181	15.08	0.80	0.302	0.055	---	0.25
182	15.17	0.80	0.302	0.055	---	0.25
183	15.25	0.80	0.302	0.054	---	0.25
184	15.33	0.77	0.290	0.054	---	0.24
185	15.42	0.77	0.290	0.054	---	0.24
186	15.50	0.77	0.290	0.054	---	0.24
187	15.58	0.63	0.239	0.053	---	0.19
188	15.67	0.63	0.239	0.053	---	0.19
189	15.75	0.63	0.239	0.053	---	0.19
190	15.83	0.63	0.239	0.053	---	0.19
191	15.92	0.63	0.239	0.052	---	0.19
192	16.00	0.63	0.239	0.052	---	0.19
193	16.08	0.13	0.050	0.052	0.009	0.04
194	16.17	0.13	0.050	0.051	0.009	0.04
195	16.25	0.13	0.050	0.051	0.009	0.04
196	16.33	0.13	0.050	0.051	0.009	0.04
197	16.42	0.13	0.050	0.051	0.009	0.04
198	16.50	0.13	0.050	0.050	0.009	0.04
199	16.58	0.10	0.038	0.050	0.007	0.03
200	16.67	0.10	0.038	0.050	0.007	0.03
201	16.75	0.10	0.038	0.050	0.007	0.03
202	16.83	0.10	0.038	0.049	0.007	0.03
203	16.92	0.10	0.038	0.049	0.007	0.03
204	17.00	0.10	0.038	0.049	0.007	0.03
205	17.08	0.17	0.063	0.049	---	0.01
206	17.17	0.17	0.063	0.048	---	0.01
207	17.25	0.17	0.063	0.048	---	0.01
208	17.33	0.17	0.063	0.048	---	0.02
209	17.42	0.17	0.063	0.048	---	0.02
210	17.50	0.17	0.063	0.047	---	0.02
211	17.58	0.17	0.063	0.047	---	0.02
212	17.67	0.17	0.063	0.047	---	0.02
213	17.75	0.17	0.063	0.047	---	0.02
214	17.83	0.13	0.050	0.047	---	0.00
215	17.92	0.13	0.050	0.046	---	0.00
216	18.00	0.13	0.050	0.046	---	0.00
217	18.08	0.13	0.050	0.046	---	0.00
218	18.17	0.13	0.050	0.046	---	0.00
219	18.25	0.13	0.050	0.045	---	0.00
220	18.33	0.13	0.050	0.045	---	0.01
221	18.42	0.13	0.050	0.045	---	0.01
222	18.50	0.13	0.050	0.045	---	0.01
223	18.58	0.10	0.038	0.045	0.007	0.03
224	18.67	0.10	0.038	0.044	0.007	0.03
225	18.75	0.10	0.038	0.044	0.007	0.03
226	18.83	0.07	0.025	0.044	0.005	0.02
227	18.92	0.07	0.025	0.044	0.005	0.02
228	19.00	0.07	0.025	0.043	0.005	0.02
229	19.08	0.10	0.038	0.043	0.007	0.03
230	19.17	0.10	0.038	0.043	0.007	0.03
231	19.25	0.10	0.038	0.043	0.007	0.03
232	19.33	0.13	0.050	0.043	---	0.01
233	19.42	0.13	0.050	0.042	---	0.01
234	19.50	0.13	0.050	0.042	---	0.01
235	19.58	0.10	0.038	0.042	0.007	0.03
236	19.67	0.10	0.038	0.042	0.007	0.03
237	19.75	0.10	0.038	0.042	0.007	0.03
238	19.83	0.07	0.025	0.041	0.005	0.02
239	19.92	0.07	0.025	0.041	0.005	0.02
240	20.00	0.07	0.025	0.041	0.005	0.02
241	20.08	0.10	0.038	0.041	0.007	0.03
242	20.17	0.10	0.038	0.041	0.007	0.03
243	20.25	0.10	0.038	0.041	0.007	0.03
244	20.33	0.10	0.038	0.040	0.007	0.03

245	20.42	0.10	0.038	0.040	0.007	0.03
246	20.50	0.10	0.038	0.040	0.007	0.03
247	20.58	0.10	0.038	0.040	0.007	0.03
248	20.67	0.10	0.038	0.040	0.007	0.03
249	20.75	0.10	0.038	0.040	0.007	0.03
250	20.83	0.07	0.025	0.039	0.005	0.02
251	20.92	0.07	0.025	0.039	0.005	0.02
252	21.00	0.07	0.025	0.039	0.005	0.02
253	21.08	0.10	0.038	0.039	0.007	0.03
254	21.17	0.10	0.038	0.039	0.007	0.03
255	21.25	0.10	0.038	0.039	0.007	0.03
256	21.33	0.07	0.025	0.038	0.005	0.02
257	21.42	0.07	0.025	0.038	0.005	0.02
258	21.50	0.07	0.025	0.038	0.005	0.02
259	21.58	0.10	0.038	0.038	0.007	0.03
260	21.67	0.10	0.038	0.038	0.007	0.03
261	21.75	0.10	0.038	0.038	0.007	0.03
262	21.83	0.07	0.025	0.038	0.005	0.02
263	21.92	0.07	0.025	0.038	0.005	0.02
264	22.00	0.07	0.025	0.037	0.005	0.02
265	22.08	0.10	0.038	0.037	---	0.00
266	22.17	0.10	0.038	0.037	---	0.00
267	22.25	0.10	0.038	0.037	---	0.00
268	22.33	0.07	0.025	0.037	0.005	0.02
269	22.42	0.07	0.025	0.037	0.005	0.02
270	22.50	0.07	0.025	0.037	0.005	0.02
271	22.58	0.07	0.025	0.037	0.005	0.02
272	22.67	0.07	0.025	0.036	0.005	0.02
273	22.75	0.07	0.025	0.036	0.005	0.02
274	22.83	0.07	0.025	0.036	0.005	0.02
275	22.92	0.07	0.025	0.036	0.005	0.02
276	23.00	0.07	0.025	0.036	0.005	0.02
277	23.08	0.07	0.025	0.036	0.005	0.02
278	23.17	0.07	0.025	0.036	0.005	0.02
279	23.25	0.07	0.025	0.036	0.005	0.02
280	23.33	0.07	0.025	0.036	0.005	0.02
281	23.42	0.07	0.025	0.036	0.005	0.02
282	23.50	0.07	0.025	0.036	0.005	0.02
283	23.58	0.07	0.025	0.036	0.005	0.02
284	23.67	0.07	0.025	0.036	0.005	0.02
285	23.75	0.07	0.025	0.036	0.005	0.02
286	23.83	0.07	0.025	0.035	0.005	0.02
287	23.92	0.07	0.025	0.035	0.005	0.02
288	24.00	0.07	0.025	0.035	0.005	0.02
Sum =		100.0			Sum =	26.2

Flood volume = Effective rainfall 2.19(In)
times area 127.1(Ac.)/[(In)/(Ft.)] = 23.2(Ac.Ft)
Total soil loss = 0.96(In)
Total soil loss = 10.202(Ac.Ft)
Total rainfall = 3.15(In)
Flood volume = 1008569.6 Cubic Feet
Total soil loss = 444400.6 Cubic Feet

Peak flow rate of this hydrograph = 46.032(CFS)

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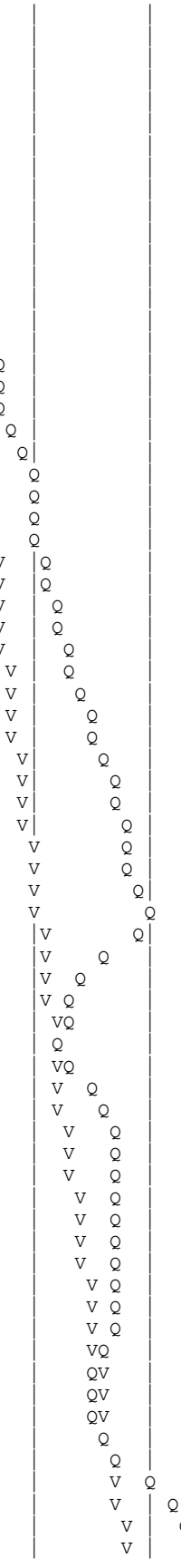
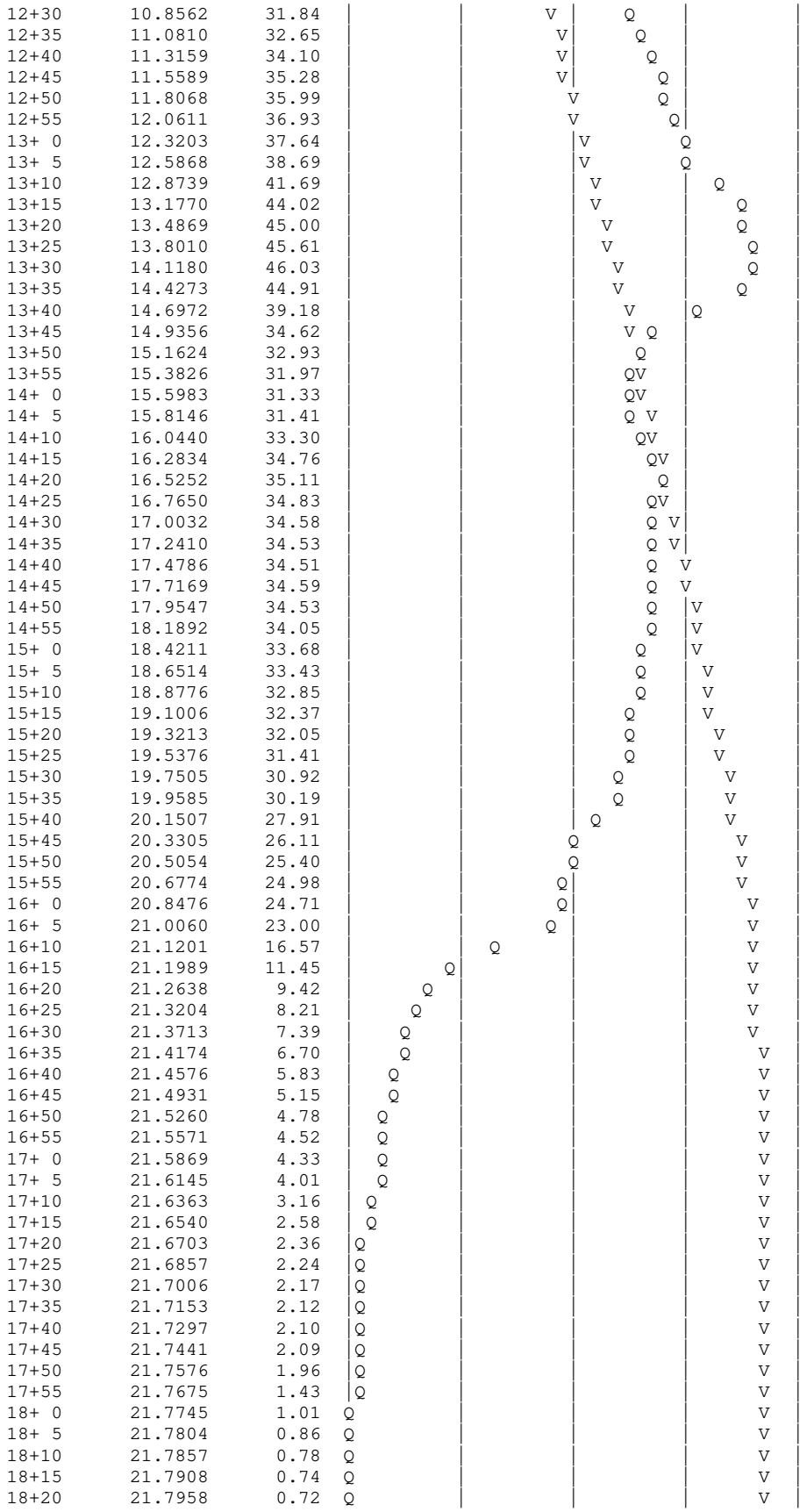
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	12.5	25.0	37.5	50.0
0+ 5	0.0015	0.21	Q	|	|	|	|
0+10	0.0091	1.11	Q	|	|	|	|
0+15	0.0216	1.81	VQ	|	|	|	|
0+20	0.0367	2.20	VQ	|	|	|	|
0+25	0.0560	2.80	V Q	|	|	|	|
0+30	0.0785	3.27	V Q	|	|	|	|
0+35	0.1025	3.48	V Q	|	|	|	|

0+40	0.1274	3.62	V Q				
0+45	0.1530	3.72	V Q				
0+50	0.1799	3.90	V Q				
0+55	0.2102	4.40	V Q				
1+ 0	0.2432	4.79	V Q				
1+ 5	0.2766	4.86	V Q				
1+10	0.3077	4.52	V Q				
1+15	0.3369	4.23	V Q				
1+20	0.3654	4.14	V Q				
1+25	0.3936	4.09	V Q				
1+30	0.4215	4.06	V Q				
1+35	0.4493	4.04	V Q				
1+40	0.4771	4.02	V Q				
1+45	0.5047	4.01	V Q				
1+50	0.5330	4.11	V Q				
1+55	0.5643	4.55	V Q				
2+ 0	0.5980	4.89	V Q				
2+ 5	0.6326	5.02	V Q				
2+10	0.6677	5.10	V Q				
2+15	0.7032	5.15	V Q				
2+20	0.7389	5.19	V Q				
2+25	0.7749	5.22	V Q				
2+30	0.8110	5.24	V Q				
2+35	0.8479	5.37	V Q				
2+40	0.8880	5.82	V Q				
2+45	0.9306	6.19	V Q				
2+50	0.9742	6.33	V Q				
2+55	1.0184	6.42	V Q				
3+ 0	1.0630	6.48	V Q				
3+ 5	1.1079	6.51	V Q				
3+10	1.1530	6.54	V Q				
3+15	1.1982	6.56	V Q				
3+20	1.2435	6.58	V Q				
3+25	1.2889	6.59	V Q				
3+30	1.3344	6.60	V Q				
3+35	1.3799	6.61	V Q				
3+40	1.4255	6.62	V Q				
3+45	1.4711	6.62	V Q				
3+50	1.5174	6.73	V Q				
3+55	1.5668	7.17	V Q				
4+ 0	1.6186	7.53	V Q				
4+ 5	1.6714	7.66	V Q				
4+10	1.7248	7.74	V Q				
4+15	1.7785	7.80	V Q				
4+20	1.8332	7.95	V Q				
4+25	1.8912	8.42	V Q				
4+30	1.9517	8.80	V Q				
4+35	2.0134	8.95	V Q				
4+40	2.0757	9.04	V Q				
4+45	2.1384	9.11	V Q				
4+50	2.1964	8.42	V Q				
4+55	2.2335	5.40	VQ				
5+ 0	2.2543	3.01	QV				
5+ 5	2.2731	2.74	QV				
5+10	2.3061	4.79	Q				
5+15	2.3508	6.48	VQ				
5+20	2.3999	7.13	VQ				
5+25	2.4540	7.86	V Q				
5+30	2.5118	8.38	V Q				
5+35	2.5664	7.94	V Q				
5+40	2.6022	5.20	Q				
5+45	2.6232	3.05	Q V				
5+50	2.6388	2.27	Q V				
5+55	2.6515	1.84	Q V				
6+ 0	2.6626	1.61	Q V				
6+ 5	2.6735	1.59	Q V				
6+10	2.6877	2.06	Q V				
6+15	2.7043	2.40	Q V				
6+20	2.7217	2.52	Q V				
6+25	2.7395	2.60	Q V				
6+30	2.7578	2.65	Q V				

6+35	2.7773	2.83				
6+40	2.8009	3.41				
6+45	2.8279	3.93				
6+50	2.8566	4.17				
6+55	2.8864	4.33				
7+ 0	2.9172	4.46				
7+ 5	2.9487	4.57				
7+10	2.9808	4.67				
7+15	3.0135	4.75				
7+20	3.0476	4.95				
7+25	3.0859	5.56				
7+30	3.1276	6.05				
7+35	3.1718	6.41				
7+40	3.2208	7.12				
7+45	3.2736	7.66				
7+50	3.3291	8.06				
7+55	3.3896	8.79				
8+ 0	3.4541	9.36				
8+ 5	3.5224	9.91				
8+10	3.5995	11.20				
8+15	3.6836	12.22				
8+20	3.7710	12.68				
8+25	3.8604	12.99				
8+30	3.9513	13.21				
8+35	4.0444	13.51				
8+40	4.1422	14.20				
8+45	4.2437	14.75				
8+50	4.3480	15.14				
8+55	4.4574	15.88				
9+ 0	4.5706	16.44				
9+ 5	4.6876	16.99				
9+10	4.8135	18.27				
9+15	4.9463	19.28				
9+20	5.0831	19.86				
9+25	5.2257	20.70				
9+30	5.3727	21.35				
9+35	5.5231	21.83				
9+40	5.6788	22.61				
9+45	5.8387	23.22				
9+50	6.0016	23.66				
9+55	6.1699	24.43				
10+ 0	6.3422	25.02				
10+ 5	6.5103	24.41				
10+10	6.6537	20.82				
10+15	6.7774	17.95				
10+20	6.8938	16.90				
10+25	7.0061	16.31				
10+30	7.1158	15.93				
10+35	7.2283	16.33				
10+40	7.3583	18.88				
10+45	7.5022	20.90				
10+50	7.6513	21.65				
10+55	7.8034	22.09				
11+ 0	7.9576	22.39				
11+ 5	8.1124	22.47				
11+10	8.2644	22.08				
11+15	8.4148	21.83				
11+20	8.5650	21.81				
11+25	8.7154	21.83				
11+30	8.8660	21.87				
11+35	9.0151	21.65				
11+40	9.1571	20.62				
11+45	9.2932	19.77				
11+50	9.4282	19.59				
11+55	9.5657	19.96				
12+ 0	9.7054	20.29				
12+ 5	9.8522	21.31				
12+10	10.0256	25.18				
12+15	10.2202	28.26				
12+20	10.4242	29.61				
12+25	10.6369	30.89				



18+25	21.8007	0.72	Q	|	|	|	V |
18+30	21.8057	0.72	Q	|	|	|	V |
18+35	21.8125	0.99	Q	|	|	|	V |
18+40	21.8268	2.08	|Q	|	|	|	V |
18+45	21.8471	2.95	| Q	|	|	|	V |
18+50	21.8689	3.17	| Q	|	|	|	V |
18+55	21.8891	2.92	| Q	|	|	|	V |
19+ 0	21.9077	2.71	| Q	|	|	|	V |
19+ 5	21.9268	2.77	| Q	|	|	|	V |
19+10	21.9489	3.21	| Q	|	|	|	V |
19+15	21.9734	3.56	| Q	|	|	|	V |
19+20	21.9973	3.46	| Q	|	|	|	V |
19+25	22.0148	2.55	| Q	|	|	|	V |
19+30	22.0273	1.82	|Q	|	|	|	V |
19+35	22.0397	1.80	|Q	|	|	|	V |
19+40	22.0579	2.65	| Q	|	|	|	V |
19+45	22.0808	3.32	| Q	|	|	|	V |
19+50	22.1045	3.44	| Q	|	|	|	V |
19+55	22.1260	3.12	| Q	|	|	|	V |
20+ 0	22.1457	2.85	| Q	|	|	|	V |
20+ 5	22.1655	2.88	| Q	|	|	|	V |
20+10	22.1881	3.28	| Q	|	|	|	V |
20+15	22.2129	3.61	| Q	|	|	|	V |
20+20	22.2386	3.73	| Q	|	|	|	V |
20+25	22.2648	3.80	| Q	|	|	|	V |
20+30	22.2913	3.85	| Q	|	|	|	V |
20+35	22.3180	3.89	| Q	|	|	|	V |
20+40	22.3450	3.92	| Q	|	|	|	V |
20+45	22.3721	3.93	| Q	|	|	|	V |
20+50	22.3985	3.83	| Q	|	|	|	V |
20+55	22.4219	3.39	| Q	|	|	|	V |
21+ 0	22.4429	3.05	| Q	|	|	|	V |
21+ 5	22.4638	3.03	| Q	|	|	|	V |
21+10	22.4872	3.40	| Q	|	|	|	V |
21+15	22.5126	3.70	| Q	|	|	|	V |
21+20	22.5380	3.69	| Q	|	|	|	V |
21+25	22.5607	3.30	| Q	|	|	|	V |
21+30	22.5812	2.98	| Q	|	|	|	V|
21+35	22.6017	2.97	| Q	|	|	|	V|
21+40	22.6247	3.35	| Q	|	|	|	V|
21+45	22.6499	3.66	| Q	|	|	|	V|
21+50	22.6751	3.66	| Q	|	|	|	V|
21+55	22.6977	3.27	| Q	|	|	|	V|
22+ 0	22.7180	2.96	| Q	|	|	|	V|
22+ 5	22.7363	2.64	| Q	|	|	|	V|
22+10	22.7481	1.72	|Q	|	|	|	V|
22+15	22.7549	0.99	Q	|	|	|	V|
22+20	22.7612	0.91	Q	|	|	|	V|
22+25	22.7721	1.59	|Q	|	|	|	V|
22+30	22.7870	2.16	|Q	|	|	|	V|
22+35	22.8031	2.34	|Q	|	|	|	V|
22+40	22.8199	2.44	|Q	|	|	|	V|
22+45	22.8370	2.49	|Q	|	|	|	V|
22+50	22.8544	2.52	| Q	|	|	|	V|
22+55	22.8720	2.55	| Q	|	|	|	V|
23+ 0	22.8897	2.57	| Q	|	|	|	V|
23+ 5	22.9075	2.59	| Q	|	|	|	V|
23+10	22.9254	2.60	| Q	|	|	|	V|
23+15	22.9434	2.62	| Q	|	|	|	V|
23+20	22.9616	2.63	| Q	|	|	|	V|
23+25	22.9798	2.65	| Q	|	|	|	V|
23+30	22.9980	2.65	| Q	|	|	|	V|
23+35	23.0163	2.65	| Q	|	|	|	V|
23+40	23.0345	2.65	| Q	|	|	|	V|
23+45	23.0528	2.65	| Q	|	|	|	V|
23+50	23.0710	2.65	| Q	|	|	|	V|
23+55	23.0892	2.65	| Q	|	|	|	V|
24+ 0	23.1075	2.65	| Q	|	|	|	V|
24+ 5	23.1242	2.43	|Q	|	|	|	V|
24+10	23.1348	1.54	|Q	|	|	|	V|
24+15	23.1406	0.83	Q	|	|	|	V|

24+20	23.1444	0.56	Q				V
24+25	23.1472	0.40	Q				V
24+30	23.1492	0.29	Q				V
24+35	23.1506	0.21	Q				V
24+40	23.1517	0.15	Q				V
24+45	23.1524	0.11	Q				V
24+50	23.1529	0.07	Q				V
24+55	23.1533	0.05	Q				V
25+ 0	23.1535	0.03	Q				V
25+ 5	23.1536	0.01	Q				V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930puh10024100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
100 YEAR STORM EVENT
1930PUH100
DS

Drainage Area = 127.12(Ac.) = 0.199 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 127.12(Ac.) = 0.199 Sq. Mi.
Length along longest watercourse = 5048.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.956 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 29.90(Ft.)
Slope along watercourse = 31.2742 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.140 Hr.
Lag time = 8.40 Min.
25% of lag time = 2.10 Min.
40% of lag time = 3.36 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	1.60	203.39

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	4.00	508.48

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 4.000(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 3.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
127.120	69.00	0.900

Total Area Entered = 127.12(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	84.4	0.194	0.900	0.037	1.000	0.037
					Sum (F) =	0.037

Area averaged mean soil loss (F) (In/Hr) = 0.037
Minimum soil loss rate ((In/Hr)) = 0.018
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	59.527	8.108	10.388
2	0.167	119.054	33.632	43.087
3	0.250	178.581	26.735	34.252
4	0.333	238.109	10.389	13.309
5	0.417	297.636	6.125	7.847
6	0.500	357.163	4.147	5.313
7	0.583	416.690	2.960	3.792
8	0.667	476.217	2.078	2.663
9	0.750	535.744	1.719	2.202
10	0.833	595.271	1.279	1.638
11	0.917	654.799	0.977	1.251
12	1.000	714.326	0.697	0.893
13	1.083	773.853	0.595	0.763
14	1.167	833.380	0.559	0.716
			Sum = 100.000 Sum=	128.113

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.032	0.065	0.006	0.03
2	0.17	0.07	0.032	0.065	0.006	0.03
3	0.25	0.07	0.032	0.065	0.006	0.03
4	0.33	0.10	0.048	0.065	0.009	0.04
5	0.42	0.10	0.048	0.064	0.009	0.04
6	0.50	0.10	0.048	0.064	0.009	0.04
7	0.58	0.10	0.048	0.064	0.009	0.04
8	0.67	0.10	0.048	0.064	0.009	0.04
9	0.75	0.10	0.048	0.063	0.009	0.04
10	0.83	0.13	0.064	0.063	---	0.00
11	0.92	0.13	0.064	0.063	---	0.00
12	1.00	0.13	0.064	0.063	---	0.00
13	1.08	0.10	0.048	0.062	0.009	0.04
14	1.17	0.10	0.048	0.062	0.009	0.04
15	1.25	0.10	0.048	0.062	0.009	0.04
16	1.33	0.10	0.048	0.062	0.009	0.04
17	1.42	0.10	0.048	0.061	0.009	0.04
18	1.50	0.10	0.048	0.061	0.009	0.04
19	1.58	0.10	0.048	0.061	0.009	0.04
20	1.67	0.10	0.048	0.061	0.009	0.04
21	1.75	0.10	0.048	0.060	0.009	0.04
22	1.83	0.13	0.064	0.060	---	0.00
23	1.92	0.13	0.064	0.060	---	0.00
24	2.00	0.13	0.064	0.060	---	0.00
25	2.08	0.13	0.064	0.059	---	0.00
26	2.17	0.13	0.064	0.059	---	0.00
27	2.25	0.13	0.064	0.059	---	0.01
28	2.33	0.13	0.064	0.059	---	0.01
29	2.42	0.13	0.064	0.058	---	0.01
30	2.50	0.13	0.064	0.058	---	0.01
31	2.58	0.17	0.080	0.058	---	0.02

32	2.67	0.17	0.080	0.058	---	0.02
33	2.75	0.17	0.080	0.057	---	0.02
34	2.83	0.17	0.080	0.057	---	0.02
35	2.92	0.17	0.080	0.057	---	0.02
36	3.00	0.17	0.080	0.057	---	0.02
37	3.08	0.17	0.080	0.057	---	0.02
38	3.17	0.17	0.080	0.056	---	0.02
39	3.25	0.17	0.080	0.056	---	0.02
40	3.33	0.17	0.080	0.056	---	0.02
41	3.42	0.17	0.080	0.056	---	0.02
42	3.50	0.17	0.080	0.055	---	0.02
43	3.58	0.17	0.080	0.055	---	0.02
44	3.67	0.17	0.080	0.055	---	0.03
45	3.75	0.17	0.080	0.055	---	0.03
46	3.83	0.20	0.096	0.054	---	0.04
47	3.92	0.20	0.096	0.054	---	0.04
48	4.00	0.20	0.096	0.054	---	0.04
49	4.08	0.20	0.096	0.054	---	0.04
50	4.17	0.20	0.096	0.054	---	0.04
51	4.25	0.20	0.096	0.053	---	0.04
52	4.33	0.23	0.112	0.053	---	0.06
53	4.42	0.23	0.112	0.053	---	0.06
54	4.50	0.23	0.112	0.053	---	0.06
55	4.58	0.23	0.112	0.052	---	0.06
56	4.67	0.23	0.112	0.052	---	0.06
57	4.75	0.23	0.112	0.052	---	0.06
58	4.83	0.27	0.128	0.052	---	0.08
59	4.92	0.27	0.128	0.051	---	0.08
60	5.00	0.27	0.128	0.051	---	0.08
61	5.08	0.20	0.096	0.051	---	0.04
62	5.17	0.20	0.096	0.051	---	0.05
63	5.25	0.20	0.096	0.051	---	0.05
64	5.33	0.23	0.112	0.050	---	0.06
65	5.42	0.23	0.112	0.050	---	0.06
66	5.50	0.23	0.112	0.050	---	0.06
67	5.58	0.27	0.128	0.050	---	0.08
68	5.67	0.27	0.128	0.049	---	0.08
69	5.75	0.27	0.128	0.049	---	0.08
70	5.83	0.27	0.128	0.049	---	0.08
71	5.92	0.27	0.128	0.049	---	0.08
72	6.00	0.27	0.128	0.049	---	0.08
73	6.08	0.30	0.144	0.048	---	0.10
74	6.17	0.30	0.144	0.048	---	0.10
75	6.25	0.30	0.144	0.048	---	0.10
76	6.33	0.30	0.144	0.048	---	0.10
77	6.42	0.30	0.144	0.048	---	0.10
78	6.50	0.30	0.144	0.047	---	0.10
79	6.58	0.33	0.160	0.047	---	0.11
80	6.67	0.33	0.160	0.047	---	0.11
81	6.75	0.33	0.160	0.047	---	0.11
82	6.83	0.33	0.160	0.046	---	0.11
83	6.92	0.33	0.160	0.046	---	0.11
84	7.00	0.33	0.160	0.046	---	0.11
85	7.08	0.33	0.160	0.046	---	0.11
86	7.17	0.33	0.160	0.046	---	0.11
87	7.25	0.33	0.160	0.045	---	0.11
88	7.33	0.37	0.176	0.045	---	0.13
89	7.42	0.37	0.176	0.045	---	0.13
90	7.50	0.37	0.176	0.045	---	0.13
91	7.58	0.40	0.192	0.045	---	0.15
92	7.67	0.40	0.192	0.044	---	0.15
93	7.75	0.40	0.192	0.044	---	0.15
94	7.83	0.43	0.208	0.044	---	0.16
95	7.92	0.43	0.208	0.044	---	0.16
96	8.00	0.43	0.208	0.044	---	0.16
97	8.08	0.50	0.240	0.043	---	0.20
98	8.17	0.50	0.240	0.043	---	0.20
99	8.25	0.50	0.240	0.043	---	0.20
100	8.33	0.50	0.240	0.043	---	0.20
101	8.42	0.50	0.240	0.043	---	0.20
102	8.50	0.50	0.240	0.042	---	0.20

103	8.58	0.53	0.256	0.042	---	0.21
104	8.67	0.53	0.256	0.042	---	0.21
105	8.75	0.53	0.256	0.042	---	0.21
106	8.83	0.57	0.272	0.042	---	0.23
107	8.92	0.57	0.272	0.041	---	0.23
108	9.00	0.57	0.272	0.041	---	0.23
109	9.08	0.63	0.304	0.041	---	0.26
110	9.17	0.63	0.304	0.041	---	0.26
111	9.25	0.63	0.304	0.041	---	0.26
112	9.33	0.67	0.320	0.040	---	0.28
113	9.42	0.67	0.320	0.040	---	0.28
114	9.50	0.67	0.320	0.040	---	0.28
115	9.58	0.70	0.336	0.040	---	0.30
116	9.67	0.70	0.336	0.040	---	0.30
117	9.75	0.70	0.336	0.039	---	0.30
118	9.83	0.73	0.352	0.039	---	0.31
119	9.92	0.73	0.352	0.039	---	0.31
120	10.00	0.73	0.352	0.039	---	0.31
121	10.08	0.50	0.240	0.039	---	0.20
122	10.17	0.50	0.240	0.039	---	0.20
123	10.25	0.50	0.240	0.038	---	0.20
124	10.33	0.50	0.240	0.038	---	0.20
125	10.42	0.50	0.240	0.038	---	0.20
126	10.50	0.50	0.240	0.038	---	0.20
127	10.58	0.67	0.320	0.038	---	0.28
128	10.67	0.67	0.320	0.037	---	0.28
129	10.75	0.67	0.320	0.037	---	0.28
130	10.83	0.67	0.320	0.037	---	0.28
131	10.92	0.67	0.320	0.037	---	0.28
132	11.00	0.67	0.320	0.037	---	0.28
133	11.08	0.63	0.304	0.036	---	0.27
134	11.17	0.63	0.304	0.036	---	0.27
135	11.25	0.63	0.304	0.036	---	0.27
136	11.33	0.63	0.304	0.036	---	0.27
137	11.42	0.63	0.304	0.036	---	0.27
138	11.50	0.63	0.304	0.036	---	0.27
139	11.58	0.57	0.272	0.035	---	0.24
140	11.67	0.57	0.272	0.035	---	0.24
141	11.75	0.57	0.272	0.035	---	0.24
142	11.83	0.60	0.288	0.035	---	0.25
143	11.92	0.60	0.288	0.035	---	0.25
144	12.00	0.60	0.288	0.035	---	0.25
145	12.08	0.83	0.400	0.034	---	0.37
146	12.17	0.83	0.400	0.034	---	0.37
147	12.25	0.83	0.400	0.034	---	0.37
148	12.33	0.87	0.416	0.034	---	0.38
149	12.42	0.87	0.416	0.034	---	0.38
150	12.50	0.87	0.416	0.034	---	0.38
151	12.58	0.93	0.448	0.033	---	0.41
152	12.67	0.93	0.448	0.033	---	0.41
153	12.75	0.93	0.448	0.033	---	0.41
154	12.83	0.97	0.464	0.033	---	0.43
155	12.92	0.97	0.464	0.033	---	0.43
156	13.00	0.97	0.464	0.033	---	0.43
157	13.08	1.13	0.544	0.032	---	0.51
158	13.17	1.13	0.544	0.032	---	0.51
159	13.25	1.13	0.544	0.032	---	0.51
160	13.33	1.13	0.544	0.032	---	0.51
161	13.42	1.13	0.544	0.032	---	0.51
162	13.50	1.13	0.544	0.032	---	0.51
163	13.58	0.77	0.368	0.031	---	0.34
164	13.67	0.77	0.368	0.031	---	0.34
165	13.75	0.77	0.368	0.031	---	0.34
166	13.83	0.77	0.368	0.031	---	0.34
167	13.92	0.77	0.368	0.031	---	0.34
168	14.00	0.77	0.368	0.031	---	0.34
169	14.08	0.90	0.432	0.030	---	0.40
170	14.17	0.90	0.432	0.030	---	0.40
171	14.25	0.90	0.432	0.030	---	0.40
172	14.33	0.87	0.416	0.030	---	0.39
173	14.42	0.87	0.416	0.030	---	0.39

174	14.50	0.87	0.416	0.030	---	0.39
175	14.58	0.87	0.416	0.030	---	0.39
176	14.67	0.87	0.416	0.029	---	0.39
177	14.75	0.87	0.416	0.029	---	0.39
178	14.83	0.83	0.400	0.029	---	0.37
179	14.92	0.83	0.400	0.029	---	0.37
180	15.00	0.83	0.400	0.029	---	0.37
181	15.08	0.80	0.384	0.029	---	0.36
182	15.17	0.80	0.384	0.028	---	0.36
183	15.25	0.80	0.384	0.028	---	0.36
184	15.33	0.77	0.368	0.028	---	0.34
185	15.42	0.77	0.368	0.028	---	0.34
186	15.50	0.77	0.368	0.028	---	0.34
187	15.58	0.63	0.304	0.028	---	0.28
188	15.67	0.63	0.304	0.028	---	0.28
189	15.75	0.63	0.304	0.027	---	0.28
190	15.83	0.63	0.304	0.027	---	0.28
191	15.92	0.63	0.304	0.027	---	0.28
192	16.00	0.63	0.304	0.027	---	0.28
193	16.08	0.13	0.064	0.027	---	0.04
194	16.17	0.13	0.064	0.027	---	0.04
195	16.25	0.13	0.064	0.027	---	0.04
196	16.33	0.13	0.064	0.026	---	0.04
197	16.42	0.13	0.064	0.026	---	0.04
198	16.50	0.13	0.064	0.026	---	0.04
199	16.58	0.10	0.048	0.026	---	0.02
200	16.67	0.10	0.048	0.026	---	0.02
201	16.75	0.10	0.048	0.026	---	0.02
202	16.83	0.10	0.048	0.026	---	0.02
203	16.92	0.10	0.048	0.026	---	0.02
204	17.00	0.10	0.048	0.025	---	0.02
205	17.08	0.17	0.080	0.025	---	0.05
206	17.17	0.17	0.080	0.025	---	0.05
207	17.25	0.17	0.080	0.025	---	0.05
208	17.33	0.17	0.080	0.025	---	0.06
209	17.42	0.17	0.080	0.025	---	0.06
210	17.50	0.17	0.080	0.025	---	0.06
211	17.58	0.17	0.080	0.025	---	0.06
212	17.67	0.17	0.080	0.024	---	0.06
213	17.75	0.17	0.080	0.024	---	0.06
214	17.83	0.13	0.064	0.024	---	0.04
215	17.92	0.13	0.064	0.024	---	0.04
216	18.00	0.13	0.064	0.024	---	0.04
217	18.08	0.13	0.064	0.024	---	0.04
218	18.17	0.13	0.064	0.024	---	0.04
219	18.25	0.13	0.064	0.024	---	0.04
220	18.33	0.13	0.064	0.023	---	0.04
221	18.42	0.13	0.064	0.023	---	0.04
222	18.50	0.13	0.064	0.023	---	0.04
223	18.58	0.10	0.048	0.023	---	0.02
224	18.67	0.10	0.048	0.023	---	0.02
225	18.75	0.10	0.048	0.023	---	0.03
226	18.83	0.07	0.032	0.023	---	0.01
227	18.92	0.07	0.032	0.023	---	0.01
228	19.00	0.07	0.032	0.023	---	0.01
229	19.08	0.10	0.048	0.022	---	0.03
230	19.17	0.10	0.048	0.022	---	0.03
231	19.25	0.10	0.048	0.022	---	0.03
232	19.33	0.13	0.064	0.022	---	0.04
233	19.42	0.13	0.064	0.022	---	0.04
234	19.50	0.13	0.064	0.022	---	0.04
235	19.58	0.10	0.048	0.022	---	0.03
236	19.67	0.10	0.048	0.022	---	0.03
237	19.75	0.10	0.048	0.022	---	0.03
238	19.83	0.07	0.032	0.022	---	0.01
239	19.92	0.07	0.032	0.021	---	0.01
240	20.00	0.07	0.032	0.021	---	0.01
241	20.08	0.10	0.048	0.021	---	0.03
242	20.17	0.10	0.048	0.021	---	0.03
243	20.25	0.10	0.048	0.021	---	0.03
244	20.33	0.10	0.048	0.021	---	0.03

245	20.42	0.10	0.048	0.021	---	0.03
246	20.50	0.10	0.048	0.021	---	0.03
247	20.58	0.10	0.048	0.021	---	0.03
248	20.67	0.10	0.048	0.021	---	0.03
249	20.75	0.10	0.048	0.021	---	0.03
250	20.83	0.07	0.032	0.020	---	0.01
251	20.92	0.07	0.032	0.020	---	0.01
252	21.00	0.07	0.032	0.020	---	0.01
253	21.08	0.10	0.048	0.020	---	0.03
254	21.17	0.10	0.048	0.020	---	0.03
255	21.25	0.10	0.048	0.020	---	0.03
256	21.33	0.07	0.032	0.020	---	0.01
257	21.42	0.07	0.032	0.020	---	0.01
258	21.50	0.07	0.032	0.020	---	0.01
259	21.58	0.10	0.048	0.020	---	0.03
260	21.67	0.10	0.048	0.020	---	0.03
261	21.75	0.10	0.048	0.020	---	0.03
262	21.83	0.07	0.032	0.020	---	0.01
263	21.92	0.07	0.032	0.020	---	0.01
264	22.00	0.07	0.032	0.019	---	0.01
265	22.08	0.10	0.048	0.019	---	0.03
266	22.17	0.10	0.048	0.019	---	0.03
267	22.25	0.10	0.048	0.019	---	0.03
268	22.33	0.07	0.032	0.019	---	0.01
269	22.42	0.07	0.032	0.019	---	0.01
270	22.50	0.07	0.032	0.019	---	0.01
271	22.58	0.07	0.032	0.019	---	0.01
272	22.67	0.07	0.032	0.019	---	0.01
273	22.75	0.07	0.032	0.019	---	0.01
274	22.83	0.07	0.032	0.019	---	0.01
275	22.92	0.07	0.032	0.019	---	0.01
276	23.00	0.07	0.032	0.019	---	0.01
277	23.08	0.07	0.032	0.019	---	0.01
278	23.17	0.07	0.032	0.019	---	0.01
279	23.25	0.07	0.032	0.019	---	0.01
280	23.33	0.07	0.032	0.019	---	0.01
281	23.42	0.07	0.032	0.019	---	0.01
282	23.50	0.07	0.032	0.019	---	0.01
283	23.58	0.07	0.032	0.019	---	0.01
284	23.67	0.07	0.032	0.018	---	0.01
285	23.75	0.07	0.032	0.018	---	0.01
286	23.83	0.07	0.032	0.018	---	0.01
287	23.92	0.07	0.032	0.018	---	0.01
288	24.00	0.07	0.032	0.018	---	0.01
Sum =		100.0			Sum =	38.4

Flood volume = Effective rainfall 3.20(In)
times area 127.1(Ac.)/[(In)/(Ft.)] = 33.9(Ac.Ft)
Total soil loss = 0.80(In)
Total soil loss = 8.500(Ac.Ft)
Total rainfall = 4.00(In)
Flood volume = 1475082.1 Cubic Feet
Total soil loss = 370242.1 Cubic Feet

Peak flow rate of this hydrograph = 64.371(CFS)

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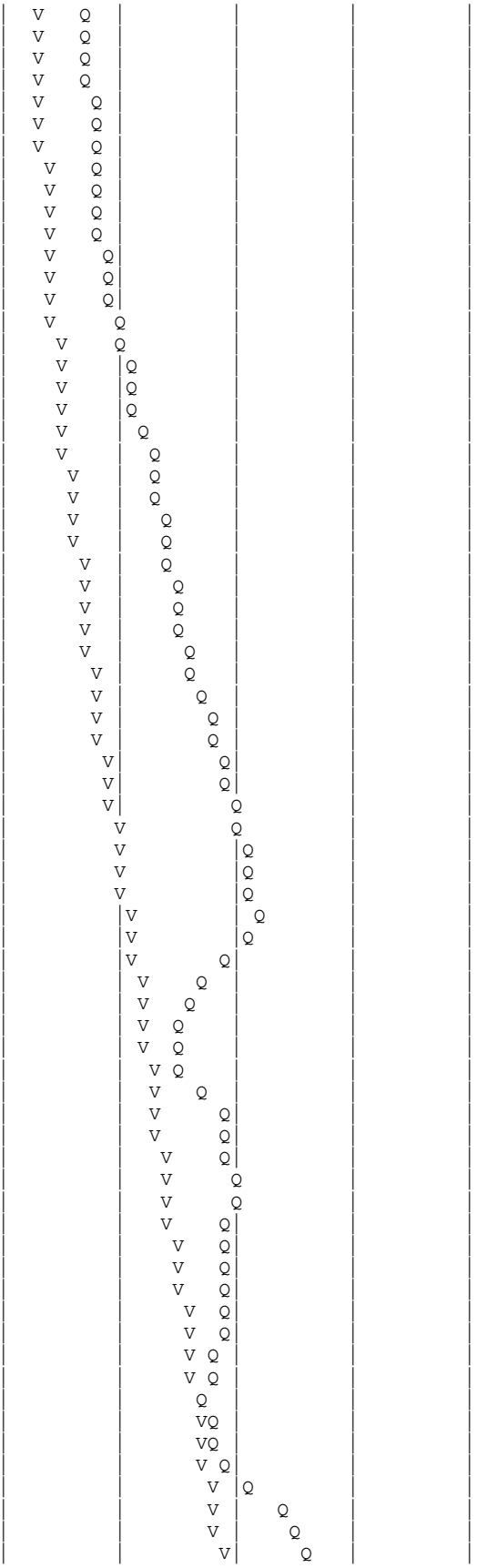
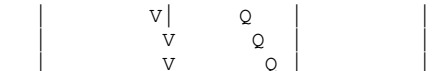
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	17.5	35.0	52.5	70.0
0+ 5	0.0019	0.27	Q	|	|	|	|
0+10	0.0115	1.40	Q	|	|	|	|
0+15	0.0274	2.30	VQ	|	|	|	|
0+20	0.0466	2.79	VQ	|	|	|	|
0+25	0.0711	3.56	V Q	|	|	|	|
0+30	0.0997	4.15	V Q	|	|	|	|
0+35	0.1302	4.42	V Q	|	|	|	|

0+40	0.1618	4.60	V Q				
0+45	0.1943	4.72	V Q				
0+50	0.2247	4.42	V Q				
0+55	0.2443	2.83	VQ				
1+ 0	0.2551	1.58	Q				
1+ 5	0.2656	1.52	Q				
1+10	0.2856	2.90	VQ				
1+15	0.3133	4.02	V Q				
1+20	0.3435	4.39	V Q				
1+25	0.3752	4.60	V Q				
1+30	0.4076	4.71	V Q				
1+35	0.4407	4.80	V Q				
1+40	0.4741	4.85	V Q				
1+45	0.5078	4.90	V Q				
1+50	0.5393	4.56	V Q				
1+55	0.5603	3.06	VQ				
2+ 0	0.5733	1.89	VQ				
2+ 5	0.5835	1.47	Q				
2+10	0.5920	1.24	Q				
2+15	0.5995	1.08	Q				
2+20	0.6062	0.97	Q				
2+25	0.6124	0.91	Q				
2+30	0.6183	0.86	Q				
2+35	0.6252	1.00	Q				
2+40	0.6367	1.67	Q				
2+45	0.6519	2.22	VQ				
2+50	0.6687	2.43	VQ				
2+55	0.6864	2.56	VQ				
3+ 0	0.7048	2.68	VQ				
3+ 5	0.7239	2.77	VQ				
3+10	0.7435	2.84	VQ				
3+15	0.7635	2.91	VQ				
3+20	0.7839	2.96	VQ				
3+25	0.8047	3.01	VQ				
3+30	0.8257	3.06	VQ				
3+35	0.8471	3.10	|Q				
3+40	0.8687	3.14	|Q				
3+45	0.8906	3.17	|Q				
3+50	0.9138	3.37	|Q				
3+55	0.9419	4.09	|VQ				
4+ 0	0.9740	4.66	|VQ				
4+ 5	1.0078	4.91	|VQ				
4+10	1.0427	5.06	|VQ				
4+15	1.0783	5.18	|VQ				
4+20	1.1158	5.43	|V Q				
4+25	1.1584	6.19	|V Q				
4+30	1.2053	6.81	|V Q				
4+35	1.2540	7.08	|V Q				
4+40	1.3040	7.25	|V Q				
4+45	1.3548	7.38	|V Q				
4+50	1.4074	7.65	|V Q				
4+55	1.4654	8.42	|V Q				
5+ 0	1.5276	9.03	|V Q				
5+ 5	1.5894	8.97	|V Q				
5+10	1.6428	7.76	|V Q				
5+15	1.6896	6.79	|V Q				
5+20	1.7353	6.63	| VQ				
5+25	1.7846	7.16	| V Q				
5+30	1.8369	7.60	| V Q				
5+35	1.8913	7.91	| V Q				
5+40	1.9512	8.69	| V Q				
5+45	2.0152	9.29	| V Q				
5+50	2.0810	9.55	| V Q				
5+55	2.1479	9.72	| V Q				
6+ 0	2.2157	9.84	| V Q				
6+ 5	2.2853	10.10	| V Q				
6+10	2.3600	10.86	| V Q				
6+15	2.4391	11.48	| V Q				
6+20	2.5201	11.76	| V Q				
6+25	2.6023	11.94	| V Q				
6+30	2.6855	12.07	| V Q				

6+35	2.7704	12.34	
6+40	2.8607	13.11	
6+45	2.9552	13.72	
6+50	3.0515	13.99	
6+55	3.1490	14.16	
7+ 0	3.2474	14.28	
7+ 5	3.3465	14.38	
7+10	3.4461	14.47	
7+15	3.5462	14.53	
7+20	3.6477	14.75	
7+25	3.7544	15.48	
7+30	3.8651	16.07	
7+35	3.9786	16.49	
7+40	4.0981	17.34	
7+45	4.2221	18.00	
7+50	4.3493	18.47	
7+55	4.4826	19.35	
8+ 0	4.6206	20.05	
8+ 5	4.7632	20.71	
8+10	4.9168	22.30	
8+15	5.0791	23.56	
8+20	5.2451	24.11	
8+25	5.4136	24.46	
8+30	5.5837	24.70	
8+35	5.7563	25.06	
8+40	5.9346	25.89	
8+45	6.1174	26.55	
8+50	6.3034	27.02	
8+55	6.4956	27.91	
9+ 0	6.6926	28.60	
9+ 5	6.8940	29.25	
9+10	7.1065	30.85	
9+15	7.3275	32.09	
9+20	7.5533	32.79	
9+25	7.7862	33.82	
9+30	8.0246	34.61	
9+35	8.2669	35.18	
9+40	8.5158	36.13	
9+45	8.7697	36.88	
9+50	9.0273	37.41	
9+55	9.2914	38.34	
10+ 0	9.5604	39.06	
10+ 5	9.8238	38.25	
10+10	10.0556	33.65	
10+15	10.2620	29.98	
10+20	10.4590	28.61	
10+25	10.6507	27.83	
10+30	10.8387	27.30	
10+35	11.0300	27.77	
10+40	11.2433	30.98	
10+45	11.4741	33.51	
10+50	11.7112	34.43	
10+55	11.9519	34.95	
11+ 0	12.1950	35.30	
11+ 5	12.4387	35.37	
11+10	12.6786	34.84	
11+15	12.9162	34.49	
11+20	13.1533	34.43	
11+25	13.3904	34.43	
11+30	13.6276	34.44	
11+35	13.8627	34.13	
11+40	14.0885	32.79	
11+45	14.3067	31.68	
11+50	14.5230	31.42	
11+55	14.7424	31.86	
12+ 0	14.9645	32.24	
12+ 5	15.1953	33.51	
12+10	15.4597	38.39	
12+15	15.7507	42.26	
12+20	16.0534	43.95	
12+25	16.3671	45.54	

12+30	16.6888	46.71	
12+35	17.0173	47.71	
12+40	17.3585	49.53	
12+45	17.7097	50.99	
12+50	18.0669	51.86	
12+55	18.4320	53.02	
13+ 0	18.8032	53.90	
13+ 5	19.1833	55.19	
13+10	19.5895	58.97	
13+15	20.0158	61.91	
13+20	20.4505	63.12	
13+25	20.8904	63.86	
13+30	21.3337	64.37	
13+35	21.7670	62.92	
13+40	22.1500	55.61	
13+45	22.4929	49.79	
13+50	22.8208	47.61	
13+55	23.1401	46.36	
14+ 0	23.4535	45.52	
14+ 5	23.7676	45.60	
14+10	24.0979	47.96	
14+15	24.4408	49.79	
14+20	24.7866	50.21	
14+25	25.1297	49.82	
14+30	25.4704	49.47	
14+35	25.8105	49.39	
14+40	26.1502	49.33	
14+45	26.4905	49.40	
14+50	26.8300	49.30	
14+55	27.1651	48.67	
15+ 0	27.4968	48.16	
15+ 5	27.8262	47.82	
15+10	28.1502	47.05	
15+15	28.4699	46.42	
15+20	28.7867	45.99	
15+25	29.0975	45.14	
15+30	29.4039	44.49	
15+35	29.7038	43.54	
15+40	29.9835	40.61	
15+45	30.2474	38.31	
15+50	30.5048	37.37	
15+55	30.7583	36.81	
16+ 0	31.0093	36.44	
16+ 5	31.2413	33.69	
16+10	31.4008	23.16	
16+15	31.5027	14.80	
16+20	31.5819	11.50	
16+25	31.6477	9.55	
16+30	31.7044	8.23	
16+35	31.7534	7.12	
16+40	31.7931	5.77	
16+45	31.8255	4.71	
16+50	31.8539	4.12	
16+55	31.8794	3.71	
17+ 0	31.9030	3.43	
17+ 5	31.9273	3.53	
17+10	31.9598	4.71	
17+15	31.9997	5.79	
17+20	32.0424	6.21	
17+25	32.0869	6.45	
17+30	32.1325	6.63	
17+35	32.1790	6.75	
17+40	32.2261	6.84	
17+45	32.2738	6.93	
17+50	32.3208	6.83	
17+55	32.3635	6.19	
18+ 0	32.4027	5.69	
18+ 5	32.4407	5.52	
18+10	32.4781	5.43	
18+15	32.5150	5.36	
18+20	32.5516	5.31	

18+25	32.5880	5.29	Q				V
18+30	32.6243	5.27	Q				V
18+35	32.6593	5.09	Q				V
18+40	32.6896	4.39	Q				V
18+45	32.7161	3.85	Q				V
18+50	32.7400	3.47	Q				V
18+55	32.7583	2.66	Q				V
19+ 0	32.7723	2.04	Q				V
19+ 5	32.7857	1.94	Q				V
19+10	32.8028	2.48	Q				V
19+15	32.8229	2.92	Q				V
19+20	32.8451	3.23	Q				V
19+25	32.8726	3.99	Q				V
19+30	32.9042	4.59	Q				V
19+35	32.9364	4.67	Q				V
19+40	32.9648	4.13	Q				V
19+45	32.9904	3.70	Q				V
19+50	33.0138	3.41	Q				V
19+55	33.0322	2.66	Q				V
20+ 0	33.0466	2.09	Q				V
20+ 5	33.0606	2.03	Q				V
20+10	33.0784	2.60	Q				V
20+15	33.0995	3.05	Q				V
20+20	33.1215	3.20	Q				V
20+25	33.1442	3.29	Q				V
20+30	33.1671	3.34	Q				V
20+35	33.1904	3.37	Q				V
20+40	33.2137	3.39	Q				V
20+45	33.2373	3.42	Q				V
20+50	33.2599	3.28	Q				V
20+55	33.2779	2.61	Q				V
21+ 0	33.2923	2.09	Q				V
21+ 5	33.3065	2.07	Q				V
21+10	33.3248	2.65	Q				V
21+15	33.3463	3.13	Q				V
21+20	33.3679	3.12	Q				V
21+25	33.3853	2.53	Q				V
21+30	33.3993	2.04	Q				V
21+35	33.4133	2.04	Q				V
21+40	33.4314	2.63	Q				V
21+45	33.4529	3.12	Q				V
21+50	33.4745	3.13	Q				V
21+55	33.4921	2.55	Q				V
22+ 0	33.5063	2.07	Q				V
22+ 5	33.5206	2.08	Q				V
22+10	33.5391	2.69	Q				V
22+15	33.5610	3.18	Q				V
22+20	33.5830	3.19	Q				V
22+25	33.6008	2.60	Q				V
22+30	33.6154	2.12	Q				V
22+35	33.6289	1.96	Q				V
22+40	33.6419	1.88	Q				V
22+45	33.6544	1.82	Q				V
22+50	33.6667	1.78	Q				V
22+55	33.6787	1.75	Q				V
23+ 0	33.6907	1.74	Q				V
23+ 5	33.7026	1.73	Q				V
23+10	33.7145	1.73	Q				V
23+15	33.7264	1.72	Q				V
23+20	33.7382	1.71	Q				V
23+25	33.7499	1.71	Q				V
23+30	33.7617	1.71	Q				V
23+35	33.7735	1.72	Q				V
23+40	33.7854	1.72	Q				V
23+45	33.7972	1.72	Q				V
23+50	33.8091	1.73	Q				V
23+55	33.8211	1.73	Q				V
24+ 0	33.8330	1.73	Q				V
24+ 5	33.8440	1.59	Q				V
24+10	33.8509	1.01	Q				V
24+15	33.8547	0.55	Q				V

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   24+20      33.8572      0.37  Q          |          |          |          V|
   24+25      33.8590      0.26  Q          |          |          |          V|
   24+30      33.8603      0.19  Q          |          |          |          V|
   24+35      33.8613      0.14  Q          |          |          |          V|
   24+40      33.8620      0.10  Q          |          |          |          V|
   24+45      33.8625      0.07  Q          |          |          |          V|
   24+50      33.8628      0.05  Q          |          |          |          V|
   24+55      33.8630      0.03  Q          |          |          |          V|
   25+ 0      33.8632      0.02  Q          |          |          |          V|
   25+ 5      33.8632      0.01  Q          |          |          |           V
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Appendix D
Basin Routing Analysis for 1, 2, 5, 10, 25, and 100 year storms

DETENTION BASIN

				open basin storage									
					media		cumulative	ac-ft	6 - 6"	3-24" cmp	24" pipe	3-4"x4"	total
elevation	depth	outflow	storage	area	factor	volume	volume	volume	subdrain	orifice	orifice	slots	outflow
1491.0	0.0	0	0.000	0									
1492.0	1.0	0.50	0.739	161,008	0.4	32,202	32,202	0.739	0.50	0.00	0.00	0.00	0.50
1493.0	2.0	0.86	2.218	161,008	0.4	64,403	96,605	2.218	0.86	0.00	0.00	0.00	0.86
1494.0	3.0	1.12	3.327	161,008	0.3	48,302	144,907	3.327	1.12	0.00	0.00	0.00	1.12
1495.0	4.0	1.32	4.435	161,008	0.3	48,302	193,210	4.435	1.32	0.00	0.00	0.00	1.32
1495.5	4.5	1.41	6.323	167,940	1.0	82,237	275,447	6.323	1.41	0.00	0.00	0.00	1.41
1496.0	5.0	2.40	8.291	174,872	1.0	85,703	361,150	8.291	1.50	0.00	0.00	0.90	2.40
1497.0	6.0	3.47	12.386	188,813	1.0	178,377	539,526	12.386	1.65	0.00	0.00	1.81	3.47
1498.0	7.0	49.56	16.882	202,890	1.0	195,852	735,378	16.882	1.80	**45.36**	0.00	2.40	49.56
1499.0	8.0	68.95	21.702	217,075	1.0	209,983	945,360	21.702	1.93	**64.14**	0.00	2.87	68.95
1500.0	9.0	83.89	26.849	231,325	1.0	224,200	1,169,560	26.849	2.06	**78.56**	0.00	3.27	83.89

invert of 6" perf pipe = 1492.25
top of overflow grate = 1497.00
top of media = 1495.00
18" pipe invert = 1490.50
2' media

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 01/06/20

HILLWOOD - APOLLO PROJECT
1 YEAR STORM EVENT BASIN ROUTING
1930BR241
DS

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 1930PUH1241.rte
**********HYDROGRAPH DATA**********
Number of intervals = 301
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 10.622 (CFS)
Total volume = 7.285 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 301
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.739	0.500	0.737	0.741
2.000	2.218	0.860	2.215	2.221
3.000	3.327	1.120	3.323	3.331
4.000	4.435	1.320	4.430	4.440
4.500	6.323	1.410	6.318	6.328
5.000	8.291	2.400	8.283	8.299
6.000	12.386	3.450	12.374	12.398
7.000	16.882	49.560	16.711	17.053
8.000	21.702	68.940	21.465	21.939
9.000	26.849	83.890	26.560	27.138

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 2.7 5.31 7.97 10.62	Depth (Ft.)
0.083	0.08	0.00	0.000	O	0.00
0.167	0.41	0.00	0.002	OI	0.00
0.250	0.68	0.00	0.006	O I	0.01
0.333	0.82	0.01	0.011	O I	0.01
0.417	1.05	0.01	0.017	O I	0.02
0.500	1.22	0.02	0.025	O I	0.03
0.583	1.30	0.02	0.033	O I	0.05
0.667	1.35	0.03	0.042	O I	0.06
0.750	1.39	0.03	0.052	O I	0.07
0.833	1.45	0.04	0.061	O I	0.08
0.917	1.64	0.05	0.071	O I	0.10
1.000	1.79	0.06	0.083	O I	0.11
1.083	1.81	0.06	0.095	O I	0.13
1.167	1.69	0.07	0.106	O I	0.14
1.250	1.58	0.08	0.117	O I	0.16
1.333	1.54	0.09	0.127	O I	0.17
1.417	1.53	0.09	0.137	O I	0.19
1.500	1.51	0.10	0.147	O I	0.20
1.583	1.51	0.11	0.157	O I	0.21
1.667	1.50	0.11	0.166	O I	0.23
1.750	1.50	0.12	0.176	O I	0.24
1.833	1.53	0.13	0.185	O I	0.25
1.917	1.70	0.13	0.196	O I	0.26
2.000	1.83	0.14	0.207	O I	0.28
2.083	1.87	0.15	0.219	O I	0.30
2.167	1.90	0.16	0.231	O I	0.31
2.250	1.92	0.16	0.243	O I	0.33
2.333	1.94	0.17	0.255	O I	0.34
2.417	1.95	0.18	0.267	O I	0.36
2.500	1.95	0.19	0.279	O I	0.38
2.583	2.00	0.20	0.291	O I	0.39
2.667	2.17	0.21	0.304	O I	0.41
2.750	2.31	0.22	0.318	O I	0.43
2.833	2.36	0.23	0.333	O I	0.45
2.917	2.39	0.24	0.348	O I	0.47
3.000	2.42	0.25	0.363	O I	0.49
3.083	2.43	0.26	0.378	O I	0.51
3.167	2.44	0.27	0.393	O I	0.53
3.250	2.45	0.28	0.408	O I	0.55
3.333	2.45	0.29	0.422	O I	0.57
3.417	2.46	0.30	0.437	O I	0.59
3.500	2.46	0.31	0.452	O I	0.61
3.583	2.47	0.32	0.467	O I	0.63
3.667	2.47	0.33	0.482	O I	0.65
3.750	2.47	0.34	0.497	O I	0.67
3.833	2.51	0.35	0.511	O I	0.69
3.917	2.68	0.36	0.527	O I	0.71
4.000	2.81	0.37	0.543	O I	0.74
4.083	2.86	0.38	0.560	O I	0.76
4.167	2.89	0.39	0.577	O I	0.78
4.250	2.91	0.40	0.595	O I	0.80
4.333	2.96	0.41	0.612	O I	0.83
4.417	3.14	0.43	0.630	O I	0.85
4.500	3.28	0.44	0.649	O I	0.88
4.583	3.34	0.45	0.669	O I	0.91
4.667	3.37	0.47	0.689	O I	0.93
4.750	3.40	0.48	0.709	O I	0.96
4.833	3.45	0.49	0.729	O I	0.99
4.917	3.63	0.50	0.750	O I	1.01
5.000	3.77	0.51	0.772	O I	1.02
5.083	3.75	0.51	0.795	O I	1.04
5.167	3.45	0.52	0.816	O I	1.05
5.250	3.21	0.52	0.835	O I	1.07
5.333	3.17	0.53	0.854	O I	1.08
5.417	3.29	0.53	0.872	O I	1.09
5.500	3.39	0.54	0.891	O I	1.10
5.583	3.46	0.54	0.911	O I	1.12

5.667	3.64	0.55	0.932	O	I			1.13
5.750	3.78	0.55	0.954	O	I			1.15
5.833	3.83	0.56	0.976	O	I			1.16
5.917	3.87	0.56	0.999	O	I			1.18
6.000	3.89	0.57	1.022	O	I			1.19
6.083	3.94	0.57	1.045	O	I			1.21
6.167	4.12	0.58	1.068	O	I			1.22
6.250	4.26	0.59	1.093	O	I			1.24
6.333	4.32	0.59	1.119	O	I			1.26
6.417	4.36	0.60	1.145	O	I			1.27
6.500	4.38	0.61	1.170	O	I			1.29
6.583	4.44	0.61	1.197	O	I			1.31
6.667	4.62	0.62	1.224	O	I			1.33
6.750	4.76	0.62	1.252	O	I			1.35
6.833	4.82	0.63	1.280	O	I			1.37
6.917	4.85	0.64	1.309	O	I			1.39
7.000	4.88	0.65	1.338	O	I			1.41
7.083	4.90	0.65	1.368	O	I			1.43
7.167	4.91	0.66	1.397	O	I			1.44
7.250	4.92	0.67	1.426	O	I			1.46
7.333	4.96	0.67	1.456	O	I			1.48
7.417	5.13	0.68	1.486	O	I			1.50
7.500	5.27	0.69	1.517	O	I			1.53
7.583	5.36	0.70	1.549	O	I			1.55
7.667	5.56	0.71	1.581	O	I			1.57
7.750	5.72	0.71	1.615	O	I			1.59
7.833	5.82	0.72	1.650	O	I			1.62
7.917	6.03	0.73	1.686	O	I			1.64
8.000	6.19	0.74	1.723	O	I			1.67
8.083	6.34	0.75	1.761	O	I			1.69
8.167	6.72	0.76	1.801	O	I			1.72
8.250	7.02	0.77	1.843	O	I			1.75
8.333	7.14	0.78	1.886	O	I			1.78
8.417	7.22	0.79	1.930	O	I			1.81
8.500	7.27	0.80	1.975	O	I			1.84
8.583	7.35	0.81	2.020	O	I			1.87
8.667	7.55	0.82	2.065	O	I			1.90
8.750	7.70	0.83	2.112	O	I			1.93
8.833	7.81	0.85	2.160	O	I			1.96
8.917	8.01	0.86	2.208	O	I			1.99
9.000	8.17	0.87	2.258	O	I			2.04
9.083	8.33	0.88	2.309	O	I			2.08
9.167	8.70	0.89	2.361	O	I			2.13
9.250	9.00	0.91	2.416	O	I			2.18
9.333	9.16	0.92	2.472	O	I			2.23
9.417	9.40	0.93	2.530	O	I			2.28
9.500	9.59	0.95	2.589	O	I			2.33
9.583	9.72	0.96	2.649	O	I			2.39
9.667	9.94	0.98	2.710	O	I			2.44
9.750	10.11	0.99	2.772	O	I			2.50
9.833	10.24	1.00	2.835	O	I			2.56
9.917	10.45	1.02	2.899	O	I			2.61
10.000	10.62	1.04	2.965	O	I			2.67
10.083	10.42	1.05	3.030	O	I			2.73
10.167	9.31	1.06	3.091	O	I			2.79
10.250	8.42	1.08	3.145	O	I			2.84
10.333	8.08	1.09	3.194	O	I			2.88
10.417	7.89	1.10	3.241	O	I			2.92
10.500	7.76	1.11	3.288	O	I			2.96
10.583	7.86	1.12	3.334	O	I			3.01
10.667	8.63	1.13	3.383	O	I			3.05
10.750	9.23	1.14	3.436	O	I			3.10
10.833	9.45	1.15	3.493	O	I			3.15
10.917	9.57	1.16	3.550	O	I			3.20
11.000	9.65	1.17	3.609	O	I			3.25
11.083	9.66	1.18	3.667	O	I			3.31
11.167	9.53	1.19	3.725	O	I			3.36
11.250	9.44	1.20	3.782	O	I			3.41
11.333	9.42	1.21	3.838	O	I			3.46
11.417	9.41	1.22	3.895	O	I			3.51
11.500	9.41	1.23	3.951	O	I			3.56

11.583	9.33	1.24	4.007	O			I	3.61
11.667	9.00	1.25	4.062	O			I	3.66
11.750	8.73	1.26	4.114	O			I	3.71
11.833	8.66	1.27	4.165	O			I	3.76
11.917	8.76	1.28	4.216	O			I	3.80
12.000	8.85	1.29	4.268	O			I	3.85
12.083	8.31	1.30	4.318	O			I	3.89
12.167	6.00	1.31	4.359	O		I		3.93
12.250	4.19	1.31	4.385	O	I			3.95
12.333	3.58	1.31	4.402	O	I			3.97
12.417	3.41	1.32	4.417	O	I			3.98
12.500	3.34	1.32	4.432	O	I			4.00
12.583	3.35	1.32	4.446	O	I			4.00
12.667	3.71	1.32	4.461	O	I			4.01
12.750	4.00	1.32	4.478	O	I			4.01
12.833	4.17	1.32	4.497	O	I			4.02
12.917	4.46	1.32	4.518	O	I			4.02
13.000	4.69	1.33	4.540	O	I			4.03
13.083	5.07	1.33	4.565	O	I			4.03
13.167	6.17	1.33	4.594	O		I		4.04
13.250	7.09	1.33	4.631	O		I		4.05
13.333	7.50	1.33	4.672	O		I		4.06
13.417	7.77	1.33	4.715	O		I		4.07
13.500	7.98	1.34	4.760	O		I		4.09
13.583	7.61	1.34	4.805	O		I		4.10
13.667	5.52	1.34	4.841	O	I			4.11
13.750	3.86	1.34	4.864	O	I			4.11
13.833	3.28	1.34	4.879	O	I			4.12
13.917	2.97	1.34	4.892	O	I			4.12
14.000	2.77	1.34	4.902	O	I			4.12
14.083	2.85	1.34	4.912	O	I			4.13
14.167	3.60	1.34	4.925	O	I			4.13
14.250	4.19	1.34	4.943	O	I			4.13
14.333	4.36	1.35	4.963	O	I			4.14
14.417	4.30	1.35	4.983	O	I			4.15
14.500	4.25	1.35	5.004	O	I			4.15
14.583	4.28	1.35	5.024	O	I			4.16
14.667	4.32	1.35	5.044	O	I			4.16
14.750	4.39	1.35	5.065	O	I			4.17
14.833	4.41	1.35	5.086	O	I			4.17
14.917	4.28	1.35	5.106	O	I			4.18
15.000	4.18	1.35	5.126	O	I			4.18
15.083	4.13	1.35	5.145	O	I			4.19
15.167	3.96	1.35	5.164	O	I			4.19
15.250	3.82	1.36	5.181	O	I			4.20
15.333	3.75	1.36	5.198	O	I			4.20
15.417	3.55	1.36	5.214	O	I			4.21
15.500	3.40	1.36	5.229	O	I			4.21
15.583	3.18	1.36	5.242	O	I			4.21
15.667	2.37	1.36	5.252	O	I			4.22
15.750	1.74	1.36	5.256	OI				4.22
15.833	1.51	1.36	5.258	O				4.22
15.917	1.40	1.36	5.259	O				4.22
16.000	1.33	1.36	5.259	O				4.22
16.083	1.37	1.36	5.259	O				4.22
16.167	1.61	1.36	5.260	O				4.22
16.250	1.79	1.36	5.262	OI				4.22
16.333	1.85	1.36	5.265	OI				4.22
16.417	1.88	1.36	5.269	OI				4.22
16.500	1.90	1.36	5.272	OI				4.22
16.583	1.88	1.36	5.276	OI				4.22
16.667	1.72	1.36	5.279	OI				4.22
16.750	1.60	1.36	5.281	O				4.22
16.833	1.56	1.36	5.283	O				4.22
16.917	1.54	1.36	5.284	O				4.22
17.000	1.53	1.36	5.285	O				4.23
17.083	1.60	1.36	5.286	O				4.23
17.167	1.92	1.36	5.289	OI				4.23
17.250	2.18	1.36	5.294	O I				4.23
17.333	2.27	1.36	5.300	O I				4.23
17.417	2.33	1.36	5.306	O I				4.23

17.500	2.37	1.36	5.313	O I				4.23
17.583	2.39	1.36	5.320	O I				4.23
17.667	2.41	1.36	5.327	O I				4.24
17.750	2.43	1.36	5.335	O I				4.24
17.833	2.40	1.36	5.342	O I				4.24
17.917	2.24	1.36	5.348	O I				4.24
18.000	2.12	1.36	5.354	O I				4.24
18.083	2.07	1.36	5.359	O I				4.24
18.167	2.05	1.36	5.364	O I				4.25
18.250	2.03	1.36	5.369	O I				4.25
18.333	2.01	1.36	5.373	O I				4.25
18.417	2.00	1.36	5.378	O I				4.25
18.500	2.00	1.37	5.382	O I				4.25
18.583	1.95	1.37	5.386	OI				4.25
18.667	1.78	1.37	5.390	OI				4.25
18.750	1.64	1.37	5.392	O				4.25
18.833	1.55	1.37	5.393	O				4.25
18.917	1.35	1.37	5.394	O				4.25
19.000	1.20	1.37	5.393	IO				4.25
19.083	1.17	1.37	5.392	IO				4.25
19.167	1.30	1.37	5.391	IO				4.25
19.250	1.40	1.37	5.391	O				4.25
19.333	1.47	1.37	5.392	O				4.25
19.417	1.65	1.37	5.393	O				4.25
19.500	1.79	1.37	5.395	OI				4.25
19.583	1.81	1.37	5.398	OI				4.26
19.667	1.68	1.37	5.401	OI				4.26
19.750	1.57	1.37	5.403	O				4.26
19.833	1.50	1.37	5.404	O				4.26
19.917	1.31	1.37	5.404	IO				4.26
20.000	1.17	1.37	5.403	IO				4.26
20.083	1.15	1.37	5.402	IO				4.26
20.167	1.29	1.37	5.401	IO				4.26
20.250	1.39	1.37	5.401	O				4.26
20.333	1.43	1.37	5.401	O				4.26
20.417	1.45	1.37	5.402	O				4.26
20.500	1.45	1.37	5.402	O				4.26
20.583	1.46	1.37	5.403	O				4.26
20.667	1.46	1.37	5.403	O				4.26
20.750	1.47	1.37	5.404	O				4.26
20.833	1.43	1.37	5.405	O				4.26
20.917	1.27	1.37	5.404	IO				4.26
21.000	1.14	1.37	5.403	IO				4.26
21.083	1.13	1.37	5.402	IO				4.26
21.167	1.27	1.37	5.401	IO				4.26
21.250	1.38	1.37	5.400	O				4.26
21.333	1.38	1.37	5.400	O				4.26
21.417	1.23	1.37	5.400	IO				4.26
21.500	1.11	1.37	5.399	IO				4.26
21.583	1.11	1.37	5.397	IO				4.25
21.667	1.25	1.37	5.396	IO				4.25
21.750	1.36	1.37	5.395	O				4.25
21.833	1.36	1.37	5.395	O				4.25
21.917	1.22	1.37	5.395	IO				4.25
22.000	1.10	1.37	5.393	IO				4.25
22.083	1.10	1.37	5.391	IO				4.25
22.167	1.25	1.37	5.390	IO				4.25
22.250	1.36	1.37	5.390	O				4.25
22.333	1.36	1.37	5.390	O				4.25
22.417	1.22	1.37	5.389	IO				4.25
22.500	1.10	1.37	5.388	IO				4.25
22.583	1.06	1.37	5.386	IO				4.25
22.667	1.04	1.37	5.384	IO				4.25
22.750	1.03	1.37	5.381	IO				4.25
22.833	1.02	1.37	5.379	IO				4.25
22.917	1.01	1.36	5.377	IO				4.25
23.000	1.00	1.36	5.374	IO				4.25
23.083	1.00	1.36	5.372	IO				4.25
23.167	1.00	1.36	5.369	IO				4.25
23.250	0.99	1.36	5.367	I O				4.25
23.333	0.99	1.36	5.364	I O				4.25

23.417	0.99	1.36	5.361	| I O	|	|	|	4.25
23.500	0.99	1.36	5.359	| I O	|	|	|	4.24
23.583	0.99	1.36	5.356	| I O	|	|	|	4.24
23.667	0.99	1.36	5.354	| I O	|	|	|	4.24
23.750	0.99	1.36	5.351	| I O	|	|	|	4.24
23.833	0.99	1.36	5.348	| I O	|	|	|	4.24
23.917	0.99	1.36	5.346	| I O	|	|	|	4.24
24.000	0.99	1.36	5.343	| I O	|	|	|	4.24
24.083	0.91	1.36	5.340	| I O	|	|	|	4.24
24.167	0.58	1.36	5.336	|I O	|	|	|	4.24
24.250	0.31	1.36	5.330	I O	|	|	|	4.24
24.333	0.21	1.36	5.322	I O	|	|	|	4.23
24.417	0.15	1.36	5.314	I O	|	|	|	4.23
24.500	0.11	1.36	5.306	I O	|	|	|	4.23
24.583	0.08	1.36	5.297	I O	|	|	|	4.23
24.667	0.06	1.36	5.288	I O	|	|	|	4.23
24.750	0.04	1.36	5.279	I O	|	|	|	4.22
24.833	0.03	1.36	5.270	I O	|	|	|	4.22
24.917	0.02	1.36	5.261	I O	|	|	|	4.22
25.000	0.01	1.36	5.251	I O	|	|	|	4.22
25.083	0.01	1.36	5.242	I O	|	|	|	4.21
25.167	0.00	1.36	5.233	I O	|	|	|	4.21
25.250	0.00	1.36	5.223	I O	|	|	|	4.21
25.333	0.00	1.36	5.214	I O	|	|	|	4.21
25.417	0.00	1.36	5.205	I O	|	|	|	4.20
25.500	0.00	1.36	5.195	I O	|	|	|	4.20
25.583	0.00	1.36	5.186	I O	|	|	|	4.20
25.667	0.00	1.36	5.177	I O	|	|	|	4.20
25.750	0.00	1.35	5.167	I O	|	|	|	4.19
25.833	0.00	1.35	5.158	I O	|	|	|	4.19
25.917	0.00	1.35	5.149	I O	|	|	|	4.19
26.000	0.00	1.35	5.139	I O	|	|	|	4.19
26.083	0.00	1.35	5.130	I O	|	|	|	4.18
26.167	0.00	1.35	5.121	I O	|	|	|	4.18
26.250	0.00	1.35	5.111	I O	|	|	|	4.18
26.333	0.00	1.35	5.102	I O	|	|	|	4.18
26.417	0.00	1.35	5.093	I O	|	|	|	4.17
26.500	0.00	1.35	5.083	I O	|	|	|	4.17
26.583	0.00	1.35	5.074	I O	|	|	|	4.17
26.667	0.00	1.35	5.065	I O	|	|	|	4.17
26.750	0.00	1.35	5.055	I O	|	|	|	4.16
26.833	0.00	1.35	5.046	I O	|	|	|	4.16
26.917	0.00	1.35	5.037	I O	|	|	|	4.16
27.000	0.00	1.35	5.028	I O	|	|	|	4.16
27.083	0.00	1.35	5.018	I O	|	|	|	4.15
27.167	0.00	1.35	5.009	I O	|	|	|	4.15
27.250	0.00	1.35	5.000	I O	|	|	|	4.15
27.333	0.00	1.35	4.991	I O	|	|	|	4.15
27.417	0.00	1.35	4.981	I O	|	|	|	4.14
27.500	0.00	1.35	4.972	I O	|	|	|	4.14
27.583	0.00	1.35	4.963	I O	|	|	|	4.14
27.667	0.00	1.34	4.953	I O	|	|	|	4.14
27.750	0.00	1.34	4.944	I O	|	|	|	4.13
27.833	0.00	1.34	4.935	I O	|	|	|	4.13
27.917	0.00	1.34	4.926	I O	|	|	|	4.13
28.000	0.00	1.34	4.916	I O	|	|	|	4.13
28.083	0.00	1.34	4.907	I O	|	|	|	4.13
28.167	0.00	1.34	4.898	I O	|	|	|	4.12
28.250	0.00	1.34	4.889	I O	|	|	|	4.12
28.333	0.00	1.34	4.879	I O	|	|	|	4.12
28.417	0.00	1.34	4.870	I O	|	|	|	4.12
28.500	0.00	1.34	4.861	I O	|	|	|	4.11
28.583	0.00	1.34	4.852	I O	|	|	|	4.11
28.667	0.00	1.34	4.843	I O	|	|	|	4.11
28.750	0.00	1.34	4.833	I O	|	|	|	4.11
28.833	0.00	1.34	4.824	I O	|	|	|	4.10
28.917	0.00	1.34	4.815	I O	|	|	|	4.10
29.000	0.00	1.34	4.806	I O	|	|	|	4.10
29.083	0.00	1.34	4.796	I O	|	|	|	4.10
29.167	0.00	1.34	4.787	I O	|	|	|	4.09
29.250	0.00	1.34	4.778	I O	|	|	|	4.09

29.333	0.00	1.34	4.769	I	O					4.09
29.417	0.00	1.34	4.760	I	O					4.09
29.500	0.00	1.34	4.750	I	O					4.08
29.583	0.00	1.33	4.741	I	O					4.08
29.667	0.00	1.33	4.732	I	O					4.08
29.750	0.00	1.33	4.723	I	O					4.08
29.833	0.00	1.33	4.714	I	O					4.07
29.917	0.00	1.33	4.704	I	O					4.07
30.000	0.00	1.33	4.695	I	O					4.07
30.083	0.00	1.33	4.686	I	O					4.07
30.167	0.00	1.33	4.677	I	O					4.06
30.250	0.00	1.33	4.668	I	O					4.06
30.333	0.00	1.33	4.659	I	O					4.06
30.417	0.00	1.33	4.649	I	O					4.06
30.500	0.00	1.33	4.640	I	O					4.05
30.583	0.00	1.33	4.631	I	O					4.05
30.667	0.00	1.33	4.622	I	O					4.05
30.750	0.00	1.33	4.613	I	O					4.05
30.833	0.00	1.33	4.604	I	O					4.04
30.917	0.00	1.33	4.595	I	O					4.04
31.000	0.00	1.33	4.585	I	O					4.04
31.083	0.00	1.33	4.576	I	O					4.04
31.167	0.00	1.33	4.567	I	O					4.03
31.250	0.00	1.33	4.558	I	O					4.03
31.333	0.00	1.33	4.549	I	O					4.03
31.417	0.00	1.32	4.540	I	O					4.03
31.500	0.00	1.32	4.531	I	O					4.03
31.583	0.00	1.32	4.522	I	O					4.02
31.667	0.00	1.32	4.512	I	O					4.02
31.750	0.00	1.32	4.503	I	O					4.02
31.833	0.00	1.32	4.494	I	O					4.02
31.917	0.00	1.32	4.485	I	O					4.01
32.000	0.00	1.32	4.476	I	O					4.01
32.083	0.00	1.32	4.467	I	O					4.01
32.167	0.00	1.32	4.458	I	O					4.01
32.250	0.00	1.32	4.449	I	O					4.00
32.333	0.00	1.32	4.440	I	O					4.00
32.417	0.00	1.32	4.430	I	O					4.00
32.500	0.00	1.32	4.421	I	O					3.99
32.583	0.00	1.32	4.412	I	O					3.98
32.667	0.00	1.31	4.403	I	O					3.97
32.750	0.00	1.31	4.394	I	O					3.96
32.833	0.00	1.31	4.385	I	O					3.96
32.917	0.00	1.31	4.376	I	O					3.95
33.000	0.00	1.31	4.367	I	O					3.94
33.083	0.00	1.31	4.358	I	O					3.93
33.167	0.00	1.30	4.349	I	O					3.92
33.250	0.00	1.30	4.340	I	O					3.91
33.333	0.00	1.30	4.331	I	O					3.91
33.417	0.00	1.30	4.322	I	O					3.90
33.500	0.00	1.30	4.313	I	O					3.89
33.583	0.00	1.30	4.304	I	O					3.88
33.667	0.00	1.29	4.295	I	O					3.87
33.750	0.00	1.29	4.287	I	O					3.87
33.833	0.00	1.29	4.278	I	O					3.86
33.917	0.00	1.29	4.269	I	O					3.85
34.000	0.00	1.29	4.260	I	O					3.84
34.083	0.00	1.29	4.251	I	O					3.83
34.167	0.00	1.29	4.242	I	O					3.83
34.250	0.00	1.28	4.233	I	O					3.82
34.333	0.00	1.28	4.224	I	O					3.81
34.417	0.00	1.28	4.216	I	O					3.80
34.500	0.00	1.28	4.207	I	O					3.79
34.583	0.00	1.28	4.198	I	O					3.79
34.667	0.00	1.28	4.189	I	O					3.78
34.750	0.00	1.27	4.180	I	O					3.77
34.833	0.00	1.27	4.172	I	O					3.76
34.917	0.00	1.27	4.163	I	O					3.75
35.000	0.00	1.27	4.154	I	O					3.75
35.083	0.00	1.27	4.145	I	O					3.74
35.167	0.00	1.27	4.137	I	O					3.73

35.250	0.00	1.26	4.128	I	O					3.72
35.333	0.00	1.26	4.119	I	O					3.72
35.417	0.00	1.26	4.111	I	O					3.71
35.500	0.00	1.26	4.102	I	O					3.70
35.583	0.00	1.26	4.093	I	O					3.69
35.667	0.00	1.26	4.085	I	O					3.68
35.750	0.00	1.26	4.076	I	O					3.68
35.833	0.00	1.25	4.067	I	O					3.67
35.917	0.00	1.25	4.059	I	O					3.66
36.000	0.00	1.25	4.050	I	O					3.65
36.083	0.00	1.25	4.041	I	O					3.64
36.167	0.00	1.25	4.033	I	O					3.64
36.250	0.00	1.25	4.024	I	O					3.63
36.333	0.00	1.24	4.016	I	O					3.62
36.417	0.00	1.24	4.007	I	O					3.61
36.500	0.00	1.24	3.999	I	O					3.61
36.583	0.00	1.24	3.990	I	O					3.60
36.667	0.00	1.24	3.982	I	O					3.59
36.750	0.00	1.24	3.973	I	O					3.58
36.833	0.00	1.24	3.964	I	O					3.58
36.917	0.00	1.23	3.956	I	O					3.57
37.000	0.00	1.23	3.947	I	O					3.56
37.083	0.00	1.23	3.939	I	O					3.55
37.167	0.00	1.23	3.931	I	O					3.54
37.250	0.00	1.23	3.922	I	O					3.54
37.333	0.00	1.23	3.914	I	O					3.53
37.417	0.00	1.22	3.905	I	O					3.52
37.500	0.00	1.22	3.897	I	O					3.51
37.583	0.00	1.22	3.888	I	O					3.51
37.667	0.00	1.22	3.880	I	O					3.50
37.750	0.00	1.22	3.872	I	O					3.49
37.833	0.00	1.22	3.863	I	O					3.48
37.917	0.00	1.22	3.855	I	O					3.48
38.000	0.00	1.21	3.846	I	O					3.47
38.083	0.00	1.21	3.838	I	O					3.46
38.167	0.00	1.21	3.830	I	O					3.45
38.250	0.00	1.21	3.821	I	O					3.45
38.333	0.00	1.21	3.813	I	O					3.44
38.417	0.00	1.21	3.805	I	O					3.43
38.500	0.00	1.20	3.796	I	O					3.42
38.583	0.00	1.20	3.788	I	O					3.42
38.667	0.00	1.20	3.780	I	O					3.41
38.750	0.00	1.20	3.772	I	O					3.40
38.833	0.00	1.20	3.763	I	O					3.39
38.917	0.00	1.20	3.755	I	O					3.39
39.000	0.00	1.20	3.747	I	O					3.38
39.083	0.00	1.19	3.739	I	O					3.37
39.167	0.00	1.19	3.730	I	O					3.36
39.250	0.00	1.19	3.722	I	O					3.36
39.333	0.00	1.19	3.714	I	O					3.35
39.417	0.00	1.19	3.706	I	O					3.34
39.500	0.00	1.19	3.698	I	O					3.33
39.583	0.00	1.19	3.689	I	O					3.33
39.667	0.00	1.18	3.681	I	O					3.32
39.750	0.00	1.18	3.673	I	O					3.31
39.833	0.00	1.18	3.665	I	O					3.31
39.917	0.00	1.18	3.657	I	O					3.30
40.000	0.00	1.18	3.649	I	O					3.29
40.083	0.00	1.18	3.641	I	O					3.28
40.167	0.00	1.18	3.633	I	O					3.28
40.250	0.00	1.17	3.624	I	O					3.27
40.333	0.00	1.17	3.616	I	O					3.26
40.417	0.00	1.17	3.608	I	O					3.25
40.500	0.00	1.17	3.600	I	O					3.25
40.583	0.00	1.17	3.592	I	O					3.24
40.667	0.00	1.17	3.584	I	O					3.23
40.750	0.00	1.16	3.576	I	O					3.22
40.833	0.00	1.16	3.568	I	O					3.22
40.917	0.00	1.16	3.560	I	O					3.21
41.000	0.00	1.16	3.552	I	O					3.20
41.083	0.00	1.16	3.544	I	O					3.20

41.167	0.00	1.16	3.536	I	O					3.19
41.250	0.00	1.16	3.528	I	O					3.18
41.333	0.00	1.15	3.520	I	O					3.17
41.417	0.00	1.15	3.512	I	O					3.17
41.500	0.00	1.15	3.504	I	O					3.16
41.583	0.00	1.15	3.496	I	O					3.15
41.667	0.00	1.15	3.488	I	O					3.15
41.750	0.00	1.15	3.481	I	O					3.14
41.833	0.00	1.15	3.473	I	O					3.13
41.917	0.00	1.14	3.465	I	O					3.12
42.000	0.00	1.14	3.457	I	O					3.12
42.083	0.00	1.14	3.449	I	O					3.11
42.167	0.00	1.14	3.441	I	O					3.10
42.250	0.00	1.14	3.433	I	O					3.10
42.333	0.00	1.14	3.425	I	O					3.09
42.417	0.00	1.14	3.418	I	O					3.08
42.500	0.00	1.13	3.410	I	O					3.07
42.583	0.00	1.13	3.402	I	O					3.07
42.667	0.00	1.13	3.394	I	O					3.06
42.750	0.00	1.13	3.386	I	O					3.05
42.833	0.00	1.13	3.379	I	O					3.05
42.917	0.00	1.13	3.371	I	O					3.04
43.000	0.00	1.13	3.363	I	O					3.03
43.083	0.00	1.13	3.355	I	O					3.03
43.167	0.00	1.12	3.348	I	O					3.02
43.250	0.00	1.12	3.340	I	O					3.01
43.333	0.00	1.12	3.332	I	O					3.00
43.417	0.00	1.12	3.324	I	O					3.00
43.500	0.00	1.12	3.317	I	O					2.99
43.583	0.00	1.12	3.309	I	O					2.98
43.667	0.00	1.11	3.301	I	O					2.98
43.750	0.00	1.11	3.294	I	O					2.97
43.833	0.00	1.11	3.286	I	O					2.96
43.917	0.00	1.11	3.278	I	O					2.96
44.000	0.00	1.11	3.271	I	O					2.95
44.083	0.00	1.11	3.263	I	O					2.94
44.167	0.00	1.10	3.256	I	O					2.94
44.250	0.00	1.10	3.248	I	O					2.93
44.333	0.00	1.10	3.240	I	O					2.92
44.417	0.00	1.10	3.233	I	O					2.92
44.500	0.00	1.10	3.225	I	O					2.91
44.583	0.00	1.09	3.218	I	O					2.90
44.667	0.00	1.09	3.210	I	O					2.89
44.750	0.00	1.09	3.203	I	O					2.89
44.833	0.00	1.09	3.195	I	O					2.88
44.917	0.00	1.09	3.188	I	O					2.87
45.000	0.00	1.09	3.180	I	O					2.87
45.083	0.00	1.08	3.173	I	O					2.86
45.167	0.00	1.08	3.165	I	O					2.85
45.250	0.00	1.08	3.158	I	O					2.85
45.333	0.00	1.08	3.150	I	O					2.84
45.417	0.00	1.08	3.143	I	O					2.83
45.500	0.00	1.08	3.136	I	O					2.83
45.583	0.00	1.07	3.128	I	O					2.82
45.667	0.00	1.07	3.121	I	O					2.81
45.750	0.00	1.07	3.113	I	O					2.81
45.833	0.00	1.07	3.106	I	O					2.80
45.917	0.00	1.07	3.099	I	O					2.79
46.000	0.00	1.06	3.091	I	O					2.79
46.083	0.00	1.06	3.084	I	O					2.78
46.167	0.00	1.06	3.077	I	O					2.77
46.250	0.00	1.06	3.069	I	O					2.77
46.333	0.00	1.06	3.062	I	O					2.76
46.417	0.00	1.06	3.055	I	O					2.75
46.500	0.00	1.05	3.048	I	O					2.75
46.583	0.00	1.05	3.040	I	O					2.74
46.667	0.00	1.05	3.033	I	O					2.73
46.750	0.00	1.05	3.026	I	O					2.73
46.833	0.00	1.05	3.019	I	O					2.72
46.917	0.00	1.05	3.011	I	O					2.72
47.000	0.00	1.04	3.004	I	O					2.71

47.083	0.00	1.04	2.997	I	O				2.70
47.167	0.00	1.04	2.990	I	O				2.70
47.250	0.00	1.04	2.983	I	O				2.69
47.333	0.00	1.04	2.976	I	O				2.68
47.417	0.00	1.04	2.968	I	O				2.68
47.500	0.00	1.03	2.961	I	O				2.67
47.583	0.00	1.03	2.954	I	O				2.66
47.667	0.00	1.03	2.947	I	O				2.66
47.750	0.00	1.03	2.940	I	O				2.65
47.833	0.00	1.03	2.933	I	O				2.64
47.917	0.00	1.03	2.926	I	O				2.64
48.000	0.00	1.02	2.919	I	O				2.63
48.083	0.00	1.02	2.912	I	O				2.63
48.167	0.00	1.02	2.905	I	O				2.62
48.250	0.00	1.02	2.898	I	O				2.61
48.333	0.00	1.02	2.891	I	O				2.61
48.417	0.00	1.02	2.884	I	O				2.60
48.500	0.00	1.01	2.877	I	O				2.59
48.583	0.00	1.01	2.870	I	O				2.59
48.667	0.00	1.01	2.863	I	O				2.58
48.750	0.00	1.01	2.856	I	O				2.58
48.833	0.00	1.01	2.849	I	O				2.57
48.917	0.00	1.01	2.842	I	O				2.56
49.000	0.00	1.00	2.835	I	O				2.56
49.083	0.00	1.00	2.828	I	O				2.55
49.167	0.00	1.00	2.821	I	O				2.54
49.250	0.00	1.00	2.814	I	O				2.54
49.333	0.00	1.00	2.807	I	O				2.53
49.417	0.00	1.00	2.800	I	O				2.53
49.500	0.00	0.99	2.794	I	O				2.52
49.583	0.00	0.99	2.787	I	O				2.51
49.667	0.00	0.99	2.780	I	O				2.51
49.750	0.00	0.99	2.773	I	O				2.50
49.833	0.00	0.99	2.766	I	O				2.49
49.917	0.00	0.99	2.759	I	O				2.49
50.000	0.00	0.99	2.753	I	O				2.48
50.083	0.00	0.98	2.746	I	O				2.48
50.167	0.00	0.98	2.739	I	O				2.47
50.250	0.00	0.98	2.732	I	O				2.46
50.333	0.00	0.98	2.726	I	O				2.46
50.417	0.00	0.98	2.719	I	O				2.45
50.500	0.00	0.98	2.712	I	O				2.45
50.583	0.00	0.97	2.705	I	O				2.44
50.667	0.00	0.97	2.699	I	O				2.43
50.750	0.00	0.97	2.692	I	O				2.43
50.833	0.00	0.97	2.685	I	O				2.42
50.917	0.00	0.97	2.679	I	O				2.42
51.000	0.00	0.97	2.672	I	O				2.41
51.083	0.00	0.96	2.665	I	O				2.40
51.167	0.00	0.96	2.659	I	O				2.40
51.250	0.00	0.96	2.652	I	O				2.39
51.333	0.00	0.96	2.645	I	O				2.39
51.417	0.00	0.96	2.639	I	O				2.38
51.500	0.00	0.96	2.632	I	O				2.37
51.583	0.00	0.96	2.626	I	O				2.37
51.667	0.00	0.95	2.619	I	O				2.36
51.750	0.00	0.95	2.613	I	O				2.36
51.833	0.00	0.95	2.606	I	O				2.35
51.917	0.00	0.95	2.599	I	O				2.34
52.000	0.00	0.95	2.593	I	O				2.34
52.083	0.00	0.95	2.586	I	O				2.33
52.167	0.00	0.94	2.580	I	O				2.33
52.250	0.00	0.94	2.573	I	O				2.32
52.333	0.00	0.94	2.567	I	O				2.31
52.417	0.00	0.94	2.560	I	O				2.31
52.500	0.00	0.94	2.554	I	O				2.30
52.583	0.00	0.94	2.547	I	O				2.30
52.667	0.00	0.94	2.541	I	O				2.29
52.750	0.00	0.93	2.535	I	O				2.29
52.833	0.00	0.93	2.528	I	O				2.28
52.917	0.00	0.93	2.522	I	O				2.27

53.000	0.00	0.93	2.515	I	O				2.27
53.083	0.00	0.93	2.509	I	O				2.26
53.167	0.00	0.93	2.503	I	O				2.26
53.250	0.00	0.93	2.496	I	O				2.25
53.333	0.00	0.92	2.490	I	O				2.25
53.417	0.00	0.92	2.483	I	O				2.24
53.500	0.00	0.92	2.477	I	O				2.23
53.583	0.00	0.92	2.471	I	O				2.23
53.667	0.00	0.92	2.464	I	O				2.22
53.750	0.00	0.92	2.458	I	O				2.22
53.833	0.00	0.91	2.452	I	O				2.21
53.917	0.00	0.91	2.445	I	O				2.21
54.000	0.00	0.91	2.439	I	O				2.20
54.083	0.00	0.91	2.433	I	O				2.19
54.167	0.00	0.91	2.427	I	O				2.19
54.250	0.00	0.91	2.420	I	O				2.18
54.333	0.00	0.91	2.414	I	O				2.18
54.417	0.00	0.90	2.408	I	O				2.17
54.500	0.00	0.90	2.402	I	O				2.17
54.583	0.00	0.90	2.395	I	O				2.16
54.667	0.00	0.90	2.389	I	O				2.15
54.750	0.00	0.90	2.383	I	O				2.15
54.833	0.00	0.90	2.377	I	O				2.14
54.917	0.00	0.90	2.371	I	O				2.14
55.000	0.00	0.89	2.365	I	O				2.13
55.083	0.00	0.89	2.358	I	O				2.13
55.167	0.00	0.89	2.352	I	O				2.12
55.250	0.00	0.89	2.346	I	O				2.12
55.333	0.00	0.89	2.340	I	O				2.11
55.417	0.00	0.89	2.334	I	O				2.10
55.500	0.00	0.89	2.328	I	O				2.10
55.583	0.00	0.88	2.322	I	O				2.09
55.667	0.00	0.88	2.316	I	O				2.09
55.750	0.00	0.88	2.310	I	O				2.08
55.833	0.00	0.88	2.303	I	O				2.08
55.917	0.00	0.88	2.297	I	O				2.07
56.000	0.00	0.88	2.291	I	O				2.07
56.083	0.00	0.88	2.285	I	O				2.06
56.167	0.00	0.87	2.279	I	O				2.06
56.250	0.00	0.87	2.273	I	O				2.05
56.333	0.00	0.87	2.267	I	O				2.04
56.417	0.00	0.87	2.261	I	O				2.04
56.500	0.00	0.87	2.255	I	O				2.03
56.583	0.00	0.87	2.249	I	O				2.03
56.667	0.00	0.87	2.243	I	O				2.02
56.750	0.00	0.86	2.237	I	O				2.02
56.833	0.00	0.86	2.231	I	O				2.01
56.917	0.00	0.86	2.226	I	O				2.01
57.000	0.00	0.86	2.220	I	O				2.00
57.083	0.00	0.86	2.214	I	O				2.00
57.167	0.00	0.86	2.208	I	O				1.99
57.250	0.00	0.86	2.202	I	O				1.99
57.333	0.00	0.85	2.196	I	O				1.99
57.417	0.00	0.85	2.190	I	O				1.98
57.500	0.00	0.85	2.184	I	O				1.98
57.583	0.00	0.85	2.178	I	O				1.97
57.667	0.00	0.85	2.172	I	O				1.97
57.750	0.00	0.85	2.167	I	O				1.97
57.833	0.00	0.85	2.161	I	O				1.96
57.917	0.00	0.84	2.155	I	O				1.96
58.000	0.00	0.84	2.149	I	O				1.95
58.083	0.00	0.84	2.143	I	O				1.95
58.167	0.00	0.84	2.138	I	O				1.95
58.250	0.00	0.84	2.132	I	O				1.94
58.333	0.00	0.84	2.126	I	O				1.94
58.417	0.00	0.84	2.120	I	O				1.93
58.500	0.00	0.83	2.115	I	O				1.93
58.583	0.00	0.83	2.109	I	O				1.93
58.667	0.00	0.83	2.103	I	O				1.92
58.750	0.00	0.83	2.097	I	O				1.92
58.833	0.00	0.83	2.092	I	O				1.91

58.917	0.00	0.83	2.086	I	O				1.91
59.000	0.00	0.83	2.080	I	O				1.91
59.083	0.00	0.83	2.074	I	O				1.90
59.167	0.00	0.82	2.069	I	O				1.90
59.250	0.00	0.82	2.063	I	O				1.90
59.333	0.00	0.82	2.057	I	O				1.89
59.417	0.00	0.82	2.052	I	O				1.89
59.500	0.00	0.82	2.046	I	O				1.88
59.583	0.00	0.82	2.041	I	O				1.88
59.667	0.00	0.82	2.035	I	O				1.88
59.750	0.00	0.81	2.029	I	O				1.87
59.833	0.00	0.81	2.024	I	O				1.87
59.917	0.00	0.81	2.018	I	O				1.86
60.000	0.00	0.81	2.013	I	O				1.86
60.083	0.00	0.81	2.007	I	O				1.86
60.167	0.00	0.81	2.001	I	O				1.85
60.250	0.00	0.81	1.996	I	O				1.85
60.333	0.00	0.80	1.990	I	O				1.85
60.417	0.00	0.80	1.985	I	O				1.84
60.500	0.00	0.80	1.979	I	O				1.84
60.583	0.00	0.80	1.974	I	O				1.83
60.667	0.00	0.80	1.968	I	O				1.83
60.750	0.00	0.80	1.963	I	O				1.83
60.833	0.00	0.80	1.957	I	O				1.82
60.917	0.00	0.80	1.952	I	O				1.82
61.000	0.00	0.79	1.946	I	O				1.82
61.083	0.00	0.79	1.941	I	O				1.81
61.167	0.00	0.79	1.935	I	O				1.81
61.250	0.00	0.79	1.930	I	O				1.81
61.333	0.00	0.79	1.924	I	O				1.80
61.417	0.00	0.79	1.919	I	O				1.80
61.500	0.00	0.79	1.914	I	O				1.79
61.583	0.00	0.78	1.908	I	O				1.79
61.667	0.00	0.78	1.903	I	O				1.79
61.750	0.00	0.78	1.897	I	O				1.78
61.833	0.00	0.78	1.892	I	O				1.78
61.917	0.00	0.78	1.887	I	O				1.78
62.000	0.00	0.78	1.881	I	O				1.77
62.083	0.00	0.78	1.876	I	O				1.77
62.167	0.00	0.78	1.871	I	O				1.77
62.250	0.00	0.77	1.865	I	O				1.76
62.333	0.00	0.77	1.860	I	O				1.76
62.417	0.00	0.77	1.855	I	O				1.75
62.500	0.00	0.77	1.849	I	O				1.75
62.583	0.00	0.77	1.844	I	O				1.75
62.667	0.00	0.77	1.839	I	O				1.74
62.750	0.00	0.77	1.833	I	O				1.74
62.833	0.00	0.77	1.828	I	O				1.74
62.917	0.00	0.76	1.823	I	O				1.73
63.000	0.00	0.76	1.818	I	O				1.73
63.083	0.00	0.76	1.812	I	O				1.73
63.167	0.00	0.76	1.807	I	O				1.72
63.250	0.00	0.76	1.802	I	O				1.72
63.333	0.00	0.76	1.797	I	O				1.72
63.417	0.00	0.76	1.792	I	O				1.71
63.500	0.00	0.75	1.786	I	O				1.71
63.583	0.00	0.75	1.781	I	O				1.70
63.667	0.00	0.75	1.776	I	O				1.70
63.750	0.00	0.75	1.771	I	O				1.70
63.833	0.00	0.75	1.766	I	O				1.69
63.917	0.00	0.75	1.760	I	O				1.69
64.000	0.00	0.75	1.755	I	O				1.69
64.083	0.00	0.75	1.750	I	O				1.68
64.167	0.00	0.74	1.745	I	O				1.68
64.250	0.00	0.74	1.740	I	O				1.68
64.333	0.00	0.74	1.735	I	O				1.67
64.417	0.00	0.74	1.730	I	O				1.67
64.500	0.00	0.74	1.725	I	O				1.67
64.583	0.00	0.74	1.719	I	O				1.66
64.667	0.00	0.74	1.714	I	O				1.66
64.750	0.00	0.74	1.709	I	O				1.66

64.833	0.00	0.73	1.704	I O				1.65
64.917	0.00	0.73	1.699	I O				1.65
65.000	0.00	0.73	1.694	I O				1.65
65.083	0.00	0.73	1.689	I O				1.64
65.167	0.00	0.73	1.684	I O				1.64
65.250	0.00	0.73	1.679	I O				1.64
65.333	0.00	0.73	1.674	I O				1.63
65.417	0.00	0.73	1.669	I O				1.63
65.500	0.00	0.73	1.664	I O				1.63
65.583	0.00	0.72	1.659	I O				1.62
65.667	0.00	0.72	1.654	I O				1.62
65.750	0.00	0.72	1.649	I O				1.62
65.833	0.00	0.72	1.644	I O				1.61
65.917	0.00	0.72	1.639	I O				1.61
66.000	0.00	0.72	1.634	I O				1.61
66.083	0.00	0.72	1.629	I O				1.60
66.167	0.00	0.72	1.624	I O				1.60
66.250	0.00	0.71	1.619	I O				1.60
66.333	0.00	0.71	1.614	I O				1.59
66.417	0.00	0.71	1.610	I O				1.59
66.500	0.00	0.71	1.605	I O				1.59
66.583	0.00	0.71	1.600	I O				1.58
66.667	0.00	0.71	1.595	I O				1.58
66.750	0.00	0.71	1.590	I O				1.58
66.833	0.00	0.71	1.585	I O				1.57
66.917	0.00	0.70	1.580	I O				1.57
67.000	0.00	0.70	1.575	I O				1.57
67.083	0.00	0.70	1.571	I O				1.56
67.167	0.00	0.70	1.566	I O				1.56
67.250	0.00	0.70	1.561	I O				1.56
67.333	0.00	0.70	1.556	I O				1.55
67.417	0.00	0.70	1.551	I O				1.55
67.500	0.00	0.70	1.547	I O				1.55
67.583	0.00	0.70	1.542	I O				1.54
67.667	0.00	0.69	1.537	I O				1.54
67.750	0.00	0.69	1.532	I O				1.54
67.833	0.00	0.69	1.527	I O				1.53
67.917	0.00	0.69	1.523	I O				1.53
68.000	0.00	0.69	1.518	I O				1.53
68.083	0.00	0.69	1.513	I O				1.52
68.167	0.00	0.69	1.508	I O				1.52
68.250	0.00	0.69	1.504	I O				1.52
68.333	0.00	0.68	1.499	I O				1.51
68.417	0.00	0.68	1.494	I O				1.51
68.500	0.00	0.68	1.490	I O				1.51
68.583	0.00	0.68	1.485	I O				1.50
68.667	0.00	0.68	1.480	I O				1.50
68.750	0.00	0.68	1.475	I O				1.50
68.833	0.00	0.68	1.471	I O				1.49
68.917	0.00	0.68	1.466	I O				1.49
69.000	0.00	0.68	1.461	I O				1.49
69.083	0.00	0.67	1.457	I O				1.49
69.167	0.00	0.67	1.452	I O				1.48
69.250	0.00	0.67	1.448	I O				1.48
69.333	0.00	0.67	1.443	I O				1.48
69.417	0.00	0.67	1.438	I O				1.47
69.500	0.00	0.67	1.434	I O				1.47
69.583	0.00	0.67	1.429	I O				1.47
69.667	0.00	0.67	1.424	I O				1.46
69.750	0.00	0.67	1.420	I O				1.46
69.833	0.00	0.66	1.415	I O				1.46
69.917	0.00	0.66	1.411	IO				1.45
70.000	0.00	0.66	1.406	IO				1.45
70.083	0.00	0.66	1.402	IO				1.45
70.167	0.00	0.66	1.397	IO				1.44
70.250	0.00	0.66	1.393	IO				1.44
70.333	0.00	0.66	1.388	IO				1.44
70.417	0.00	0.66	1.383	IO				1.44
70.500	0.00	0.66	1.379	IO				1.43
70.583	0.00	0.65	1.374	IO				1.43
70.667	0.00	0.65	1.370	IO				1.43

70.750	0.00	0.65	1.365	IO				1.42
70.833	0.00	0.65	1.361	IO				1.42
70.917	0.00	0.65	1.356	IO				1.42
71.000	0.00	0.65	1.352	IO				1.41
71.083	0.00	0.65	1.348	IO				1.41
71.167	0.00	0.65	1.343	IO				1.41
71.250	0.00	0.65	1.339	IO				1.41
71.333	0.00	0.64	1.334	IO				1.40
71.417	0.00	0.64	1.330	IO				1.40
71.500	0.00	0.64	1.325	IO				1.40
71.583	0.00	0.64	1.321	IO				1.39
71.667	0.00	0.64	1.316	IO				1.39
71.750	0.00	0.64	1.312	IO				1.39
71.833	0.00	0.64	1.308	IO				1.38
71.917	0.00	0.64	1.303	IO				1.38
72.000	0.00	0.64	1.299	IO				1.38
72.083	0.00	0.64	1.294	IO				1.38
72.167	0.00	0.63	1.290	IO				1.37
72.250	0.00	0.63	1.286	IO				1.37
72.333	0.00	0.63	1.281	IO				1.37
72.417	0.00	0.63	1.277	IO				1.36
72.500	0.00	0.63	1.273	IO				1.36
72.583	0.00	0.63	1.268	IO				1.36
72.667	0.00	0.63	1.264	IO				1.36
72.750	0.00	0.63	1.260	IO				1.35
72.833	0.00	0.63	1.255	IO				1.35
72.917	0.00	0.62	1.251	IO				1.35
73.000	0.00	0.62	1.247	IO				1.34
73.083	0.00	0.62	1.243	IO				1.34
73.167	0.00	0.62	1.238	IO				1.34
73.250	0.00	0.62	1.234	IO				1.33
73.333	0.00	0.62	1.230	IO				1.33
73.417	0.00	0.62	1.225	IO				1.33
73.500	0.00	0.62	1.221	IO				1.33
73.583	0.00	0.62	1.217	IO				1.32
73.667	0.00	0.62	1.213	IO				1.32
73.750	0.00	0.61	1.208	IO				1.32
73.833	0.00	0.61	1.204	IO				1.31
73.917	0.00	0.61	1.200	IO				1.31
74.000	0.00	0.61	1.196	IO				1.31
74.083	0.00	0.61	1.192	IO				1.31
74.167	0.00	0.61	1.187	IO				1.30
74.250	0.00	0.61	1.183	IO				1.30
74.333	0.00	0.61	1.179	IO				1.30
74.417	0.00	0.61	1.175	IO				1.29
74.500	0.00	0.61	1.171	IO				1.29
74.583	0.00	0.60	1.166	IO				1.29
74.667	0.00	0.60	1.162	IO				1.29
74.750	0.00	0.60	1.158	IO				1.28
74.833	0.00	0.60	1.154	IO				1.28
74.917	0.00	0.60	1.150	IO				1.28
75.000	0.00	0.60	1.146	IO				1.28
75.083	0.00	0.60	1.142	IO				1.27
75.167	0.00	0.60	1.138	IO				1.27
75.250	0.00	0.60	1.133	IO				1.27
75.333	0.00	0.60	1.129	IO				1.26
75.417	0.00	0.59	1.125	IO				1.26
75.500	0.00	0.59	1.121	IO				1.26
75.583	0.00	0.59	1.117	IO				1.26
75.667	0.00	0.59	1.113	IO				1.25
75.750	0.00	0.59	1.109	IO				1.25
75.833	0.00	0.59	1.105	IO				1.25
75.917	0.00	0.59	1.101	IO				1.24
76.000	0.00	0.59	1.097	IO				1.24
76.083	0.00	0.59	1.093	IO				1.24
76.167	0.00	0.59	1.089	IO				1.24
76.250	0.00	0.58	1.085	IO				1.23
76.333	0.00	0.58	1.081	IO				1.23
76.417	0.00	0.58	1.077	IO				1.23
76.500	0.00	0.58	1.073	IO				1.23
76.583	0.00	0.58	1.069	IO				1.22

76.667	0.00	0.58	1.065	IO				1.22
76.750	0.00	0.58	1.061	IO				1.22
76.833	0.00	0.58	1.057	IO				1.21
76.917	0.00	0.58	1.053	IO				1.21
77.000	0.00	0.58	1.049	IO				1.21
77.083	0.00	0.57	1.045	IO				1.21
77.167	0.00	0.57	1.041	IO				1.20
77.250	0.00	0.57	1.037	IO				1.20
77.333	0.00	0.57	1.033	IO				1.20
77.417	0.00	0.57	1.029	IO				1.20
77.500	0.00	0.57	1.025	IO				1.19
77.583	0.00	0.57	1.021	IO				1.19
77.667	0.00	0.57	1.017	IO				1.19
77.750	0.00	0.57	1.013	IO				1.19
77.833	0.00	0.57	1.009	IO				1.18
77.917	0.00	0.56	1.006	IO				1.18
78.000	0.00	0.56	1.002	IO				1.18
78.083	0.00	0.56	0.998	IO				1.17
78.167	0.00	0.56	0.994	IO				1.17
78.250	0.00	0.56	0.990	IO				1.17
78.333	0.00	0.56	0.986	IO				1.17
78.417	0.00	0.56	0.982	IO				1.16
78.500	0.00	0.56	0.978	IO				1.16
78.583	0.00	0.56	0.975	IO				1.16
78.667	0.00	0.56	0.971	IO				1.16
78.750	0.00	0.56	0.967	IO				1.15
78.833	0.00	0.55	0.963	IO				1.15
78.917	0.00	0.55	0.959	IO				1.15
79.000	0.00	0.55	0.956	IO				1.15
79.083	0.00	0.55	0.952	IO				1.14
79.167	0.00	0.55	0.948	IO				1.14
79.250	0.00	0.55	0.944	IO				1.14
79.333	0.00	0.55	0.940	IO				1.14
79.417	0.00	0.55	0.937	IO				1.13
79.500	0.00	0.55	0.933	IO				1.13
79.583	0.00	0.55	0.929	IO				1.13
79.667	0.00	0.55	0.925	IO				1.13
79.750	0.00	0.54	0.922	IO				1.12
79.833	0.00	0.54	0.918	IO				1.12
79.917	0.00	0.54	0.914	IO				1.12
80.000	0.00	0.54	0.910	IO				1.12
80.083	0.00	0.54	0.907	IO				1.11
80.167	0.00	0.54	0.903	IO				1.11
80.250	0.00	0.54	0.899	IO				1.11
80.333	0.00	0.54	0.895	IO				1.11
80.417	0.00	0.54	0.892	IO				1.10
80.500	0.00	0.54	0.888	IO				1.10
80.583	0.00	0.54	0.884	IO				1.10
80.667	0.00	0.53	0.881	IO				1.10
80.750	0.00	0.53	0.877	IO				1.09
80.833	0.00	0.53	0.873	IO				1.09
80.917	0.00	0.53	0.870	IO				1.09
81.000	0.00	0.53	0.866	IO				1.09
81.083	0.00	0.53	0.862	IO				1.08
81.167	0.00	0.53	0.859	IO				1.08
81.250	0.00	0.53	0.855	IO				1.08
81.333	0.00	0.53	0.851	IO				1.08
81.417	0.00	0.53	0.848	IO				1.07
81.500	0.00	0.53	0.844	IO				1.07
81.583	0.00	0.52	0.841	IO				1.07
81.667	0.00	0.52	0.837	IO				1.07
81.750	0.00	0.52	0.833	IO				1.06
81.833	0.00	0.52	0.830	IO				1.06
81.917	0.00	0.52	0.826	IO				1.06
82.000	0.00	0.52	0.823	IO				1.06
82.083	0.00	0.52	0.819	IO				1.05
82.167	0.00	0.52	0.815	IO				1.05
82.250	0.00	0.52	0.812	IO				1.05
82.333	0.00	0.52	0.808	IO				1.05
82.417	0.00	0.52	0.805	IO				1.04
82.500	0.00	0.52	0.801	IO				1.04

82.583	0.00	0.51	0.798	IO				1.04
82.667	0.00	0.51	0.794	IO				1.04
82.750	0.00	0.51	0.791	IO				1.03
82.833	0.00	0.51	0.787	IO				1.03
82.917	0.00	0.51	0.783	IO				1.03
83.000	0.00	0.51	0.780	IO				1.03
83.083	0.00	0.51	0.776	IO				1.03
83.167	0.00	0.51	0.773	IO				1.02
83.250	0.00	0.51	0.769	IO				1.02
83.333	0.00	0.51	0.766	IO				1.02
83.417	0.00	0.51	0.762	IO				1.02
83.500	0.00	0.50	0.759	IO				1.01
83.583	0.00	0.50	0.756	IO				1.01
83.667	0.00	0.50	0.752	IO				1.01
83.750	0.00	0.50	0.749	IO				1.01
83.833	0.00	0.50	0.745	IO				1.00
83.917	0.00	0.50	0.742	IO				1.00
84.000	0.00	0.50	0.738	IO				1.00
84.083	0.00	0.50	0.735	IO				0.99
84.167	0.00	0.49	0.731	IO				0.99
84.250	0.00	0.49	0.728	IO				0.99
84.333	0.00	0.49	0.725	IO				0.98
84.417	0.00	0.49	0.721	IO				0.98
84.500	0.00	0.49	0.718	IO				0.97
84.583	0.00	0.48	0.715	IO				0.97
84.667	0.00	0.48	0.711	IO				0.96
84.750	0.00	0.48	0.708	IO				0.96
84.833	0.00	0.48	0.705	IO				0.95
84.917	0.00	0.47	0.701	IO				0.95
85.000	0.00	0.47	0.698	IO				0.94
85.083	0.00	0.47	0.695	IO				0.94
85.167	0.00	0.47	0.692	IO				0.94
85.250	0.00	0.47	0.688	IO				0.93
85.333	0.00	0.46	0.685	IO				0.93
85.417	0.00	0.46	0.682	IO				0.92
85.500	0.00	0.46	0.679	IO				0.92
85.583	0.00	0.46	0.676	IO				0.91
85.667	0.00	0.46	0.673	IO				0.91
85.750	0.00	0.45	0.669	IO				0.91
85.833	0.00	0.45	0.666	IO				0.90
85.917	0.00	0.45	0.663	IO				0.90
86.000	0.00	0.45	0.660	IO				0.89
86.083	0.00	0.44	0.657	IO				0.89
86.167	0.00	0.44	0.654	IO				0.88
86.250	0.00	0.44	0.651	IO				0.88
86.333	0.00	0.44	0.648	IO				0.88
86.417	0.00	0.44	0.645	IO				0.87
86.500	0.00	0.43	0.642	IO				0.87
86.583	0.00	0.43	0.639	IO				0.86
86.667	0.00	0.43	0.636	IO				0.86
86.750	0.00	0.43	0.633	IO				0.86
86.833	0.00	0.43	0.630	IO				0.85
86.917	0.00	0.42	0.627	IO				0.85
87.000	0.00	0.42	0.624	IO				0.84
87.083	0.00	0.42	0.621	IO				0.84
87.167	0.00	0.42	0.618	IO				0.84
87.250	0.00	0.42	0.616	IO				0.83
87.333	0.00	0.41	0.613	IO				0.83
87.417	0.00	0.41	0.610	IO				0.83
87.500	0.00	0.41	0.607	IO				0.82
87.583	0.00	0.41	0.604	IO				0.82
87.667	0.00	0.41	0.601	IO				0.81
87.750	0.00	0.41	0.599	IO				0.81
87.833	0.00	0.40	0.596	IO				0.81
87.917	0.00	0.40	0.593	IO				0.80
88.000	0.00	0.40	0.590	IO				0.80
88.083	0.00	0.40	0.588	IO				0.80
88.167	0.00	0.40	0.585	IO				0.79
88.250	0.00	0.39	0.582	IO				0.79
88.333	0.00	0.39	0.579	IO				0.78
88.417	0.00	0.39	0.577	IO				0.78

88.500	0.00	0.39	0.574	IO				0.78
88.583	0.00	0.39	0.571	IO				0.77
88.667	0.00	0.38	0.569	IO				0.77
88.750	0.00	0.38	0.566	IO				0.77
88.833	0.00	0.38	0.563	IO				0.76
88.917	0.00	0.38	0.561	IO				0.76
89.000	0.00	0.38	0.558	IO				0.76
89.083	0.00	0.38	0.556	IO				0.75
89.167	0.00	0.37	0.553	IO				0.75
89.250	0.00	0.37	0.550	IO				0.74
89.333	0.00	0.37	0.548	IO				0.74
89.417	0.00	0.37	0.545	IO				0.74
89.500	0.00	0.37	0.543	IO				0.73
89.583	0.00	0.37	0.540	IO				0.73
89.667	0.00	0.36	0.538	IO				0.73
89.750	0.00	0.36	0.535	IO				0.72
89.833	0.00	0.36	0.533	IO				0.72
89.917	0.00	0.36	0.530	IO				0.72
90.000	0.00	0.36	0.528	IO				0.71
90.083	0.00	0.36	0.525	IO				0.71
90.167	0.00	0.35	0.523	IO				0.71
90.250	0.00	0.35	0.520	IO				0.70
90.333	0.00	0.35	0.518	IO				0.70
90.417	0.00	0.35	0.516	IO				0.70
90.500	0.00	0.35	0.513	IO				0.69
90.583	0.00	0.35	0.511	IO				0.69
90.667	0.00	0.34	0.509	IO				0.69
90.750	0.00	0.34	0.506	IO				0.68
90.833	0.00	0.34	0.504	IO				0.68
90.917	0.00	0.34	0.501	IO				0.68
91.000	0.00	0.34	0.499	IO				0.68
91.083	0.00	0.34	0.497	IO				0.67
91.167	0.00	0.33	0.494	IO				0.67
91.250	0.00	0.33	0.492	IO				0.67
91.333	0.00	0.33	0.490	O				0.66
91.417	0.00	0.33	0.488	O				0.66
91.500	0.00	0.33	0.485	O				0.66
91.583	0.00	0.33	0.483	O				0.65
91.667	0.00	0.33	0.481	O				0.65
91.750	0.00	0.32	0.479	O				0.65
91.833	0.00	0.32	0.476	O				0.64
91.917	0.00	0.32	0.474	O				0.64
92.000	0.00	0.32	0.472	O				0.64
92.083	0.00	0.32	0.470	O				0.64
92.167	0.00	0.32	0.468	O				0.63
92.250	0.00	0.31	0.465	O				0.63
92.333	0.00	0.31	0.463	O				0.63
92.417	0.00	0.31	0.461	O				0.62
92.500	0.00	0.31	0.459	O				0.62
92.583	0.00	0.31	0.457	O				0.62
92.667	0.00	0.31	0.455	O				0.62
92.750	0.00	0.31	0.453	O				0.61
92.833	0.00	0.30	0.450	O				0.61
92.917	0.00	0.30	0.448	O				0.61
93.000	0.00	0.30	0.446	O				0.60
93.083	0.00	0.30	0.444	O				0.60
93.167	0.00	0.30	0.442	O				0.60
93.250	0.00	0.30	0.440	O				0.60
93.333	0.00	0.30	0.438	O				0.59
93.417	0.00	0.30	0.436	O				0.59
93.500	0.00	0.29	0.434	O				0.59
93.583	0.00	0.29	0.432	O				0.58
93.667	0.00	0.29	0.430	O				0.58
93.750	0.00	0.29	0.428	O				0.58
93.833	0.00	0.29	0.426	O				0.58
93.917	0.00	0.29	0.424	O				0.57
94.000	0.00	0.29	0.422	O				0.57
94.083	0.00	0.28	0.420	O				0.57
94.167	0.00	0.28	0.418	O				0.57
94.250	0.00	0.28	0.416	O				0.56
94.333	0.00	0.28	0.414	O				0.56

94.417	0.00	0.28	0.412	O					0.56
94.500	0.00	0.28	0.410	O					0.56
94.583	0.00	0.28	0.408	O					0.55
94.667	0.00	0.28	0.407	O					0.55
94.750	0.00	0.27	0.405	O					0.55
94.833	0.00	0.27	0.403	O					0.55
94.917	0.00	0.27	0.401	O					0.54
95.000	0.00	0.27	0.399	O					0.54
95.083	0.00	0.27	0.397	O					0.54
95.167	0.00	0.27	0.395	O					0.54
95.250	0.00	0.27	0.394	O					0.53
95.333	0.00	0.27	0.392	O					0.53
95.417	0.00	0.26	0.390	O					0.53
95.500	0.00	0.26	0.388	O					0.53
95.583	0.00	0.26	0.386	O					0.52
95.667	0.00	0.26	0.384	O					0.52
95.750	0.00	0.26	0.383	O					0.52
95.833	0.00	0.26	0.381	O					0.52
95.917	0.00	0.26	0.379	O					0.51
96.000	0.00	0.26	0.377	O					0.51
96.083	0.00	0.25	0.376	O					0.51
96.167	0.00	0.25	0.374	O					0.51
96.250	0.00	0.25	0.372	O					0.50
96.333	0.00	0.25	0.370	O					0.50
96.417	0.00	0.25	0.369	O					0.50
96.500	0.00	0.25	0.367	O					0.50
96.583	0.00	0.25	0.365	O					0.49
96.667	0.00	0.25	0.364	O					0.49
96.750	0.00	0.24	0.362	O					0.49
96.833	0.00	0.24	0.360	O					0.49
96.917	0.00	0.24	0.359	O					0.49
97.000	0.00	0.24	0.357	O					0.48
97.083	0.00	0.24	0.355	O					0.48
97.167	0.00	0.24	0.354	O					0.48
97.250	0.00	0.24	0.352	O					0.48
97.333	0.00	0.24	0.350	O					0.47
97.417	0.00	0.24	0.349	O					0.47
97.500	0.00	0.23	0.347	O					0.47
97.583	0.00	0.23	0.345	O					0.47
97.667	0.00	0.23	0.344	O					0.47
97.750	0.00	0.23	0.342	O					0.46
97.833	0.00	0.23	0.341	O					0.46
97.917	0.00	0.23	0.339	O					0.46
98.000	0.00	0.23	0.337	O					0.46
98.083	0.00	0.23	0.336	O					0.45
98.167	0.00	0.23	0.334	O					0.45
98.250	0.00	0.23	0.333	O					0.45
98.333	0.00	0.22	0.331	O					0.45
98.417	0.00	0.22	0.330	O					0.45
98.500	0.00	0.22	0.328	O					0.44
98.583	0.00	0.22	0.327	O					0.44
98.667	0.00	0.22	0.325	O					0.44
98.750	0.00	0.22	0.324	O					0.44
98.833	0.00	0.22	0.322	O					0.44
98.917	0.00	0.22	0.321	O					0.43
99.000	0.00	0.22	0.319	O					0.43
99.083	0.00	0.21	0.318	O					0.43
99.167	0.00	0.21	0.316	O					0.43
99.250	0.00	0.21	0.315	O					0.43
99.333	0.00	0.21	0.313	O					0.42
99.417	0.00	0.21	0.312	O					0.42
99.500	0.00	0.21	0.310	O					0.42
99.583	0.00	0.21	0.309	O					0.42
99.667	0.00	0.21	0.307	O					0.42
99.750	0.00	0.21	0.306	O					0.41
99.833	0.00	0.21	0.305	O					0.41
99.917	0.00	0.21	0.303	O					0.41
100.000	0.00	0.20	0.302	O					0.41
100.083	0.00	0.20	0.300	O					0.41
100.167	0.00	0.20	0.299	O					0.40
100.250	0.00	0.20	0.298	O					0.40

100.333	0.00	0.20	0.296	O	|	|	|	0.40
100.417	0.00	0.20	0.295	O	|	|	|	0.40
100.500	0.00	0.20	0.293	O	|	|	|	0.40
100.583	0.00	0.20	0.292	O	|	|	|	0.40
100.667	0.00	0.20	0.291	O	|	|	|	0.39
100.750	0.00	0.20	0.289	O	|	|	|	0.39
100.833	0.00	0.19	0.288	O	|	|	|	0.39
100.917	0.00	0.19	0.287	O	|	|	|	0.39
101.000	0.00	0.19	0.285	O	|	|	|	0.39
101.083	0.00	0.19	0.284	O	|	|	|	0.38
101.167	0.00	0.19	0.283	O	|	|	|	0.38
101.250	0.00	0.19	0.281	O	|	|	|	0.38
101.333	0.00	0.19	0.280	O	|	|	|	0.38
101.417	0.00	0.19	0.279	O	|	|	|	0.38
101.500	0.00	0.19	0.277	O	|	|	|	0.38
101.583	0.00	0.19	0.276	O	|	|	|	0.37
101.667	0.00	0.19	0.275	O	|	|	|	0.37
101.750	0.00	0.19	0.274	O	|	|	|	0.37
101.833	0.00	0.18	0.272	O	|	|	|	0.37
101.917	0.00	0.18	0.271	O	|	|	|	0.37
102.000	0.00	0.18	0.270	O	|	|	|	0.37
102.083	0.00	0.18	0.269	O	|	|	|	0.36
102.167	0.00	0.18	0.267	O	|	|	|	0.36
102.250	0.00	0.18	0.266	O	|	|	|	0.36
102.333	0.00	0.18	0.265	O	|	|	|	0.36
102.417	0.00	0.18	0.264	O	|	|	|	0.36
102.500	0.00	0.18	0.262	O	|	|	|	0.36
102.583	0.00	0.18	0.261	O	|	|	|	0.35
102.667	0.00	0.18	0.260	O	|	|	|	0.35
102.750	0.00	0.18	0.259	O	|	|	|	0.35
102.833	0.00	0.17	0.258	O	|	|	|	0.35
102.917	0.00	0.17	0.256	O	|	|	|	0.35
103.000	0.00	0.17	0.255	O	|	|	|	0.35
103.083	0.00	0.17	0.254	O	|	|	|	0.34
103.167	0.00	0.17	0.253	O	|	|	|	0.34
103.250	0.00	0.17	0.252	O	|	|	|	0.34
103.333	0.00	0.17	0.250	O	|	|	|	0.34
103.417	0.00	0.17	0.249	O	|	|	|	0.34
103.500	0.00	0.17	0.248	O	|	|	|	0.34
103.583	0.00	0.17	0.247	O	|	|	|	0.33
103.667	0.00	0.17	0.246	O	|	|	|	0.33
103.750	0.00	0.17	0.245	O	|	|	|	0.33
103.833	0.00	0.16	0.244	O	|	|	|	0.33
103.917	0.00	0.16	0.242	O	|	|	|	0.33
104.000	0.00	0.16	0.241	O	|	|	|	0.33
104.083	0.00	0.16	0.240	O	|	|	|	0.32
104.167	0.00	0.16	0.239	O	|	|	|	0.32
104.250	0.00	0.16	0.238	O	|	|	|	0.32
104.333	0.00	0.16	0.237	O	|	|	|	0.32
104.417	0.00	0.16	0.236	O	|	|	|	0.32
104.500	0.00	0.16	0.235	O	|	|	|	0.32
104.583	0.00	0.16	0.234	O	|	|	|	0.32
104.667	0.00	0.16	0.232	O	|	|	|	0.31
104.750	0.00	0.16	0.231	O	|	|	|	0.31
104.833	0.00	0.16	0.230	O	|	|	|	0.31
104.917	0.00	0.16	0.229	O	|	|	|	0.31
105.000	0.00	0.15	0.228	O	|	|	|	0.31
105.083	0.00	0.15	0.227	O	|	|	|	0.31
105.167	0.00	0.15	0.226	O	|	|	|	0.31
105.250	0.00	0.15	0.225	O	|	|	|	0.30
105.333	0.00	0.15	0.224	O	|	|	|	0.30
105.417	0.00	0.15	0.223	O	|	|	|	0.30
105.500	0.00	0.15	0.222	O	|	|	|	0.30
105.583	0.00	0.15	0.221	O	|	|	|	0.30
105.667	0.00	0.15	0.220	O	|	|	|	0.30
105.750	0.00	0.15	0.219	O	|	|	|	0.30
105.833	0.00	0.15	0.218	O	|	|	|	0.29
105.917	0.00	0.15	0.217	O	|	|	|	0.29
106.000	0.00	0.15	0.216	O	|	|	|	0.29
106.083	0.00	0.15	0.215	O	|	|	|	0.29
106.167	0.00	0.14	0.214	O	|	|	|	0.29

106.250	0.00	0.14	0.213	O					0.29
106.333	0.00	0.14	0.212	O					0.29
106.417	0.00	0.14	0.211	O					0.29
106.500	0.00	0.14	0.210	O					0.28
106.583	0.00	0.14	0.209	O					0.28
106.667	0.00	0.14	0.208	O					0.28
106.750	0.00	0.14	0.207	O					0.28
106.833	0.00	0.14	0.206	O					0.28
106.917	0.00	0.14	0.205	O					0.28
107.000	0.00	0.14	0.204	O					0.28
107.083	0.00	0.14	0.203	O					0.27
107.167	0.00	0.14	0.202	O					0.27
107.250	0.00	0.14	0.201	O					0.27
107.333	0.00	0.14	0.200	O					0.27
107.417	0.00	0.13	0.199	O					0.27
107.500	0.00	0.13	0.198	O					0.27
107.583	0.00	0.13	0.197	O					0.27
107.667	0.00	0.13	0.197	O					0.27
107.750	0.00	0.13	0.196	O					0.26
107.833	0.00	0.13	0.195	O					0.26
107.917	0.00	0.13	0.194	O					0.26
108.000	0.00	0.13	0.193	O					0.26
108.083	0.00	0.13	0.192	O					0.26
108.167	0.00	0.13	0.191	O					0.26
108.250	0.00	0.13	0.190	O					0.26
108.333	0.00	0.13	0.189	O					0.26
108.417	0.00	0.13	0.188	O					0.26
108.500	0.00	0.13	0.188	O					0.25
108.583	0.00	0.13	0.187	O					0.25
108.667	0.00	0.13	0.186	O					0.25
108.750	0.00	0.13	0.185	O					0.25
108.833	0.00	0.12	0.184	O					0.25
108.917	0.00	0.12	0.183	O					0.25
109.000	0.00	0.12	0.182	O					0.25
109.083	0.00	0.12	0.182	O					0.25
109.167	0.00	0.12	0.181	O					0.24
109.250	0.00	0.12	0.180	O					0.24
109.333	0.00	0.12	0.179	O					0.24
109.417	0.00	0.12	0.178	O					0.24
109.500	0.00	0.12	0.177	O					0.24
109.583	0.00	0.12	0.177	O					0.24
109.667	0.00	0.12	0.176	O					0.24
109.750	0.00	0.12	0.175	O					0.24
109.833	0.00	0.12	0.174	O					0.24
109.917	0.00	0.12	0.173	O					0.23
110.000	0.00	0.12	0.173	O					0.23
110.083	0.00	0.12	0.172	O					0.23
110.167	0.00	0.12	0.171	O					0.23
110.250	0.00	0.12	0.170	O					0.23
110.333	0.00	0.11	0.169	O					0.23
110.417	0.00	0.11	0.169	O					0.23
110.500	0.00	0.11	0.168	O					0.23
110.583	0.00	0.11	0.167	O					0.23
110.667	0.00	0.11	0.166	O					0.22
110.750	0.00	0.11	0.165	O					0.22
110.833	0.00	0.11	0.165	O					0.22
110.917	0.00	0.11	0.164	O					0.22
111.000	0.00	0.11	0.163	O					0.22
111.083	0.00	0.11	0.162	O					0.22
111.167	0.00	0.11	0.162	O					0.22
111.250	0.00	0.11	0.161	O					0.22
111.333	0.00	0.11	0.160	O					0.22
111.417	0.00	0.11	0.159	O					0.22
111.500	0.00	0.11	0.159	O					0.21
111.583	0.00	0.11	0.158	O					0.21
111.667	0.00	0.11	0.157	O					0.21
111.750	0.00	0.11	0.156	O					0.21
111.833	0.00	0.11	0.156	O					0.21
111.917	0.00	0.10	0.155	O					0.21
112.000	0.00	0.10	0.154	O					0.21
112.083	0.00	0.10	0.154	O					0.21

112.167	0.00	0.10	0.153	O					0.21
112.250	0.00	0.10	0.152	O					0.21
112.333	0.00	0.10	0.151	O					0.20
112.417	0.00	0.10	0.151	O					0.20
112.500	0.00	0.10	0.150	O					0.20
112.583	0.00	0.10	0.149	O					0.20
112.667	0.00	0.10	0.149	O					0.20
112.750	0.00	0.10	0.148	O					0.20
112.833	0.00	0.10	0.147	O					0.20
112.917	0.00	0.10	0.147	O					0.20
113.000	0.00	0.10	0.146	O					0.20
113.083	0.00	0.10	0.145	O					0.20
113.167	0.00	0.10	0.145	O					0.20
113.250	0.00	0.10	0.144	O					0.19
113.333	0.00	0.10	0.143	O					0.19
113.417	0.00	0.10	0.143	O					0.19
113.500	0.00	0.10	0.142	O					0.19
113.583	0.00	0.10	0.141	O					0.19
113.667	0.00	0.10	0.141	O					0.19
113.750	0.00	0.09	0.140	O					0.19
113.833	0.00	0.09	0.139	O					0.19
113.917	0.00	0.09	0.139	O					0.19
114.000	0.00	0.09	0.138	O					0.19
114.083	0.00	0.09	0.137	O					0.19
114.167	0.00	0.09	0.137	O					0.18
114.250	0.00	0.09	0.136	O					0.18
114.333	0.00	0.09	0.135	O					0.18
114.417	0.00	0.09	0.135	O					0.18
114.500	0.00	0.09	0.134	O					0.18
114.583	0.00	0.09	0.134	O					0.18
114.667	0.00	0.09	0.133	O					0.18
114.750	0.00	0.09	0.132	O					0.18
114.833	0.00	0.09	0.132	O					0.18
114.917	0.00	0.09	0.131	O					0.18
115.000	0.00	0.09	0.130	O					0.18
115.083	0.00	0.09	0.130	O					0.18
115.167	0.00	0.09	0.129	O					0.17
115.250	0.00	0.09	0.129	O					0.17
115.333	0.00	0.09	0.128	O					0.17
115.417	0.00	0.09	0.127	O					0.17
115.500	0.00	0.09	0.127	O					0.17
115.583	0.00	0.09	0.126	O					0.17
115.667	0.00	0.09	0.126	O					0.17
115.750	0.00	0.08	0.125	O					0.17
115.833	0.00	0.08	0.124	O					0.17
115.917	0.00	0.08	0.124	O					0.17
116.000	0.00	0.08	0.123	O					0.17
116.083	0.00	0.08	0.123	O					0.17
116.167	0.00	0.08	0.122	O					0.17
116.250	0.00	0.08	0.122	O					0.16
116.333	0.00	0.08	0.121	O					0.16
116.417	0.00	0.08	0.120	O					0.16
116.500	0.00	0.08	0.120	O					0.16
116.583	0.00	0.08	0.119	O					0.16
116.667	0.00	0.08	0.119	O					0.16
116.750	0.00	0.08	0.118	O					0.16
116.833	0.00	0.08	0.118	O					0.16
116.917	0.00	0.08	0.117	O					0.16
117.000	0.00	0.08	0.117	O					0.16
117.083	0.00	0.08	0.116	O					0.16
117.167	0.00	0.08	0.116	O					0.16
117.250	0.00	0.08	0.115	O					0.16
117.333	0.00	0.08	0.114	O					0.15
117.417	0.00	0.08	0.114	O					0.15
117.500	0.00	0.08	0.113	O					0.15
117.583	0.00	0.08	0.113	O					0.15
117.667	0.00	0.08	0.112	O					0.15
117.750	0.00	0.08	0.112	O					0.15
117.833	0.00	0.08	0.111	O					0.15
117.917	0.00	0.07	0.111	O					0.15
118.000	0.00	0.07	0.110	O					0.15

118.083	0.00	0.07	0.110	O					0.15
118.167	0.00	0.07	0.109	O					0.15
118.250	0.00	0.07	0.109	O					0.15
118.333	0.00	0.07	0.108	O					0.15
118.417	0.00	0.07	0.108	O					0.15
118.500	0.00	0.07	0.107	O					0.15
118.583	0.00	0.07	0.107	O					0.14
118.667	0.00	0.07	0.106	O					0.14
118.750	0.00	0.07	0.106	O					0.14
118.833	0.00	0.07	0.105	O					0.14
118.917	0.00	0.07	0.105	O					0.14
119.000	0.00	0.07	0.104	O					0.14
119.083	0.00	0.07	0.104	O					0.14
119.167	0.00	0.07	0.103	O					0.14
119.250	0.00	0.07	0.103	O					0.14
119.333	0.00	0.07	0.102	O					0.14
119.417	0.00	0.07	0.102	O					0.14
119.500	0.00	0.07	0.101	O					0.14
119.583	0.00	0.07	0.101	O					0.14
119.667	0.00	0.07	0.100	O					0.14
119.750	0.00	0.07	0.100	O					0.14
119.833	0.00	0.07	0.100	O					0.13
119.917	0.00	0.07	0.099	O					0.13
120.000	0.00	0.07	0.099	O					0.13
120.083	0.00	0.07	0.098	O					0.13
120.167	0.00	0.07	0.098	O					0.13
120.250	0.00	0.07	0.097	O					0.13
120.333	0.00	0.07	0.097	O					0.13
120.417	0.00	0.07	0.096	O					0.13
120.500	0.00	0.06	0.096	O					0.13
120.583	0.00	0.06	0.095	O					0.13
120.667	0.00	0.06	0.095	O					0.13
120.750	0.00	0.06	0.095	O					0.13
120.833	0.00	0.06	0.094	O					0.13
120.917	0.00	0.06	0.094	O					0.13
121.000	0.00	0.06	0.093	O					0.13
121.083	0.00	0.06	0.093	O					0.13
121.167	0.00	0.06	0.092	O					0.13
121.250	0.00	0.06	0.092	O					0.12
121.333	0.00	0.06	0.092	O					0.12
121.417	0.00	0.06	0.091	O					0.12
121.500	0.00	0.06	0.091	O					0.12
121.583	0.00	0.06	0.090	O					0.12
121.667	0.00	0.06	0.090	O					0.12
121.750	0.00	0.06	0.089	O					0.12
121.833	0.00	0.06	0.089	O					0.12
121.917	0.00	0.06	0.089	O					0.12
122.000	0.00	0.06	0.088	O					0.12
122.083	0.00	0.06	0.088	O					0.12
122.167	0.00	0.06	0.087	O					0.12
122.250	0.00	0.06	0.087	O					0.12
122.333	0.00	0.06	0.087	O					0.12
122.417	0.00	0.06	0.086	O					0.12
122.500	0.00	0.06	0.086	O					0.12
122.583	0.00	0.06	0.085	O					0.12
122.667	0.00	0.06	0.085	O					0.11
122.750	0.00	0.06	0.085	O					0.11
122.833	0.00	0.06	0.084	O					0.11
122.917	0.00	0.06	0.084	O					0.11
123.000	0.00	0.06	0.083	O					0.11
123.083	0.00	0.06	0.083	O					0.11
123.167	0.00	0.06	0.083	O					0.11
123.250	0.00	0.06	0.082	O					0.11
123.333	0.00	0.06	0.082	O					0.11
123.417	0.00	0.06	0.081	O					0.11
123.500	0.00	0.05	0.081	O					0.11
123.583	0.00	0.05	0.081	O					0.11
123.667	0.00	0.05	0.080	O					0.11
123.750	0.00	0.05	0.080	O					0.11
123.833	0.00	0.05	0.080	O					0.11
123.917	0.00	0.05	0.079	O					0.11

124.000	0.00	0.05	0.079	O					0.11
124.083	0.00	0.05	0.078	O					0.11
124.167	0.00	0.05	0.078	O					0.11
124.250	0.00	0.05	0.078	O					0.11
124.333	0.00	0.05	0.077	O					0.10
124.417	0.00	0.05	0.077	O					0.10
124.500	0.00	0.05	0.077	O					0.10
124.583	0.00	0.05	0.076	O					0.10
124.667	0.00	0.05	0.076	O					0.10
124.750	0.00	0.05	0.076	O					0.10
124.833	0.00	0.05	0.075	O					0.10
124.917	0.00	0.05	0.075	O					0.10
125.000	0.00	0.05	0.075	O					0.10
125.083	0.00	0.05	0.074	O					0.10
125.167	0.00	0.05	0.074	O					0.10
125.250	0.00	0.05	0.074	O					0.10
125.333	0.00	0.05	0.073	O					0.10
125.417	0.00	0.05	0.073	O					0.10
125.500	0.00	0.05	0.073	O					0.10
125.583	0.00	0.05	0.072	O					0.10
125.667	0.00	0.05	0.072	O					0.10
125.750	0.00	0.05	0.072	O					0.10
125.833	0.00	0.05	0.071	O					0.10
125.917	0.00	0.05	0.071	O					0.10
126.000	0.00	0.05	0.071	O					0.10
126.083	0.00	0.05	0.070	O					0.09
126.167	0.00	0.05	0.070	O					0.09
126.250	0.00	0.05	0.070	O					0.09
126.333	0.00	0.05	0.069	O					0.09
126.417	0.00	0.05	0.069	O					0.09
126.500	0.00	0.05	0.069	O					0.09
126.583	0.00	0.05	0.068	O					0.09
126.667	0.00	0.05	0.068	O					0.09
126.750	0.00	0.05	0.068	O					0.09
126.833	0.00	0.05	0.067	O					0.09
126.917	0.00	0.05	0.067	O					0.09
127.000	0.00	0.05	0.067	O					0.09
127.083	0.00	0.04	0.066	O					0.09
127.167	0.00	0.04	0.066	O					0.09
127.250	0.00	0.04	0.066	O					0.09
127.333	0.00	0.04	0.065	O					0.09
127.417	0.00	0.04	0.065	O					0.09
127.500	0.00	0.04	0.065	O					0.09
127.583	0.00	0.04	0.065	O					0.09
127.667	0.00	0.04	0.064	O					0.09
127.750	0.00	0.04	0.064	O					0.09
127.833	0.00	0.04	0.064	O					0.09
127.917	0.00	0.04	0.063	O					0.09
128.000	0.00	0.04	0.063	O					0.09
128.083	0.00	0.04	0.063	O					0.08
128.167	0.00	0.04	0.062	O					0.08
128.250	0.00	0.04	0.062	O					0.08
128.333	0.00	0.04	0.062	O					0.08
128.417	0.00	0.04	0.062	O					0.08
128.500	0.00	0.04	0.061	O					0.08
128.583	0.00	0.04	0.061	O					0.08
128.667	0.00	0.04	0.061	O					0.08
128.750	0.00	0.04	0.060	O					0.08
128.833	0.00	0.04	0.060	O					0.08
128.917	0.00	0.04	0.060	O					0.08
129.000	0.00	0.04	0.060	O					0.08
129.083	0.00	0.04	0.059	O					0.08
129.167	0.00	0.04	0.059	O					0.08
129.250	0.00	0.04	0.059	O					0.08
129.333	0.00	0.04	0.059	O					0.08
129.417	0.00	0.04	0.058	O					0.08
129.500	0.00	0.04	0.058	O					0.08
129.583	0.00	0.04	0.058	O					0.08
129.667	0.00	0.04	0.057	O					0.08
129.750	0.00	0.04	0.057	O					0.08
129.833	0.00	0.04	0.057	O					0.08

129.917	0.00	0.04	0.057	O					0.08
130.000	0.00	0.04	0.056	O					0.08
130.083	0.00	0.04	0.056	O					0.08
130.167	0.00	0.04	0.056	O					0.08
130.250	0.00	0.04	0.056	O					0.08
130.333	0.00	0.04	0.055	O					0.07
130.417	0.00	0.04	0.055	O					0.07
130.500	0.00	0.04	0.055	O					0.07
130.583	0.00	0.04	0.055	O					0.07
130.667	0.00	0.04	0.054	O					0.07
130.750	0.00	0.04	0.054	O					0.07
130.833	0.00	0.04	0.054	O					0.07
130.917	0.00	0.04	0.054	O					0.07
131.000	0.00	0.04	0.053	O					0.07
131.083	0.00	0.04	0.053	O					0.07
131.167	0.00	0.04	0.053	O					0.07
131.250	0.00	0.04	0.053	O					0.07
131.333	0.00	0.04	0.052	O					0.07
131.417	0.00	0.04	0.052	O					0.07
131.500	0.00	0.04	0.052	O					0.07
131.583	0.00	0.03	0.052	O					0.07
131.667	0.00	0.03	0.051	O					0.07
131.750	0.00	0.03	0.051	O					0.07
131.833	0.00	0.03	0.051	O					0.07
131.917	0.00	0.03	0.051	O					0.07
132.000	0.00	0.03	0.050	O					0.07
132.083	0.00	0.03	0.050	O					0.07
132.167	0.00	0.03	0.050	O					0.07
132.250	0.00	0.03	0.050	O					0.07
132.333	0.00	0.03	0.049	O					0.07
132.417	0.00	0.03	0.049	O					0.07
132.500	0.00	0.03	0.049	O					0.07
132.583	0.00	0.03	0.049	O					0.07
132.667	0.00	0.03	0.049	O					0.07
132.750	0.00	0.03	0.048	O					0.07
132.833	0.00	0.03	0.048	O					0.07
132.917	0.00	0.03	0.048	O					0.06
133.000	0.00	0.03	0.048	O					0.06
133.083	0.00	0.03	0.047	O					0.06
133.167	0.00	0.03	0.047	O					0.06
133.250	0.00	0.03	0.047	O					0.06
133.333	0.00	0.03	0.047	O					0.06
133.417	0.00	0.03	0.047	O					0.06
133.500	0.00	0.03	0.046	O					0.06
133.583	0.00	0.03	0.046	O					0.06
133.667	0.00	0.03	0.046	O					0.06
133.750	0.00	0.03	0.046	O					0.06
133.833	0.00	0.03	0.046	O					0.06
133.917	0.00	0.03	0.045	O					0.06
134.000	0.00	0.03	0.045	O					0.06
134.083	0.00	0.03	0.045	O					0.06
134.167	0.00	0.03	0.045	O					0.06
134.250	0.00	0.03	0.044	O					0.06
134.333	0.00	0.03	0.044	O					0.06
134.417	0.00	0.03	0.044	O					0.06
134.500	0.00	0.03	0.044	O					0.06
134.583	0.00	0.03	0.044	O					0.06
134.667	0.00	0.03	0.043	O					0.06
134.750	0.00	0.03	0.043	O					0.06
134.833	0.00	0.03	0.043	O					0.06
134.917	0.00	0.03	0.043	O					0.06
135.000	0.00	0.03	0.043	O					0.06
135.083	0.00	0.03	0.042	O					0.06
135.167	0.00	0.03	0.042	O					0.06
135.250	0.00	0.03	0.042	O					0.06
135.333	0.00	0.03	0.042	O					0.06
135.417	0.00	0.03	0.042	O					0.06
135.500	0.00	0.03	0.041	O					0.06
135.583	0.00	0.03	0.041	O					0.06
135.667	0.00	0.03	0.041	O					0.06
135.750	0.00	0.03	0.041	O					0.06

135.833	0.00	0.03	0.041	O					0.06
135.917	0.00	0.03	0.040	O					0.05
136.000	0.00	0.03	0.040	O					0.05
136.083	0.00	0.03	0.040	O					0.05
136.167	0.00	0.03	0.040	O					0.05
136.250	0.00	0.03	0.040	O					0.05
136.333	0.00	0.03	0.040	O					0.05
136.417	0.00	0.03	0.039	O					0.05
136.500	0.00	0.03	0.039	O					0.05
136.583	0.00	0.03	0.039	O					0.05
136.667	0.00	0.03	0.039	O					0.05
136.750	0.00	0.03	0.039	O					0.05
136.833	0.00	0.03	0.038	O					0.05
136.917	0.00	0.03	0.038	O					0.05
137.000	0.00	0.03	0.038	O					0.05
137.083	0.00	0.03	0.038	O					0.05
137.167	0.00	0.03	0.038	O					0.05
137.250	0.00	0.03	0.038	O					0.05
137.333	0.00	0.03	0.037	O					0.05
137.417	0.00	0.03	0.037	O					0.05
137.500	0.00	0.03	0.037	O					0.05
137.583	0.00	0.02	0.037	O					0.05
137.667	0.00	0.02	0.037	O					0.05
137.750	0.00	0.02	0.037	O					0.05
137.833	0.00	0.02	0.036	O					0.05
137.917	0.00	0.02	0.036	O					0.05
138.000	0.00	0.02	0.036	O					0.05
138.083	0.00	0.02	0.036	O					0.05
138.167	0.00	0.02	0.036	O					0.05
138.250	0.00	0.02	0.036	O					0.05
138.333	0.00	0.02	0.035	O					0.05
138.417	0.00	0.02	0.035	O					0.05
138.500	0.00	0.02	0.035	O					0.05
138.583	0.00	0.02	0.035	O					0.05
138.667	0.00	0.02	0.035	O					0.05
138.750	0.00	0.02	0.035	O					0.05
138.833	0.00	0.02	0.034	O					0.05
138.917	0.00	0.02	0.034	O					0.05
139.000	0.00	0.02	0.034	O					0.05
139.083	0.00	0.02	0.034	O					0.05
139.167	0.00	0.02	0.034	O					0.05
139.250	0.00	0.02	0.034	O					0.05
139.333	0.00	0.02	0.033	O					0.05
139.417	0.00	0.02	0.033	O					0.05
139.500	0.00	0.02	0.033	O					0.04
139.583	0.00	0.02	0.033	O					0.04
139.667	0.00	0.02	0.033	O					0.04
139.750	0.00	0.02	0.033	O					0.04
139.833	0.00	0.02	0.033	O					0.04
139.917	0.00	0.02	0.032	O					0.04
140.000	0.00	0.02	0.032	O					0.04
140.083	0.00	0.02	0.032	O					0.04
140.167	0.00	0.02	0.032	O					0.04
140.250	0.00	0.02	0.032	O					0.04
140.333	0.00	0.02	0.032	O					0.04
140.417	0.00	0.02	0.031	O					0.04
140.500	0.00	0.02	0.031	O					0.04
140.583	0.00	0.02	0.031	O					0.04
140.667	0.00	0.02	0.031	O					0.04
140.750	0.00	0.02	0.031	O					0.04
140.833	0.00	0.02	0.031	O					0.04
140.917	0.00	0.02	0.031	O					0.04
141.000	0.00	0.02	0.030	O					0.04
141.083	0.00	0.02	0.030	O					0.04
141.167	0.00	0.02	0.030	O					0.04
141.250	0.00	0.02	0.030	O					0.04
141.333	0.00	0.02	0.030	O					0.04
141.417	0.00	0.02	0.030	O					0.04
141.500	0.00	0.02	0.030	O					0.04
141.583	0.00	0.02	0.030	O					0.04
141.667	0.00	0.02	0.029	O					0.04

141.750	0.00	0.02	0.029	O					0.04
141.833	0.00	0.02	0.029	O					0.04
141.917	0.00	0.02	0.029	O					0.04
142.000	0.00	0.02	0.029	O					0.04
142.083	0.00	0.02	0.029	O					0.04
142.167	0.00	0.02	0.029	O					0.04
142.250	0.00	0.02	0.028	O					0.04
142.333	0.00	0.02	0.028	O					0.04
142.417	0.00	0.02	0.028	O					0.04
142.500	0.00	0.02	0.028	O					0.04
142.583	0.00	0.02	0.028	O					0.04
142.667	0.00	0.02	0.028	O					0.04
142.750	0.00	0.02	0.028	O					0.04
142.833	0.00	0.02	0.028	O					0.04
142.917	0.00	0.02	0.027	O					0.04
143.000	0.00	0.02	0.027	O					0.04
143.083	0.00	0.02	0.027	O					0.04
143.167	0.00	0.02	0.027	O					0.04
143.250	0.00	0.02	0.027	O					0.04
143.333	0.00	0.02	0.027	O					0.04
143.417	0.00	0.02	0.027	O					0.04
143.500	0.00	0.02	0.027	O					0.04
143.583	0.00	0.02	0.026	O					0.04
143.667	0.00	0.02	0.026	O					0.04
143.750	0.00	0.02	0.026	O					0.04
143.833	0.00	0.02	0.026	O					0.04
143.917	0.00	0.02	0.026	O					0.04
144.000	0.00	0.02	0.026	O					0.03
144.083	0.00	0.02	0.026	O					0.03
144.167	0.00	0.02	0.026	O					0.03
144.250	0.00	0.02	0.025	O					0.03
144.333	0.00	0.02	0.025	O					0.03
144.417	0.00	0.02	0.025	O					0.03
144.500	0.00	0.02	0.025	O					0.03
144.583	0.00	0.02	0.025	O					0.03
144.667	0.00	0.02	0.025	O					0.03
144.750	0.00	0.02	0.025	O					0.03
144.833	0.00	0.02	0.025	O					0.03
144.917	0.00	0.02	0.024	O					0.03
145.000	0.00	0.02	0.024	O					0.03
145.083	0.00	0.02	0.024	O					0.03
145.167	0.00	0.02	0.024	O					0.03
145.250	0.00	0.02	0.024	O					0.03
145.333	0.00	0.02	0.024	O					0.03
145.417	0.00	0.02	0.024	O					0.03
145.500	0.00	0.02	0.024	O					0.03
145.583	0.00	0.02	0.024	O					0.03
145.667	0.00	0.02	0.023	O					0.03
145.750	0.00	0.02	0.023	O					0.03
145.833	0.00	0.02	0.023	O					0.03
145.917	0.00	0.02	0.023	O					0.03
146.000	0.00	0.02	0.023	O					0.03
146.083	0.00	0.02	0.023	O					0.03
146.167	0.00	0.02	0.023	O					0.03
146.250	0.00	0.02	0.023	O					0.03
146.333	0.00	0.02	0.023	O					0.03
146.417	0.00	0.02	0.023	O					0.03
146.500	0.00	0.02	0.022	O					0.03
146.583	0.00	0.02	0.022	O					0.03
146.667	0.00	0.02	0.022	O					0.03
146.750	0.00	0.01	0.022	O					0.03
146.833	0.00	0.01	0.022	O					0.03
146.917	0.00	0.01	0.022	O					0.03
147.000	0.00	0.01	0.022	O					0.03
147.083	0.00	0.01	0.022	O					0.03
147.167	0.00	0.01	0.022	O					0.03
147.250	0.00	0.01	0.021	O					0.03
147.333	0.00	0.01	0.021	O					0.03
147.417	0.00	0.01	0.021	O					0.03
147.500	0.00	0.01	0.021	O					0.03
147.583	0.00	0.01	0.021	O					0.03

147.667	0.00	0.01	0.021	O					0.03
147.750	0.00	0.01	0.021	O					0.03
147.833	0.00	0.01	0.021	O					0.03
147.917	0.00	0.01	0.021	O					0.03
148.000	0.00	0.01	0.021	O					0.03
148.083	0.00	0.01	0.021	O					0.03
148.167	0.00	0.01	0.020	O					0.03
148.250	0.00	0.01	0.020	O					0.03
148.333	0.00	0.01	0.020	O					0.03
148.417	0.00	0.01	0.020	O					0.03
148.500	0.00	0.01	0.020	O					0.03
148.583	0.00	0.01	0.020	O					0.03
148.667	0.00	0.01	0.020	O					0.03
148.750	0.00	0.01	0.020	O					0.03
148.833	0.00	0.01	0.020	O					0.03
148.917	0.00	0.01	0.020	O					0.03
149.000	0.00	0.01	0.019	O					0.03
149.083	0.00	0.01	0.019	O					0.03
149.167	0.00	0.01	0.019	O					0.03
149.250	0.00	0.01	0.019	O					0.03
149.333	0.00	0.01	0.019	O					0.03
149.417	0.00	0.01	0.019	O					0.03
149.500	0.00	0.01	0.019	O					0.03
149.583	0.00	0.01	0.019	O					0.03
149.667	0.00	0.01	0.019	O					0.03
149.750	0.00	0.01	0.019	O					0.03
149.833	0.00	0.01	0.019	O					0.03
149.917	0.00	0.01	0.019	O					0.03
150.000	0.00	0.01	0.018	O					0.02
150.083	0.00	0.01	0.018	O					0.02
150.167	0.00	0.01	0.018	O					0.02
150.250	0.00	0.01	0.018	O					0.02
150.333	0.00	0.01	0.018	O					0.02
150.417	0.00	0.01	0.018	O					0.02
150.500	0.00	0.01	0.018	O					0.02
150.583	0.00	0.01	0.018	O					0.02
150.667	0.00	0.01	0.018	O					0.02
150.750	0.00	0.01	0.018	O					0.02
150.833	0.00	0.01	0.018	O					0.02
150.917	0.00	0.01	0.018	O					0.02
151.000	0.00	0.01	0.017	O					0.02
151.083	0.00	0.01	0.017	O					0.02
151.167	0.00	0.01	0.017	O					0.02
151.250	0.00	0.01	0.017	O					0.02
151.333	0.00	0.01	0.017	O					0.02
151.417	0.00	0.01	0.017	O					0.02
151.500	0.00	0.01	0.017	O					0.02
151.583	0.00	0.01	0.017	O					0.02
151.667	0.00	0.01	0.017	O					0.02
151.750	0.00	0.01	0.017	O					0.02
151.833	0.00	0.01	0.017	O					0.02
151.917	0.00	0.01	0.017	O					0.02
152.000	0.00	0.01	0.016	O					0.02
152.083	0.00	0.01	0.016	O					0.02
152.167	0.00	0.01	0.016	O					0.02
152.250	0.00	0.01	0.016	O					0.02
152.333	0.00	0.01	0.016	O					0.02
152.417	0.00	0.01	0.016	O					0.02
152.500	0.00	0.01	0.016	O					0.02
152.583	0.00	0.01	0.016	O					0.02
152.667	0.00	0.01	0.016	O					0.02
152.750	0.00	0.01	0.016	O					0.02
152.833	0.00	0.01	0.016	O					0.02
152.917	0.00	0.01	0.016	O					0.02
153.000	0.00	0.01	0.016	O					0.02
153.083	0.00	0.01	0.016	O					0.02
153.167	0.00	0.01	0.015	O					0.02
153.250	0.00	0.01	0.015	O					0.02
153.333	0.00	0.01	0.015	O					0.02
153.417	0.00	0.01	0.015	O					0.02
153.500	0.00	0.01	0.015	O					0.02

153.583	0.00	0.01	0.015	O					0.02
153.667	0.00	0.01	0.015	O					0.02
153.750	0.00	0.01	0.015	O					0.02
153.833	0.00	0.01	0.015	O					0.02
153.917	0.00	0.01	0.015	O					0.02
154.000	0.00	0.01	0.015	O					0.02
154.083	0.00	0.01	0.015	O					0.02
154.167	0.00	0.01	0.015	O					0.02
154.250	0.00	0.01	0.015	O					0.02
154.333	0.00	0.01	0.014	O					0.02
154.417	0.00	0.01	0.014	O					0.02
154.500	0.00	0.01	0.014	O					0.02
154.583	0.00	0.01	0.014	O					0.02
154.667	0.00	0.01	0.014	O					0.02
154.750	0.00	0.01	0.014	O					0.02
154.833	0.00	0.01	0.014	O					0.02
154.917	0.00	0.01	0.014	O					0.02
155.000	0.00	0.01	0.014	O					0.02
155.083	0.00	0.01	0.014	O					0.02
155.167	0.00	0.01	0.014	O					0.02
155.250	0.00	0.01	0.014	O					0.02
155.333	0.00	0.01	0.014	O					0.02
155.417	0.00	0.01	0.014	O					0.02
155.500	0.00	0.01	0.014	O					0.02
155.583	0.00	0.01	0.013	O					0.02
155.667	0.00	0.01	0.013	O					0.02
155.750	0.00	0.01	0.013	O					0.02
155.833	0.00	0.01	0.013	O					0.02
155.917	0.00	0.01	0.013	O					0.02
156.000	0.00	0.01	0.013	O					0.02
156.083	0.00	0.01	0.013	O					0.02
156.167	0.00	0.01	0.013	O					0.02
156.250	0.00	0.01	0.013	O					0.02
156.333	0.00	0.01	0.013	O					0.02
156.417	0.00	0.01	0.013	O					0.02
156.500	0.00	0.01	0.013	O					0.02
156.583	0.00	0.01	0.013	O					0.02
156.667	0.00	0.01	0.013	O					0.02
156.750	0.00	0.01	0.013	O					0.02
156.833	0.00	0.01	0.013	O					0.02
156.917	0.00	0.01	0.013	O					0.02
157.000	0.00	0.01	0.012	O					0.02
157.083	0.00	0.01	0.012	O					0.02
157.167	0.00	0.01	0.012	O					0.02
157.250	0.00	0.01	0.012	O					0.02
157.333	0.00	0.01	0.012	O					0.02
157.417	0.00	0.01	0.012	O					0.02
157.500	0.00	0.01	0.012	O					0.02
157.583	0.00	0.01	0.012	O					0.02
157.667	0.00	0.01	0.012	O					0.02
157.750	0.00	0.01	0.012	O					0.02
157.833	0.00	0.01	0.012	O					0.02
157.917	0.00	0.01	0.012	O					0.02
158.000	0.00	0.01	0.012	O					0.02
158.083	0.00	0.01	0.012	O					0.02
158.167	0.00	0.01	0.012	O					0.02
158.250	0.00	0.01	0.012	O					0.02
158.333	0.00	0.01	0.012	O					0.02
158.417	0.00	0.01	0.012	O					0.02
158.500	0.00	0.01	0.011	O					0.02
158.583	0.00	0.01	0.011	O					0.02
158.667	0.00	0.01	0.011	O					0.02
158.750	0.00	0.01	0.011	O					0.02
158.833	0.00	0.01	0.011	O					0.02
158.917	0.00	0.01	0.011	O					0.02
159.000	0.00	0.01	0.011	O					0.02
159.083	0.00	0.01	0.011	O					0.02
159.167	0.00	0.01	0.011	O					0.01
159.250	0.00	0.01	0.011	O					0.01
159.333	0.00	0.01	0.011	O					0.01
159.417	0.00	0.01	0.011	O					0.01

159.500	0.00	0.01	0.011	O					0.01
159.583	0.00	0.01	0.011	O					0.01
159.667	0.00	0.01	0.011	O					0.01
159.750	0.00	0.01	0.011	O					0.01
159.833	0.00	0.01	0.011	O					0.01
159.917	0.00	0.01	0.011	O					0.01
160.000	0.00	0.01	0.011	O					0.01
160.083	0.00	0.01	0.010	O					0.01
160.167	0.00	0.01	0.010	O					0.01
160.250	0.00	0.01	0.010	O					0.01
160.333	0.00	0.01	0.010	O					0.01
160.417	0.00	0.01	0.010	O					0.01
160.500	0.00	0.01	0.010	O					0.01
160.583	0.00	0.01	0.010	O					0.01
160.667	0.00	0.01	0.010	O					0.01
160.750	0.00	0.01	0.010	O					0.01
160.833	0.00	0.01	0.010	O					0.01
160.917	0.00	0.01	0.010	O					0.01
161.000	0.00	0.01	0.010	O					0.01
161.083	0.00	0.01	0.010	O					0.01
161.167	0.00	0.01	0.010	O					0.01
161.250	0.00	0.01	0.010	O					0.01
161.333	0.00	0.01	0.010	O					0.01
161.417	0.00	0.01	0.010	O					0.01
161.500	0.00	0.01	0.010	O					0.01
161.583	0.00	0.01	0.010	O					0.01
161.667	0.00	0.01	0.010	O					0.01
161.750	0.00	0.01	0.010	O					0.01
161.833	0.00	0.01	0.010	O					0.01
161.917	0.00	0.01	0.009	O					0.01
162.000	0.00	0.01	0.009	O					0.01
162.083	0.00	0.01	0.009	O					0.01
162.167	0.00	0.01	0.009	O					0.01
162.250	0.00	0.01	0.009	O					0.01
162.333	0.00	0.01	0.009	O					0.01
162.417	0.00	0.01	0.009	O					0.01
162.500	0.00	0.01	0.009	O					0.01
162.583	0.00	0.01	0.009	O					0.01
162.667	0.00	0.01	0.009	O					0.01
162.750	0.00	0.01	0.009	O					0.01
162.833	0.00	0.01	0.009	O					0.01
162.917	0.00	0.01	0.009	O					0.01
163.000	0.00	0.01	0.009	O					0.01
163.083	0.00	0.01	0.009	O					0.01
163.167	0.00	0.01	0.009	O					0.01
163.250	0.00	0.01	0.009	O					0.01
163.333	0.00	0.01	0.009	O					0.01
163.417	0.00	0.01	0.009	O					0.01
163.500	0.00	0.01	0.009	O					0.01
163.583	0.00	0.01	0.009	O					0.01
163.667	0.00	0.01	0.009	O					0.01
163.750	0.00	0.01	0.009	O					0.01
163.833	0.00	0.01	0.009	O					0.01
163.917	0.00	0.01	0.008	O					0.01
164.000	0.00	0.01	0.008	O					0.01
164.083	0.00	0.01	0.008	O					0.01
164.167	0.00	0.01	0.008	O					0.01
164.250	0.00	0.01	0.008	O					0.01
164.333	0.00	0.01	0.008	O					0.01
164.417	0.00	0.01	0.008	O					0.01
164.500	0.00	0.01	0.008	O					0.01
164.583	0.00	0.01	0.008	O					0.01
164.667	0.00	0.01	0.008	O					0.01
164.750	0.00	0.01	0.008	O					0.01
164.833	0.00	0.01	0.008	O					0.01
164.917	0.00	0.01	0.008	O					0.01
165.000	0.00	0.01	0.008	O					0.01
165.083	0.00	0.01	0.008	O					0.01
165.167	0.00	0.01	0.008	O					0.01
165.250	0.00	0.01	0.008	O					0.01
165.333	0.00	0.01	0.008	O					0.01

165.417	0.00	0.01	0.008	O	|	|	|	0.01
165.500	0.00	0.01	0.008	O	|	|	|	0.01
165.583	0.00	0.01	0.008	O	|	|	|	0.01
165.667	0.00	0.01	0.008	O	|	|	|	0.01
165.750	0.00	0.01	0.008	O	|	|	|	0.01
165.833	0.00	0.01	0.008	O	|	|	|	0.01
165.917	0.00	0.01	0.008	O	|	|	|	0.01
166.000	0.00	0.01	0.008	O	|	|	|	0.01
166.083	0.00	0.01	0.007	O	|	|	|	0.01
166.167	0.00	0.01	0.007	O	|	|	|	0.01
166.250	0.00	0.01	0.007	O	|	|	|	0.01
166.333	0.00	0.01	0.007	O	|	|	|	0.01
166.417	0.00	0.00	0.007	O	|	|	|	0.01
166.500	0.00	0.00	0.007	O	|	|	|	0.01
166.583	0.00	0.00	0.007	O	|	|	|	0.01
166.667	0.00	0.00	0.007	O	|	|	|	0.01

Remaining water in basin = 0.01 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 1.366 (CFS)
Total volume = 7.278 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 01/06/20

HILLWOOD - APOLLO PROJECT
2 YEAR STORM EVENT BASIN ROUTING
1930BR242
DS

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 1930PUH2242.rte
**********HYDROGRAPH DATA**********
Number of intervals = 301
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 15.258 (CFS)
Total volume = 8.957 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 301
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

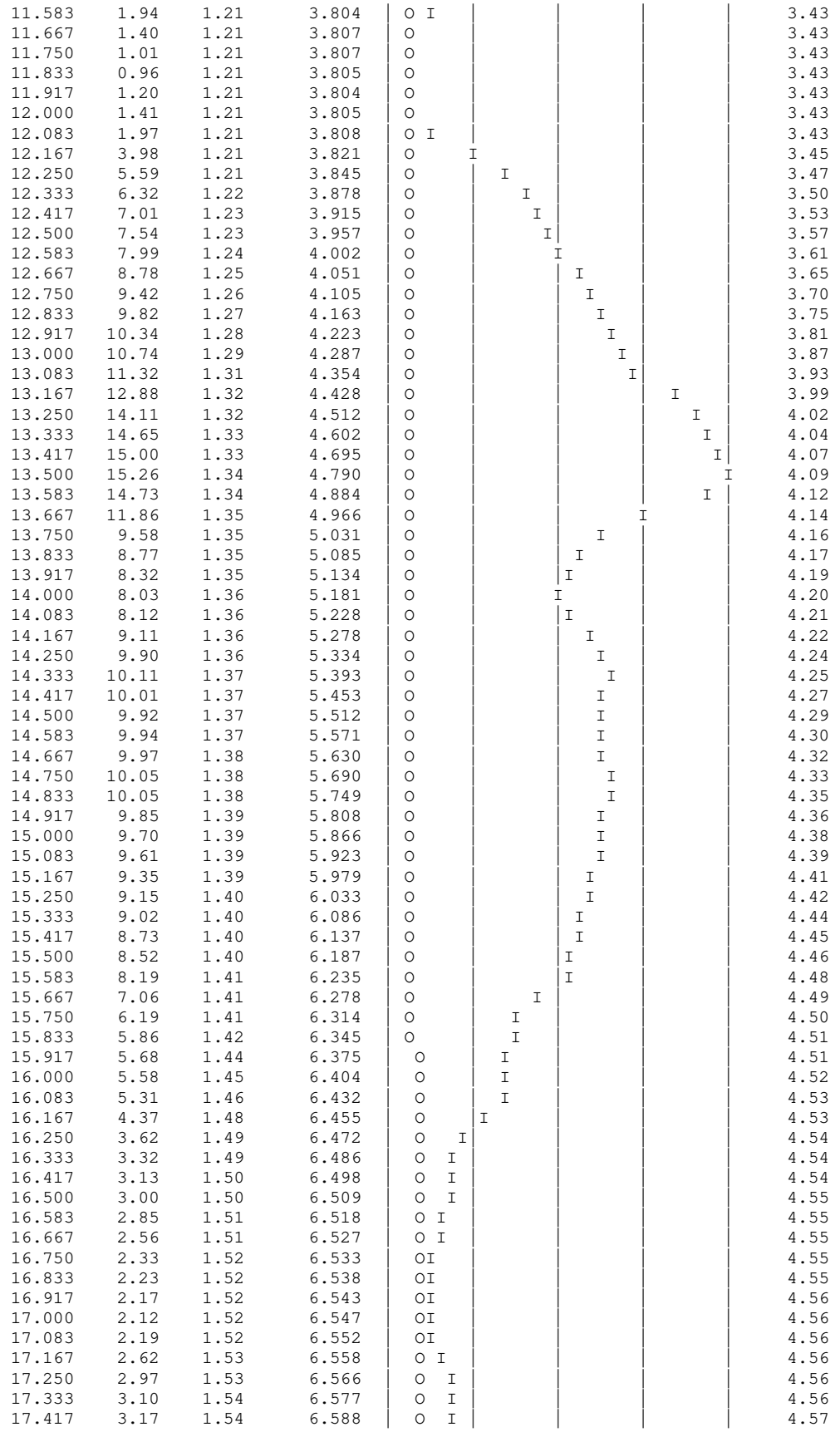
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.739	0.500	0.737	0.741
2.000	2.218	0.860	2.215	2.221
3.000	3.327	1.120	3.323	3.331
4.000	4.435	1.320	4.430	4.440
4.500	6.323	1.410	6.318	6.328
5.000	8.291	2.400	8.283	8.299
6.000	12.386	3.450	12.374	12.398
7.000	16.882	49.560	16.711	17.053
8.000	21.702	68.940	21.465	21.939
9.000	26.849	83.890	26.560	27.138

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	3.8	7.63	11.44	15.26	Depth (Ft.)
0.083	0.11	0.00	0.000	O					0.00
0.167	0.56	0.00	0.003	OI					0.00
0.250	0.92	0.01	0.008	OI					0.01
0.333	1.12	0.01	0.015	O I					0.02
0.417	1.42	0.02	0.023	O I					0.03
0.500	1.66	0.02	0.034	O I					0.05
0.583	1.77	0.03	0.045	O I					0.06
0.667	1.84	0.04	0.058	O I					0.08
0.750	1.89	0.05	0.070	O I					0.09
0.833	1.98	0.06	0.083	O I					0.11
0.917	2.23	0.07	0.097	O I					0.13
1.000	2.43	0.08	0.113	O I					0.15
1.083	2.47	0.09	0.129	O I					0.17
1.167	2.30	0.10	0.145	O I					0.20
1.250	2.15	0.11	0.160	O I					0.22
1.333	2.10	0.12	0.173	O I					0.23
1.417	2.08	0.13	0.187	O I					0.25
1.500	2.06	0.14	0.200	O I					0.27
1.583	2.05	0.14	0.214	O I					0.29
1.667	2.04	0.15	0.227	O I					0.31
1.750	2.04	0.16	0.240	O I					0.32
1.833	2.09	0.17	0.253	O I					0.34
1.917	2.31	0.18	0.267	O I					0.36
2.000	2.49	0.19	0.282	O I					0.38
2.083	2.55	0.20	0.298	O I					0.40
2.167	2.59	0.21	0.314	O I					0.42
2.250	2.62	0.22	0.330	O I					0.45
2.333	2.64	0.23	0.347	O I					0.47
2.417	2.65	0.25	0.364	O I					0.49
2.500	2.66	0.26	0.380	O I					0.51
2.583	2.73	0.27	0.397	O I					0.54
2.667	2.96	0.28	0.415	O I					0.56
2.750	3.14	0.29	0.434	O I					0.59
2.833	3.22	0.31	0.453	O I					0.61
2.917	3.26	0.32	0.474	O I					0.64
3.000	3.29	0.33	0.494	O I					0.67
3.083	3.31	0.35	0.514	O I					0.70
3.167	3.32	0.36	0.535	O I					0.72
3.250	3.33	0.38	0.555	O I					0.75
3.333	3.34	0.39	0.575	O I					0.78
3.417	3.35	0.40	0.596	O I					0.81
3.500	3.35	0.42	0.616	O I					0.83
3.583	3.36	0.43	0.636	O I					0.86
3.667	3.36	0.44	0.656	O I					0.89
3.750	3.36	0.46	0.676	O I					0.92
3.833	3.42	0.47	0.697	O I					0.94
3.917	3.64	0.49	0.718	O I					0.97
4.000	3.82	0.50	0.740	O I					1.00
4.083	3.89	0.51	0.763	O I					1.02
4.167	3.93	0.51	0.786	O I					1.03
4.250	3.96	0.52	0.810	O I					1.05
4.333	4.04	0.52	0.834	O I					1.06
4.417	4.28	0.53	0.859	O I					1.08
4.500	4.47	0.54	0.885	O I					1.10
4.583	4.55	0.54	0.913	O I					1.12
4.667	4.59	0.55	0.941	O I					1.14
4.750	4.63	0.56	0.968	O I					1.16
4.833	4.71	0.56	0.997	O I					1.17
4.917	4.95	0.57	1.026	O I					1.19
5.000	5.14	0.58	1.057	O I					1.21
5.083	5.11	0.58	1.088	O I					1.24
5.167	4.71	0.59	1.118	O I					1.26
5.250	4.38	0.60	1.145	O I					1.27
5.333	4.32	0.61	1.171	O I					1.29
5.417	4.48	0.61	1.197	O I					1.31
5.500	4.61	0.62	1.224	O I					1.33
5.583	4.71	0.62	1.252	O I					1.35

5.667	4.95	0.63	1.281	O	I			1.37
5.750	5.14	0.64	1.311	O	I			1.39
5.833	5.22	0.65	1.342	O	I			1.41
5.917	5.26	0.65	1.374	O	I			1.43
6.000	5.29	0.66	1.406	O	I			1.45
6.083	5.37	0.67	1.438	O	I			1.47
6.167	5.61	0.68	1.471	O	I			1.50
6.250	5.81	0.69	1.506	O	I			1.52
6.333	5.89	0.70	1.541	O	I			1.54
6.417	5.94	0.70	1.577	O	I			1.57
6.500	5.97	0.71	1.613	O	I			1.59
6.583	6.05	0.72	1.650	O	I			1.62
6.667	6.29	0.73	1.687	O	I			1.64
6.750	6.49	0.74	1.726	O	I			1.67
6.833	6.56	0.75	1.766	O	I			1.69
6.917	6.61	0.76	1.806	O	I			1.72
7.000	6.64	0.77	1.847	O	I			1.75
7.083	6.67	0.78	1.887	O	I			1.78
7.167	6.69	0.79	1.928	O	I			1.80
7.250	6.70	0.80	1.968	O	I			1.83
7.333	6.76	0.81	2.009	O	I			1.86
7.417	6.99	0.82	2.051	O	I			1.89
7.500	7.18	0.83	2.094	O	I			1.92
7.583	7.31	0.84	2.138	O	I			1.95
7.667	7.58	0.85	2.184	O	I			1.98
7.750	7.79	0.86	2.231	O	I			2.01
7.833	7.93	0.87	2.279	O	I			2.05
7.917	8.21	0.89	2.328	O	I			2.10
8.000	8.43	0.90	2.379	O	I			2.15
8.083	8.64	0.91	2.432	O	I			2.19
8.167	9.15	0.92	2.487	O	I			2.24
8.250	9.56	0.94	2.545	O	I			2.29
8.333	9.73	0.95	2.605	O	I			2.35
8.417	9.83	0.96	2.666	O	I			2.40
8.500	9.91	0.98	2.727	O	I			2.46
8.583	10.01	0.99	2.789	O	I			2.51
8.667	10.28	1.01	2.852	O	I			2.57
8.750	10.49	1.02	2.916	O	I			2.63
8.833	10.63	1.04	2.982	O	I			2.69
8.917	10.92	1.05	3.049	O	I			2.75
9.000	11.13	1.07	3.117	O	I			2.81
9.083	10.30	1.09	3.184	O	I			2.87
9.167	6.54	1.10	3.234	O	I			2.92
9.250	3.55	1.10	3.261	O	I			2.94
9.333	2.51	1.11	3.275	O	I			2.95
9.417	2.17	1.11	3.283	O	I			2.96
9.500	1.99	1.11	3.290	O	I			2.97
9.583	1.89	1.11	3.296	O	I			2.97
9.667	2.05	1.11	3.301	O	I			2.98
9.750	2.18	1.12	3.308	O	I			2.98
9.833	2.29	1.12	3.316	O	I			2.99
9.917	2.59	1.12	3.325	O	I			3.00
10.000	2.85	1.12	3.336	O	I			3.01
10.083	3.52	1.12	3.350	O	I			3.02
10.167	5.86	1.13	3.375	O	I			3.04
10.250	7.76	1.14	3.414	O	I			3.08
10.333	8.52	1.14	3.462	O	I			3.12
10.417	8.98	1.15	3.515	O	I			3.17
10.500	9.29	1.16	3.570	O	I			3.22
10.583	8.87	1.17	3.624	O	I			3.27
10.667	6.36	1.18	3.668	O	I			3.31
10.750	4.38	1.19	3.697	O	I			3.33
10.833	3.70	1.19	3.717	O	I			3.35
10.917	3.34	1.19	3.733	O	I			3.37
11.000	3.12	1.20	3.747	O	I			3.38
11.083	2.92	1.20	3.759	O	I			3.39
11.167	2.58	1.20	3.770	O	I			3.40
11.250	2.29	1.20	3.778	O	I			3.41
11.333	2.17	1.20	3.786	O	I			3.41
11.417	2.10	1.20	3.792	O	I			3.42
11.500	2.08	1.21	3.798	O	I			3.43



17.500	3.22	1.55	6.599	O I				4.57
17.583	3.26	1.55	6.611	O I				4.57
17.667	3.28	1.56	6.622	O I				4.58
17.750	3.31	1.57	6.634	O I				4.58
17.833	3.27	1.57	6.646	O I				4.58
17.917	3.06	1.58	6.657	O I				4.58
18.000	2.89	1.58	6.667	O I				4.59
18.083	2.82	1.59	6.675	O I				4.59
18.167	2.79	1.59	6.684	O I				4.59
18.250	2.76	1.60	6.692	O I				4.59
18.333	2.74	1.60	6.700	O I				4.60
18.417	2.73	1.60	6.708	O I				4.60
18.500	2.72	1.61	6.716	O I				4.60
18.583	2.65	1.61	6.723	O I				4.60
18.667	2.42	1.61	6.729	O I				4.60
18.750	2.24	1.62	6.734	OI				4.60
18.833	2.11	1.62	6.738	OI				4.61
18.917	1.84	1.62	6.740	O				4.61
19.000	1.63	1.62	6.741	O				4.61
19.083	1.59	1.62	6.741	O				4.61
19.167	1.77	1.62	6.742	O				4.61
19.250	1.91	1.62	6.743	O				4.61
19.333	2.00	1.62	6.745	OI				4.61
19.417	2.25	1.62	6.749	OI				4.61
19.500	2.44	1.63	6.754	O I				4.61
19.583	2.46	1.63	6.759	O I				4.61
19.667	2.28	1.63	6.765	OI				4.61
19.750	2.14	1.63	6.769	OI				4.61
19.833	2.04	1.64	6.772	OI				4.61
19.917	1.79	1.64	6.774	O				4.61
20.000	1.59	1.64	6.774	O				4.61
20.083	1.57	1.64	6.774	O				4.61
20.167	1.75	1.64	6.774	O				4.61
20.250	1.90	1.64	6.775	O				4.61
20.333	1.94	1.64	6.777	OI				4.62
20.417	1.97	1.64	6.779	OI				4.62
20.500	1.98	1.64	6.781	OI				4.62
20.583	1.99	1.64	6.784	OI				4.62
20.667	1.99	1.64	6.786	OI				4.62
20.750	2.00	1.64	6.789	OI				4.62
20.833	1.95	1.65	6.791	OI				4.62
20.917	1.72	1.65	6.792	O				4.62
21.000	1.55	1.65	6.792	O				4.62
21.083	1.54	1.65	6.791	O				4.62
21.167	1.73	1.65	6.791	O				4.62
21.250	1.88	1.65	6.792	O				4.62
21.333	1.87	1.65	6.794	O				4.62
21.417	1.68	1.65	6.795	O				4.62
21.500	1.51	1.65	6.795	O				4.62
21.583	1.51	1.65	6.794	O				4.62
21.667	1.70	1.65	6.793	O				4.62
21.750	1.86	1.65	6.794	O				4.62
21.833	1.86	1.65	6.796	O				4.62
21.917	1.66	1.65	6.796	O				4.62
22.000	1.50	1.65	6.796	O				4.62
22.083	1.50	1.65	6.795	O				4.62
22.167	1.70	1.65	6.795	O				4.62
22.250	1.86	1.65	6.796	O				4.62
22.333	1.86	1.65	6.797	O				4.62
22.417	1.66	1.65	6.798	O				4.62
22.500	1.50	1.65	6.797	O				4.62
22.583	1.45	1.65	6.796	O				4.62
22.667	1.42	1.65	6.795	IO				4.62
22.750	1.40	1.65	6.793	IO				4.62
22.833	1.38	1.65	6.791	IO				4.62
22.917	1.37	1.64	6.789	IO				4.62
23.000	1.36	1.64	6.788	IO				4.62
23.083	1.36	1.64	6.786	IO				4.62
23.167	1.36	1.64	6.784	IO				4.62
23.250	1.35	1.64	6.782	IO				4.62
23.333	1.35	1.64	6.780	IO				4.62

23.417	1.35	1.64	6.778	| IO	|	|	|	4.62
23.500	1.35	1.64	6.776	| IO	|	|	|	4.62
23.583	1.35	1.64	6.774	| IO	|	|	|	4.61
23.667	1.35	1.64	6.772	| IO	|	|	|	4.61
23.750	1.35	1.63	6.770	| IO	|	|	|	4.61
23.833	1.35	1.63	6.768	| IO	|	|	|	4.61
23.917	1.35	1.63	6.766	| IO	|	|	|	4.61
24.000	1.35	1.63	6.764	| IO	|	|	|	4.61
24.083	1.24	1.63	6.761	| IO	|	|	|	4.61
24.167	0.78	1.63	6.757	|I O	|	|	|	4.61
24.250	0.42	1.62	6.750	I O	|	|	|	4.61
24.333	0.28	1.62	6.741	I O	|	|	|	4.61
24.417	0.20	1.62	6.732	I O	|	|	|	4.60
24.500	0.15	1.61	6.722	I O	|	|	|	4.60
24.583	0.11	1.61	6.712	I O	|	|	|	4.60
24.667	0.08	1.60	6.701	I O	|	|	|	4.60
24.750	0.06	1.60	6.691	I O	|	|	|	4.59
24.833	0.04	1.59	6.680	I O	|	|	|	4.59
24.917	0.02	1.58	6.669	I O	|	|	|	4.59
25.000	0.02	1.58	6.659	I O	|	|	|	4.59
25.083	0.01	1.57	6.648	I O	|	|	|	4.58
25.167	0.00	1.57	6.637	I O	|	|	|	4.58
25.250	0.00	1.56	6.626	I O	|	|	|	4.58
25.333	0.00	1.56	6.616	I O	|	|	|	4.57
25.417	0.00	1.55	6.605	I O	|	|	|	4.57
25.500	0.00	1.55	6.594	I O	|	|	|	4.57
25.583	0.00	1.54	6.584	I O	|	|	|	4.57
25.667	0.00	1.54	6.573	I O	|	|	|	4.56
25.750	0.00	1.53	6.562	I O	|	|	|	4.56
25.833	0.00	1.53	6.552	I O	|	|	|	4.56
25.917	0.00	1.52	6.541	I O	|	|	|	4.56
26.000	0.00	1.51	6.531	I O	|	|	|	4.55
26.083	0.00	1.51	6.521	I O	|	|	|	4.55
26.167	0.00	1.50	6.510	I O	|	|	|	4.55
26.250	0.00	1.50	6.500	I O	|	|	|	4.54
26.333	0.00	1.49	6.490	I O	|	|	|	4.54
26.417	0.00	1.49	6.479	I O	|	|	|	4.54
26.500	0.00	1.48	6.469	I O	|	|	|	4.54
26.583	0.00	1.48	6.459	I O	|	|	|	4.53
26.667	0.00	1.47	6.449	I O	|	|	|	4.53
26.750	0.00	1.47	6.439	I O	|	|	|	4.53
26.833	0.00	1.46	6.428	I O	|	|	|	4.53
26.917	0.00	1.46	6.418	I O	|	|	|	4.52
27.000	0.00	1.45	6.408	I O	|	|	|	4.52
27.083	0.00	1.45	6.398	I O	|	|	|	4.52
27.167	0.00	1.44	6.388	I O	|	|	|	4.52
27.250	0.00	1.44	6.378	I O	|	|	|	4.51
27.333	0.00	1.43	6.369	I O	|	|	|	4.51
27.417	0.00	1.43	6.359	I O	|	|	|	4.51
27.500	0.00	1.42	6.349	I O	|	|	|	4.51
27.583	0.00	1.42	6.339	I O	|	|	|	4.50
27.667	0.00	1.41	6.329	I O	|	|	|	4.50
27.750	0.00	1.41	6.320	I O	|	|	|	4.50
27.833	0.00	1.41	6.310	I O	|	|	|	4.50
27.917	0.00	1.41	6.300	I O	|	|	|	4.49
28.000	0.00	1.41	6.291	I O	|	|	|	4.49
28.083	0.00	1.41	6.281	I O	|	|	|	4.49
28.167	0.00	1.41	6.271	I O	|	|	|	4.49
28.250	0.00	1.41	6.261	I O	|	|	|	4.48
28.333	0.00	1.41	6.252	I O	|	|	|	4.48
28.417	0.00	1.41	6.242	I O	|	|	|	4.48
28.500	0.00	1.41	6.232	I O	|	|	|	4.48
28.583	0.00	1.41	6.223	I O	|	|	|	4.47
28.667	0.00	1.40	6.213	I O	|	|	|	4.47
28.750	0.00	1.40	6.203	I O	|	|	|	4.47
28.833	0.00	1.40	6.194	I O	|	|	|	4.47
28.917	0.00	1.40	6.184	I O	|	|	|	4.46
29.000	0.00	1.40	6.174	I O	|	|	|	4.46
29.083	0.00	1.40	6.165	I O	|	|	|	4.46
29.167	0.00	1.40	6.155	I O	|	|	|	4.46
29.250	0.00	1.40	6.145	I O	|	|	|	4.45

29.333	0.00	1.40	6.136	I	O				4.45
29.417	0.00	1.40	6.126	I	O				4.45
29.500	0.00	1.40	6.116	I	O				4.45
29.583	0.00	1.40	6.107	I	O				4.44
29.667	0.00	1.40	6.097	I	O				4.44
29.750	0.00	1.40	6.088	I	O				4.44
29.833	0.00	1.40	6.078	I	O				4.44
29.917	0.00	1.40	6.068	I	O				4.43
30.000	0.00	1.40	6.059	I	O				4.43
30.083	0.00	1.40	6.049	I	O				4.43
30.167	0.00	1.40	6.039	I	O				4.42
30.250	0.00	1.40	6.030	I	O				4.42
30.333	0.00	1.40	6.020	I	O				4.42
30.417	0.00	1.40	6.011	I	O				4.42
30.500	0.00	1.39	6.001	I	O				4.41
30.583	0.00	1.39	5.991	I	O				4.41
30.667	0.00	1.39	5.982	I	O				4.41
30.750	0.00	1.39	5.972	I	O				4.41
30.833	0.00	1.39	5.963	I	O				4.40
30.917	0.00	1.39	5.953	I	O				4.40
31.000	0.00	1.39	5.943	I	O				4.40
31.083	0.00	1.39	5.934	I	O				4.40
31.167	0.00	1.39	5.924	I	O				4.39
31.250	0.00	1.39	5.915	I	O				4.39
31.333	0.00	1.39	5.905	I	O				4.39
31.417	0.00	1.39	5.896	I	O				4.39
31.500	0.00	1.39	5.886	I	O				4.38
31.583	0.00	1.39	5.876	I	O				4.38
31.667	0.00	1.39	5.867	I	O				4.38
31.750	0.00	1.39	5.857	I	O				4.38
31.833	0.00	1.39	5.848	I	O				4.37
31.917	0.00	1.39	5.838	I	O				4.37
32.000	0.00	1.39	5.829	I	O				4.37
32.083	0.00	1.39	5.819	I	O				4.37
32.167	0.00	1.39	5.810	I	O				4.36
32.250	0.00	1.39	5.800	I	O				4.36
32.333	0.00	1.38	5.790	I	O				4.36
32.417	0.00	1.38	5.781	I	O				4.36
32.500	0.00	1.38	5.771	I	O				4.35
32.583	0.00	1.38	5.762	I	O				4.35
32.667	0.00	1.38	5.752	I	O				4.35
32.750	0.00	1.38	5.743	I	O				4.35
32.833	0.00	1.38	5.733	I	O				4.34
32.917	0.00	1.38	5.724	I	O				4.34
33.000	0.00	1.38	5.714	I	O				4.34
33.083	0.00	1.38	5.705	I	O				4.34
33.167	0.00	1.38	5.695	I	O				4.33
33.250	0.00	1.38	5.686	I	O				4.33
33.333	0.00	1.38	5.676	I	O				4.33
33.417	0.00	1.38	5.667	I	O				4.33
33.500	0.00	1.38	5.657	I	O				4.32
33.583	0.00	1.38	5.648	I	O				4.32
33.667	0.00	1.38	5.638	I	O				4.32
33.750	0.00	1.38	5.629	I	O				4.32
33.833	0.00	1.38	5.619	I	O				4.31
33.917	0.00	1.38	5.610	I	O				4.31
34.000	0.00	1.38	5.600	I	O				4.31
34.083	0.00	1.38	5.591	I	O				4.31
34.167	0.00	1.37	5.581	I	O				4.30
34.250	0.00	1.37	5.572	I	O				4.30
34.333	0.00	1.37	5.562	I	O				4.30
34.417	0.00	1.37	5.553	I	O				4.30
34.500	0.00	1.37	5.544	I	O				4.29
34.583	0.00	1.37	5.534	I	O				4.29
34.667	0.00	1.37	5.525	I	O				4.29
34.750	0.00	1.37	5.515	I	O				4.29
34.833	0.00	1.37	5.506	I	O				4.28
34.917	0.00	1.37	5.496	I	O				4.28
35.000	0.00	1.37	5.487	I	O				4.28
35.083	0.00	1.37	5.477	I	O				4.28
35.167	0.00	1.37	5.468	I	O				4.27

35.250	0.00	1.37	5.459	I	O				4.27
35.333	0.00	1.37	5.449	I	O				4.27
35.417	0.00	1.37	5.440	I	O				4.27
35.500	0.00	1.37	5.430	I	O				4.26
35.583	0.00	1.37	5.421	I	O				4.26
35.667	0.00	1.37	5.411	I	O				4.26
35.750	0.00	1.37	5.402	I	O				4.26
35.833	0.00	1.37	5.393	I	O				4.25
35.917	0.00	1.37	5.383	I	O				4.25
36.000	0.00	1.36	5.374	I	O				4.25
36.083	0.00	1.36	5.364	I	O				4.25
36.167	0.00	1.36	5.355	I	O				4.24
36.250	0.00	1.36	5.346	I	O				4.24
36.333	0.00	1.36	5.336	I	O				4.24
36.417	0.00	1.36	5.327	I	O				4.24
36.500	0.00	1.36	5.318	I	O				4.23
36.583	0.00	1.36	5.308	I	O				4.23
36.667	0.00	1.36	5.299	I	O				4.23
36.750	0.00	1.36	5.289	I	O				4.23
36.833	0.00	1.36	5.280	I	O				4.22
36.917	0.00	1.36	5.271	I	O				4.22
37.000	0.00	1.36	5.261	I	O				4.22
37.083	0.00	1.36	5.252	I	O				4.22
37.167	0.00	1.36	5.243	I	O				4.21
37.250	0.00	1.36	5.233	I	O				4.21
37.333	0.00	1.36	5.224	I	O				4.21
37.417	0.00	1.36	5.215	I	O				4.21
37.500	0.00	1.36	5.205	I	O				4.20
37.583	0.00	1.36	5.196	I	O				4.20
37.667	0.00	1.36	5.186	I	O				4.20
37.750	0.00	1.36	5.177	I	O				4.20
37.833	0.00	1.35	5.168	I	O				4.19
37.917	0.00	1.35	5.159	I	O				4.19
38.000	0.00	1.35	5.149	I	O				4.19
38.083	0.00	1.35	5.140	I	O				4.19
38.167	0.00	1.35	5.131	I	O				4.18
38.250	0.00	1.35	5.121	I	O				4.18
38.333	0.00	1.35	5.112	I	O				4.18
38.417	0.00	1.35	5.103	I	O				4.18
38.500	0.00	1.35	5.093	I	O				4.17
38.583	0.00	1.35	5.084	I	O				4.17
38.667	0.00	1.35	5.075	I	O				4.17
38.750	0.00	1.35	5.065	I	O				4.17
38.833	0.00	1.35	5.056	I	O				4.16
38.917	0.00	1.35	5.047	I	O				4.16
39.000	0.00	1.35	5.037	I	O				4.16
39.083	0.00	1.35	5.028	I	O				4.16
39.167	0.00	1.35	5.019	I	O				4.15
39.250	0.00	1.35	5.010	I	O				4.15
39.333	0.00	1.35	5.000	I	O				4.15
39.417	0.00	1.35	4.991	I	O				4.15
39.500	0.00	1.35	4.982	I	O				4.14
39.583	0.00	1.35	4.973	I	O				4.14
39.667	0.00	1.35	4.963	I	O				4.14
39.750	0.00	1.34	4.954	I	O				4.14
39.833	0.00	1.34	4.945	I	O				4.13
39.917	0.00	1.34	4.935	I	O				4.13
40.000	0.00	1.34	4.926	I	O				4.13
40.083	0.00	1.34	4.917	I	O				4.13
40.167	0.00	1.34	4.908	I	O				4.13
40.250	0.00	1.34	4.899	I	O				4.12
40.333	0.00	1.34	4.889	I	O				4.12
40.417	0.00	1.34	4.880	I	O				4.12
40.500	0.00	1.34	4.871	I	O				4.12
40.583	0.00	1.34	4.862	I	O				4.11
40.667	0.00	1.34	4.852	I	O				4.11
40.750	0.00	1.34	4.843	I	O				4.11
40.833	0.00	1.34	4.834	I	O				4.11
40.917	0.00	1.34	4.825	I	O				4.10
41.000	0.00	1.34	4.815	I	O				4.10
41.083	0.00	1.34	4.806	I	O				4.10

41.167	0.00	1.34	4.797	I	O				4.10
41.250	0.00	1.34	4.788	I	O				4.09
41.333	0.00	1.34	4.779	I	O				4.09
41.417	0.00	1.34	4.769	I	O				4.09
41.500	0.00	1.34	4.760	I	O				4.09
41.583	0.00	1.34	4.751	I	O				4.08
41.667	0.00	1.33	4.742	I	O				4.08
41.750	0.00	1.33	4.733	I	O				4.08
41.833	0.00	1.33	4.723	I	O				4.08
41.917	0.00	1.33	4.714	I	O				4.07
42.000	0.00	1.33	4.705	I	O				4.07
42.083	0.00	1.33	4.696	I	O				4.07
42.167	0.00	1.33	4.687	I	O				4.07
42.250	0.00	1.33	4.678	I	O				4.06
42.333	0.00	1.33	4.668	I	O				4.06
42.417	0.00	1.33	4.659	I	O				4.06
42.500	0.00	1.33	4.650	I	O				4.06
42.583	0.00	1.33	4.641	I	O				4.05
42.667	0.00	1.33	4.632	I	O				4.05
42.750	0.00	1.33	4.623	I	O				4.05
42.833	0.00	1.33	4.613	I	O				4.05
42.917	0.00	1.33	4.604	I	O				4.04
43.000	0.00	1.33	4.595	I	O				4.04
43.083	0.00	1.33	4.586	I	O				4.04
43.167	0.00	1.33	4.577	I	O				4.04
43.250	0.00	1.33	4.568	I	O				4.04
43.333	0.00	1.33	4.559	I	O				4.03
43.417	0.00	1.33	4.549	I	O				4.03
43.500	0.00	1.33	4.540	I	O				4.03
43.583	0.00	1.32	4.531	I	O				4.03
43.667	0.00	1.32	4.522	I	O				4.02
43.750	0.00	1.32	4.513	I	O				4.02
43.833	0.00	1.32	4.504	I	O				4.02
43.917	0.00	1.32	4.495	I	O				4.02
44.000	0.00	1.32	4.486	I	O				4.01
44.083	0.00	1.32	4.477	I	O				4.01
44.167	0.00	1.32	4.467	I	O				4.01
44.250	0.00	1.32	4.458	I	O				4.01
44.333	0.00	1.32	4.449	I	O				4.00
44.417	0.00	1.32	4.440	I	O				4.00
44.500	0.00	1.32	4.431	I	O				4.00
44.583	0.00	1.32	4.422	I	O				3.99
44.667	0.00	1.32	4.413	I	O				3.98
44.750	0.00	1.31	4.404	I	O				3.97
44.833	0.00	1.31	4.395	I	O				3.96
44.917	0.00	1.31	4.386	I	O				3.96
45.000	0.00	1.31	4.377	I	O				3.95
45.083	0.00	1.31	4.368	I	O				3.94
45.167	0.00	1.31	4.359	I	O				3.93
45.250	0.00	1.30	4.350	I	O				3.92
45.333	0.00	1.30	4.341	I	O				3.91
45.417	0.00	1.30	4.332	I	O				3.91
45.500	0.00	1.30	4.323	I	O				3.90
45.583	0.00	1.30	4.314	I	O				3.89
45.667	0.00	1.30	4.305	I	O				3.88
45.750	0.00	1.29	4.296	I	O				3.87
45.833	0.00	1.29	4.287	I	O				3.87
45.917	0.00	1.29	4.278	I	O				3.86
46.000	0.00	1.29	4.269	I	O				3.85
46.083	0.00	1.29	4.260	I	O				3.84
46.167	0.00	1.29	4.252	I	O				3.83
46.250	0.00	1.29	4.243	I	O				3.83
46.333	0.00	1.28	4.234	I	O				3.82
46.417	0.00	1.28	4.225	I	O				3.81
46.500	0.00	1.28	4.216	I	O				3.80
46.583	0.00	1.28	4.207	I	O				3.79
46.667	0.00	1.28	4.199	I	O				3.79
46.750	0.00	1.28	4.190	I	O				3.78
46.833	0.00	1.27	4.181	I	O				3.77
46.917	0.00	1.27	4.172	I	O				3.76
47.000	0.00	1.27	4.163	I	O				3.75

47.083	0.00	1.27	4.155	I	O				3.75
47.167	0.00	1.27	4.146	I	O				3.74
47.250	0.00	1.27	4.137	I	O				3.73
47.333	0.00	1.26	4.129	I	O				3.72
47.417	0.00	1.26	4.120	I	O				3.72
47.500	0.00	1.26	4.111	I	O				3.71
47.583	0.00	1.26	4.102	I	O				3.70
47.667	0.00	1.26	4.094	I	O				3.69
47.750	0.00	1.26	4.085	I	O				3.68
47.833	0.00	1.26	4.076	I	O				3.68
47.917	0.00	1.25	4.068	I	O				3.67
48.000	0.00	1.25	4.059	I	O				3.66
48.083	0.00	1.25	4.051	I	O				3.65
48.167	0.00	1.25	4.042	I	O				3.65
48.250	0.00	1.25	4.033	I	O				3.64
48.333	0.00	1.25	4.025	I	O				3.63
48.417	0.00	1.24	4.016	I	O				3.62
48.500	0.00	1.24	4.008	I	O				3.61
48.583	0.00	1.24	3.999	I	O				3.61
48.667	0.00	1.24	3.991	I	O				3.60
48.750	0.00	1.24	3.982	I	O				3.59
48.833	0.00	1.24	3.974	I	O				3.58
48.917	0.00	1.24	3.965	I	O				3.58
49.000	0.00	1.23	3.956	I	O				3.57
49.083	0.00	1.23	3.948	I	O				3.56
49.167	0.00	1.23	3.940	I	O				3.55
49.250	0.00	1.23	3.931	I	O				3.55
49.333	0.00	1.23	3.923	I	O				3.54
49.417	0.00	1.23	3.914	I	O				3.53
49.500	0.00	1.22	3.906	I	O				3.52
49.583	0.00	1.22	3.897	I	O				3.51
49.667	0.00	1.22	3.889	I	O				3.51
49.750	0.00	1.22	3.880	I	O				3.50
49.833	0.00	1.22	3.872	I	O				3.49
49.917	0.00	1.22	3.864	I	O				3.48
50.000	0.00	1.22	3.855	I	O				3.48
50.083	0.00	1.21	3.847	I	O				3.47
50.167	0.00	1.21	3.839	I	O				3.46
50.250	0.00	1.21	3.830	I	O				3.45
50.333	0.00	1.21	3.822	I	O				3.45
50.417	0.00	1.21	3.814	I	O				3.44
50.500	0.00	1.21	3.805	I	O				3.43
50.583	0.00	1.20	3.797	I	O				3.42
50.667	0.00	1.20	3.789	I	O				3.42
50.750	0.00	1.20	3.780	I	O				3.41
50.833	0.00	1.20	3.772	I	O				3.40
50.917	0.00	1.20	3.764	I	O				3.39
51.000	0.00	1.20	3.756	I	O				3.39
51.083	0.00	1.20	3.747	I	O				3.38
51.167	0.00	1.19	3.739	I	O				3.37
51.250	0.00	1.19	3.731	I	O				3.36
51.333	0.00	1.19	3.723	I	O				3.36
51.417	0.00	1.19	3.714	I	O				3.35
51.500	0.00	1.19	3.706	I	O				3.34
51.583	0.00	1.19	3.698	I	O				3.33
51.667	0.00	1.19	3.690	I	O				3.33
51.750	0.00	1.18	3.682	I	O				3.32
51.833	0.00	1.18	3.674	I	O				3.31
51.917	0.00	1.18	3.666	I	O				3.31
52.000	0.00	1.18	3.657	I	O				3.30
52.083	0.00	1.18	3.649	I	O				3.29
52.167	0.00	1.18	3.641	I	O				3.28
52.250	0.00	1.18	3.633	I	O				3.28
52.333	0.00	1.17	3.625	I	O				3.27
52.417	0.00	1.17	3.617	I	O				3.26
52.500	0.00	1.17	3.609	I	O				3.25
52.583	0.00	1.17	3.601	I	O				3.25
52.667	0.00	1.17	3.593	I	O				3.24
52.750	0.00	1.17	3.585	I	O				3.23
52.833	0.00	1.17	3.577	I	O				3.23
52.917	0.00	1.16	3.569	I	O				3.22

53.000	0.00	1.16	3.561	I	O				3.21
53.083	0.00	1.16	3.553	I	O				3.20
53.167	0.00	1.16	3.545	I	O				3.20
53.250	0.00	1.16	3.537	I	O				3.19
53.333	0.00	1.16	3.529	I	O				3.18
53.417	0.00	1.15	3.521	I	O				3.17
53.500	0.00	1.15	3.513	I	O				3.17
53.583	0.00	1.15	3.505	I	O				3.16
53.667	0.00	1.15	3.497	I	O				3.15
53.750	0.00	1.15	3.489	I	O				3.15
53.833	0.00	1.15	3.481	I	O				3.14
53.917	0.00	1.15	3.473	I	O				3.13
54.000	0.00	1.14	3.465	I	O				3.12
54.083	0.00	1.14	3.457	I	O				3.12
54.167	0.00	1.14	3.450	I	O				3.11
54.250	0.00	1.14	3.442	I	O				3.10
54.333	0.00	1.14	3.434	I	O				3.10
54.417	0.00	1.14	3.426	I	O				3.09
54.500	0.00	1.14	3.418	I	O				3.08
54.583	0.00	1.14	3.410	I	O				3.08
54.667	0.00	1.13	3.403	I	O				3.07
54.750	0.00	1.13	3.395	I	O				3.06
54.833	0.00	1.13	3.387	I	O				3.05
54.917	0.00	1.13	3.379	I	O				3.05
55.000	0.00	1.13	3.371	I	O				3.04
55.083	0.00	1.13	3.364	I	O				3.03
55.167	0.00	1.13	3.356	I	O				3.03
55.250	0.00	1.12	3.348	I	O				3.02
55.333	0.00	1.12	3.340	I	O				3.01
55.417	0.00	1.12	3.333	I	O				3.01
55.500	0.00	1.12	3.325	I	O				3.00
55.583	0.00	1.12	3.317	I	O				2.99
55.667	0.00	1.12	3.310	I	O				2.98
55.750	0.00	1.11	3.302	I	O				2.98
55.833	0.00	1.11	3.294	I	O				2.97
55.917	0.00	1.11	3.287	I	O				2.96
56.000	0.00	1.11	3.279	I	O				2.96
56.083	0.00	1.11	3.271	I	O				2.95
56.167	0.00	1.11	3.264	I	O				2.94
56.250	0.00	1.10	3.256	I	O				2.94
56.333	0.00	1.10	3.248	I	O				2.93
56.417	0.00	1.10	3.241	I	O				2.92
56.500	0.00	1.10	3.233	I	O				2.92
56.583	0.00	1.10	3.226	I	O				2.91
56.667	0.00	1.09	3.218	I	O				2.90
56.750	0.00	1.09	3.211	I	O				2.90
56.833	0.00	1.09	3.203	I	O				2.89
56.917	0.00	1.09	3.196	I	O				2.88
57.000	0.00	1.09	3.188	I	O				2.87
57.083	0.00	1.09	3.181	I	O				2.87
57.167	0.00	1.08	3.173	I	O				2.86
57.250	0.00	1.08	3.166	I	O				2.85
57.333	0.00	1.08	3.158	I	O				2.85
57.417	0.00	1.08	3.151	I	O				2.84
57.500	0.00	1.08	3.143	I	O				2.83
57.583	0.00	1.08	3.136	I	O				2.83
57.667	0.00	1.07	3.129	I	O				2.82
57.750	0.00	1.07	3.121	I	O				2.81
57.833	0.00	1.07	3.114	I	O				2.81
57.917	0.00	1.07	3.106	I	O				2.80
58.000	0.00	1.07	3.099	I	O				2.79
58.083	0.00	1.06	3.092	I	O				2.79
58.167	0.00	1.06	3.084	I	O				2.78
58.250	0.00	1.06	3.077	I	O				2.77
58.333	0.00	1.06	3.070	I	O				2.77
58.417	0.00	1.06	3.063	I	O				2.76
58.500	0.00	1.06	3.055	I	O				2.75
58.583	0.00	1.05	3.048	I	O				2.75
58.667	0.00	1.05	3.041	I	O				2.74
58.750	0.00	1.05	3.033	I	O				2.74
58.833	0.00	1.05	3.026	I	O				2.73

58.917	0.00	1.05	3.019	I O				2.72
59.000	0.00	1.05	3.012	I O				2.72
59.083	0.00	1.04	3.005	I O				2.71
59.167	0.00	1.04	2.997	I O				2.70
59.250	0.00	1.04	2.990	I O				2.70
59.333	0.00	1.04	2.983	I O				2.69
59.417	0.00	1.04	2.976	I O				2.68
59.500	0.00	1.04	2.969	I O				2.68
59.583	0.00	1.03	2.962	I O				2.67
59.667	0.00	1.03	2.955	I O				2.66
59.750	0.00	1.03	2.947	I O				2.66
59.833	0.00	1.03	2.940	I O				2.65
59.917	0.00	1.03	2.933	I O				2.64
60.000	0.00	1.03	2.926	I O				2.64
60.083	0.00	1.02	2.919	I O				2.63
60.167	0.00	1.02	2.912	I O				2.63
60.250	0.00	1.02	2.905	I O				2.62
60.333	0.00	1.02	2.898	I O				2.61
60.417	0.00	1.02	2.891	I O				2.61
60.500	0.00	1.02	2.884	I O				2.60
60.583	0.00	1.01	2.877	I O				2.59
60.667	0.00	1.01	2.870	I O				2.59
60.750	0.00	1.01	2.863	I O				2.58
60.833	0.00	1.01	2.856	I O				2.58
60.917	0.00	1.01	2.849	I O				2.57
61.000	0.00	1.01	2.842	I O				2.56
61.083	0.00	1.00	2.835	I O				2.56
61.167	0.00	1.00	2.828	I O				2.55
61.250	0.00	1.00	2.821	I O				2.54
61.333	0.00	1.00	2.815	I O				2.54
61.417	0.00	1.00	2.808	I O				2.53
61.500	0.00	1.00	2.801	I O				2.53
61.583	0.00	1.00	2.794	I O				2.52
61.667	0.00	0.99	2.787	I O				2.51
61.750	0.00	0.99	2.780	I O				2.51
61.833	0.00	0.99	2.773	I O				2.50
61.917	0.00	0.99	2.767	I O				2.49
62.000	0.00	0.99	2.760	I O				2.49
62.083	0.00	0.99	2.753	I O				2.48
62.167	0.00	0.98	2.746	I O				2.48
62.250	0.00	0.98	2.740	I O				2.47
62.333	0.00	0.98	2.733	I O				2.46
62.417	0.00	0.98	2.726	I O				2.46
62.500	0.00	0.98	2.719	I O				2.45
62.583	0.00	0.98	2.713	I O				2.45
62.667	0.00	0.97	2.706	I O				2.44
62.750	0.00	0.97	2.699	I O				2.43
62.833	0.00	0.97	2.692	I O				2.43
62.917	0.00	0.97	2.686	I O				2.42
63.000	0.00	0.97	2.679	I O				2.42
63.083	0.00	0.97	2.672	I O				2.41
63.167	0.00	0.96	2.666	I O				2.40
63.250	0.00	0.96	2.659	I O				2.40
63.333	0.00	0.96	2.652	I O				2.39
63.417	0.00	0.96	2.646	I O				2.39
63.500	0.00	0.96	2.639	I O				2.38
63.583	0.00	0.96	2.633	I O				2.37
63.667	0.00	0.96	2.626	I O				2.37
63.750	0.00	0.95	2.619	I O				2.36
63.833	0.00	0.95	2.613	IO				2.36
63.917	0.00	0.95	2.606	IO				2.35
64.000	0.00	0.95	2.600	IO				2.34
64.083	0.00	0.95	2.593	IO				2.34
64.167	0.00	0.95	2.587	IO				2.33
64.250	0.00	0.94	2.580	IO				2.33
64.333	0.00	0.94	2.574	IO				2.32
64.417	0.00	0.94	2.567	IO				2.31
64.500	0.00	0.94	2.561	IO				2.31
64.583	0.00	0.94	2.554	IO				2.30
64.667	0.00	0.94	2.548	IO				2.30
64.750	0.00	0.94	2.541	IO				2.29

64.833	0.00	0.93	2.535	IO				2.29
64.917	0.00	0.93	2.529	IO				2.28
65.000	0.00	0.93	2.522	IO				2.27
65.083	0.00	0.93	2.516	IO				2.27
65.167	0.00	0.93	2.509	IO				2.26
65.250	0.00	0.93	2.503	IO				2.26
65.333	0.00	0.93	2.497	IO				2.25
65.417	0.00	0.92	2.490	IO				2.25
65.500	0.00	0.92	2.484	IO				2.24
65.583	0.00	0.92	2.477	IO				2.23
65.667	0.00	0.92	2.471	IO				2.23
65.750	0.00	0.92	2.465	IO				2.22
65.833	0.00	0.92	2.458	IO				2.22
65.917	0.00	0.91	2.452	IO				2.21
66.000	0.00	0.91	2.446	IO				2.21
66.083	0.00	0.91	2.440	IO				2.20
66.167	0.00	0.91	2.433	IO				2.19
66.250	0.00	0.91	2.427	IO				2.19
66.333	0.00	0.91	2.421	IO				2.18
66.417	0.00	0.91	2.415	IO				2.18
66.500	0.00	0.90	2.408	IO				2.17
66.583	0.00	0.90	2.402	IO				2.17
66.667	0.00	0.90	2.396	IO				2.16
66.750	0.00	0.90	2.390	IO				2.15
66.833	0.00	0.90	2.383	IO				2.15
66.917	0.00	0.90	2.377	IO				2.14
67.000	0.00	0.90	2.371	IO				2.14
67.083	0.00	0.89	2.365	IO				2.13
67.167	0.00	0.89	2.359	IO				2.13
67.250	0.00	0.89	2.353	IO				2.12
67.333	0.00	0.89	2.347	IO				2.12
67.417	0.00	0.89	2.340	IO				2.11
67.500	0.00	0.89	2.334	IO				2.10
67.583	0.00	0.89	2.328	IO				2.10
67.667	0.00	0.88	2.322	IO				2.09
67.750	0.00	0.88	2.316	IO				2.09
67.833	0.00	0.88	2.310	IO				2.08
67.917	0.00	0.88	2.304	IO				2.08
68.000	0.00	0.88	2.298	IO				2.07
68.083	0.00	0.88	2.292	IO				2.07
68.167	0.00	0.88	2.286	IO				2.06
68.250	0.00	0.87	2.280	IO				2.06
68.333	0.00	0.87	2.274	IO				2.05
68.417	0.00	0.87	2.268	IO				2.04
68.500	0.00	0.87	2.262	IO				2.04
68.583	0.00	0.87	2.256	IO				2.03
68.667	0.00	0.87	2.250	IO				2.03
68.750	0.00	0.87	2.244	IO				2.02
68.833	0.00	0.86	2.238	IO				2.02
68.917	0.00	0.86	2.232	IO				2.01
69.000	0.00	0.86	2.226	IO				2.01
69.083	0.00	0.86	2.220	IO				2.00
69.167	0.00	0.86	2.214	IO				2.00
69.250	0.00	0.86	2.208	IO				1.99
69.333	0.00	0.86	2.202	IO				1.99
69.417	0.00	0.85	2.196	IO				1.99
69.500	0.00	0.85	2.190	IO				1.98
69.583	0.00	0.85	2.185	IO				1.98
69.667	0.00	0.85	2.179	IO				1.97
69.750	0.00	0.85	2.173	IO				1.97
69.833	0.00	0.85	2.167	IO				1.97
69.917	0.00	0.85	2.161	IO				1.96
70.000	0.00	0.84	2.155	IO				1.96
70.083	0.00	0.84	2.150	IO				1.95
70.167	0.00	0.84	2.144	IO				1.95
70.250	0.00	0.84	2.138	IO				1.95
70.333	0.00	0.84	2.132	IO				1.94
70.417	0.00	0.84	2.126	IO				1.94
70.500	0.00	0.84	2.121	IO				1.93
70.583	0.00	0.83	2.115	IO				1.93
70.667	0.00	0.83	2.109	IO				1.93

70.750	0.00	0.83	2.103	IO				1.92
70.833	0.00	0.83	2.098	IO				1.92
70.917	0.00	0.83	2.092	IO				1.91
71.000	0.00	0.83	2.086	IO				1.91
71.083	0.00	0.83	2.081	IO				1.91
71.167	0.00	0.83	2.075	IO				1.90
71.250	0.00	0.82	2.069	IO				1.90
71.333	0.00	0.82	2.064	IO				1.90
71.417	0.00	0.82	2.058	IO				1.89
71.500	0.00	0.82	2.052	IO				1.89
71.583	0.00	0.82	2.047	IO				1.88
71.667	0.00	0.82	2.041	IO				1.88
71.750	0.00	0.82	2.035	IO				1.88
71.833	0.00	0.81	2.030	IO				1.87
71.917	0.00	0.81	2.024	IO				1.87
72.000	0.00	0.81	2.018	IO				1.87
72.083	0.00	0.81	2.013	IO				1.86
72.167	0.00	0.81	2.007	IO				1.86
72.250	0.00	0.81	2.002	IO				1.85
72.333	0.00	0.81	1.996	IO				1.85
72.417	0.00	0.80	1.991	IO				1.85
72.500	0.00	0.80	1.985	IO				1.84
72.583	0.00	0.80	1.980	IO				1.84
72.667	0.00	0.80	1.974	IO				1.84
72.750	0.00	0.80	1.969	IO				1.83
72.833	0.00	0.80	1.963	IO				1.83
72.917	0.00	0.80	1.958	IO				1.82
73.000	0.00	0.80	1.952	IO				1.82
73.083	0.00	0.79	1.947	IO				1.82
73.167	0.00	0.79	1.941	IO				1.81
73.250	0.00	0.79	1.936	IO				1.81
73.333	0.00	0.79	1.930	IO				1.81
73.417	0.00	0.79	1.925	IO				1.80
73.500	0.00	0.79	1.919	IO				1.80
73.583	0.00	0.79	1.914	IO				1.79
73.667	0.00	0.78	1.909	IO				1.79
73.750	0.00	0.78	1.903	IO				1.79
73.833	0.00	0.78	1.898	IO				1.78
73.917	0.00	0.78	1.892	IO				1.78
74.000	0.00	0.78	1.887	IO				1.78
74.083	0.00	0.78	1.882	IO				1.77
74.167	0.00	0.78	1.876	IO				1.77
74.250	0.00	0.78	1.871	IO				1.77
74.333	0.00	0.77	1.866	IO				1.76
74.417	0.00	0.77	1.860	IO				1.76
74.500	0.00	0.77	1.855	IO				1.75
74.583	0.00	0.77	1.850	IO				1.75
74.667	0.00	0.77	1.844	IO				1.75
74.750	0.00	0.77	1.839	IO				1.74
74.833	0.00	0.77	1.834	IO				1.74
74.917	0.00	0.77	1.829	IO				1.74
75.000	0.00	0.76	1.823	IO				1.73
75.083	0.00	0.76	1.818	IO				1.73
75.167	0.00	0.76	1.813	IO				1.73
75.250	0.00	0.76	1.808	IO				1.72
75.333	0.00	0.76	1.802	IO				1.72
75.417	0.00	0.76	1.797	IO				1.72
75.500	0.00	0.76	1.792	IO				1.71
75.583	0.00	0.76	1.787	IO				1.71
75.667	0.00	0.75	1.781	IO				1.70
75.750	0.00	0.75	1.776	IO				1.70
75.833	0.00	0.75	1.771	IO				1.70
75.917	0.00	0.75	1.766	IO				1.69
76.000	0.00	0.75	1.761	IO				1.69
76.083	0.00	0.75	1.756	IO				1.69
76.167	0.00	0.75	1.750	IO				1.68
76.250	0.00	0.74	1.745	IO				1.68
76.333	0.00	0.74	1.740	IO				1.68
76.417	0.00	0.74	1.735	IO				1.67
76.500	0.00	0.74	1.730	IO				1.67
76.583	0.00	0.74	1.725	IO				1.67

76.667	0.00	0.74	1.720	IO				1.66
76.750	0.00	0.74	1.715	IO				1.66
76.833	0.00	0.74	1.710	IO				1.66
76.917	0.00	0.74	1.705	IO				1.65
77.000	0.00	0.73	1.700	IO				1.65
77.083	0.00	0.73	1.694	IO				1.65
77.167	0.00	0.73	1.689	IO				1.64
77.250	0.00	0.73	1.684	IO				1.64
77.333	0.00	0.73	1.679	IO				1.64
77.417	0.00	0.73	1.674	IO				1.63
77.500	0.00	0.73	1.669	IO				1.63
77.583	0.00	0.73	1.664	IO				1.63
77.667	0.00	0.72	1.659	IO				1.62
77.750	0.00	0.72	1.654	IO				1.62
77.833	0.00	0.72	1.649	IO				1.62
77.917	0.00	0.72	1.644	IO				1.61
78.000	0.00	0.72	1.639	IO				1.61
78.083	0.00	0.72	1.635	IO				1.61
78.167	0.00	0.72	1.630	IO				1.60
78.250	0.00	0.72	1.625	IO				1.60
78.333	0.00	0.71	1.620	IO				1.60
78.417	0.00	0.71	1.615	IO				1.59
78.500	0.00	0.71	1.610	IO				1.59
78.583	0.00	0.71	1.605	IO				1.59
78.667	0.00	0.71	1.600	IO				1.58
78.750	0.00	0.71	1.595	IO				1.58
78.833	0.00	0.71	1.590	IO				1.58
78.917	0.00	0.71	1.585	IO				1.57
79.000	0.00	0.70	1.581	IO				1.57
79.083	0.00	0.70	1.576	IO				1.57
79.167	0.00	0.70	1.571	IO				1.56
79.250	0.00	0.70	1.566	IO				1.56
79.333	0.00	0.70	1.561	IO				1.56
79.417	0.00	0.70	1.556	IO				1.55
79.500	0.00	0.70	1.552	IO				1.55
79.583	0.00	0.70	1.547	IO				1.55
79.667	0.00	0.70	1.542	IO				1.54
79.750	0.00	0.69	1.537	IO				1.54
79.833	0.00	0.69	1.532	IO				1.54
79.917	0.00	0.69	1.528	IO				1.53
80.000	0.00	0.69	1.523	IO				1.53
80.083	0.00	0.69	1.518	IO				1.53
80.167	0.00	0.69	1.513	IO				1.52
80.250	0.00	0.69	1.509	IO				1.52
80.333	0.00	0.69	1.504	IO				1.52
80.417	0.00	0.69	1.499	IO				1.51
80.500	0.00	0.68	1.495	IO				1.51
80.583	0.00	0.68	1.490	IO				1.51
80.667	0.00	0.68	1.485	IO				1.50
80.750	0.00	0.68	1.480	IO				1.50
80.833	0.00	0.68	1.476	IO				1.50
80.917	0.00	0.68	1.471	IO				1.49
81.000	0.00	0.68	1.466	IO				1.49
81.083	0.00	0.68	1.462	IO				1.49
81.167	0.00	0.67	1.457	IO				1.49
81.250	0.00	0.67	1.452	IO				1.48
81.333	0.00	0.67	1.448	IO				1.48
81.417	0.00	0.67	1.443	IO				1.48
81.500	0.00	0.67	1.439	IO				1.47
81.583	0.00	0.67	1.434	IO				1.47
81.667	0.00	0.67	1.429	IO				1.47
81.750	0.00	0.67	1.425	IO				1.46
81.833	0.00	0.67	1.420	IO				1.46
81.917	0.00	0.66	1.416	IO				1.46
82.000	0.00	0.66	1.411	IO				1.45
82.083	0.00	0.66	1.406	IO				1.45
82.167	0.00	0.66	1.402	IO				1.45
82.250	0.00	0.66	1.397	IO				1.45
82.333	0.00	0.66	1.393	IO				1.44
82.417	0.00	0.66	1.388	IO				1.44
82.500	0.00	0.66	1.384	IO				1.44

82.583	0.00	0.66	1.379	IO				1.43
82.667	0.00	0.65	1.375	IO				1.43
82.750	0.00	0.65	1.370	IO				1.43
82.833	0.00	0.65	1.366	IO				1.42
82.917	0.00	0.65	1.361	IO				1.42
83.000	0.00	0.65	1.357	IO				1.42
83.083	0.00	0.65	1.352	IO				1.41
83.167	0.00	0.65	1.348	IO				1.41
83.250	0.00	0.65	1.343	IO				1.41
83.333	0.00	0.65	1.339	IO				1.41
83.417	0.00	0.64	1.334	IO				1.40
83.500	0.00	0.64	1.330	IO				1.40
83.583	0.00	0.64	1.326	IO				1.40
83.667	0.00	0.64	1.321	IO				1.39
83.750	0.00	0.64	1.317	IO				1.39
83.833	0.00	0.64	1.312	IO				1.39
83.917	0.00	0.64	1.308	IO				1.38
84.000	0.00	0.64	1.304	IO				1.38
84.083	0.00	0.64	1.299	IO				1.38
84.167	0.00	0.64	1.295	IO				1.38
84.250	0.00	0.63	1.290	IO				1.37
84.333	0.00	0.63	1.286	IO				1.37
84.417	0.00	0.63	1.282	IO				1.37
84.500	0.00	0.63	1.277	IO				1.36
84.583	0.00	0.63	1.273	IO				1.36
84.667	0.00	0.63	1.269	IO				1.36
84.750	0.00	0.63	1.264	IO				1.36
84.833	0.00	0.63	1.260	IO				1.35
84.917	0.00	0.63	1.256	IO				1.35
85.000	0.00	0.62	1.251	IO				1.35
85.083	0.00	0.62	1.247	IO				1.34
85.167	0.00	0.62	1.243	IO				1.34
85.250	0.00	0.62	1.238	IO				1.34
85.333	0.00	0.62	1.234	IO				1.33
85.417	0.00	0.62	1.230	IO				1.33
85.500	0.00	0.62	1.226	IO				1.33
85.583	0.00	0.62	1.221	IO				1.33
85.667	0.00	0.62	1.217	IO				1.32
85.750	0.00	0.62	1.213	IO				1.32
85.833	0.00	0.61	1.209	IO				1.32
85.917	0.00	0.61	1.204	IO				1.31
86.000	0.00	0.61	1.200	IO				1.31
86.083	0.00	0.61	1.196	IO				1.31
86.167	0.00	0.61	1.192	IO				1.31
86.250	0.00	0.61	1.188	IO				1.30
86.333	0.00	0.61	1.183	IO				1.30
86.417	0.00	0.61	1.179	IO				1.30
86.500	0.00	0.61	1.175	IO				1.29
86.583	0.00	0.61	1.171	IO				1.29
86.667	0.00	0.60	1.167	IO				1.29
86.750	0.00	0.60	1.163	IO				1.29
86.833	0.00	0.60	1.158	IO				1.28
86.917	0.00	0.60	1.154	IO				1.28
87.000	0.00	0.60	1.150	IO				1.28
87.083	0.00	0.60	1.146	IO				1.28
87.167	0.00	0.60	1.142	IO				1.27
87.250	0.00	0.60	1.138	IO				1.27
87.333	0.00	0.60	1.134	IO				1.27
87.417	0.00	0.60	1.130	IO				1.26
87.500	0.00	0.59	1.125	IO				1.26
87.583	0.00	0.59	1.121	IO				1.26
87.667	0.00	0.59	1.117	IO				1.26
87.750	0.00	0.59	1.113	IO				1.25
87.833	0.00	0.59	1.109	IO				1.25
87.917	0.00	0.59	1.105	IO				1.25
88.000	0.00	0.59	1.101	IO				1.24
88.083	0.00	0.59	1.097	IO				1.24
88.167	0.00	0.59	1.093	IO				1.24
88.250	0.00	0.59	1.089	IO				1.24
88.333	0.00	0.58	1.085	IO				1.23
88.417	0.00	0.58	1.081	IO				1.23

88.500	0.00	0.58	1.077	IO				1.23
88.583	0.00	0.58	1.073	IO				1.23
88.667	0.00	0.58	1.069	IO				1.22
88.750	0.00	0.58	1.065	IO				1.22
88.833	0.00	0.58	1.061	IO				1.22
88.917	0.00	0.58	1.057	IO				1.21
89.000	0.00	0.58	1.053	IO				1.21
89.083	0.00	0.58	1.049	IO				1.21
89.167	0.00	0.57	1.045	IO				1.21
89.250	0.00	0.57	1.041	IO				1.20
89.333	0.00	0.57	1.037	IO				1.20
89.417	0.00	0.57	1.033	IO				1.20
89.500	0.00	0.57	1.029	IO				1.20
89.583	0.00	0.57	1.025	IO				1.19
89.667	0.00	0.57	1.021	IO				1.19
89.750	0.00	0.57	1.017	IO				1.19
89.833	0.00	0.57	1.014	IO				1.19
89.917	0.00	0.57	1.010	IO				1.18
90.000	0.00	0.56	1.006	IO				1.18
90.083	0.00	0.56	1.002	IO				1.18
90.167	0.00	0.56	0.998	IO				1.18
90.250	0.00	0.56	0.994	IO				1.17
90.333	0.00	0.56	0.990	IO				1.17
90.417	0.00	0.56	0.986	IO				1.17
90.500	0.00	0.56	0.983	IO				1.16
90.583	0.00	0.56	0.979	IO				1.16
90.667	0.00	0.56	0.975	IO				1.16
90.750	0.00	0.56	0.971	IO				1.16
90.833	0.00	0.56	0.967	IO				1.15
90.917	0.00	0.55	0.963	IO				1.15
91.000	0.00	0.55	0.960	IO				1.15
91.083	0.00	0.55	0.956	IO				1.15
91.167	0.00	0.55	0.952	IO				1.14
91.250	0.00	0.55	0.948	IO				1.14
91.333	0.00	0.55	0.944	IO				1.14
91.417	0.00	0.55	0.941	IO				1.14
91.500	0.00	0.55	0.937	IO				1.13
91.583	0.00	0.55	0.933	IO				1.13
91.667	0.00	0.55	0.929	IO				1.13
91.750	0.00	0.55	0.926	IO				1.13
91.833	0.00	0.54	0.922	IO				1.12
91.917	0.00	0.54	0.918	IO				1.12
92.000	0.00	0.54	0.914	IO				1.12
92.083	0.00	0.54	0.911	IO				1.12
92.167	0.00	0.54	0.907	IO				1.11
92.250	0.00	0.54	0.903	IO				1.11
92.333	0.00	0.54	0.899	IO				1.11
92.417	0.00	0.54	0.896	IO				1.11
92.500	0.00	0.54	0.892	IO				1.10
92.583	0.00	0.54	0.888	IO				1.10
92.667	0.00	0.54	0.885	IO				1.10
92.750	0.00	0.53	0.881	IO				1.10
92.833	0.00	0.53	0.877	IO				1.09
92.917	0.00	0.53	0.874	IO				1.09
93.000	0.00	0.53	0.870	IO				1.09
93.083	0.00	0.53	0.866	IO				1.09
93.167	0.00	0.53	0.863	IO				1.08
93.250	0.00	0.53	0.859	IO				1.08
93.333	0.00	0.53	0.855	IO				1.08
93.417	0.00	0.53	0.852	IO				1.08
93.500	0.00	0.53	0.848	IO				1.07
93.583	0.00	0.53	0.844	IO				1.07
93.667	0.00	0.52	0.841	IO				1.07
93.750	0.00	0.52	0.837	IO				1.07
93.833	0.00	0.52	0.834	IO				1.06
93.917	0.00	0.52	0.830	IO				1.06
94.000	0.00	0.52	0.826	IO				1.06
94.083	0.00	0.52	0.823	IO				1.06
94.167	0.00	0.52	0.819	IO				1.05
94.250	0.00	0.52	0.816	IO				1.05
94.333	0.00	0.52	0.812	IO				1.05

94.417	0.00	0.52	0.808	IO				1.05
94.500	0.00	0.52	0.805	IO				1.04
94.583	0.00	0.52	0.801	IO				1.04
94.667	0.00	0.51	0.798	IO				1.04
94.750	0.00	0.51	0.794	IO				1.04
94.833	0.00	0.51	0.791	IO				1.03
94.917	0.00	0.51	0.787	IO				1.03
95.000	0.00	0.51	0.784	IO				1.03
95.083	0.00	0.51	0.780	IO				1.03
95.167	0.00	0.51	0.777	IO				1.03
95.250	0.00	0.51	0.773	IO				1.02
95.333	0.00	0.51	0.770	IO				1.02
95.417	0.00	0.51	0.766	IO				1.02
95.500	0.00	0.51	0.763	IO				1.02
95.583	0.00	0.50	0.759	IO				1.01
95.667	0.00	0.50	0.756	IO				1.01
95.750	0.00	0.50	0.752	IO				1.01
95.833	0.00	0.50	0.749	IO				1.01
95.917	0.00	0.50	0.745	IO				1.00
96.000	0.00	0.50	0.742	IO				1.00
96.083	0.00	0.50	0.738	IO				1.00
96.167	0.00	0.50	0.735	IO				0.99
96.250	0.00	0.49	0.732	IO				0.99
96.333	0.00	0.49	0.728	IO				0.99
96.417	0.00	0.49	0.725	IO				0.98
96.500	0.00	0.49	0.721	IO				0.98
96.583	0.00	0.49	0.718	IO				0.97
96.667	0.00	0.48	0.715	IO				0.97
96.750	0.00	0.48	0.711	IO				0.96
96.833	0.00	0.48	0.708	IO				0.96
96.917	0.00	0.48	0.705	IO				0.95
97.000	0.00	0.47	0.702	O				0.95
97.083	0.00	0.47	0.698	O				0.94
97.167	0.00	0.47	0.695	O				0.94
97.250	0.00	0.47	0.692	O				0.94
97.333	0.00	0.47	0.689	O				0.93
97.417	0.00	0.46	0.685	O				0.93
97.500	0.00	0.46	0.682	O				0.92
97.583	0.00	0.46	0.679	O				0.92
97.667	0.00	0.46	0.676	O				0.91
97.750	0.00	0.46	0.673	O				0.91
97.833	0.00	0.45	0.670	O				0.91
97.917	0.00	0.45	0.667	O				0.90
98.000	0.00	0.45	0.663	O				0.90
98.083	0.00	0.45	0.660	O				0.89
98.167	0.00	0.44	0.657	O				0.89
98.250	0.00	0.44	0.654	O				0.89
98.333	0.00	0.44	0.651	O				0.88
98.417	0.00	0.44	0.648	O				0.88
98.500	0.00	0.44	0.645	O				0.87
98.583	0.00	0.43	0.642	O				0.87
98.667	0.00	0.43	0.639	O				0.86
98.750	0.00	0.43	0.636	O				0.86
98.833	0.00	0.43	0.633	O				0.86
98.917	0.00	0.43	0.630	O				0.85
99.000	0.00	0.42	0.627	O				0.85
99.083	0.00	0.42	0.624	O				0.84
99.167	0.00	0.42	0.622	O				0.84
99.250	0.00	0.42	0.619	O				0.84
99.333	0.00	0.42	0.616	O				0.83
99.417	0.00	0.41	0.613	O				0.83
99.500	0.00	0.41	0.610	O				0.83
99.583	0.00	0.41	0.607	O				0.82
99.667	0.00	0.41	0.604	O				0.82
99.750	0.00	0.41	0.602	O				0.81
99.833	0.00	0.41	0.599	O				0.81
99.917	0.00	0.40	0.596	O				0.81
100.000	0.00	0.40	0.593	O				0.80
100.083	0.00	0.40	0.590	O				0.80
100.167	0.00	0.40	0.588	O				0.80
100.250	0.00	0.40	0.585	O				0.79

100.333	0.00	0.39	0.582	O					0.79
100.417	0.00	0.39	0.580	O					0.78
100.500	0.00	0.39	0.577	O					0.78
100.583	0.00	0.39	0.574	O					0.78
100.667	0.00	0.39	0.572	O					0.77
100.750	0.00	0.38	0.569	O					0.77
100.833	0.00	0.38	0.566	O					0.77
100.917	0.00	0.38	0.564	O					0.76
101.000	0.00	0.38	0.561	O					0.76
101.083	0.00	0.38	0.558	O					0.76
101.167	0.00	0.38	0.556	O					0.75
101.250	0.00	0.37	0.553	O					0.75
101.333	0.00	0.37	0.551	O					0.75
101.417	0.00	0.37	0.548	O					0.74
101.500	0.00	0.37	0.545	O					0.74
101.583	0.00	0.37	0.543	O					0.73
101.667	0.00	0.37	0.540	O					0.73
101.750	0.00	0.36	0.538	O					0.73
101.833	0.00	0.36	0.535	O					0.72
101.917	0.00	0.36	0.533	O					0.72
102.000	0.00	0.36	0.530	O					0.72
102.083	0.00	0.36	0.528	O					0.71
102.167	0.00	0.36	0.526	O					0.71
102.250	0.00	0.35	0.523	O					0.71
102.333	0.00	0.35	0.521	O					0.70
102.417	0.00	0.35	0.518	O					0.70
102.500	0.00	0.35	0.516	O					0.70
102.583	0.00	0.35	0.513	O					0.69
102.667	0.00	0.35	0.511	O					0.69
102.750	0.00	0.34	0.509	O					0.69
102.833	0.00	0.34	0.506	O					0.69
102.917	0.00	0.34	0.504	O					0.68
103.000	0.00	0.34	0.502	O					0.68
103.083	0.00	0.34	0.499	O					0.68
103.167	0.00	0.34	0.497	O					0.67
103.250	0.00	0.33	0.495	O					0.67
103.333	0.00	0.33	0.492	O					0.67
103.417	0.00	0.33	0.490	O					0.66
103.500	0.00	0.33	0.488	O					0.66
103.583	0.00	0.33	0.486	O					0.66
103.667	0.00	0.33	0.483	O					0.65
103.750	0.00	0.33	0.481	O					0.65
103.833	0.00	0.32	0.479	O					0.65
103.917	0.00	0.32	0.477	O					0.64
104.000	0.00	0.32	0.474	O					0.64
104.083	0.00	0.32	0.472	O					0.64
104.167	0.00	0.32	0.470	O					0.64
104.250	0.00	0.32	0.468	O					0.63
104.333	0.00	0.31	0.466	O					0.63
104.417	0.00	0.31	0.463	O					0.63
104.500	0.00	0.31	0.461	O					0.62
104.583	0.00	0.31	0.459	O					0.62
104.667	0.00	0.31	0.457	O					0.62
104.750	0.00	0.31	0.455	O					0.62
104.833	0.00	0.31	0.453	O					0.61
104.917	0.00	0.30	0.451	O					0.61
105.000	0.00	0.30	0.449	O					0.61
105.083	0.00	0.30	0.446	O					0.60
105.167	0.00	0.30	0.444	O					0.60
105.250	0.00	0.30	0.442	O					0.60
105.333	0.00	0.30	0.440	O					0.60
105.417	0.00	0.30	0.438	O					0.59
105.500	0.00	0.30	0.436	O					0.59
105.583	0.00	0.29	0.434	O					0.59
105.667	0.00	0.29	0.432	O					0.58
105.750	0.00	0.29	0.430	O					0.58
105.833	0.00	0.29	0.428	O					0.58
105.917	0.00	0.29	0.426	O					0.58
106.000	0.00	0.29	0.424	O					0.57
106.083	0.00	0.29	0.422	O					0.57
106.167	0.00	0.28	0.420	O					0.57

106.250	0.00	0.28	0.418	O					0.57
106.333	0.00	0.28	0.416	O					0.56
106.417	0.00	0.28	0.414	O					0.56
106.500	0.00	0.28	0.412	O					0.56
106.583	0.00	0.28	0.411	O					0.56
106.667	0.00	0.28	0.409	O					0.55
106.750	0.00	0.28	0.407	O					0.55
106.833	0.00	0.27	0.405	O					0.55
106.917	0.00	0.27	0.403	O					0.55
107.000	0.00	0.27	0.401	O					0.54
107.083	0.00	0.27	0.399	O					0.54
107.167	0.00	0.27	0.397	O					0.54
107.250	0.00	0.27	0.396	O					0.54
107.333	0.00	0.27	0.394	O					0.53
107.417	0.00	0.27	0.392	O					0.53
107.500	0.00	0.26	0.390	O					0.53
107.583	0.00	0.26	0.388	O					0.53
107.667	0.00	0.26	0.386	O					0.52
107.750	0.00	0.26	0.385	O					0.52
107.833	0.00	0.26	0.383	O					0.52
107.917	0.00	0.26	0.381	O					0.52
108.000	0.00	0.26	0.379	O					0.51
108.083	0.00	0.26	0.377	O					0.51
108.167	0.00	0.25	0.376	O					0.51
108.250	0.00	0.25	0.374	O					0.51
108.333	0.00	0.25	0.372	O					0.50
108.417	0.00	0.25	0.371	O					0.50
108.500	0.00	0.25	0.369	O					0.50
108.583	0.00	0.25	0.367	O					0.50
108.667	0.00	0.25	0.365	O					0.49
108.750	0.00	0.25	0.364	O					0.49
108.833	0.00	0.24	0.362	O					0.49
108.917	0.00	0.24	0.360	O					0.49
109.000	0.00	0.24	0.359	O					0.49
109.083	0.00	0.24	0.357	O					0.48
109.167	0.00	0.24	0.355	O					0.48
109.250	0.00	0.24	0.354	O					0.48
109.333	0.00	0.24	0.352	O					0.48
109.417	0.00	0.24	0.350	O					0.47
109.500	0.00	0.24	0.349	O					0.47
109.583	0.00	0.23	0.347	O					0.47
109.667	0.00	0.23	0.346	O					0.47
109.750	0.00	0.23	0.344	O					0.47
109.833	0.00	0.23	0.342	O					0.46
109.917	0.00	0.23	0.341	O					0.46
110.000	0.00	0.23	0.339	O					0.46
110.083	0.00	0.23	0.338	O					0.46
110.167	0.00	0.23	0.336	O					0.45
110.250	0.00	0.23	0.334	O					0.45
110.333	0.00	0.23	0.333	O					0.45
110.417	0.00	0.22	0.331	O					0.45
110.500	0.00	0.22	0.330	O					0.45
110.583	0.00	0.22	0.328	O					0.44
110.667	0.00	0.22	0.327	O					0.44
110.750	0.00	0.22	0.325	O					0.44
110.833	0.00	0.22	0.324	O					0.44
110.917	0.00	0.22	0.322	O					0.44
111.000	0.00	0.22	0.321	O					0.43
111.083	0.00	0.22	0.319	O					0.43
111.167	0.00	0.21	0.318	O					0.43
111.250	0.00	0.21	0.316	O					0.43
111.333	0.00	0.21	0.315	O					0.43
111.417	0.00	0.21	0.313	O					0.42
111.500	0.00	0.21	0.312	O					0.42
111.583	0.00	0.21	0.310	O					0.42
111.667	0.00	0.21	0.309	O					0.42
111.750	0.00	0.21	0.308	O					0.42
111.833	0.00	0.21	0.306	O					0.41
111.917	0.00	0.21	0.305	O					0.41
112.000	0.00	0.21	0.303	O					0.41
112.083	0.00	0.20	0.302	O					0.41

112.167	0.00	0.20	0.300	O	|	|	|	|	0.41
112.250	0.00	0.20	0.299	O	|	|	|	|	0.40
112.333	0.00	0.20	0.298	O	|	|	|	|	0.40
112.417	0.00	0.20	0.296	O	|	|	|	|	0.40
112.500	0.00	0.20	0.295	O	|	|	|	|	0.40
112.583	0.00	0.20	0.294	O	|	|	|	|	0.40
112.667	0.00	0.20	0.292	O	|	|	|	|	0.40
112.750	0.00	0.20	0.291	O	|	|	|	|	0.39
112.833	0.00	0.20	0.289	O	|	|	|	|	0.39
112.917	0.00	0.19	0.288	O	|	|	|	|	0.39
113.000	0.00	0.19	0.287	O	|	|	|	|	0.39
113.083	0.00	0.19	0.285	O	|	|	|	|	0.39
113.167	0.00	0.19	0.284	O	|	|	|	|	0.38
113.250	0.00	0.19	0.283	O	|	|	|	|	0.38
113.333	0.00	0.19	0.281	O	|	|	|	|	0.38
113.417	0.00	0.19	0.280	O	|	|	|	|	0.38
113.500	0.00	0.19	0.279	O	|	|	|	|	0.38
113.583	0.00	0.19	0.278	O	|	|	|	|	0.38
113.667	0.00	0.19	0.276	O	|	|	|	|	0.37
113.750	0.00	0.19	0.275	O	|	|	|	|	0.37
113.833	0.00	0.19	0.274	O	|	|	|	|	0.37
113.917	0.00	0.18	0.272	O	|	|	|	|	0.37
114.000	0.00	0.18	0.271	O	|	|	|	|	0.37
114.083	0.00	0.18	0.270	O	|	|	|	|	0.37
114.167	0.00	0.18	0.269	O	|	|	|	|	0.36
114.250	0.00	0.18	0.267	O	|	|	|	|	0.36
114.333	0.00	0.18	0.266	O	|	|	|	|	0.36
114.417	0.00	0.18	0.265	O	|	|	|	|	0.36
114.500	0.00	0.18	0.264	O	|	|	|	|	0.36
114.583	0.00	0.18	0.262	O	|	|	|	|	0.36
114.667	0.00	0.18	0.261	O	|	|	|	|	0.35
114.750	0.00	0.18	0.260	O	|	|	|	|	0.35
114.833	0.00	0.18	0.259	O	|	|	|	|	0.35
114.917	0.00	0.17	0.258	O	|	|	|	|	0.35
115.000	0.00	0.17	0.256	O	|	|	|	|	0.35
115.083	0.00	0.17	0.255	O	|	|	|	|	0.35
115.167	0.00	0.17	0.254	O	|	|	|	|	0.34
115.250	0.00	0.17	0.253	O	|	|	|	|	0.34
115.333	0.00	0.17	0.252	O	|	|	|	|	0.34
115.417	0.00	0.17	0.251	O	|	|	|	|	0.34
115.500	0.00	0.17	0.249	O	|	|	|	|	0.34
115.583	0.00	0.17	0.248	O	|	|	|	|	0.34
115.667	0.00	0.17	0.247	O	|	|	|	|	0.33
115.750	0.00	0.17	0.246	O	|	|	|	|	0.33
115.833	0.00	0.17	0.245	O	|	|	|	|	0.33
115.917	0.00	0.16	0.244	O	|	|	|	|	0.33
116.000	0.00	0.16	0.242	O	|	|	|	|	0.33
116.083	0.00	0.16	0.241	O	|	|	|	|	0.33
116.167	0.00	0.16	0.240	O	|	|	|	|	0.33
116.250	0.00	0.16	0.239	O	|	|	|	|	0.32
116.333	0.00	0.16	0.238	O	|	|	|	|	0.32
116.417	0.00	0.16	0.237	O	|	|	|	|	0.32
116.500	0.00	0.16	0.236	O	|	|	|	|	0.32
116.583	0.00	0.16	0.235	O	|	|	|	|	0.32
116.667	0.00	0.16	0.234	O	|	|	|	|	0.32
116.750	0.00	0.16	0.233	O	|	|	|	|	0.31
116.833	0.00	0.16	0.231	O	|	|	|	|	0.31
116.917	0.00	0.16	0.230	O	|	|	|	|	0.31
117.000	0.00	0.16	0.229	O	|	|	|	|	0.31
117.083	0.00	0.15	0.228	O	|	|	|	|	0.31
117.167	0.00	0.15	0.227	O	|	|	|	|	0.31
117.250	0.00	0.15	0.226	O	|	|	|	|	0.31
117.333	0.00	0.15	0.225	O	|	|	|	|	0.30
117.417	0.00	0.15	0.224	O	|	|	|	|	0.30
117.500	0.00	0.15	0.223	O	|	|	|	|	0.30
117.583	0.00	0.15	0.222	O	|	|	|	|	0.30
117.667	0.00	0.15	0.221	O	|	|	|	|	0.30
117.750	0.00	0.15	0.220	O	|	|	|	|	0.30
117.833	0.00	0.15	0.219	O	|	|	|	|	0.30
117.917	0.00	0.15	0.218	O	|	|	|	|	0.29
118.000	0.00	0.15	0.217	O	|	|	|	|	0.29

118.083	0.00	0.15	0.216	O				0.29
118.167	0.00	0.15	0.215	O				0.29
118.250	0.00	0.14	0.214	O				0.29
118.333	0.00	0.14	0.213	O				0.29
118.417	0.00	0.14	0.212	O				0.29
118.500	0.00	0.14	0.211	O				0.29
118.583	0.00	0.14	0.210	O				0.28
118.667	0.00	0.14	0.209	O				0.28
118.750	0.00	0.14	0.208	O				0.28
118.833	0.00	0.14	0.207	O				0.28
118.917	0.00	0.14	0.206	O				0.28
119.000	0.00	0.14	0.205	O				0.28
119.083	0.00	0.14	0.204	O				0.28
119.167	0.00	0.14	0.203	O				0.27
119.250	0.00	0.14	0.202	O				0.27
119.333	0.00	0.14	0.201	O				0.27
119.417	0.00	0.14	0.200	O				0.27
119.500	0.00	0.13	0.199	O				0.27
119.583	0.00	0.13	0.198	O				0.27
119.667	0.00	0.13	0.198	O				0.27
119.750	0.00	0.13	0.197	O				0.27
119.833	0.00	0.13	0.196	O				0.26
119.917	0.00	0.13	0.195	O				0.26
120.000	0.00	0.13	0.194	O				0.26
120.083	0.00	0.13	0.193	O				0.26
120.167	0.00	0.13	0.192	O				0.26
120.250	0.00	0.13	0.191	O				0.26
120.333	0.00	0.13	0.190	O				0.26
120.417	0.00	0.13	0.189	O				0.26
120.500	0.00	0.13	0.189	O				0.26
120.583	0.00	0.13	0.188	O				0.25
120.667	0.00	0.13	0.187	O				0.25
120.750	0.00	0.13	0.186	O				0.25
120.833	0.00	0.13	0.185	O				0.25
120.917	0.00	0.12	0.184	O				0.25
121.000	0.00	0.12	0.183	O				0.25
121.083	0.00	0.12	0.182	O				0.25
121.167	0.00	0.12	0.182	O				0.25
121.250	0.00	0.12	0.181	O				0.24
121.333	0.00	0.12	0.180	O				0.24
121.417	0.00	0.12	0.179	O				0.24
121.500	0.00	0.12	0.178	O				0.24
121.583	0.00	0.12	0.177	O				0.24
121.667	0.00	0.12	0.177	O				0.24
121.750	0.00	0.12	0.176	O				0.24
121.833	0.00	0.12	0.175	O				0.24
121.917	0.00	0.12	0.174	O				0.24
122.000	0.00	0.12	0.173	O				0.23
122.083	0.00	0.12	0.173	O				0.23
122.167	0.00	0.12	0.172	O				0.23
122.250	0.00	0.12	0.171	O				0.23
122.333	0.00	0.12	0.170	O				0.23
122.417	0.00	0.11	0.169	O				0.23
122.500	0.00	0.11	0.169	O				0.23
122.583	0.00	0.11	0.168	O				0.23
122.667	0.00	0.11	0.167	O				0.23
122.750	0.00	0.11	0.166	O				0.22
122.833	0.00	0.11	0.165	O				0.22
122.917	0.00	0.11	0.165	O				0.22
123.000	0.00	0.11	0.164	O				0.22
123.083	0.00	0.11	0.163	O				0.22
123.167	0.00	0.11	0.162	O				0.22
123.250	0.00	0.11	0.162	O				0.22
123.333	0.00	0.11	0.161	O				0.22
123.417	0.00	0.11	0.160	O				0.22
123.500	0.00	0.11	0.159	O				0.22
123.583	0.00	0.11	0.159	O				0.21
123.667	0.00	0.11	0.158	O				0.21
123.750	0.00	0.11	0.157	O				0.21
123.833	0.00	0.11	0.156	O				0.21
123.917	0.00	0.11	0.156	O				0.21

124.000	0.00	0.10	0.155	O					0.21
124.083	0.00	0.10	0.154	O					0.21
124.167	0.00	0.10	0.154	O					0.21
124.250	0.00	0.10	0.153	O					0.21
124.333	0.00	0.10	0.152	O					0.21
124.417	0.00	0.10	0.151	O					0.20
124.500	0.00	0.10	0.151	O					0.20
124.583	0.00	0.10	0.150	O					0.20
124.667	0.00	0.10	0.149	O					0.20
124.750	0.00	0.10	0.149	O					0.20
124.833	0.00	0.10	0.148	O					0.20
124.917	0.00	0.10	0.147	O					0.20
125.000	0.00	0.10	0.147	O					0.20
125.083	0.00	0.10	0.146	O					0.20
125.167	0.00	0.10	0.145	O					0.20
125.250	0.00	0.10	0.145	O					0.20
125.333	0.00	0.10	0.144	O					0.19
125.417	0.00	0.10	0.143	O					0.19
125.500	0.00	0.10	0.143	O					0.19
125.583	0.00	0.10	0.142	O					0.19
125.667	0.00	0.10	0.141	O					0.19
125.750	0.00	0.10	0.141	O					0.19
125.833	0.00	0.09	0.140	O					0.19
125.917	0.00	0.09	0.139	O					0.19
126.000	0.00	0.09	0.139	O					0.19
126.083	0.00	0.09	0.138	O					0.19
126.167	0.00	0.09	0.137	O					0.19
126.250	0.00	0.09	0.137	O					0.18
126.333	0.00	0.09	0.136	O					0.18
126.417	0.00	0.09	0.135	O					0.18
126.500	0.00	0.09	0.135	O					0.18
126.583	0.00	0.09	0.134	O					0.18
126.667	0.00	0.09	0.134	O					0.18
126.750	0.00	0.09	0.133	O					0.18
126.833	0.00	0.09	0.132	O					0.18
126.917	0.00	0.09	0.132	O					0.18
127.000	0.00	0.09	0.131	O					0.18
127.083	0.00	0.09	0.130	O					0.18
127.167	0.00	0.09	0.130	O					0.18
127.250	0.00	0.09	0.129	O					0.17
127.333	0.00	0.09	0.129	O					0.17
127.417	0.00	0.09	0.128	O					0.17
127.500	0.00	0.09	0.127	O					0.17
127.583	0.00	0.09	0.127	O					0.17
127.667	0.00	0.09	0.126	O					0.17
127.750	0.00	0.09	0.126	O					0.17
127.833	0.00	0.08	0.125	O					0.17
127.917	0.00	0.08	0.125	O					0.17
128.000	0.00	0.08	0.124	O					0.17
128.083	0.00	0.08	0.123	O					0.17
128.167	0.00	0.08	0.123	O					0.17
128.250	0.00	0.08	0.122	O					0.17
128.333	0.00	0.08	0.122	O					0.16
128.417	0.00	0.08	0.121	O					0.16
128.500	0.00	0.08	0.121	O					0.16
128.583	0.00	0.08	0.120	O					0.16
128.667	0.00	0.08	0.119	O					0.16
128.750	0.00	0.08	0.119	O					0.16
128.833	0.00	0.08	0.118	O					0.16
128.917	0.00	0.08	0.118	O					0.16
129.000	0.00	0.08	0.117	O					0.16
129.083	0.00	0.08	0.117	O					0.16
129.167	0.00	0.08	0.116	O					0.16
129.250	0.00	0.08	0.116	O					0.16
129.333	0.00	0.08	0.115	O					0.16
129.417	0.00	0.08	0.115	O					0.15
129.500	0.00	0.08	0.114	O					0.15
129.583	0.00	0.08	0.113	O					0.15
129.667	0.00	0.08	0.113	O					0.15
129.750	0.00	0.08	0.112	O					0.15
129.833	0.00	0.08	0.112	O					0.15

129.917	0.00	0.08	0.111	O					0.15
130.000	0.00	0.07	0.111	O					0.15
130.083	0.00	0.07	0.110	O					0.15
130.167	0.00	0.07	0.110	O					0.15
130.250	0.00	0.07	0.109	O					0.15
130.333	0.00	0.07	0.109	O					0.15
130.417	0.00	0.07	0.108	O					0.15
130.500	0.00	0.07	0.108	O					0.15
130.583	0.00	0.07	0.107	O					0.15
130.667	0.00	0.07	0.107	O					0.14
130.750	0.00	0.07	0.106	O					0.14
130.833	0.00	0.07	0.106	O					0.14
130.917	0.00	0.07	0.105	O					0.14
131.000	0.00	0.07	0.105	O					0.14
131.083	0.00	0.07	0.104	O					0.14
131.167	0.00	0.07	0.104	O					0.14
131.250	0.00	0.07	0.103	O					0.14
131.333	0.00	0.07	0.103	O					0.14
131.417	0.00	0.07	0.102	O					0.14
131.500	0.00	0.07	0.102	O					0.14
131.583	0.00	0.07	0.101	O					0.14
131.667	0.00	0.07	0.101	O					0.14
131.750	0.00	0.07	0.101	O					0.14
131.833	0.00	0.07	0.100	O					0.14
131.917	0.00	0.07	0.100	O					0.13
132.000	0.00	0.07	0.099	O					0.13
132.083	0.00	0.07	0.099	O					0.13
132.167	0.00	0.07	0.098	O					0.13
132.250	0.00	0.07	0.098	O					0.13
132.333	0.00	0.07	0.097	O					0.13
132.417	0.00	0.07	0.097	O					0.13
132.500	0.00	0.07	0.096	O					0.13
132.583	0.00	0.06	0.096	O					0.13
132.667	0.00	0.06	0.095	O					0.13
132.750	0.00	0.06	0.095	O					0.13
132.833	0.00	0.06	0.095	O					0.13
132.917	0.00	0.06	0.094	O					0.13
133.000	0.00	0.06	0.094	O					0.13
133.083	0.00	0.06	0.093	O					0.13
133.167	0.00	0.06	0.093	O					0.13
133.250	0.00	0.06	0.092	O					0.13
133.333	0.00	0.06	0.092	O					0.12
133.417	0.00	0.06	0.092	O					0.12
133.500	0.00	0.06	0.091	O					0.12
133.583	0.00	0.06	0.091	O					0.12
133.667	0.00	0.06	0.090	O					0.12
133.750	0.00	0.06	0.090	O					0.12
133.833	0.00	0.06	0.089	O					0.12
133.917	0.00	0.06	0.089	O					0.12
134.000	0.00	0.06	0.089	O					0.12
134.083	0.00	0.06	0.088	O					0.12
134.167	0.00	0.06	0.088	O					0.12
134.250	0.00	0.06	0.087	O					0.12
134.333	0.00	0.06	0.087	O					0.12
134.417	0.00	0.06	0.087	O					0.12
134.500	0.00	0.06	0.086	O					0.12
134.583	0.00	0.06	0.086	O					0.12
134.667	0.00	0.06	0.085	O					0.12
134.750	0.00	0.06	0.085	O					0.11
134.833	0.00	0.06	0.085	O					0.11
134.917	0.00	0.06	0.084	O					0.11
135.000	0.00	0.06	0.084	O					0.11
135.083	0.00	0.06	0.083	O					0.11
135.167	0.00	0.06	0.083	O					0.11
135.250	0.00	0.06	0.083	O					0.11
135.333	0.00	0.06	0.082	O					0.11
135.417	0.00	0.06	0.082	O					0.11
135.500	0.00	0.06	0.081	O					0.11
135.583	0.00	0.05	0.081	O					0.11
135.667	0.00	0.05	0.081	O					0.11
135.750	0.00	0.05	0.080	O					0.11

135.833	0.00	0.05	0.080	O					0.11
135.917	0.00	0.05	0.080	O					0.11
136.000	0.00	0.05	0.079	O					0.11
136.083	0.00	0.05	0.079	O					0.11
136.167	0.00	0.05	0.079	O					0.11
136.250	0.00	0.05	0.078	O					0.11
136.333	0.00	0.05	0.078	O					0.11
136.417	0.00	0.05	0.077	O					0.10
136.500	0.00	0.05	0.077	O					0.10
136.583	0.00	0.05	0.077	O					0.10
136.667	0.00	0.05	0.076	O					0.10
136.750	0.00	0.05	0.076	O					0.10
136.833	0.00	0.05	0.076	O					0.10
136.917	0.00	0.05	0.075	O					0.10
137.000	0.00	0.05	0.075	O					0.10
137.083	0.00	0.05	0.075	O					0.10
137.167	0.00	0.05	0.074	O					0.10
137.250	0.00	0.05	0.074	O					0.10
137.333	0.00	0.05	0.074	O					0.10
137.417	0.00	0.05	0.073	O					0.10
137.500	0.00	0.05	0.073	O					0.10
137.583	0.00	0.05	0.073	O					0.10
137.667	0.00	0.05	0.072	O					0.10
137.750	0.00	0.05	0.072	O					0.10
137.833	0.00	0.05	0.072	O					0.10
137.917	0.00	0.05	0.071	O					0.10
138.000	0.00	0.05	0.071	O					0.10
138.083	0.00	0.05	0.071	O					0.10
138.167	0.00	0.05	0.070	O					0.09
138.250	0.00	0.05	0.070	O					0.09
138.333	0.00	0.05	0.070	O					0.09
138.417	0.00	0.05	0.069	O					0.09
138.500	0.00	0.05	0.069	O					0.09
138.583	0.00	0.05	0.069	O					0.09
138.667	0.00	0.05	0.068	O					0.09
138.750	0.00	0.05	0.068	O					0.09
138.833	0.00	0.05	0.068	O					0.09
138.917	0.00	0.05	0.067	O					0.09
139.000	0.00	0.05	0.067	O					0.09
139.083	0.00	0.05	0.067	O					0.09
139.167	0.00	0.04	0.066	O					0.09
139.250	0.00	0.04	0.066	O					0.09
139.333	0.00	0.04	0.066	O					0.09
139.417	0.00	0.04	0.065	O					0.09
139.500	0.00	0.04	0.065	O					0.09
139.583	0.00	0.04	0.065	O					0.09
139.667	0.00	0.04	0.065	O					0.09
139.750	0.00	0.04	0.064	O					0.09
139.833	0.00	0.04	0.064	O					0.09
139.917	0.00	0.04	0.064	O					0.09
140.000	0.00	0.04	0.063	O					0.09
140.083	0.00	0.04	0.063	O					0.09
140.167	0.00	0.04	0.063	O					0.08
140.250	0.00	0.04	0.062	O					0.08
140.333	0.00	0.04	0.062	O					0.08
140.417	0.00	0.04	0.062	O					0.08
140.500	0.00	0.04	0.062	O					0.08
140.583	0.00	0.04	0.061	O					0.08
140.667	0.00	0.04	0.061	O					0.08
140.750	0.00	0.04	0.061	O					0.08
140.833	0.00	0.04	0.060	O					0.08
140.917	0.00	0.04	0.060	O					0.08
141.000	0.00	0.04	0.060	O					0.08
141.083	0.00	0.04	0.060	O					0.08
141.167	0.00	0.04	0.059	O					0.08
141.250	0.00	0.04	0.059	O					0.08
141.333	0.00	0.04	0.059	O					0.08
141.417	0.00	0.04	0.059	O					0.08
141.500	0.00	0.04	0.058	O					0.08
141.583	0.00	0.04	0.058	O					0.08
141.667	0.00	0.04	0.058	O					0.08

141.750	0.00	0.04	0.057	O	|	|	|	|	0.08
141.833	0.00	0.04	0.057	O	|	|	|	|	0.08
141.917	0.00	0.04	0.057	O	|	|	|	|	0.08
142.000	0.00	0.04	0.057	O	|	|	|	|	0.08
142.083	0.00	0.04	0.056	O	|	|	|	|	0.08
142.167	0.00	0.04	0.056	O	|	|	|	|	0.08
142.250	0.00	0.04	0.056	O	|	|	|	|	0.08
142.333	0.00	0.04	0.056	O	|	|	|	|	0.08
142.417	0.00	0.04	0.055	O	|	|	|	|	0.07
142.500	0.00	0.04	0.055	O	|	|	|	|	0.07
142.583	0.00	0.04	0.055	O	|	|	|	|	0.07
142.667	0.00	0.04	0.055	O	|	|	|	|	0.07
142.750	0.00	0.04	0.054	O	|	|	|	|	0.07
142.833	0.00	0.04	0.054	O	|	|	|	|	0.07
142.917	0.00	0.04	0.054	O	|	|	|	|	0.07
143.000	0.00	0.04	0.054	O	|	|	|	|	0.07
143.083	0.00	0.04	0.053	O	|	|	|	|	0.07
143.167	0.00	0.04	0.053	O	|	|	|	|	0.07
143.250	0.00	0.04	0.053	O	|	|	|	|	0.07
143.333	0.00	0.04	0.053	O	|	|	|	|	0.07
143.417	0.00	0.04	0.052	O	|	|	|	|	0.07
143.500	0.00	0.04	0.052	O	|	|	|	|	0.07
143.583	0.00	0.04	0.052	O	|	|	|	|	0.07
143.667	0.00	0.03	0.052	O	|	|	|	|	0.07
143.750	0.00	0.03	0.051	O	|	|	|	|	0.07
143.833	0.00	0.03	0.051	O	|	|	|	|	0.07
143.917	0.00	0.03	0.051	O	|	|	|	|	0.07
144.000	0.00	0.03	0.051	O	|	|	|	|	0.07
144.083	0.00	0.03	0.050	O	|	|	|	|	0.07
144.167	0.00	0.03	0.050	O	|	|	|	|	0.07
144.250	0.00	0.03	0.050	O	|	|	|	|	0.07
144.333	0.00	0.03	0.050	O	|	|	|	|	0.07
144.417	0.00	0.03	0.049	O	|	|	|	|	0.07
144.500	0.00	0.03	0.049	O	|	|	|	|	0.07
144.583	0.00	0.03	0.049	O	|	|	|	|	0.07
144.667	0.00	0.03	0.049	O	|	|	|	|	0.07
144.750	0.00	0.03	0.049	O	|	|	|	|	0.07
144.833	0.00	0.03	0.048	O	|	|	|	|	0.07
144.917	0.00	0.03	0.048	O	|	|	|	|	0.07
145.000	0.00	0.03	0.048	O	|	|	|	|	0.06
145.083	0.00	0.03	0.048	O	|	|	|	|	0.06
145.167	0.00	0.03	0.047	O	|	|	|	|	0.06
145.250	0.00	0.03	0.047	O	|	|	|	|	0.06
145.333	0.00	0.03	0.047	O	|	|	|	|	0.06
145.417	0.00	0.03	0.047	O	|	|	|	|	0.06
145.500	0.00	0.03	0.047	O	|	|	|	|	0.06
145.583	0.00	0.03	0.046	O	|	|	|	|	0.06
145.667	0.00	0.03	0.046	O	|	|	|	|	0.06
145.750	0.00	0.03	0.046	O	|	|	|	|	0.06
145.833	0.00	0.03	0.046	O	|	|	|	|	0.06
145.917	0.00	0.03	0.046	O	|	|	|	|	0.06
146.000	0.00	0.03	0.045	O	|	|	|	|	0.06
146.083	0.00	0.03	0.045	O	|	|	|	|	0.06
146.167	0.00	0.03	0.045	O	|	|	|	|	0.06
146.250	0.00	0.03	0.045	O	|	|	|	|	0.06
146.333	0.00	0.03	0.044	O	|	|	|	|	0.06
146.417	0.00	0.03	0.044	O	|	|	|	|	0.06
146.500	0.00	0.03	0.044	O	|	|	|	|	0.06
146.583	0.00	0.03	0.044	O	|	|	|	|	0.06
146.667	0.00	0.03	0.044	O	|	|	|	|	0.06
146.750	0.00	0.03	0.043	O	|	|	|	|	0.06
146.833	0.00	0.03	0.043	O	|	|	|	|	0.06
146.917	0.00	0.03	0.043	O	|	|	|	|	0.06
147.000	0.00	0.03	0.043	O	|	|	|	|	0.06
147.083	0.00	0.03	0.043	O	|	|	|	|	0.06
147.167	0.00	0.03	0.042	O	|	|	|	|	0.06
147.250	0.00	0.03	0.042	O	|	|	|	|	0.06
147.333	0.00	0.03	0.042	O	|	|	|	|	0.06
147.417	0.00	0.03	0.042	O	|	|	|	|	0.06
147.500	0.00	0.03	0.042	O	|	|	|	|	0.06
147.583	0.00	0.03	0.041	O	|	|	|	|	0.06

147.667	0.00	0.03	0.041	O	|	|	|	|	0.06
147.750	0.00	0.03	0.041	O	|	|	|	|	0.06
147.833	0.00	0.03	0.041	O	|	|	|	|	0.06
147.917	0.00	0.03	0.041	O	|	|	|	|	0.06
148.000	0.00	0.03	0.041	O	|	|	|	|	0.05
148.083	0.00	0.03	0.040	O	|	|	|	|	0.05
148.167	0.00	0.03	0.040	O	|	|	|	|	0.05
148.250	0.00	0.03	0.040	O	|	|	|	|	0.05
148.333	0.00	0.03	0.040	O	|	|	|	|	0.05
148.417	0.00	0.03	0.040	O	|	|	|	|	0.05
148.500	0.00	0.03	0.039	O	|	|	|	|	0.05
148.583	0.00	0.03	0.039	O	|	|	|	|	0.05
148.667	0.00	0.03	0.039	O	|	|	|	|	0.05
148.750	0.00	0.03	0.039	O	|	|	|	|	0.05
148.833	0.00	0.03	0.039	O	|	|	|	|	0.05
148.917	0.00	0.03	0.038	O	|	|	|	|	0.05
149.000	0.00	0.03	0.038	O	|	|	|	|	0.05
149.083	0.00	0.03	0.038	O	|	|	|	|	0.05
149.167	0.00	0.03	0.038	O	|	|	|	|	0.05
149.250	0.00	0.03	0.038	O	|	|	|	|	0.05
149.333	0.00	0.03	0.038	O	|	|	|	|	0.05
149.417	0.00	0.03	0.037	O	|	|	|	|	0.05
149.500	0.00	0.03	0.037	O	|	|	|	|	0.05
149.583	0.00	0.03	0.037	O	|	|	|	|	0.05
149.667	0.00	0.02	0.037	O	|	|	|	|	0.05
149.750	0.00	0.02	0.037	O	|	|	|	|	0.05
149.833	0.00	0.02	0.037	O	|	|	|	|	0.05
149.917	0.00	0.02	0.036	O	|	|	|	|	0.05
150.000	0.00	0.02	0.036	O	|	|	|	|	0.05
150.083	0.00	0.02	0.036	O	|	|	|	|	0.05
150.167	0.00	0.02	0.036	O	|	|	|	|	0.05
150.250	0.00	0.02	0.036	O	|	|	|	|	0.05
150.333	0.00	0.02	0.036	O	|	|	|	|	0.05
150.417	0.00	0.02	0.035	O	|	|	|	|	0.05
150.500	0.00	0.02	0.035	O	|	|	|	|	0.05
150.583	0.00	0.02	0.035	O	|	|	|	|	0.05
150.667	0.00	0.02	0.035	O	|	|	|	|	0.05
150.750	0.00	0.02	0.035	O	|	|	|	|	0.05
150.833	0.00	0.02	0.035	O	|	|	|	|	0.05
150.917	0.00	0.02	0.034	O	|	|	|	|	0.05
151.000	0.00	0.02	0.034	O	|	|	|	|	0.05
151.083	0.00	0.02	0.034	O	|	|	|	|	0.05
151.167	0.00	0.02	0.034	O	|	|	|	|	0.05
151.250	0.00	0.02	0.034	O	|	|	|	|	0.05
151.333	0.00	0.02	0.034	O	|	|	|	|	0.05
151.417	0.00	0.02	0.033	O	|	|	|	|	0.05
151.500	0.00	0.02	0.033	O	|	|	|	|	0.05
151.583	0.00	0.02	0.033	O	|	|	|	|	0.04
151.667	0.00	0.02	0.033	O	|	|	|	|	0.04
151.750	0.00	0.02	0.033	O	|	|	|	|	0.04
151.833	0.00	0.02	0.033	O	|	|	|	|	0.04
151.917	0.00	0.02	0.033	O	|	|	|	|	0.04
152.000	0.00	0.02	0.032	O	|	|	|	|	0.04
152.083	0.00	0.02	0.032	O	|	|	|	|	0.04
152.167	0.00	0.02	0.032	O	|	|	|	|	0.04
152.250	0.00	0.02	0.032	O	|	|	|	|	0.04
152.333	0.00	0.02	0.032	O	|	|	|	|	0.04
152.417	0.00	0.02	0.032	O	|	|	|	|	0.04
152.500	0.00	0.02	0.031	O	|	|	|	|	0.04
152.583	0.00	0.02	0.031	O	|	|	|	|	0.04
152.667	0.00	0.02	0.031	O	|	|	|	|	0.04
152.750	0.00	0.02	0.031	O	|	|	|	|	0.04
152.833	0.00	0.02	0.031	O	|	|	|	|	0.04
152.917	0.00	0.02	0.031	O	|	|	|	|	0.04
153.000	0.00	0.02	0.031	O	|	|	|	|	0.04
153.083	0.00	0.02	0.030	O	|	|	|	|	0.04
153.167	0.00	0.02	0.030	O	|	|	|	|	0.04
153.250	0.00	0.02	0.030	O	|	|	|	|	0.04
153.333	0.00	0.02	0.030	O	|	|	|	|	0.04
153.417	0.00	0.02	0.030	O	|	|	|	|	0.04
153.500	0.00	0.02	0.030	O	|	|	|	|	0.04

153.583	0.00	0.02	0.030	O					0.04
153.667	0.00	0.02	0.030	O					0.04
153.750	0.00	0.02	0.029	O					0.04
153.833	0.00	0.02	0.029	O					0.04
153.917	0.00	0.02	0.029	O					0.04
154.000	0.00	0.02	0.029	O					0.04
154.083	0.00	0.02	0.029	O					0.04
154.167	0.00	0.02	0.029	O					0.04
154.250	0.00	0.02	0.029	O					0.04
154.333	0.00	0.02	0.028	O					0.04
154.417	0.00	0.02	0.028	O					0.04
154.500	0.00	0.02	0.028	O					0.04
154.583	0.00	0.02	0.028	O					0.04
154.667	0.00	0.02	0.028	O					0.04
154.750	0.00	0.02	0.028	O					0.04
154.833	0.00	0.02	0.028	O					0.04
154.917	0.00	0.02	0.028	O					0.04
155.000	0.00	0.02	0.027	O					0.04
155.083	0.00	0.02	0.027	O					0.04
155.167	0.00	0.02	0.027	O					0.04
155.250	0.00	0.02	0.027	O					0.04
155.333	0.00	0.02	0.027	O					0.04
155.417	0.00	0.02	0.027	O					0.04
155.500	0.00	0.02	0.027	O					0.04
155.583	0.00	0.02	0.027	O					0.04
155.667	0.00	0.02	0.026	O					0.04
155.750	0.00	0.02	0.026	O					0.04
155.833	0.00	0.02	0.026	O					0.04
155.917	0.00	0.02	0.026	O					0.04
156.000	0.00	0.02	0.026	O					0.04
156.083	0.00	0.02	0.026	O					0.03
156.167	0.00	0.02	0.026	O					0.03
156.250	0.00	0.02	0.026	O					0.03
156.333	0.00	0.02	0.025	O					0.03
156.417	0.00	0.02	0.025	O					0.03
156.500	0.00	0.02	0.025	O					0.03
156.583	0.00	0.02	0.025	O					0.03
156.667	0.00	0.02	0.025	O					0.03
156.750	0.00	0.02	0.025	O					0.03
156.833	0.00	0.02	0.025	O					0.03
156.917	0.00	0.02	0.025	O					0.03
157.000	0.00	0.02	0.024	O					0.03
157.083	0.00	0.02	0.024	O					0.03
157.167	0.00	0.02	0.024	O					0.03
157.250	0.00	0.02	0.024	O					0.03
157.333	0.00	0.02	0.024	O					0.03
157.417	0.00	0.02	0.024	O					0.03
157.500	0.00	0.02	0.024	O					0.03
157.583	0.00	0.02	0.024	O					0.03
157.667	0.00	0.02	0.024	O					0.03
157.750	0.00	0.02	0.023	O					0.03
157.833	0.00	0.02	0.023	O					0.03
157.917	0.00	0.02	0.023	O					0.03
158.000	0.00	0.02	0.023	O					0.03
158.083	0.00	0.02	0.023	O					0.03
158.167	0.00	0.02	0.023	O					0.03
158.250	0.00	0.02	0.023	O					0.03
158.333	0.00	0.02	0.023	O					0.03
158.417	0.00	0.02	0.023	O					0.03
158.500	0.00	0.02	0.023	O					0.03
158.583	0.00	0.02	0.022	O					0.03
158.667	0.00	0.02	0.022	O					0.03
158.750	0.00	0.02	0.022	O					0.03
158.833	0.00	0.01	0.022	O					0.03
158.917	0.00	0.01	0.022	O					0.03
159.000	0.00	0.01	0.022	O					0.03
159.083	0.00	0.01	0.022	O					0.03
159.167	0.00	0.01	0.022	O					0.03
159.250	0.00	0.01	0.022	O					0.03
159.333	0.00	0.01	0.021	O					0.03
159.417	0.00	0.01	0.021	O					0.03

159.500	0.00	0.01	0.021	O	|	|	|	|	0.03
159.583	0.00	0.01	0.021	O	|	|	|	|	0.03
159.667	0.00	0.01	0.021	O	|	|	|	|	0.03
159.750	0.00	0.01	0.021	O	|	|	|	|	0.03
159.833	0.00	0.01	0.021	O	|	|	|	|	0.03
159.917	0.00	0.01	0.021	O	|	|	|	|	0.03
160.000	0.00	0.01	0.021	O	|	|	|	|	0.03
160.083	0.00	0.01	0.021	O	|	|	|	|	0.03
160.167	0.00	0.01	0.021	O	|	|	|	|	0.03
160.250	0.00	0.01	0.020	O	|	|	|	|	0.03
160.333	0.00	0.01	0.020	O	|	|	|	|	0.03
160.417	0.00	0.01	0.020	O	|	|	|	|	0.03
160.500	0.00	0.01	0.020	O	|	|	|	|	0.03
160.583	0.00	0.01	0.020	O	|	|	|	|	0.03
160.667	0.00	0.01	0.020	O	|	|	|	|	0.03
160.750	0.00	0.01	0.020	O	|	|	|	|	0.03
160.833	0.00	0.01	0.020	O	|	|	|	|	0.03
160.917	0.00	0.01	0.020	O	|	|	|	|	0.03
161.000	0.00	0.01	0.020	O	|	|	|	|	0.03
161.083	0.00	0.01	0.019	O	|	|	|	|	0.03
161.167	0.00	0.01	0.019	O	|	|	|	|	0.03
161.250	0.00	0.01	0.019	O	|	|	|	|	0.03
161.333	0.00	0.01	0.019	O	|	|	|	|	0.03
161.417	0.00	0.01	0.019	O	|	|	|	|	0.03
161.500	0.00	0.01	0.019	O	|	|	|	|	0.03
161.583	0.00	0.01	0.019	O	|	|	|	|	0.03
161.667	0.00	0.01	0.019	O	|	|	|	|	0.03
161.750	0.00	0.01	0.019	O	|	|	|	|	0.03
161.833	0.00	0.01	0.019	O	|	|	|	|	0.03
161.917	0.00	0.01	0.019	O	|	|	|	|	0.03
162.000	0.00	0.01	0.019	O	|	|	|	|	0.03
162.083	0.00	0.01	0.018	O	|	|	|	|	0.02
162.167	0.00	0.01	0.018	O	|	|	|	|	0.02
162.250	0.00	0.01	0.018	O	|	|	|	|	0.02
162.333	0.00	0.01	0.018	O	|	|	|	|	0.02
162.417	0.00	0.01	0.018	O	|	|	|	|	0.02
162.500	0.00	0.01	0.018	O	|	|	|	|	0.02
162.583	0.00	0.01	0.018	O	|	|	|	|	0.02
162.667	0.00	0.01	0.018	O	|	|	|	|	0.02
162.750	0.00	0.01	0.018	O	|	|	|	|	0.02
162.833	0.00	0.01	0.018	O	|	|	|	|	0.02
162.917	0.00	0.01	0.018	O	|	|	|	|	0.02
163.000	0.00	0.01	0.018	O	|	|	|	|	0.02
163.083	0.00	0.01	0.017	O	|	|	|	|	0.02
163.167	0.00	0.01	0.017	O	|	|	|	|	0.02
163.250	0.00	0.01	0.017	O	|	|	|	|	0.02
163.333	0.00	0.01	0.017	O	|	|	|	|	0.02
163.417	0.00	0.01	0.017	O	|	|	|	|	0.02
163.500	0.00	0.01	0.017	O	|	|	|	|	0.02
163.583	0.00	0.01	0.017	O	|	|	|	|	0.02
163.667	0.00	0.01	0.017	O	|	|	|	|	0.02
163.750	0.00	0.01	0.017	O	|	|	|	|	0.02
163.833	0.00	0.01	0.017	O	|	|	|	|	0.02
163.917	0.00	0.01	0.017	O	|	|	|	|	0.02
164.000	0.00	0.01	0.017	O	|	|	|	|	0.02
164.083	0.00	0.01	0.016	O	|	|	|	|	0.02
164.167	0.00	0.01	0.016	O	|	|	|	|	0.02
164.250	0.00	0.01	0.016	O	|	|	|	|	0.02
164.333	0.00	0.01	0.016	O	|	|	|	|	0.02
164.417	0.00	0.01	0.016	O	|	|	|	|	0.02
164.500	0.00	0.01	0.016	O	|	|	|	|	0.02
164.583	0.00	0.01	0.016	O	|	|	|	|	0.02
164.667	0.00	0.01	0.016	O	|	|	|	|	0.02
164.750	0.00	0.01	0.016	O	|	|	|	|	0.02
164.833	0.00	0.01	0.016	O	|	|	|	|	0.02
164.917	0.00	0.01	0.016	O	|	|	|	|	0.02
165.000	0.00	0.01	0.016	O	|	|	|	|	0.02
165.083	0.00	0.01	0.016	O	|	|	|	|	0.02
165.167	0.00	0.01	0.016	O	|	|	|	|	0.02
165.250	0.00	0.01	0.015	O	|	|	|	|	0.02
165.333	0.00	0.01	0.015	O	|	|	|	|	0.02

165.417	0.00	0.01	0.015	O	|	|	|	|	0.02
165.500	0.00	0.01	0.015	O	|	|	|	|	0.02
165.583	0.00	0.01	0.015	O	|	|	|	|	0.02
165.667	0.00	0.01	0.015	O	|	|	|	|	0.02
165.750	0.00	0.01	0.015	O	|	|	|	|	0.02
165.833	0.00	0.01	0.015	O	|	|	|	|	0.02
165.917	0.00	0.01	0.015	O	|	|	|	|	0.02
166.000	0.00	0.01	0.015	O	|	|	|	|	0.02
166.083	0.00	0.01	0.015	O	|	|	|	|	0.02
166.167	0.00	0.01	0.015	O	|	|	|	|	0.02
166.250	0.00	0.01	0.015	O	|	|	|	|	0.02
166.333	0.00	0.01	0.015	O	|	|	|	|	0.02
166.417	0.00	0.01	0.014	O	|	|	|	|	0.02
166.500	0.00	0.01	0.014	O	|	|	|	|	0.02
166.583	0.00	0.01	0.014	O	|	|	|	|	0.02
166.667	0.00	0.01	0.014	O	|	|	|	|	0.02

Remaining water in basin = 0.01 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 1.649 (CFS)
Total volume = 8.943 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 01/06/20

HILLWOOD - APOLLO PROJECT
5 YEAR STORM EVENT BASIN ROUTING
1930BR245
DS

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 1930puh5245.rte
**********HYDROGRAPH DATA**********
Number of intervals = 301
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 24.880 (CFS)
Total volume = 12.945 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 301
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

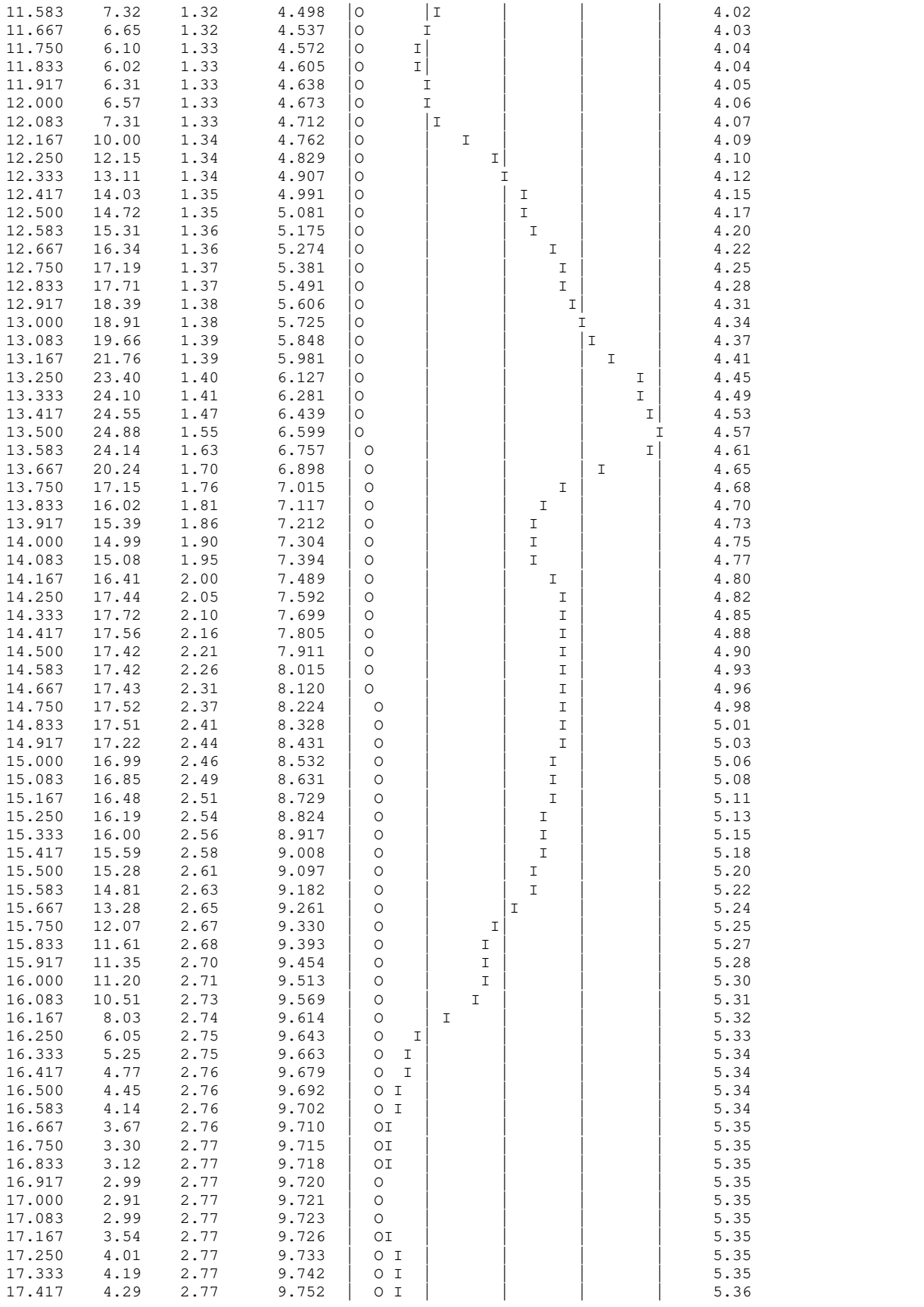
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.739	0.500	0.737	0.741
2.000	2.218	0.860	2.215	2.221
3.000	3.327	1.120	3.323	3.331
4.000	4.435	1.320	4.430	4.440
4.500	6.323	1.410	6.318	6.328
5.000	8.291	2.400	8.283	8.299
6.000	12.386	3.450	12.374	12.398
7.000	16.882	49.560	16.711	17.053
8.000	21.702	68.940	21.465	21.939
9.000	26.849	83.890	26.560	27.138

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 6.2 12.44 18.66 24.88	Depth (Ft.)
0.083	0.15	0.00	0.001	O	0.00
0.167	0.76	0.00	0.004	O	0.00
0.250	1.24	0.01	0.010	OI	0.01
0.333	1.51	0.01	0.020	OI	0.03
0.417	1.92	0.02	0.032	O I	0.04
0.500	2.24	0.03	0.046	O I	0.06
0.583	2.39	0.04	0.061	O I	0.08
0.667	2.48	0.05	0.078	O I	0.11
0.750	2.55	0.06	0.095	O I	0.13
0.833	2.68	0.08	0.112	O I	0.15
0.917	3.02	0.09	0.131	O I	0.18
1.000	3.29	0.10	0.152	O I	0.21
1.083	3.33	0.12	0.175	O I	0.24
1.167	3.10	0.13	0.196	O I	0.27
1.250	2.90	0.15	0.216	O I	0.29
1.333	2.84	0.16	0.234	O I	0.32
1.417	2.81	0.17	0.253	O I	0.34
1.500	2.79	0.18	0.271	O I	0.37
1.583	2.77	0.20	0.289	O I	0.39
1.667	2.76	0.21	0.306	O I	0.41
1.750	2.75	0.22	0.324	O I	0.44
1.833	2.82	0.23	0.341	O I	0.46
1.917	3.12	0.24	0.360	O I	0.49
2.000	3.36	0.26	0.381	O I	0.52
2.083	3.45	0.27	0.402	O I	0.54
2.167	3.50	0.29	0.424	O I	0.57
2.250	3.54	0.30	0.447	O I	0.60
2.333	3.56	0.32	0.469	O I	0.63
2.417	3.58	0.33	0.491	O I	0.66
2.500	3.60	0.35	0.514	O I	0.70
2.583	3.68	0.36	0.536	O I	0.73
2.667	4.00	0.38	0.560	O I	0.76
2.750	4.25	0.40	0.586	O I	0.79
2.833	4.35	0.41	0.613	O I	0.83
2.917	4.41	0.43	0.640	O I	0.87
3.000	4.45	0.45	0.667	O I	0.90
3.083	4.47	0.47	0.695	O I	0.94
3.167	4.49	0.49	0.722	O I	0.98
3.250	4.51	0.50	0.750	O I	1.01
3.333	4.52	0.51	0.778	O I	1.03
3.417	4.53	0.52	0.805	O I	1.04
3.500	4.53	0.52	0.833	O I	1.06
3.583	4.54	0.53	0.861	O I	1.08
3.667	4.54	0.54	0.888	O I	1.10
3.750	4.54	0.54	0.916	O I	1.12
3.833	4.62	0.55	0.943	O I	1.14
3.917	4.92	0.56	0.973	O I	1.16
4.000	5.17	0.56	1.003	O I	1.18
4.083	5.26	0.57	1.035	O I	1.20
4.167	5.32	0.58	1.068	O I	1.22
4.250	5.35	0.59	1.101	O I	1.24
4.333	5.45	0.60	1.134	O I	1.27
4.417	5.78	0.60	1.168	O I	1.29
4.500	6.04	0.61	1.205	O I	1.31
4.583	6.14	0.62	1.242	O I	1.34
4.667	6.21	0.63	1.281	O I	1.37
4.750	6.25	0.64	1.319	O I	1.39
4.833	6.36	0.65	1.358	O I	1.42
4.917	6.69	0.66	1.399	O I	1.45
5.000	6.95	0.67	1.441	O I	1.47
5.083	6.91	0.68	1.484	O I	1.50
5.167	6.36	0.69	1.525	O I	1.53
5.250	5.92	0.70	1.562	O I	1.56
5.333	5.83	0.71	1.598	O I	1.58
5.417	6.05	0.72	1.634	O I	1.61
5.500	6.24	0.73	1.671	O I	1.63
5.583	6.36	0.74	1.710	O I	1.66

5.667	6.69	0.75	1.750	O	I	|	|	|	1.68
5.750	6.95	0.76	1.791	O	I	|	|	|	1.71
5.833	7.05	0.77	1.834	O	|I	|	|	|	1.74
5.917	7.11	0.78	1.878	O	|I	|	|	|	1.77
6.000	7.16	0.79	1.922	|O	|I	|	|	|	1.80
6.083	7.26	0.80	1.966	|O	|I	|	|	|	1.83
6.167	7.58	0.81	2.011	|O	|I	|	|	|	1.86
6.250	7.84	0.82	2.059	|O	I	|	|	|	1.89
6.333	7.96	0.83	2.107	|O	I	|	|	|	1.93
6.417	8.03	0.85	2.157	|O	I	|	|	|	1.96
6.500	8.07	0.86	2.206	|O	I	|	|	|	1.99
6.583	8.18	0.87	2.256	|O	I	|	|	|	2.03
6.667	8.51	0.88	2.308	|O	I	|	|	|	2.08
6.750	8.76	0.89	2.361	|O	I	|	|	|	2.13
6.833	8.87	0.91	2.416	|O	I	|	|	|	2.18
6.917	8.93	0.92	2.471	|O	I	|	|	|	2.23
7.000	8.98	0.93	2.526	|O	I	|	|	|	2.28
7.083	9.01	0.95	2.581	|O	I	|	|	|	2.33
7.167	9.04	0.96	2.637	|O	I	|	|	|	2.38
7.250	9.05	0.97	2.693	|O	I	|	|	|	2.43
7.333	9.14	0.98	2.749	|O	I	|	|	|	2.48
7.417	9.45	1.00	2.806	|O	I	|	|	|	2.53
7.500	9.70	1.01	2.865	|O	I	|	|	|	2.58
7.583	9.87	1.03	2.925	|O	I	|	|	|	2.64
7.667	10.24	1.04	2.987	|O	I	|	|	|	2.69
7.750	10.52	1.06	3.052	|O	I	|	|	|	2.75
7.833	10.72	1.07	3.117	|O	I	|	|	|	2.81
7.917	11.10	1.09	3.185	|O	I	|	|	|	2.87
8.000	11.39	1.10	3.255	|O	I	|	|	|	2.94
8.083	10.58	1.12	3.323	|O	I	|	|	|	3.00
8.167	6.75	1.13	3.375	|O	I	|	|	|	3.04
8.250	3.72	1.13	3.403	|O I	|	|	|	|	3.07
8.333	2.61	1.14	3.417	|O I	|	|	|	|	3.08
8.417	1.99	1.14	3.425	|OI	|	|	|	|	3.09
8.500	1.59	1.14	3.430	|OI	|	|	|	|	3.09
8.583	1.42	1.14	3.432	|O	|	|	|	|	3.09
8.667	1.64	1.14	3.435	|OI	|	|	|	|	3.10
8.750	1.81	1.14	3.439	|OI	|	|	|	|	3.10
8.833	1.94	1.14	3.444	|OI	|	|	|	|	3.11
8.917	2.35	1.14	3.451	|O I	|	|	|	|	3.11
9.000	2.68	1.14	3.460	|O I	|	|	|	|	3.12
9.083	3.01	1.15	3.472	|O I	|	|	|	|	3.13
9.167	3.86	1.15	3.488	|O I	|	|	|	|	3.15
9.250	4.59	1.15	3.509	|O I	|	|	|	|	3.16
9.333	5.03	1.16	3.534	|O I	|	|	|	|	3.19
9.417	5.65	1.16	3.563	|O I	|	|	|	|	3.21
9.500	6.14	1.17	3.596	|O I	|	|	|	|	3.24
9.583	6.50	1.17	3.631	|O I	|	|	|	|	3.27
9.667	7.08	1.18	3.670	|O	|I	|	|	|	3.31
9.750	7.54	1.19	3.712	|O	|I	|	|	|	3.35
9.833	7.89	1.20	3.757	|O	I	|	|	|	3.39
9.917	8.45	1.21	3.805	|O	I	|	|	|	3.43
10.000	8.90	1.22	3.856	|O	I	|	|	|	3.48
10.083	8.52	1.22	3.908	|O	I	|	|	|	3.52
10.167	6.09	1.23	3.949	|O	I	|	|	|	3.56
10.250	4.16	1.24	3.976	|O I	|	|	|	|	3.59
10.333	3.48	1.24	3.994	|O I	|	|	|	|	3.60
10.417	3.12	1.24	4.008	|O I	|	|	|	|	3.61
10.500	2.89	1.25	4.020	|O I	|	|	|	|	3.63
10.583	3.20	1.25	4.033	|O I	|	|	|	|	3.64
10.667	4.99	1.25	4.052	|O I	|	|	|	|	3.65
10.750	6.42	1.26	4.083	|O	I	|	|	|	3.68
10.833	6.97	1.26	4.121	|O	I	|	|	|	3.72
10.917	7.31	1.27	4.161	|O	|I	|	|	|	3.75
11.000	7.56	1.28	4.203	|O	|I	|	|	|	3.79
11.083	7.66	1.29	4.247	|O	|I	|	|	|	3.83
11.167	7.42	1.29	4.290	|O	|I	|	|	|	3.87
11.250	7.29	1.30	4.332	|O	|I	|	|	|	3.91
11.333	7.31	1.31	4.373	|O	|I	|	|	|	3.94
11.417	7.37	1.32	4.415	|O	|I	|	|	|	3.98
11.500	7.43	1.32	4.457	|O	|I	|	|	|	4.01



17.500	4.36	2.78	9.763	O I				5.36
17.583	4.41	2.78	9.774	O I				5.36
17.667	4.44	2.78	9.785	O I				5.36
17.750	4.47	2.79	9.797	O I				5.37
17.833	4.42	2.79	9.808	O I				5.37
17.917	4.13	2.79	9.818	O I				5.37
18.000	3.90	2.79	9.827	O I				5.38
18.083	3.82	2.80	9.834	OI				5.38
18.167	3.77	2.80	9.841	OI				5.38
18.250	3.73	2.80	9.847	OI				5.38
18.333	3.71	2.80	9.854	OI				5.38
18.417	3.69	2.80	9.860	OI				5.38
18.500	3.67	2.80	9.866	OI				5.38
18.583	3.59	2.81	9.872	OI				5.39
18.667	3.27	2.81	9.876	OI				5.39
18.750	3.02	2.81	9.878	O				5.39
18.833	2.85	2.81	9.879	O				5.39
18.917	2.48	2.81	9.878	O				5.39
19.000	2.20	2.81	9.875	IO				5.39
19.083	2.16	2.81	9.871	IO				5.39
19.167	2.39	2.80	9.867	O				5.38
19.250	2.58	2.80	9.865	O				5.38
19.333	2.71	2.80	9.864	O				5.38
19.417	3.04	2.80	9.864	O				5.38
19.500	3.30	2.80	9.867	OI				5.38
19.583	3.33	2.80	9.870	OI				5.39
19.667	3.08	2.81	9.873	O				5.39
19.750	2.89	2.81	9.874	O				5.39
19.833	2.75	2.81	9.874	O				5.39
19.917	2.41	2.81	9.873	O				5.39
20.000	2.16	2.80	9.869	IO				5.39
20.083	2.12	2.80	9.865	IO				5.38
20.167	2.37	2.80	9.861	O				5.38
20.250	2.57	2.80	9.858	O				5.38
20.333	2.63	2.80	9.857	O				5.38
20.417	2.66	2.80	9.856	O				5.38
20.500	2.68	2.80	9.855	O				5.38
20.583	2.69	2.80	9.854	O				5.38
20.667	2.69	2.80	9.853	O				5.38
20.750	2.70	2.80	9.853	O				5.38
20.833	2.63	2.80	9.852	O				5.38
20.917	2.33	2.80	9.850	IO				5.38
21.000	2.09	2.80	9.846	IO				5.38
21.083	2.08	2.80	9.841	IO				5.38
21.167	2.33	2.80	9.837	O				5.38
21.250	2.54	2.80	9.834	O				5.38
21.333	2.53	2.80	9.832	O				5.38
21.417	2.26	2.79	9.830	IO				5.38
21.500	2.04	2.79	9.825	IO				5.37
21.583	2.04	2.79	9.820	IO				5.37
21.667	2.30	2.79	9.816	IO				5.37
21.750	2.51	2.79	9.813	O				5.37
21.833	2.51	2.79	9.811	O				5.37
21.917	2.25	2.79	9.808	IO				5.37
22.000	2.03	2.79	9.804	IO				5.37
22.083	2.03	2.79	9.799	IO				5.37
22.167	2.30	2.79	9.794	IO				5.37
22.250	2.51	2.78	9.792	O				5.37
22.333	2.51	2.78	9.790	O				5.37
22.417	2.25	2.78	9.787	IO				5.37
22.500	2.03	2.78	9.783	IO				5.36
22.583	1.96	2.78	9.777	IO				5.36
22.667	1.92	2.78	9.771	IO				5.36
22.750	1.89	2.78	9.765	IO				5.36
22.833	1.87	2.78	9.759	IO				5.36
22.917	1.85	2.77	9.753	IO				5.36
23.000	1.84	2.77	9.747	IO				5.36
23.083	1.84	2.77	9.740	IO				5.35
23.167	1.83	2.77	9.734	IO				5.35
23.250	1.83	2.77	9.727	IO				5.35
23.333	1.82	2.77	9.721	IO				5.35

23.417	1.82	2.76	9.714	| IO				5.35
23.500	1.82	2.76	9.708	| IO				5.35
23.583	1.82	2.76	9.701	| IO				5.34
23.667	1.82	2.76	9.695	| IO				5.34
23.750	1.82	2.76	9.688	| IO				5.34
23.833	1.82	2.76	9.682	| IO				5.34
23.917	1.82	2.75	9.675	| IO				5.34
24.000	1.82	2.75	9.669	| IO				5.34
24.083	1.67	2.75	9.662	| IO				5.33
24.167	1.06	2.75	9.652	|I O				5.33
24.250	0.57	2.75	9.639	I O				5.33
24.333	0.38	2.74	9.623	I O				5.33
24.417	0.27	2.74	9.607	I O				5.32
24.500	0.20	2.73	9.590	I O				5.32
24.583	0.14	2.73	9.572	I O				5.31
24.667	0.11	2.72	9.554	I O				5.31
24.750	0.07	2.72	9.536	I O				5.30
24.833	0.05	2.71	9.518	I O				5.30
24.917	0.03	2.71	9.499	I O				5.30
25.000	0.02	2.71	9.481	I O				5.29
25.083	0.01	2.70	9.462	I O				5.29
25.167	0.00	2.70	9.444	I O				5.28
25.250	0.00	2.69	9.425	I O				5.28
25.333	0.00	2.69	9.407	I O				5.27
25.417	0.00	2.68	9.388	I O				5.27
25.500	0.00	2.68	9.370	I O				5.26
25.583	0.00	2.67	9.351	I O				5.26
25.667	0.00	2.67	9.333	I O				5.25
25.750	0.00	2.66	9.315	I O				5.25
25.833	0.00	2.66	9.296	I O				5.25
25.917	0.00	2.65	9.278	I O				5.24
26.000	0.00	2.65	9.260	I O				5.24
26.083	0.00	2.64	9.242	I O				5.23
26.167	0.00	2.64	9.223	I O				5.23
26.250	0.00	2.63	9.205	I O				5.22
26.333	0.00	2.63	9.187	I O				5.22
26.417	0.00	2.63	9.169	I O				5.21
26.500	0.00	2.62	9.151	I O				5.21
26.583	0.00	2.62	9.133	I O				5.21
26.667	0.00	2.61	9.115	I O				5.20
26.750	0.00	2.61	9.097	I O				5.20
26.833	0.00	2.60	9.079	I O				5.19
26.917	0.00	2.60	9.061	I O				5.19
27.000	0.00	2.59	9.043	I O				5.18
27.083	0.00	2.59	9.025	I O				5.18
27.167	0.00	2.58	9.008	I O				5.17
27.250	0.00	2.58	8.990	I O				5.17
27.333	0.00	2.57	8.972	I O				5.17
27.417	0.00	2.57	8.954	I O				5.16
27.500	0.00	2.57	8.937	I O				5.16
27.583	0.00	2.56	8.919	I O				5.15
27.667	0.00	2.56	8.901	I O				5.15
27.750	0.00	2.55	8.884	I O				5.14
27.833	0.00	2.55	8.866	I O				5.14
27.917	0.00	2.54	8.849	I O				5.14
28.000	0.00	2.54	8.831	I O				5.13
28.083	0.00	2.53	8.814	I O				5.13
28.167	0.00	2.53	8.796	I O				5.12
28.250	0.00	2.53	8.779	I O				5.12
28.333	0.00	2.52	8.761	I O				5.11
28.417	0.00	2.52	8.744	I O				5.11
28.500	0.00	2.51	8.727	I O				5.11
28.583	0.00	2.51	8.710	I O				5.10
28.667	0.00	2.50	8.692	I O				5.10
28.750	0.00	2.50	8.675	I O				5.09
28.833	0.00	2.49	8.658	I O				5.09
28.917	0.00	2.49	8.641	I O				5.09
29.000	0.00	2.49	8.624	I O				5.08
29.083	0.00	2.48	8.606	I O				5.08
29.167	0.00	2.48	8.589	I O				5.07
29.250	0.00	2.47	8.572	I O				5.07

29.333	0.00	2.47	8.555	I O				5.06
29.417	0.00	2.46	8.538	I O				5.06
29.500	0.00	2.46	8.521	I O				5.06
29.583	0.00	2.45	8.504	I O				5.05
29.667	0.00	2.45	8.488	I O				5.05
29.750	0.00	2.45	8.471	I O				5.04
29.833	0.00	2.44	8.454	I O				5.04
29.917	0.00	2.44	8.437	I O				5.04
30.000	0.00	2.43	8.420	I O				5.03
30.083	0.00	2.43	8.404	I O				5.03
30.167	0.00	2.42	8.387	I O				5.02
30.250	0.00	2.42	8.370	I O				5.02
30.333	0.00	2.42	8.354	I O				5.02
30.417	0.00	2.41	8.337	I O				5.01
30.500	0.00	2.41	8.320	I O				5.01
30.583	0.00	2.40	8.304	I O				5.00
30.667	0.00	2.40	8.287	I O				5.00
30.750	0.00	2.39	8.271	I O				4.99
30.833	0.00	2.38	8.254	I O				4.99
30.917	0.00	2.37	8.238	I O				4.99
31.000	0.00	2.37	8.222	I O				4.98
31.083	0.00	2.36	8.205	I O				4.98
31.167	0.00	2.35	8.189	I O				4.97
31.250	0.00	2.34	8.173	I O				4.97
31.333	0.00	2.33	8.157	I O				4.97
31.417	0.00	2.32	8.141	I O				4.96
31.500	0.00	2.32	8.125	I O				4.96
31.583	0.00	2.31	8.109	I O				4.95
31.667	0.00	2.30	8.093	I O				4.95
31.750	0.00	2.29	8.077	I O				4.95
31.833	0.00	2.28	8.062	I O				4.94
31.917	0.00	2.28	8.046	I O				4.94
32.000	0.00	2.27	8.030	I O				4.93
32.083	0.00	2.26	8.015	I O				4.93
32.167	0.00	2.25	7.999	I O				4.93
32.250	0.00	2.25	7.984	I O				4.92
32.333	0.00	2.24	7.968	I O				4.92
32.417	0.00	2.23	7.953	I O				4.91
32.500	0.00	2.22	7.937	I O				4.91
32.583	0.00	2.21	7.922	I O				4.91
32.667	0.00	2.21	7.907	I O				4.90
32.750	0.00	2.20	7.892	I O				4.90
32.833	0.00	2.19	7.877	I O				4.89
32.917	0.00	2.18	7.862	I O				4.89
33.000	0.00	2.18	7.846	I O				4.89
33.083	0.00	2.17	7.832	I O				4.88
33.167	0.00	2.16	7.817	I O				4.88
33.250	0.00	2.15	7.802	I O				4.88
33.333	0.00	2.15	7.787	I O				4.87
33.417	0.00	2.14	7.772	I O				4.87
33.500	0.00	2.13	7.757	I O				4.86
33.583	0.00	2.12	7.743	I O				4.86
33.667	0.00	2.12	7.728	I O				4.86
33.750	0.00	2.11	7.714	I O				4.85
33.833	0.00	2.10	7.699	I O				4.85
33.917	0.00	2.10	7.685	I O				4.85
34.000	0.00	2.09	7.670	I O				4.84
34.083	0.00	2.08	7.656	I O				4.84
34.167	0.00	2.07	7.642	I O				4.84
34.250	0.00	2.07	7.627	I O				4.83
34.333	0.00	2.06	7.613	I O				4.83
34.417	0.00	2.05	7.599	I O				4.82
34.500	0.00	2.04	7.585	I O				4.82
34.583	0.00	2.04	7.571	I O				4.82
34.667	0.00	2.03	7.557	I O				4.81
34.750	0.00	2.02	7.543	I O				4.81
34.833	0.00	2.02	7.529	I O				4.81
34.917	0.00	2.01	7.515	I O				4.80
35.000	0.00	2.00	7.501	I O				4.80
35.083	0.00	2.00	7.488	I O				4.80
35.167	0.00	1.99	7.474	I O				4.79

35.250	0.00	1.98	7.460	I	O				4.79
35.333	0.00	1.98	7.447	I	O				4.79
35.417	0.00	1.97	7.433	I	O				4.78
35.500	0.00	1.96	7.419	I	O				4.78
35.583	0.00	1.95	7.406	I	O				4.78
35.667	0.00	1.95	7.392	I	O				4.77
35.750	0.00	1.94	7.379	I	O				4.77
35.833	0.00	1.93	7.366	I	O				4.76
35.917	0.00	1.93	7.352	I	O				4.76
36.000	0.00	1.92	7.339	I	O				4.76
36.083	0.00	1.91	7.326	I	O				4.75
36.167	0.00	1.91	7.313	I	O				4.75
36.250	0.00	1.90	7.300	I	O				4.75
36.333	0.00	1.89	7.287	I	O				4.74
36.417	0.00	1.89	7.274	I	O				4.74
36.500	0.00	1.88	7.261	I	O				4.74
36.583	0.00	1.88	7.248	I	O				4.73
36.667	0.00	1.87	7.235	I	O				4.73
36.750	0.00	1.86	7.222	I	O				4.73
36.833	0.00	1.86	7.209	I	O				4.73
36.917	0.00	1.85	7.196	I	O				4.72
37.000	0.00	1.84	7.184	I	O				4.72
37.083	0.00	1.84	7.171	I	O				4.72
37.167	0.00	1.83	7.158	I	O				4.71
37.250	0.00	1.82	7.146	I	O				4.71
37.333	0.00	1.82	7.133	I	O				4.71
37.417	0.00	1.81	7.121	I	O				4.70
37.500	0.00	1.81	7.108	I	O				4.70
37.583	0.00	1.80	7.096	I	O				4.70
37.667	0.00	1.79	7.084	I	O				4.69
37.750	0.00	1.79	7.071	I	O				4.69
37.833	0.00	1.78	7.059	I	O				4.69
37.917	0.00	1.77	7.047	I	O				4.68
38.000	0.00	1.77	7.034	I	O				4.68
38.083	0.00	1.76	7.022	I	O				4.68
38.167	0.00	1.76	7.010	I	O				4.67
38.250	0.00	1.75	6.998	I	O				4.67
38.333	0.00	1.74	6.986	I	O				4.67
38.417	0.00	1.74	6.974	I	O				4.67
38.500	0.00	1.73	6.962	I	O				4.66
38.583	0.00	1.73	6.950	I	O				4.66
38.667	0.00	1.72	6.938	I	O				4.66
38.750	0.00	1.71	6.927	I	O				4.65
38.833	0.00	1.71	6.915	I	O				4.65
38.917	0.00	1.70	6.903	I	O				4.65
39.000	0.00	1.70	6.891	I	O				4.64
39.083	0.00	1.69	6.880	I	O				4.64
39.167	0.00	1.68	6.868	I	O				4.64
39.250	0.00	1.68	6.857	I	O				4.64
39.333	0.00	1.67	6.845	I	O				4.63
39.417	0.00	1.67	6.833	I	O				4.63
39.500	0.00	1.66	6.822	I	O				4.63
39.583	0.00	1.66	6.811	I	O				4.62
39.667	0.00	1.65	6.799	I	O				4.62
39.750	0.00	1.64	6.788	I	O				4.62
39.833	0.00	1.64	6.777	I	O				4.62
39.917	0.00	1.63	6.765	I	O				4.61
40.000	0.00	1.63	6.754	I	O				4.61
40.083	0.00	1.62	6.743	I	O				4.61
40.167	0.00	1.62	6.732	I	O				4.60
40.250	0.00	1.61	6.721	I	O				4.60
40.333	0.00	1.60	6.710	I	O				4.60
40.417	0.00	1.60	6.699	I	O				4.60
40.500	0.00	1.59	6.688	I	O				4.59
40.583	0.00	1.59	6.677	I	O				4.59
40.667	0.00	1.58	6.666	I	O				4.59
40.750	0.00	1.58	6.655	I	O				4.58
40.833	0.00	1.57	6.644	I	O				4.58
40.917	0.00	1.57	6.633	I	O				4.58
41.000	0.00	1.56	6.622	I	O				4.58
41.083	0.00	1.56	6.612	I	O				4.57

41.167	0.00	1.55	6.601	IO				4.57
41.250	0.00	1.54	6.590	IO				4.57
41.333	0.00	1.54	6.580	IO				4.57
41.417	0.00	1.53	6.569	IO				4.56
41.500	0.00	1.53	6.559	IO				4.56
41.583	0.00	1.52	6.548	IO				4.56
41.667	0.00	1.52	6.538	IO				4.55
41.750	0.00	1.51	6.527	IO				4.55
41.833	0.00	1.51	6.517	IO				4.55
41.917	0.00	1.50	6.506	IO				4.55
42.000	0.00	1.50	6.496	IO				4.54
42.083	0.00	1.49	6.486	IO				4.54
42.167	0.00	1.49	6.476	IO				4.54
42.250	0.00	1.48	6.465	IO				4.54
42.333	0.00	1.48	6.455	IO				4.53
42.417	0.00	1.47	6.445	IO				4.53
42.500	0.00	1.47	6.435	IO				4.53
42.583	0.00	1.46	6.425	IO				4.53
42.667	0.00	1.46	6.415	IO				4.52
42.750	0.00	1.45	6.405	IO				4.52
42.833	0.00	1.45	6.395	IO				4.52
42.917	0.00	1.44	6.385	IO				4.52
43.000	0.00	1.44	6.375	IO				4.51
43.083	0.00	1.43	6.365	IO				4.51
43.167	0.00	1.43	6.355	IO				4.51
43.250	0.00	1.42	6.345	IO				4.51
43.333	0.00	1.42	6.336	IO				4.50
43.417	0.00	1.41	6.326	IO				4.50
43.500	0.00	1.41	6.316	IO				4.50
43.583	0.00	1.41	6.306	IO				4.50
43.667	0.00	1.41	6.297	IO				4.49
43.750	0.00	1.41	6.287	IO				4.49
43.833	0.00	1.41	6.277	IO				4.49
43.917	0.00	1.41	6.268	IO				4.49
44.000	0.00	1.41	6.258	IO				4.48
44.083	0.00	1.41	6.248	IO				4.48
44.167	0.00	1.41	6.239	IO				4.48
44.250	0.00	1.41	6.229	IO				4.48
44.333	0.00	1.41	6.219	IO				4.47
44.417	0.00	1.40	6.210	IO				4.47
44.500	0.00	1.40	6.200	IO				4.47
44.583	0.00	1.40	6.190	IO				4.46
44.667	0.00	1.40	6.181	IO				4.46
44.750	0.00	1.40	6.171	IO				4.46
44.833	0.00	1.40	6.161	IO				4.46
44.917	0.00	1.40	6.152	IO				4.45
45.000	0.00	1.40	6.142	IO				4.45
45.083	0.00	1.40	6.132	IO				4.45
45.167	0.00	1.40	6.123	IO				4.45
45.250	0.00	1.40	6.113	IO				4.44
45.333	0.00	1.40	6.103	IO				4.44
45.417	0.00	1.40	6.094	IO				4.44
45.500	0.00	1.40	6.084	IO				4.44
45.583	0.00	1.40	6.074	IO				4.43
45.667	0.00	1.40	6.065	IO				4.43
45.750	0.00	1.40	6.055	IO				4.43
45.833	0.00	1.40	6.046	IO				4.43
45.917	0.00	1.40	6.036	IO				4.42
46.000	0.00	1.40	6.026	IO				4.42
46.083	0.00	1.40	6.017	IO				4.42
46.167	0.00	1.39	6.007	IO				4.42
46.250	0.00	1.39	5.997	IO				4.41
46.333	0.00	1.39	5.988	IO				4.41
46.417	0.00	1.39	5.978	IO				4.41
46.500	0.00	1.39	5.969	IO				4.41
46.583	0.00	1.39	5.959	IO				4.40
46.667	0.00	1.39	5.949	IO				4.40
46.750	0.00	1.39	5.940	IO				4.40
46.833	0.00	1.39	5.930	IO				4.40
46.917	0.00	1.39	5.921	IO				4.39
47.000	0.00	1.39	5.911	IO				4.39

47.083	0.00	1.39	5.902	IO				4.39
47.167	0.00	1.39	5.892	IO				4.39
47.250	0.00	1.39	5.882	IO				4.38
47.333	0.00	1.39	5.873	IO				4.38
47.417	0.00	1.39	5.863	IO				4.38
47.500	0.00	1.39	5.854	IO				4.38
47.583	0.00	1.39	5.844	IO				4.37
47.667	0.00	1.39	5.835	IO				4.37
47.750	0.00	1.39	5.825	IO				4.37
47.833	0.00	1.39	5.816	IO				4.37
47.917	0.00	1.39	5.806	IO				4.36
48.000	0.00	1.38	5.796	IO				4.36
48.083	0.00	1.38	5.787	IO				4.36
48.167	0.00	1.38	5.777	IO				4.36
48.250	0.00	1.38	5.768	IO				4.35
48.333	0.00	1.38	5.758	IO				4.35
48.417	0.00	1.38	5.749	IO				4.35
48.500	0.00	1.38	5.739	IO				4.35
48.583	0.00	1.38	5.730	IO				4.34
48.667	0.00	1.38	5.720	IO				4.34
48.750	0.00	1.38	5.711	IO				4.34
48.833	0.00	1.38	5.701	IO				4.34
48.917	0.00	1.38	5.692	IO				4.33
49.000	0.00	1.38	5.682	IO				4.33
49.083	0.00	1.38	5.673	IO				4.33
49.167	0.00	1.38	5.663	IO				4.33
49.250	0.00	1.38	5.654	IO				4.32
49.333	0.00	1.38	5.644	IO				4.32
49.417	0.00	1.38	5.635	IO				4.32
49.500	0.00	1.38	5.625	IO				4.32
49.583	0.00	1.38	5.616	IO				4.31
49.667	0.00	1.38	5.606	IO				4.31
49.750	0.00	1.38	5.597	IO				4.31
49.833	0.00	1.37	5.587	IO				4.31
49.917	0.00	1.37	5.578	IO				4.30
50.000	0.00	1.37	5.568	IO				4.30
50.083	0.00	1.37	5.559	IO				4.30
50.167	0.00	1.37	5.550	IO				4.30
50.250	0.00	1.37	5.540	IO				4.29
50.333	0.00	1.37	5.531	IO				4.29
50.417	0.00	1.37	5.521	IO				4.29
50.500	0.00	1.37	5.512	IO				4.29
50.583	0.00	1.37	5.502	IO				4.28
50.667	0.00	1.37	5.493	IO				4.28
50.750	0.00	1.37	5.483	IO				4.28
50.833	0.00	1.37	5.474	IO				4.28
50.917	0.00	1.37	5.465	IO				4.27
51.000	0.00	1.37	5.455	IO				4.27
51.083	0.00	1.37	5.446	IO				4.27
51.167	0.00	1.37	5.436	IO				4.27
51.250	0.00	1.37	5.427	IO				4.26
51.333	0.00	1.37	5.417	IO				4.26
51.417	0.00	1.37	5.408	IO				4.26
51.500	0.00	1.37	5.399	IO				4.26
51.583	0.00	1.37	5.389	IO				4.25
51.667	0.00	1.37	5.380	IO				4.25
51.750	0.00	1.36	5.370	IO				4.25
51.833	0.00	1.36	5.361	IO				4.25
51.917	0.00	1.36	5.352	IO				4.24
52.000	0.00	1.36	5.342	IO				4.24
52.083	0.00	1.36	5.333	IO				4.24
52.167	0.00	1.36	5.323	IO				4.24
52.250	0.00	1.36	5.314	IO				4.23
52.333	0.00	1.36	5.305	IO				4.23
52.417	0.00	1.36	5.295	IO				4.23
52.500	0.00	1.36	5.286	IO				4.23
52.583	0.00	1.36	5.277	IO				4.22
52.667	0.00	1.36	5.267	IO				4.22
52.750	0.00	1.36	5.258	IO				4.22
52.833	0.00	1.36	5.249	IO				4.22
52.917	0.00	1.36	5.239	IO				4.21

53.000	0.00	1.36	5.230	IO				4.21
53.083	0.00	1.36	5.220	IO				4.21
53.167	0.00	1.36	5.211	IO				4.21
53.250	0.00	1.36	5.202	IO				4.20
53.333	0.00	1.36	5.192	IO				4.20
53.417	0.00	1.36	5.183	IO				4.20
53.500	0.00	1.36	5.174	IO				4.20
53.583	0.00	1.35	5.164	IO				4.19
53.667	0.00	1.35	5.155	IO				4.19
53.750	0.00	1.35	5.146	IO				4.19
53.833	0.00	1.35	5.136	IO				4.19
53.917	0.00	1.35	5.127	IO				4.18
54.000	0.00	1.35	5.118	IO				4.18
54.083	0.00	1.35	5.108	IO				4.18
54.167	0.00	1.35	5.099	IO				4.18
54.250	0.00	1.35	5.090	IO				4.17
54.333	0.00	1.35	5.081	IO				4.17
54.417	0.00	1.35	5.071	IO				4.17
54.500	0.00	1.35	5.062	IO				4.17
54.583	0.00	1.35	5.053	IO				4.16
54.667	0.00	1.35	5.043	IO				4.16
54.750	0.00	1.35	5.034	IO				4.16
54.833	0.00	1.35	5.025	IO				4.16
54.917	0.00	1.35	5.016	IO				4.15
55.000	0.00	1.35	5.006	IO				4.15
55.083	0.00	1.35	4.997	IO				4.15
55.167	0.00	1.35	4.988	IO				4.15
55.250	0.00	1.35	4.978	IO				4.14
55.333	0.00	1.35	4.969	IO				4.14
55.417	0.00	1.35	4.960	IO				4.14
55.500	0.00	1.34	4.951	IO				4.14
55.583	0.00	1.34	4.941	IO				4.13
55.667	0.00	1.34	4.932	IO				4.13
55.750	0.00	1.34	4.923	IO				4.13
55.833	0.00	1.34	4.914	IO				4.13
55.917	0.00	1.34	4.904	IO				4.12
56.000	0.00	1.34	4.895	IO				4.12
56.083	0.00	1.34	4.886	IO				4.12
56.167	0.00	1.34	4.877	IO				4.12
56.250	0.00	1.34	4.867	IO				4.11
56.333	0.00	1.34	4.858	IO				4.11
56.417	0.00	1.34	4.849	IO				4.11
56.500	0.00	1.34	4.840	IO				4.11
56.583	0.00	1.34	4.831	IO				4.10
56.667	0.00	1.34	4.821	IO				4.10
56.750	0.00	1.34	4.812	IO				4.10
56.833	0.00	1.34	4.803	IO				4.10
56.917	0.00	1.34	4.794	IO				4.09
57.000	0.00	1.34	4.784	IO				4.09
57.083	0.00	1.34	4.775	IO				4.09
57.167	0.00	1.34	4.766	IO				4.09
57.250	0.00	1.34	4.757	IO				4.09
57.333	0.00	1.33	4.748	IO				4.08
57.417	0.00	1.33	4.738	IO				4.08
57.500	0.00	1.33	4.729	IO				4.08
57.583	0.00	1.33	4.720	IO				4.08
57.667	0.00	1.33	4.711	IO				4.07
57.750	0.00	1.33	4.702	IO				4.07
57.833	0.00	1.33	4.693	IO				4.07
57.917	0.00	1.33	4.683	IO				4.07
58.000	0.00	1.33	4.674	IO				4.06
58.083	0.00	1.33	4.665	IO				4.06
58.167	0.00	1.33	4.656	IO				4.06
58.250	0.00	1.33	4.647	IO				4.06
58.333	0.00	1.33	4.638	IO				4.05
58.417	0.00	1.33	4.628	IO				4.05
58.500	0.00	1.33	4.619	IO				4.05
58.583	0.00	1.33	4.610	IO				4.05
58.667	0.00	1.33	4.601	IO				4.04
58.750	0.00	1.33	4.592	IO				4.04
58.833	0.00	1.33	4.583	IO				4.04

58.917	0.00	1.33	4.574	IO				4.04
59.000	0.00	1.33	4.564	IO				4.03
59.083	0.00	1.33	4.555	IO				4.03
59.167	0.00	1.33	4.546	IO				4.03
59.250	0.00	1.32	4.537	IO				4.03
59.333	0.00	1.32	4.528	IO				4.02
59.417	0.00	1.32	4.519	IO				4.02
59.500	0.00	1.32	4.510	IO				4.02
59.583	0.00	1.32	4.501	IO				4.02
59.667	0.00	1.32	4.491	IO				4.01
59.750	0.00	1.32	4.482	IO				4.01
59.833	0.00	1.32	4.473	IO				4.01
59.917	0.00	1.32	4.464	IO				4.01
60.000	0.00	1.32	4.455	IO				4.01
60.083	0.00	1.32	4.446	IO				4.00
60.167	0.00	1.32	4.437	IO				4.00
60.250	0.00	1.32	4.428	IO				3.99
60.333	0.00	1.32	4.419	IO				3.99
60.417	0.00	1.32	4.410	IO				3.98
60.500	0.00	1.31	4.401	IO				3.97
60.583	0.00	1.31	4.391	IO				3.96
60.667	0.00	1.31	4.382	IO				3.95
60.750	0.00	1.31	4.373	IO				3.94
60.833	0.00	1.31	4.364	IO				3.94
60.917	0.00	1.31	4.355	IO				3.93
61.000	0.00	1.30	4.346	IO				3.92
61.083	0.00	1.30	4.337	IO				3.91
61.167	0.00	1.30	4.328	IO				3.90
61.250	0.00	1.30	4.320	IO				3.90
61.333	0.00	1.30	4.311	IO				3.89
61.417	0.00	1.30	4.302	IO				3.88
61.500	0.00	1.29	4.293	IO				3.87
61.583	0.00	1.29	4.284	IO				3.86
61.667	0.00	1.29	4.275	IO				3.86
61.750	0.00	1.29	4.266	IO				3.85
61.833	0.00	1.29	4.257	IO				3.84
61.917	0.00	1.29	4.248	IO				3.83
62.000	0.00	1.28	4.239	IO				3.82
62.083	0.00	1.28	4.231	IO				3.82
62.167	0.00	1.28	4.222	IO				3.81
62.250	0.00	1.28	4.213	IO				3.80
62.333	0.00	1.28	4.204	IO				3.79
62.417	0.00	1.28	4.195	IO				3.78
62.500	0.00	1.28	4.187	IO				3.78
62.583	0.00	1.27	4.178	IO				3.77
62.667	0.00	1.27	4.169	IO				3.76
62.750	0.00	1.27	4.160	IO				3.75
62.833	0.00	1.27	4.152	IO				3.74
62.917	0.00	1.27	4.143	IO				3.74
63.000	0.00	1.27	4.134	IO				3.73
63.083	0.00	1.26	4.125	IO				3.72
63.167	0.00	1.26	4.117	IO				3.71
63.250	0.00	1.26	4.108	IO				3.70
63.333	0.00	1.26	4.099	IO				3.70
63.417	0.00	1.26	4.091	IO				3.69
63.500	0.00	1.26	4.082	IO				3.68
63.583	0.00	1.25	4.073	IO				3.67
63.667	0.00	1.25	4.065	IO				3.67
63.750	0.00	1.25	4.056	IO				3.66
63.833	0.00	1.25	4.047	IO				3.65
63.917	0.00	1.25	4.039	IO				3.64
64.000	0.00	1.25	4.030	IO				3.63
64.083	0.00	1.25	4.022	IO				3.63
64.167	0.00	1.24	4.013	IO				3.62
64.250	0.00	1.24	4.005	IO				3.61
64.333	0.00	1.24	3.996	IO				3.60
64.417	0.00	1.24	3.987	IO				3.60
64.500	0.00	1.24	3.979	IO				3.59
64.583	0.00	1.24	3.970	IO				3.58
64.667	0.00	1.23	3.962	IO				3.57
64.750	0.00	1.23	3.953	IO				3.57

64.833	0.00	1.23	3.945	IO				3.56
64.917	0.00	1.23	3.936	IO				3.55
65.000	0.00	1.23	3.928	IO				3.54
65.083	0.00	1.23	3.920	IO				3.53
65.167	0.00	1.23	3.911	IO				3.53
65.250	0.00	1.22	3.903	IO				3.52
65.333	0.00	1.22	3.894	IO				3.51
65.417	0.00	1.22	3.886	IO				3.50
65.500	0.00	1.22	3.877	IO				3.50
65.583	0.00	1.22	3.869	IO				3.49
65.667	0.00	1.22	3.861	IO				3.48
65.750	0.00	1.21	3.852	IO				3.47
65.833	0.00	1.21	3.844	IO				3.47
65.917	0.00	1.21	3.836	IO				3.46
66.000	0.00	1.21	3.827	IO				3.45
66.083	0.00	1.21	3.819	IO				3.44
66.167	0.00	1.21	3.811	IO				3.44
66.250	0.00	1.21	3.802	IO				3.43
66.333	0.00	1.20	3.794	IO				3.42
66.417	0.00	1.20	3.786	IO				3.41
66.500	0.00	1.20	3.777	IO				3.41
66.583	0.00	1.20	3.769	IO				3.40
66.667	0.00	1.20	3.761	IO				3.39
66.750	0.00	1.20	3.753	IO				3.38
66.833	0.00	1.20	3.744	IO				3.38
66.917	0.00	1.19	3.736	IO				3.37
67.000	0.00	1.19	3.728	IO				3.36
67.083	0.00	1.19	3.720	IO				3.35
67.167	0.00	1.19	3.712	IO				3.35
67.250	0.00	1.19	3.703	IO				3.34
67.333	0.00	1.19	3.695	IO				3.33
67.417	0.00	1.18	3.687	IO				3.32
67.500	0.00	1.18	3.679	IO				3.32
67.583	0.00	1.18	3.671	IO				3.31
67.667	0.00	1.18	3.663	IO				3.30
67.750	0.00	1.18	3.654	IO				3.30
67.833	0.00	1.18	3.646	IO				3.29
67.917	0.00	1.18	3.638	IO				3.28
68.000	0.00	1.17	3.630	IO				3.27
68.083	0.00	1.17	3.622	IO				3.27
68.167	0.00	1.17	3.614	IO				3.26
68.250	0.00	1.17	3.606	IO				3.25
68.333	0.00	1.17	3.598	IO				3.24
68.417	0.00	1.17	3.590	IO				3.24
68.500	0.00	1.17	3.582	IO				3.23
68.583	0.00	1.16	3.574	IO				3.22
68.667	0.00	1.16	3.566	IO				3.22
68.750	0.00	1.16	3.558	IO				3.21
68.833	0.00	1.16	3.550	IO				3.20
68.917	0.00	1.16	3.542	IO				3.19
69.000	0.00	1.16	3.534	IO				3.19
69.083	0.00	1.16	3.526	IO				3.18
69.167	0.00	1.15	3.518	IO				3.17
69.250	0.00	1.15	3.510	IO				3.17
69.333	0.00	1.15	3.502	IO				3.16
69.417	0.00	1.15	3.494	IO				3.15
69.500	0.00	1.15	3.486	IO				3.14
69.583	0.00	1.15	3.478	IO				3.14
69.667	0.00	1.15	3.470	IO				3.13
69.750	0.00	1.14	3.462	IO				3.12
69.833	0.00	1.14	3.455	IO				3.12
69.917	0.00	1.14	3.447	IO				3.11
70.000	0.00	1.14	3.439	IO				3.10
70.083	0.00	1.14	3.431	IO				3.09
70.167	0.00	1.14	3.423	IO				3.09
70.250	0.00	1.14	3.415	IO				3.08
70.333	0.00	1.13	3.407	IO				3.07
70.417	0.00	1.13	3.400	IO				3.07
70.500	0.00	1.13	3.392	IO				3.06
70.583	0.00	1.13	3.384	IO				3.05
70.667	0.00	1.13	3.376	IO				3.04

70.750	0.00	1.13	3.369	IO				3.04
70.833	0.00	1.13	3.361	IO				3.03
70.917	0.00	1.12	3.353	IO				3.02
71.000	0.00	1.12	3.345	IO				3.02
71.083	0.00	1.12	3.338	IO				3.01
71.167	0.00	1.12	3.330	IO				3.00
71.250	0.00	1.12	3.322	IO				3.00
71.333	0.00	1.12	3.314	IO				2.99
71.417	0.00	1.12	3.307	IO				2.98
71.500	0.00	1.11	3.299	IO				2.97
71.583	0.00	1.11	3.291	IO				2.97
71.667	0.00	1.11	3.284	IO				2.96
71.750	0.00	1.11	3.276	IO				2.95
71.833	0.00	1.11	3.268	IO				2.95
71.917	0.00	1.10	3.261	IO				2.94
72.000	0.00	1.10	3.253	IO				2.93
72.083	0.00	1.10	3.246	IO				2.93
72.167	0.00	1.10	3.238	IO				2.92
72.250	0.00	1.10	3.231	IO				2.91
72.333	0.00	1.10	3.223	IO				2.91
72.417	0.00	1.09	3.215	IO				2.90
72.500	0.00	1.09	3.208	IO				2.89
72.583	0.00	1.09	3.200	IO				2.89
72.667	0.00	1.09	3.193	IO				2.88
72.750	0.00	1.09	3.185	IO				2.87
72.833	0.00	1.09	3.178	IO				2.87
72.917	0.00	1.08	3.170	IO				2.86
73.000	0.00	1.08	3.163	IO				2.85
73.083	0.00	1.08	3.156	IO				2.85
73.167	0.00	1.08	3.148	IO				2.84
73.250	0.00	1.08	3.141	IO				2.83
73.333	0.00	1.07	3.133	IO				2.83
73.417	0.00	1.07	3.126	IO				2.82
73.500	0.00	1.07	3.119	IO				2.81
73.583	0.00	1.07	3.111	IO				2.81
73.667	0.00	1.07	3.104	IO				2.80
73.750	0.00	1.07	3.096	IO				2.79
73.833	0.00	1.06	3.089	IO				2.79
73.917	0.00	1.06	3.082	IO				2.78
74.000	0.00	1.06	3.074	IO				2.77
74.083	0.00	1.06	3.067	IO				2.77
74.167	0.00	1.06	3.060	IO				2.76
74.250	0.00	1.06	3.053	IO				2.75
74.333	0.00	1.05	3.045	IO				2.75
74.417	0.00	1.05	3.038	IO				2.74
74.500	0.00	1.05	3.031	IO				2.73
74.583	0.00	1.05	3.024	IO				2.73
74.667	0.00	1.05	3.016	IO				2.72
74.750	0.00	1.05	3.009	IO				2.71
74.833	0.00	1.04	3.002	IO				2.71
74.917	0.00	1.04	2.995	IO				2.70
75.000	0.00	1.04	2.988	IO				2.69
75.083	0.00	1.04	2.980	IO				2.69
75.167	0.00	1.04	2.973	IO				2.68
75.250	0.00	1.04	2.966	IO				2.67
75.333	0.00	1.03	2.959	IO				2.67
75.417	0.00	1.03	2.952	IO				2.66
75.500	0.00	1.03	2.945	IO				2.66
75.583	0.00	1.03	2.938	IO				2.65
75.667	0.00	1.03	2.931	IO				2.64
75.750	0.00	1.03	2.924	IO				2.64
75.833	0.00	1.02	2.917	IO				2.63
75.917	0.00	1.02	2.910	IO				2.62
76.000	0.00	1.02	2.902	IO				2.62
76.083	0.00	1.02	2.895	IO				2.61
76.167	0.00	1.02	2.888	IO				2.60
76.250	0.00	1.02	2.881	IO				2.60
76.333	0.00	1.01	2.874	IO				2.59
76.417	0.00	1.01	2.867	IO				2.59
76.500	0.00	1.01	2.861	IO				2.58
76.583	0.00	1.01	2.854	IO				2.57

76.667	0.00	1.01	2.847	IO				2.57
76.750	0.00	1.01	2.840	IO				2.56
76.833	0.00	1.00	2.833	IO				2.55
76.917	0.00	1.00	2.826	IO				2.55
77.000	0.00	1.00	2.819	IO				2.54
77.083	0.00	1.00	2.812	IO				2.54
77.167	0.00	1.00	2.805	IO				2.53
77.250	0.00	1.00	2.798	IO				2.52
77.333	0.00	0.99	2.791	IO				2.52
77.417	0.00	0.99	2.785	IO				2.51
77.500	0.00	0.99	2.778	IO				2.50
77.583	0.00	0.99	2.771	IO				2.50
77.667	0.00	0.99	2.764	IO				2.49
77.750	0.00	0.99	2.757	IO				2.49
77.833	0.00	0.98	2.751	IO				2.48
77.917	0.00	0.98	2.744	IO				2.47
78.000	0.00	0.98	2.737	IO				2.47
78.083	0.00	0.98	2.730	IO				2.46
78.167	0.00	0.98	2.724	IO				2.46
78.250	0.00	0.98	2.717	IO				2.45
78.333	0.00	0.98	2.710	IO				2.44
78.417	0.00	0.97	2.703	IO				2.44
78.500	0.00	0.97	2.697	IO				2.43
78.583	0.00	0.97	2.690	IO				2.43
78.667	0.00	0.97	2.683	IO				2.42
78.750	0.00	0.97	2.677	IO				2.41
78.833	0.00	0.97	2.670	IO				2.41
78.917	0.00	0.96	2.663	IO				2.40
79.000	0.00	0.96	2.657	IO				2.40
79.083	0.00	0.96	2.650	IO				2.39
79.167	0.00	0.96	2.643	IO				2.38
79.250	0.00	0.96	2.637	IO				2.38
79.333	0.00	0.96	2.630	IO				2.37
79.417	0.00	0.96	2.624	IO				2.37
79.500	0.00	0.95	2.617	IO				2.36
79.583	0.00	0.95	2.611	IO				2.35
79.667	0.00	0.95	2.604	IO				2.35
79.750	0.00	0.95	2.597	IO				2.34
79.833	0.00	0.95	2.591	IO				2.34
79.917	0.00	0.95	2.584	IO				2.33
80.000	0.00	0.94	2.578	IO				2.32
80.083	0.00	0.94	2.571	IO				2.32
80.167	0.00	0.94	2.565	IO				2.31
80.250	0.00	0.94	2.558	IO				2.31
80.333	0.00	0.94	2.552	IO				2.30
80.417	0.00	0.94	2.545	IO				2.30
80.500	0.00	0.94	2.539	IO				2.29
80.583	0.00	0.93	2.533	IO				2.28
80.667	0.00	0.93	2.526	IO				2.28
80.750	0.00	0.93	2.520	IO				2.27
80.833	0.00	0.93	2.513	IO				2.27
80.917	0.00	0.93	2.507	IO				2.26
81.000	0.00	0.93	2.501	IO				2.25
81.083	0.00	0.92	2.494	IO				2.25
81.167	0.00	0.92	2.488	IO				2.24
81.250	0.00	0.92	2.481	IO				2.24
81.333	0.00	0.92	2.475	IO				2.23
81.417	0.00	0.92	2.469	IO				2.23
81.500	0.00	0.92	2.462	IO				2.22
81.583	0.00	0.92	2.456	IO				2.21
81.667	0.00	0.91	2.450	IO				2.21
81.750	0.00	0.91	2.444	IO				2.20
81.833	0.00	0.91	2.437	IO				2.20
81.917	0.00	0.91	2.431	IO				2.19
82.000	0.00	0.91	2.425	IO				2.19
82.083	0.00	0.91	2.419	IO				2.18
82.167	0.00	0.91	2.412	IO				2.18
82.250	0.00	0.90	2.406	IO				2.17
82.333	0.00	0.90	2.400	IO				2.16
82.417	0.00	0.90	2.394	IO				2.16
82.500	0.00	0.90	2.387	IO				2.15

82.583	0.00	0.90	2.381	IO				2.15
82.667	0.00	0.90	2.375	IO				2.14
82.750	0.00	0.90	2.369	IO				2.14
82.833	0.00	0.89	2.363	IO				2.13
82.917	0.00	0.89	2.357	IO				2.12
83.000	0.00	0.89	2.350	IO				2.12
83.083	0.00	0.89	2.344	IO				2.11
83.167	0.00	0.89	2.338	IO				2.11
83.250	0.00	0.89	2.332	IO				2.10
83.333	0.00	0.89	2.326	IO				2.10
83.417	0.00	0.88	2.320	IO				2.09
83.500	0.00	0.88	2.314	IO				2.09
83.583	0.00	0.88	2.308	IO				2.08
83.667	0.00	0.88	2.302	IO				2.08
83.750	0.00	0.88	2.296	IO				2.07
83.833	0.00	0.88	2.290	IO				2.06
83.917	0.00	0.88	2.284	IO				2.06
84.000	0.00	0.87	2.277	IO				2.05
84.083	0.00	0.87	2.271	IO				2.05
84.167	0.00	0.87	2.265	IO				2.04
84.250	0.00	0.87	2.259	IO				2.04
84.333	0.00	0.87	2.253	IO				2.03
84.417	0.00	0.87	2.248	IO				2.03
84.500	0.00	0.87	2.242	IO				2.02
84.583	0.00	0.86	2.236	IO				2.02
84.667	0.00	0.86	2.230	IO				2.01
84.750	0.00	0.86	2.224	IO				2.01
84.833	0.00	0.86	2.218	IO				2.00
84.917	0.00	0.86	2.212	IO				2.00
85.000	0.00	0.86	2.206	IO				1.99
85.083	0.00	0.86	2.200	IO				1.99
85.167	0.00	0.85	2.194	IO				1.98
85.250	0.00	0.85	2.188	IO				1.98
85.333	0.00	0.85	2.182	IO				1.98
85.417	0.00	0.85	2.177	IO				1.97
85.500	0.00	0.85	2.171	IO				1.97
85.583	0.00	0.85	2.165	IO				1.96
85.667	0.00	0.85	2.159	IO				1.96
85.750	0.00	0.84	2.153	IO				1.96
85.833	0.00	0.84	2.147	IO				1.95
85.917	0.00	0.84	2.142	IO				1.95
86.000	0.00	0.84	2.136	IO				1.94
86.083	0.00	0.84	2.130	IO				1.94
86.167	0.00	0.84	2.124	IO				1.94
86.250	0.00	0.84	2.119	IO				1.93
86.333	0.00	0.83	2.113	IO				1.93
86.417	0.00	0.83	2.107	IO				1.92
86.500	0.00	0.83	2.101	IO				1.92
86.583	0.00	0.83	2.096	IO				1.92
86.667	0.00	0.83	2.090	IO				1.91
86.750	0.00	0.83	2.084	IO				1.91
86.833	0.00	0.83	2.078	IO				1.91
86.917	0.00	0.82	2.073	IO				1.90
87.000	0.00	0.82	2.067	IO				1.90
87.083	0.00	0.82	2.061	IO				1.89
87.167	0.00	0.82	2.056	IO				1.89
87.250	0.00	0.82	2.050	IO				1.89
87.333	0.00	0.82	2.044	IO				1.88
87.417	0.00	0.82	2.039	IO				1.88
87.500	0.00	0.82	2.033	IO				1.88
87.583	0.00	0.81	2.028	IO				1.87
87.667	0.00	0.81	2.022	IO				1.87
87.750	0.00	0.81	2.016	IO				1.86
87.833	0.00	0.81	2.011	IO				1.86
87.917	0.00	0.81	2.005	IO				1.86
88.000	0.00	0.81	2.000	IO				1.85
88.083	0.00	0.81	1.994	IO				1.85
88.167	0.00	0.80	1.989	IO				1.84
88.250	0.00	0.80	1.983	IO				1.84
88.333	0.00	0.80	1.978	IO				1.84
88.417	0.00	0.80	1.972	IO				1.83

88.500	0.00	0.80	1.967	IO				1.83
88.583	0.00	0.80	1.961	IO				1.83
88.667	0.00	0.80	1.956	IO				1.82
88.750	0.00	0.79	1.950	IO				1.82
88.833	0.00	0.79	1.945	IO				1.82
88.917	0.00	0.79	1.939	IO				1.81
89.000	0.00	0.79	1.934	IO				1.81
89.083	0.00	0.79	1.928	IO				1.80
89.167	0.00	0.79	1.923	IO				1.80
89.250	0.00	0.79	1.917	IO				1.80
89.333	0.00	0.79	1.912	IO				1.79
89.417	0.00	0.78	1.907	IO				1.79
89.500	0.00	0.78	1.901	IO				1.79
89.583	0.00	0.78	1.896	IO				1.78
89.667	0.00	0.78	1.890	IO				1.78
89.750	0.00	0.78	1.885	IO				1.77
89.833	0.00	0.78	1.880	IO				1.77
89.917	0.00	0.78	1.874	O				1.77
90.000	0.00	0.78	1.869	O				1.76
90.083	0.00	0.77	1.864	O				1.76
90.167	0.00	0.77	1.858	O				1.76
90.250	0.00	0.77	1.853	O				1.75
90.333	0.00	0.77	1.848	O				1.75
90.417	0.00	0.77	1.842	O				1.75
90.500	0.00	0.77	1.837	O				1.74
90.583	0.00	0.77	1.832	O				1.74
90.667	0.00	0.76	1.827	O				1.74
90.750	0.00	0.76	1.821	O				1.73
90.833	0.00	0.76	1.816	O				1.73
90.917	0.00	0.76	1.811	O				1.72
91.000	0.00	0.76	1.806	O				1.72
91.083	0.00	0.76	1.800	O				1.72
91.167	0.00	0.76	1.795	O				1.71
91.250	0.00	0.76	1.790	O				1.71
91.333	0.00	0.75	1.785	O				1.71
91.417	0.00	0.75	1.780	O				1.70
91.500	0.00	0.75	1.774	O				1.70
91.583	0.00	0.75	1.769	O				1.70
91.667	0.00	0.75	1.764	O				1.69
91.750	0.00	0.75	1.759	O				1.69
91.833	0.00	0.75	1.754	O				1.69
91.917	0.00	0.75	1.749	O				1.68
92.000	0.00	0.74	1.743	O				1.68
92.083	0.00	0.74	1.738	O				1.68
92.167	0.00	0.74	1.733	O				1.67
92.250	0.00	0.74	1.728	O				1.67
92.333	0.00	0.74	1.723	O				1.67
92.417	0.00	0.74	1.718	O				1.66
92.500	0.00	0.74	1.713	O				1.66
92.583	0.00	0.74	1.708	O				1.66
92.667	0.00	0.73	1.703	O				1.65
92.750	0.00	0.73	1.698	O				1.65
92.833	0.00	0.73	1.693	O				1.64
92.917	0.00	0.73	1.688	O				1.64
93.000	0.00	0.73	1.683	O				1.64
93.083	0.00	0.73	1.678	O				1.63
93.167	0.00	0.73	1.673	O				1.63
93.250	0.00	0.73	1.668	O				1.63
93.333	0.00	0.72	1.663	O				1.62
93.417	0.00	0.72	1.658	O				1.62
93.500	0.00	0.72	1.653	O				1.62
93.583	0.00	0.72	1.648	O				1.61
93.667	0.00	0.72	1.643	O				1.61
93.750	0.00	0.72	1.638	O				1.61
93.833	0.00	0.72	1.633	O				1.60
93.917	0.00	0.72	1.628	O				1.60
94.000	0.00	0.72	1.623	O				1.60
94.083	0.00	0.71	1.618	O				1.59
94.167	0.00	0.71	1.613	O				1.59
94.250	0.00	0.71	1.608	O				1.59
94.333	0.00	0.71	1.603	O				1.58

94.417	0.00	0.71	1.598	O					1.58
94.500	0.00	0.71	1.593	O					1.58
94.583	0.00	0.71	1.589	O					1.57
94.667	0.00	0.71	1.584	O					1.57
94.750	0.00	0.70	1.579	O					1.57
94.833	0.00	0.70	1.574	O					1.56
94.917	0.00	0.70	1.569	O					1.56
95.000	0.00	0.70	1.564	O					1.56
95.083	0.00	0.70	1.560	O					1.55
95.167	0.00	0.70	1.555	O					1.55
95.250	0.00	0.70	1.550	O					1.55
95.333	0.00	0.70	1.545	O					1.55
95.417	0.00	0.70	1.540	O					1.54
95.500	0.00	0.69	1.536	O					1.54
95.583	0.00	0.69	1.531	O					1.54
95.667	0.00	0.69	1.526	O					1.53
95.750	0.00	0.69	1.521	O					1.53
95.833	0.00	0.69	1.516	O					1.53
95.917	0.00	0.69	1.512	O					1.52
96.000	0.00	0.69	1.507	O					1.52
96.083	0.00	0.69	1.502	O					1.52
96.167	0.00	0.68	1.498	O					1.51
96.250	0.00	0.68	1.493	O					1.51
96.333	0.00	0.68	1.488	O					1.51
96.417	0.00	0.68	1.483	O					1.50
96.500	0.00	0.68	1.479	O					1.50
96.583	0.00	0.68	1.474	O					1.50
96.667	0.00	0.68	1.469	O					1.49
96.750	0.00	0.68	1.465	O					1.49
96.833	0.00	0.68	1.460	O					1.49
96.917	0.00	0.67	1.455	O					1.48
97.000	0.00	0.67	1.451	O					1.48
97.083	0.00	0.67	1.446	O					1.48
97.167	0.00	0.67	1.442	O					1.47
97.250	0.00	0.67	1.437	O					1.47
97.333	0.00	0.67	1.432	O					1.47
97.417	0.00	0.67	1.428	O					1.47
97.500	0.00	0.67	1.423	O					1.46
97.583	0.00	0.67	1.419	O					1.46
97.667	0.00	0.66	1.414	O					1.46
97.750	0.00	0.66	1.409	O					1.45
97.833	0.00	0.66	1.405	O					1.45
97.917	0.00	0.66	1.400	O					1.45
98.000	0.00	0.66	1.396	O					1.44
98.083	0.00	0.66	1.391	O					1.44
98.167	0.00	0.66	1.387	O					1.44
98.250	0.00	0.66	1.382	O					1.43
98.333	0.00	0.66	1.378	O					1.43
98.417	0.00	0.65	1.373	O					1.43
98.500	0.00	0.65	1.369	O					1.43
98.583	0.00	0.65	1.364	O					1.42
98.667	0.00	0.65	1.360	O					1.42
98.750	0.00	0.65	1.355	O					1.42
98.833	0.00	0.65	1.351	O					1.41
98.917	0.00	0.65	1.346	O					1.41
99.000	0.00	0.65	1.342	O					1.41
99.083	0.00	0.65	1.337	O					1.40
99.167	0.00	0.64	1.333	O					1.40
99.250	0.00	0.64	1.328	O					1.40
99.333	0.00	0.64	1.324	O					1.40
99.417	0.00	0.64	1.320	O					1.39
99.500	0.00	0.64	1.315	O					1.39
99.583	0.00	0.64	1.311	O					1.39
99.667	0.00	0.64	1.306	O					1.38
99.750	0.00	0.64	1.302	O					1.38
99.833	0.00	0.64	1.298	O					1.38
99.917	0.00	0.63	1.293	O					1.37
100.000	0.00	0.63	1.289	O					1.37
100.083	0.00	0.63	1.284	O					1.37
100.167	0.00	0.63	1.280	O					1.37
100.250	0.00	0.63	1.276	O					1.36

100.333	0.00	0.63	1.271	O					1.36
100.417	0.00	0.63	1.267	O					1.36
100.500	0.00	0.63	1.263	O					1.35
100.583	0.00	0.63	1.258	O					1.35
100.667	0.00	0.63	1.254	O					1.35
100.750	0.00	0.62	1.250	O					1.35
100.833	0.00	0.62	1.246	O					1.34
100.917	0.00	0.62	1.241	O					1.34
101.000	0.00	0.62	1.237	O					1.34
101.083	0.00	0.62	1.233	O					1.33
101.167	0.00	0.62	1.228	O					1.33
101.250	0.00	0.62	1.224	O					1.33
101.333	0.00	0.62	1.220	O					1.33
101.417	0.00	0.62	1.216	O					1.32
101.500	0.00	0.61	1.211	O					1.32
101.583	0.00	0.61	1.207	O					1.32
101.667	0.00	0.61	1.203	O					1.31
101.750	0.00	0.61	1.199	O					1.31
101.833	0.00	0.61	1.195	O					1.31
101.917	0.00	0.61	1.190	O					1.31
102.000	0.00	0.61	1.186	O					1.30
102.083	0.00	0.61	1.182	O					1.30
102.167	0.00	0.61	1.178	O					1.30
102.250	0.00	0.61	1.174	O					1.29
102.333	0.00	0.60	1.169	O					1.29
102.417	0.00	0.60	1.165	O					1.29
102.500	0.00	0.60	1.161	O					1.29
102.583	0.00	0.60	1.157	O					1.28
102.667	0.00	0.60	1.153	O					1.28
102.750	0.00	0.60	1.149	O					1.28
102.833	0.00	0.60	1.145	O					1.27
102.917	0.00	0.60	1.140	O					1.27
103.000	0.00	0.60	1.136	O					1.27
103.083	0.00	0.60	1.132	O					1.27
103.167	0.00	0.59	1.128	O					1.26
103.250	0.00	0.59	1.124	O					1.26
103.333	0.00	0.59	1.120	O					1.26
103.417	0.00	0.59	1.116	O					1.25
103.500	0.00	0.59	1.112	O					1.25
103.583	0.00	0.59	1.108	O					1.25
103.667	0.00	0.59	1.104	O					1.25
103.750	0.00	0.59	1.100	O					1.24
103.833	0.00	0.59	1.096	O					1.24
103.917	0.00	0.59	1.092	O					1.24
104.000	0.00	0.58	1.087	O					1.24
104.083	0.00	0.58	1.083	O					1.23
104.167	0.00	0.58	1.079	O					1.23
104.250	0.00	0.58	1.075	O					1.23
104.333	0.00	0.58	1.071	O					1.22
104.417	0.00	0.58	1.067	O					1.22
104.500	0.00	0.58	1.063	O					1.22
104.583	0.00	0.58	1.059	O					1.22
104.667	0.00	0.58	1.055	O					1.21
104.750	0.00	0.58	1.051	O					1.21
104.833	0.00	0.58	1.048	O					1.21
104.917	0.00	0.57	1.044	O					1.21
105.000	0.00	0.57	1.040	O					1.20
105.083	0.00	0.57	1.036	O					1.20
105.167	0.00	0.57	1.032	O					1.20
105.250	0.00	0.57	1.028	O					1.20
105.333	0.00	0.57	1.024	O					1.19
105.417	0.00	0.57	1.020	O					1.19
105.500	0.00	0.57	1.016	O					1.19
105.583	0.00	0.57	1.012	O					1.18
105.667	0.00	0.57	1.008	O					1.18
105.750	0.00	0.56	1.004	O					1.18
105.833	0.00	0.56	1.000	O					1.18
105.917	0.00	0.56	0.997	O					1.17
106.000	0.00	0.56	0.993	O					1.17
106.083	0.00	0.56	0.989	O					1.17
106.167	0.00	0.56	0.985	O					1.17

106.250	0.00	0.56	0.981	O					1.16
106.333	0.00	0.56	0.977	O					1.16
106.417	0.00	0.56	0.973	O					1.16
106.500	0.00	0.56	0.970	O					1.16
106.583	0.00	0.56	0.966	O					1.15
106.667	0.00	0.55	0.962	O					1.15
106.750	0.00	0.55	0.958	O					1.15
106.833	0.00	0.55	0.954	O					1.15
106.917	0.00	0.55	0.951	O					1.14
107.000	0.00	0.55	0.947	O					1.14
107.083	0.00	0.55	0.943	O					1.14
107.167	0.00	0.55	0.939	O					1.14
107.250	0.00	0.55	0.935	O					1.13
107.333	0.00	0.55	0.932	O					1.13
107.417	0.00	0.55	0.928	O					1.13
107.500	0.00	0.55	0.924	O					1.13
107.583	0.00	0.54	0.920	O					1.12
107.667	0.00	0.54	0.917	O					1.12
107.750	0.00	0.54	0.913	O					1.12
107.833	0.00	0.54	0.909	O					1.12
107.917	0.00	0.54	0.905	O					1.11
108.000	0.00	0.54	0.902	O					1.11
108.083	0.00	0.54	0.898	O					1.11
108.167	0.00	0.54	0.894	O					1.11
108.250	0.00	0.54	0.891	O					1.10
108.333	0.00	0.54	0.887	O					1.10
108.417	0.00	0.54	0.883	O					1.10
108.500	0.00	0.53	0.880	O					1.10
108.583	0.00	0.53	0.876	O					1.09
108.667	0.00	0.53	0.872	O					1.09
108.750	0.00	0.53	0.869	O					1.09
108.833	0.00	0.53	0.865	O					1.09
108.917	0.00	0.53	0.861	O					1.08
109.000	0.00	0.53	0.858	O					1.08
109.083	0.00	0.53	0.854	O					1.08
109.167	0.00	0.53	0.850	O					1.08
109.250	0.00	0.53	0.847	O					1.07
109.333	0.00	0.53	0.843	O					1.07
109.417	0.00	0.52	0.839	O					1.07
109.500	0.00	0.52	0.836	O					1.07
109.583	0.00	0.52	0.832	O					1.06
109.667	0.00	0.52	0.829	O					1.06
109.750	0.00	0.52	0.825	O					1.06
109.833	0.00	0.52	0.821	O					1.06
109.917	0.00	0.52	0.818	O					1.05
110.000	0.00	0.52	0.814	O					1.05
110.083	0.00	0.52	0.811	O					1.05
110.167	0.00	0.52	0.807	O					1.05
110.250	0.00	0.52	0.804	O					1.04
110.333	0.00	0.51	0.800	O					1.04
110.417	0.00	0.51	0.797	O					1.04
110.500	0.00	0.51	0.793	O					1.04
110.583	0.00	0.51	0.789	O					1.03
110.667	0.00	0.51	0.786	O					1.03
110.750	0.00	0.51	0.782	O					1.03
110.833	0.00	0.51	0.779	O					1.03
110.917	0.00	0.51	0.775	O					1.02
111.000	0.00	0.51	0.772	O					1.02
111.083	0.00	0.51	0.768	O					1.02
111.167	0.00	0.51	0.765	O					1.02
111.250	0.00	0.51	0.761	O					1.02
111.333	0.00	0.50	0.758	O					1.01
111.417	0.00	0.50	0.754	O					1.01
111.500	0.00	0.50	0.751	O					1.01
111.583	0.00	0.50	0.748	O					1.01
111.667	0.00	0.50	0.744	O					1.00
111.750	0.00	0.50	0.741	O					1.00
111.833	0.00	0.50	0.737	O					1.00
111.917	0.00	0.50	0.734	O					0.99
112.000	0.00	0.49	0.730	O					0.99
112.083	0.00	0.49	0.727	O					0.98

112.167	0.00	0.49	0.724	O					0.98
112.250	0.00	0.49	0.720	O					0.97
112.333	0.00	0.49	0.717	O					0.97
112.417	0.00	0.48	0.714	O					0.97
112.500	0.00	0.48	0.710	O					0.96
112.583	0.00	0.48	0.707	O					0.96
112.667	0.00	0.48	0.704	O					0.95
112.750	0.00	0.47	0.700	O					0.95
112.833	0.00	0.47	0.697	O					0.94
112.917	0.00	0.47	0.694	O					0.94
113.000	0.00	0.47	0.691	O					0.93
113.083	0.00	0.47	0.687	O					0.93
113.167	0.00	0.46	0.684	O					0.93
113.250	0.00	0.46	0.681	O					0.92
113.333	0.00	0.46	0.678	O					0.92
113.417	0.00	0.46	0.675	O					0.91
113.500	0.00	0.45	0.672	O					0.91
113.583	0.00	0.45	0.668	O					0.90
113.667	0.00	0.45	0.665	O					0.90
113.750	0.00	0.45	0.662	O					0.90
113.833	0.00	0.45	0.659	O					0.89
113.917	0.00	0.44	0.656	O					0.89
114.000	0.00	0.44	0.653	O					0.88
114.083	0.00	0.44	0.650	O					0.88
114.167	0.00	0.44	0.647	O					0.88
114.250	0.00	0.44	0.644	O					0.87
114.333	0.00	0.43	0.641	O					0.87
114.417	0.00	0.43	0.638	O					0.86
114.500	0.00	0.43	0.635	O					0.86
114.583	0.00	0.43	0.632	O					0.86
114.667	0.00	0.43	0.629	O					0.85
114.750	0.00	0.42	0.626	O					0.85
114.833	0.00	0.42	0.623	O					0.84
114.917	0.00	0.42	0.620	O					0.84
115.000	0.00	0.42	0.618	O					0.84
115.083	0.00	0.42	0.615	O					0.83
115.167	0.00	0.41	0.612	O					0.83
115.250	0.00	0.41	0.609	O					0.82
115.333	0.00	0.41	0.606	O					0.82
115.417	0.00	0.41	0.603	O					0.82
115.500	0.00	0.41	0.601	O					0.81
115.583	0.00	0.40	0.598	O					0.81
115.667	0.00	0.40	0.595	O					0.81
115.750	0.00	0.40	0.592	O					0.80
115.833	0.00	0.40	0.589	O					0.80
115.917	0.00	0.40	0.587	O					0.79
116.000	0.00	0.40	0.584	O					0.79
116.083	0.00	0.39	0.581	O					0.79
116.167	0.00	0.39	0.579	O					0.78
116.250	0.00	0.39	0.576	O					0.78
116.333	0.00	0.39	0.573	O					0.78
116.417	0.00	0.39	0.571	O					0.77
116.500	0.00	0.38	0.568	O					0.77
116.583	0.00	0.38	0.565	O					0.76
116.667	0.00	0.38	0.563	O					0.76
116.750	0.00	0.38	0.560	O					0.76
116.833	0.00	0.38	0.557	O					0.75
116.917	0.00	0.38	0.555	O					0.75
117.000	0.00	0.37	0.552	O					0.75
117.083	0.00	0.37	0.550	O					0.74
117.167	0.00	0.37	0.547	O					0.74
117.250	0.00	0.37	0.545	O					0.74
117.333	0.00	0.37	0.542	O					0.73
117.417	0.00	0.37	0.540	O					0.73
117.500	0.00	0.36	0.537	O					0.73
117.583	0.00	0.36	0.535	O					0.72
117.667	0.00	0.36	0.532	O					0.72
117.750	0.00	0.36	0.530	O					0.72
117.833	0.00	0.36	0.527	O					0.71
117.917	0.00	0.35	0.525	O					0.71
118.000	0.00	0.35	0.522	O					0.71

118.083	0.00	0.35	0.520	O				0.70
118.167	0.00	0.35	0.517	O				0.70
118.250	0.00	0.35	0.515	O				0.70
118.333	0.00	0.35	0.513	O				0.69
118.417	0.00	0.35	0.510	O				0.69
118.500	0.00	0.34	0.508	O				0.69
118.583	0.00	0.34	0.505	O				0.68
118.667	0.00	0.34	0.503	O				0.68
118.750	0.00	0.34	0.501	O				0.68
118.833	0.00	0.34	0.498	O				0.67
118.917	0.00	0.34	0.496	O				0.67
119.000	0.00	0.33	0.494	O				0.67
119.083	0.00	0.33	0.491	O				0.67
119.167	0.00	0.33	0.489	O				0.66
119.250	0.00	0.33	0.487	O				0.66
119.333	0.00	0.33	0.485	O				0.66
119.417	0.00	0.33	0.482	O				0.65
119.500	0.00	0.32	0.480	O				0.65
119.583	0.00	0.32	0.478	O				0.65
119.667	0.00	0.32	0.476	O				0.64
119.750	0.00	0.32	0.474	O				0.64
119.833	0.00	0.32	0.471	O				0.64
119.917	0.00	0.32	0.469	O				0.63
120.000	0.00	0.32	0.467	O				0.63
120.083	0.00	0.31	0.465	O				0.63
120.167	0.00	0.31	0.463	O				0.63
120.250	0.00	0.31	0.460	O				0.62
120.333	0.00	0.31	0.458	O				0.62
120.417	0.00	0.31	0.456	O				0.62
120.500	0.00	0.31	0.454	O				0.61
120.583	0.00	0.31	0.452	O				0.61
120.667	0.00	0.30	0.450	O				0.61
120.750	0.00	0.30	0.448	O				0.61
120.833	0.00	0.30	0.446	O				0.60
120.917	0.00	0.30	0.444	O				0.60
121.000	0.00	0.30	0.442	O				0.60
121.083	0.00	0.30	0.439	O				0.59
121.167	0.00	0.30	0.437	O				0.59
121.250	0.00	0.29	0.435	O				0.59
121.333	0.00	0.29	0.433	O				0.59
121.417	0.00	0.29	0.431	O				0.58
121.500	0.00	0.29	0.429	O				0.58
121.583	0.00	0.29	0.427	O				0.58
121.667	0.00	0.29	0.425	O				0.58
121.750	0.00	0.29	0.423	O				0.57
121.833	0.00	0.29	0.421	O				0.57
121.917	0.00	0.28	0.419	O				0.57
122.000	0.00	0.28	0.418	O				0.57
122.083	0.00	0.28	0.416	O				0.56
122.167	0.00	0.28	0.414	O				0.56
122.250	0.00	0.28	0.412	O				0.56
122.333	0.00	0.28	0.410	O				0.55
122.417	0.00	0.28	0.408	O				0.55
122.500	0.00	0.27	0.406	O				0.55
122.583	0.00	0.27	0.404	O				0.55
122.667	0.00	0.27	0.402	O				0.54
122.750	0.00	0.27	0.400	O				0.54
122.833	0.00	0.27	0.399	O				0.54
122.917	0.00	0.27	0.397	O				0.54
123.000	0.00	0.27	0.395	O				0.53
123.083	0.00	0.27	0.393	O				0.53
123.167	0.00	0.26	0.391	O				0.53
123.250	0.00	0.26	0.389	O				0.53
123.333	0.00	0.26	0.388	O				0.52
123.417	0.00	0.26	0.386	O				0.52
123.500	0.00	0.26	0.384	O				0.52
123.583	0.00	0.26	0.382	O				0.52
123.667	0.00	0.26	0.380	O				0.51
123.750	0.00	0.26	0.379	O				0.51
123.833	0.00	0.25	0.377	O				0.51
123.917	0.00	0.25	0.375	O				0.51

124.000	0.00	0.25	0.373	O					0.51
124.083	0.00	0.25	0.372	O					0.50
124.167	0.00	0.25	0.370	O					0.50
124.250	0.00	0.25	0.368	O					0.50
124.333	0.00	0.25	0.366	O					0.50
124.417	0.00	0.25	0.365	O					0.49
124.500	0.00	0.25	0.363	O					0.49
124.583	0.00	0.24	0.361	O					0.49
124.667	0.00	0.24	0.360	O					0.49
124.750	0.00	0.24	0.358	O					0.48
124.833	0.00	0.24	0.356	O					0.48
124.917	0.00	0.24	0.355	O					0.48
125.000	0.00	0.24	0.353	O					0.48
125.083	0.00	0.24	0.351	O					0.48
125.167	0.00	0.24	0.350	O					0.47
125.250	0.00	0.24	0.348	O					0.47
125.333	0.00	0.23	0.347	O					0.47
125.417	0.00	0.23	0.345	O					0.47
125.500	0.00	0.23	0.343	O					0.46
125.583	0.00	0.23	0.342	O					0.46
125.667	0.00	0.23	0.340	O					0.46
125.750	0.00	0.23	0.339	O					0.46
125.833	0.00	0.23	0.337	O					0.46
125.917	0.00	0.23	0.335	O					0.45
126.000	0.00	0.23	0.334	O					0.45
126.083	0.00	0.22	0.332	O					0.45
126.167	0.00	0.22	0.331	O					0.45
126.250	0.00	0.22	0.329	O					0.45
126.333	0.00	0.22	0.328	O					0.44
126.417	0.00	0.22	0.326	O					0.44
126.500	0.00	0.22	0.325	O					0.44
126.583	0.00	0.22	0.323	O					0.44
126.667	0.00	0.22	0.322	O					0.44
126.750	0.00	0.22	0.320	O					0.43
126.833	0.00	0.22	0.319	O					0.43
126.917	0.00	0.21	0.317	O					0.43
127.000	0.00	0.21	0.316	O					0.43
127.083	0.00	0.21	0.314	O					0.43
127.167	0.00	0.21	0.313	O					0.42
127.250	0.00	0.21	0.311	O					0.42
127.333	0.00	0.21	0.310	O					0.42
127.417	0.00	0.21	0.308	O					0.42
127.500	0.00	0.21	0.307	O					0.42
127.583	0.00	0.21	0.306	O					0.41
127.667	0.00	0.21	0.304	O					0.41
127.750	0.00	0.20	0.303	O					0.41
127.833	0.00	0.20	0.301	O					0.41
127.917	0.00	0.20	0.300	O					0.41
128.000	0.00	0.20	0.299	O					0.40
128.083	0.00	0.20	0.297	O					0.40
128.167	0.00	0.20	0.296	O					0.40
128.250	0.00	0.20	0.294	O					0.40
128.333	0.00	0.20	0.293	O					0.40
128.417	0.00	0.20	0.292	O					0.39
128.500	0.00	0.20	0.290	O					0.39
128.583	0.00	0.20	0.289	O					0.39
128.667	0.00	0.19	0.288	O					0.39
128.750	0.00	0.19	0.286	O					0.39
128.833	0.00	0.19	0.285	O					0.39
128.917	0.00	0.19	0.284	O					0.38
129.000	0.00	0.19	0.282	O					0.38
129.083	0.00	0.19	0.281	O					0.38
129.167	0.00	0.19	0.280	O					0.38
129.250	0.00	0.19	0.278	O					0.38
129.333	0.00	0.19	0.277	O					0.37
129.417	0.00	0.19	0.276	O					0.37
129.500	0.00	0.19	0.275	O					0.37
129.583	0.00	0.18	0.273	O					0.37
129.667	0.00	0.18	0.272	O					0.37
129.750	0.00	0.18	0.271	O					0.37
129.833	0.00	0.18	0.269	O					0.36

129.917	0.00	0.18	0.268	O					0.36
130.000	0.00	0.18	0.267	O					0.36
130.083	0.00	0.18	0.266	O					0.36
130.167	0.00	0.18	0.264	O					0.36
130.250	0.00	0.18	0.263	O					0.36
130.333	0.00	0.18	0.262	O					0.35
130.417	0.00	0.18	0.261	O					0.35
130.500	0.00	0.18	0.260	O					0.35
130.583	0.00	0.17	0.258	O					0.35
130.667	0.00	0.17	0.257	O					0.35
130.750	0.00	0.17	0.256	O					0.35
130.833	0.00	0.17	0.255	O					0.34
130.917	0.00	0.17	0.254	O					0.34
131.000	0.00	0.17	0.252	O					0.34
131.083	0.00	0.17	0.251	O					0.34
131.167	0.00	0.17	0.250	O					0.34
131.250	0.00	0.17	0.249	O					0.34
131.333	0.00	0.17	0.248	O					0.34
131.417	0.00	0.17	0.247	O					0.33
131.500	0.00	0.17	0.245	O					0.33
131.583	0.00	0.17	0.244	O					0.33
131.667	0.00	0.16	0.243	O					0.33
131.750	0.00	0.16	0.242	O					0.33
131.833	0.00	0.16	0.241	O					0.33
131.917	0.00	0.16	0.240	O					0.32
132.000	0.00	0.16	0.239	O					0.32
132.083	0.00	0.16	0.238	O					0.32
132.167	0.00	0.16	0.236	O					0.32
132.250	0.00	0.16	0.235	O					0.32
132.333	0.00	0.16	0.234	O					0.32
132.417	0.00	0.16	0.233	O					0.32
132.500	0.00	0.16	0.232	O					0.31
132.583	0.00	0.16	0.231	O					0.31
132.667	0.00	0.16	0.230	O					0.31
132.750	0.00	0.15	0.229	O					0.31
132.833	0.00	0.15	0.228	O					0.31
132.917	0.00	0.15	0.227	O					0.31
133.000	0.00	0.15	0.226	O					0.31
133.083	0.00	0.15	0.225	O					0.30
133.167	0.00	0.15	0.224	O					0.30
133.250	0.00	0.15	0.223	O					0.30
133.333	0.00	0.15	0.222	O					0.30
133.417	0.00	0.15	0.221	O					0.30
133.500	0.00	0.15	0.219	O					0.30
133.583	0.00	0.15	0.218	O					0.30
133.667	0.00	0.15	0.217	O					0.29
133.750	0.00	0.15	0.216	O					0.29
133.833	0.00	0.15	0.215	O					0.29
133.917	0.00	0.15	0.214	O					0.29
134.000	0.00	0.14	0.213	O					0.29
134.083	0.00	0.14	0.212	O					0.29
134.167	0.00	0.14	0.211	O					0.29
134.250	0.00	0.14	0.210	O					0.28
134.333	0.00	0.14	0.210	O					0.28
134.417	0.00	0.14	0.209	O					0.28
134.500	0.00	0.14	0.208	O					0.28
134.583	0.00	0.14	0.207	O					0.28
134.667	0.00	0.14	0.206	O					0.28
134.750	0.00	0.14	0.205	O					0.28
134.833	0.00	0.14	0.204	O					0.28
134.917	0.00	0.14	0.203	O					0.27
135.000	0.00	0.14	0.202	O					0.27
135.083	0.00	0.14	0.201	O					0.27
135.167	0.00	0.14	0.200	O					0.27
135.250	0.00	0.13	0.199	O					0.27
135.333	0.00	0.13	0.198	O					0.27
135.417	0.00	0.13	0.197	O					0.27
135.500	0.00	0.13	0.196	O					0.27
135.583	0.00	0.13	0.195	O					0.26
135.667	0.00	0.13	0.194	O					0.26
135.750	0.00	0.13	0.194	O					0.26

135.833	0.00	0.13	0.193	O				0.26
135.917	0.00	0.13	0.192	O				0.26
136.000	0.00	0.13	0.191	O				0.26
136.083	0.00	0.13	0.190	O				0.26
136.167	0.00	0.13	0.189	O				0.26
136.250	0.00	0.13	0.188	O				0.25
136.333	0.00	0.13	0.187	O				0.25
136.417	0.00	0.13	0.186	O				0.25
136.500	0.00	0.13	0.186	O				0.25
136.583	0.00	0.12	0.185	O				0.25
136.667	0.00	0.12	0.184	O				0.25
136.750	0.00	0.12	0.183	O				0.25
136.833	0.00	0.12	0.182	O				0.25
136.917	0.00	0.12	0.181	O				0.25
137.000	0.00	0.12	0.180	O				0.24
137.083	0.00	0.12	0.180	O				0.24
137.167	0.00	0.12	0.179	O				0.24
137.250	0.00	0.12	0.178	O				0.24
137.333	0.00	0.12	0.177	O				0.24
137.417	0.00	0.12	0.176	O				0.24
137.500	0.00	0.12	0.176	O				0.24
137.583	0.00	0.12	0.175	O				0.24
137.667	0.00	0.12	0.174	O				0.24
137.750	0.00	0.12	0.173	O				0.23
137.833	0.00	0.12	0.172	O				0.23
137.917	0.00	0.12	0.171	O				0.23
138.000	0.00	0.12	0.171	O				0.23
138.083	0.00	0.11	0.170	O				0.23
138.167	0.00	0.11	0.169	O				0.23
138.250	0.00	0.11	0.168	O				0.23
138.333	0.00	0.11	0.168	O				0.23
138.417	0.00	0.11	0.167	O				0.23
138.500	0.00	0.11	0.166	O				0.22
138.583	0.00	0.11	0.165	O				0.22
138.667	0.00	0.11	0.164	O				0.22
138.750	0.00	0.11	0.164	O				0.22
138.833	0.00	0.11	0.163	O				0.22
138.917	0.00	0.11	0.162	O				0.22
139.000	0.00	0.11	0.161	O				0.22
139.083	0.00	0.11	0.161	O				0.22
139.167	0.00	0.11	0.160	O				0.22
139.250	0.00	0.11	0.159	O				0.22
139.333	0.00	0.11	0.158	O				0.21
139.417	0.00	0.11	0.158	O				0.21
139.500	0.00	0.11	0.157	O				0.21
139.583	0.00	0.11	0.156	O				0.21
139.667	0.00	0.11	0.155	O				0.21
139.750	0.00	0.10	0.155	O				0.21
139.833	0.00	0.10	0.154	O				0.21
139.917	0.00	0.10	0.153	O				0.21
140.000	0.00	0.10	0.153	O				0.21
140.083	0.00	0.10	0.152	O				0.21
140.167	0.00	0.10	0.151	O				0.20
140.250	0.00	0.10	0.150	O				0.20
140.333	0.00	0.10	0.150	O				0.20
140.417	0.00	0.10	0.149	O				0.20
140.500	0.00	0.10	0.148	O				0.20
140.583	0.00	0.10	0.148	O				0.20
140.667	0.00	0.10	0.147	O				0.20
140.750	0.00	0.10	0.146	O				0.20
140.833	0.00	0.10	0.146	O				0.20
140.917	0.00	0.10	0.145	O				0.20
141.000	0.00	0.10	0.144	O				0.20
141.083	0.00	0.10	0.144	O				0.19
141.167	0.00	0.10	0.143	O				0.19
141.250	0.00	0.10	0.142	O				0.19
141.333	0.00	0.10	0.142	O				0.19
141.417	0.00	0.10	0.141	O				0.19
141.500	0.00	0.09	0.140	O				0.19
141.583	0.00	0.09	0.140	O				0.19
141.667	0.00	0.09	0.139	O				0.19

141.750	0.00	0.09	0.138	O	|	|	|	|	0.19
141.833	0.00	0.09	0.138	O	|	|	|	|	0.19
141.917	0.00	0.09	0.137	O	|	|	|	|	0.19
142.000	0.00	0.09	0.136	O	|	|	|	|	0.18
142.083	0.00	0.09	0.136	O	|	|	|	|	0.18
142.167	0.00	0.09	0.135	O	|	|	|	|	0.18
142.250	0.00	0.09	0.135	O	|	|	|	|	0.18
142.333	0.00	0.09	0.134	O	|	|	|	|	0.18
142.417	0.00	0.09	0.133	O	|	|	|	|	0.18
142.500	0.00	0.09	0.133	O	|	|	|	|	0.18
142.583	0.00	0.09	0.132	O	|	|	|	|	0.18
142.667	0.00	0.09	0.131	O	|	|	|	|	0.18
142.750	0.00	0.09	0.131	O	|	|	|	|	0.18
142.833	0.00	0.09	0.130	O	|	|	|	|	0.18
142.917	0.00	0.09	0.130	O	|	|	|	|	0.18
143.000	0.00	0.09	0.129	O	|	|	|	|	0.17
143.083	0.00	0.09	0.128	O	|	|	|	|	0.17
143.167	0.00	0.09	0.128	O	|	|	|	|	0.17
143.250	0.00	0.09	0.127	O	|	|	|	|	0.17
143.333	0.00	0.09	0.127	O	|	|	|	|	0.17
143.417	0.00	0.09	0.126	O	|	|	|	|	0.17
143.500	0.00	0.08	0.125	O	|	|	|	|	0.17
143.583	0.00	0.08	0.125	O	|	|	|	|	0.17
143.667	0.00	0.08	0.124	O	|	|	|	|	0.17
143.750	0.00	0.08	0.124	O	|	|	|	|	0.17
143.833	0.00	0.08	0.123	O	|	|	|	|	0.17
143.917	0.00	0.08	0.123	O	|	|	|	|	0.17
144.000	0.00	0.08	0.122	O	|	|	|	|	0.17
144.083	0.00	0.08	0.121	O	|	|	|	|	0.16
144.167	0.00	0.08	0.121	O	|	|	|	|	0.16
144.250	0.00	0.08	0.120	O	|	|	|	|	0.16
144.333	0.00	0.08	0.120	O	|	|	|	|	0.16
144.417	0.00	0.08	0.119	O	|	|	|	|	0.16
144.500	0.00	0.08	0.119	O	|	|	|	|	0.16
144.583	0.00	0.08	0.118	O	|	|	|	|	0.16
144.667	0.00	0.08	0.118	O	|	|	|	|	0.16
144.750	0.00	0.08	0.117	O	|	|	|	|	0.16
144.833	0.00	0.08	0.116	O	|	|	|	|	0.16
144.917	0.00	0.08	0.116	O	|	|	|	|	0.16
145.000	0.00	0.08	0.115	O	|	|	|	|	0.16
145.083	0.00	0.08	0.115	O	|	|	|	|	0.16
145.167	0.00	0.08	0.114	O	|	|	|	|	0.15
145.250	0.00	0.08	0.114	O	|	|	|	|	0.15
145.333	0.00	0.08	0.113	O	|	|	|	|	0.15
145.417	0.00	0.08	0.113	O	|	|	|	|	0.15
145.500	0.00	0.08	0.112	O	|	|	|	|	0.15
145.583	0.00	0.08	0.112	O	|	|	|	|	0.15
145.667	0.00	0.08	0.111	O	|	|	|	|	0.15
145.750	0.00	0.07	0.111	O	|	|	|	|	0.15
145.833	0.00	0.07	0.110	O	|	|	|	|	0.15
145.917	0.00	0.07	0.110	O	|	|	|	|	0.15
146.000	0.00	0.07	0.109	O	|	|	|	|	0.15
146.083	0.00	0.07	0.109	O	|	|	|	|	0.15
146.167	0.00	0.07	0.108	O	|	|	|	|	0.15
146.250	0.00	0.07	0.108	O	|	|	|	|	0.15
146.333	0.00	0.07	0.107	O	|	|	|	|	0.14
146.417	0.00	0.07	0.107	O	|	|	|	|	0.14
146.500	0.00	0.07	0.106	O	|	|	|	|	0.14
146.583	0.00	0.07	0.106	O	|	|	|	|	0.14
146.667	0.00	0.07	0.105	O	|	|	|	|	0.14
146.750	0.00	0.07	0.105	O	|	|	|	|	0.14
146.833	0.00	0.07	0.104	O	|	|	|	|	0.14
146.917	0.00	0.07	0.104	O	|	|	|	|	0.14
147.000	0.00	0.07	0.103	O	|	|	|	|	0.14
147.083	0.00	0.07	0.103	O	|	|	|	|	0.14
147.167	0.00	0.07	0.102	O	|	|	|	|	0.14
147.250	0.00	0.07	0.102	O	|	|	|	|	0.14
147.333	0.00	0.07	0.101	O	|	|	|	|	0.14
147.417	0.00	0.07	0.101	O	|	|	|	|	0.14
147.500	0.00	0.07	0.100	O	|	|	|	|	0.14
147.583	0.00	0.07	0.100	O	|	|	|	|	0.14

147.667	0.00	0.07	0.099	O					0.13
147.750	0.00	0.07	0.099	O					0.13
147.833	0.00	0.07	0.098	O					0.13
147.917	0.00	0.07	0.098	O					0.13
148.000	0.00	0.07	0.098	O					0.13
148.083	0.00	0.07	0.097	O					0.13
148.167	0.00	0.07	0.097	O					0.13
148.250	0.00	0.07	0.096	O					0.13
148.333	0.00	0.06	0.096	O					0.13
148.417	0.00	0.06	0.095	O					0.13
148.500	0.00	0.06	0.095	O					0.13
148.583	0.00	0.06	0.094	O					0.13
148.667	0.00	0.06	0.094	O					0.13
148.750	0.00	0.06	0.094	O					0.13
148.833	0.00	0.06	0.093	O					0.13
148.917	0.00	0.06	0.093	O					0.13
149.000	0.00	0.06	0.092	O					0.12
149.083	0.00	0.06	0.092	O					0.12
149.167	0.00	0.06	0.091	O					0.12
149.250	0.00	0.06	0.091	O					0.12
149.333	0.00	0.06	0.091	O					0.12
149.417	0.00	0.06	0.090	O					0.12
149.500	0.00	0.06	0.090	O					0.12
149.583	0.00	0.06	0.089	O					0.12
149.667	0.00	0.06	0.089	O					0.12
149.750	0.00	0.06	0.088	O					0.12
149.833	0.00	0.06	0.088	O					0.12
149.917	0.00	0.06	0.088	O					0.12
150.000	0.00	0.06	0.087	O					0.12
150.083	0.00	0.06	0.087	O					0.12
150.167	0.00	0.06	0.086	O					0.12
150.250	0.00	0.06	0.086	O					0.12
150.333	0.00	0.06	0.086	O					0.12
150.417	0.00	0.06	0.085	O					0.12
150.500	0.00	0.06	0.085	O					0.11
150.583	0.00	0.06	0.084	O					0.11
150.667	0.00	0.06	0.084	O					0.11
150.750	0.00	0.06	0.084	O					0.11
150.833	0.00	0.06	0.083	O					0.11
150.917	0.00	0.06	0.083	O					0.11
151.000	0.00	0.06	0.082	O					0.11
151.083	0.00	0.06	0.082	O					0.11
151.167	0.00	0.06	0.082	O					0.11
151.250	0.00	0.06	0.081	O					0.11
151.333	0.00	0.05	0.081	O					0.11
151.417	0.00	0.05	0.081	O					0.11
151.500	0.00	0.05	0.080	O					0.11
151.583	0.00	0.05	0.080	O					0.11
151.667	0.00	0.05	0.079	O					0.11
151.750	0.00	0.05	0.079	O					0.11
151.833	0.00	0.05	0.079	O					0.11
151.917	0.00	0.05	0.078	O					0.11
152.000	0.00	0.05	0.078	O					0.11
152.083	0.00	0.05	0.078	O					0.11
152.167	0.00	0.05	0.077	O					0.10
152.250	0.00	0.05	0.077	O					0.10
152.333	0.00	0.05	0.077	O					0.10
152.417	0.00	0.05	0.076	O					0.10
152.500	0.00	0.05	0.076	O					0.10
152.583	0.00	0.05	0.076	O					0.10
152.667	0.00	0.05	0.075	O					0.10
152.750	0.00	0.05	0.075	O					0.10
152.833	0.00	0.05	0.074	O					0.10
152.917	0.00	0.05	0.074	O					0.10
153.000	0.00	0.05	0.074	O					0.10
153.083	0.00	0.05	0.073	O					0.10
153.167	0.00	0.05	0.073	O					0.10
153.250	0.00	0.05	0.073	O					0.10
153.333	0.00	0.05	0.072	O					0.10
153.417	0.00	0.05	0.072	O					0.10
153.500	0.00	0.05	0.072	O					0.10

153.583	0.00	0.05	0.071	O				0.10
153.667	0.00	0.05	0.071	O				0.10
153.750	0.00	0.05	0.071	O				0.10
153.833	0.00	0.05	0.070	O				0.10
153.917	0.00	0.05	0.070	O				0.09
154.000	0.00	0.05	0.070	O				0.09
154.083	0.00	0.05	0.069	O				0.09
154.167	0.00	0.05	0.069	O				0.09
154.250	0.00	0.05	0.069	O				0.09
154.333	0.00	0.05	0.068	O				0.09
154.417	0.00	0.05	0.068	O				0.09
154.500	0.00	0.05	0.068	O				0.09
154.583	0.00	0.05	0.068	O				0.09
154.667	0.00	0.05	0.067	O				0.09
154.750	0.00	0.05	0.067	O				0.09
154.833	0.00	0.05	0.067	O				0.09
154.917	0.00	0.04	0.066	O				0.09
155.000	0.00	0.04	0.066	O				0.09
155.083	0.00	0.04	0.066	O				0.09
155.167	0.00	0.04	0.065	O				0.09
155.250	0.00	0.04	0.065	O				0.09
155.333	0.00	0.04	0.065	O				0.09
155.417	0.00	0.04	0.064	O				0.09
155.500	0.00	0.04	0.064	O				0.09
155.583	0.00	0.04	0.064	O				0.09
155.667	0.00	0.04	0.064	O				0.09
155.750	0.00	0.04	0.063	O				0.09
155.833	0.00	0.04	0.063	O				0.09
155.917	0.00	0.04	0.063	O				0.08
156.000	0.00	0.04	0.062	O				0.08
156.083	0.00	0.04	0.062	O				0.08
156.167	0.00	0.04	0.062	O				0.08
156.250	0.00	0.04	0.062	O				0.08
156.333	0.00	0.04	0.061	O				0.08
156.417	0.00	0.04	0.061	O				0.08
156.500	0.00	0.04	0.061	O				0.08
156.583	0.00	0.04	0.060	O				0.08
156.667	0.00	0.04	0.060	O				0.08
156.750	0.00	0.04	0.060	O				0.08
156.833	0.00	0.04	0.060	O				0.08
156.917	0.00	0.04	0.059	O				0.08
157.000	0.00	0.04	0.059	O				0.08
157.083	0.00	0.04	0.059	O				0.08
157.167	0.00	0.04	0.058	O				0.08
157.250	0.00	0.04	0.058	O				0.08
157.333	0.00	0.04	0.058	O				0.08
157.417	0.00	0.04	0.058	O				0.08
157.500	0.00	0.04	0.057	O				0.08
157.583	0.00	0.04	0.057	O				0.08
157.667	0.00	0.04	0.057	O				0.08
157.750	0.00	0.04	0.057	O				0.08
157.833	0.00	0.04	0.056	O				0.08
157.917	0.00	0.04	0.056	O				0.08
158.000	0.00	0.04	0.056	O				0.08
158.083	0.00	0.04	0.056	O				0.08
158.167	0.00	0.04	0.055	O				0.07
158.250	0.00	0.04	0.055	O				0.07
158.333	0.00	0.04	0.055	O				0.07
158.417	0.00	0.04	0.054	O				0.07
158.500	0.00	0.04	0.054	O				0.07
158.583	0.00	0.04	0.054	O				0.07
158.667	0.00	0.04	0.054	O				0.07
158.750	0.00	0.04	0.053	O				0.07
158.833	0.00	0.04	0.053	O				0.07
158.917	0.00	0.04	0.053	O				0.07
159.000	0.00	0.04	0.053	O				0.07
159.083	0.00	0.04	0.052	O				0.07
159.167	0.00	0.04	0.052	O				0.07
159.250	0.00	0.04	0.052	O				0.07
159.333	0.00	0.04	0.052	O				0.07
159.417	0.00	0.03	0.052	O				0.07

159.500	0.00	0.03	0.051	O	|	|	|	|	0.07
159.583	0.00	0.03	0.051	O	|	|	|	|	0.07
159.667	0.00	0.03	0.051	O	|	|	|	|	0.07
159.750	0.00	0.03	0.051	O	|	|	|	|	0.07
159.833	0.00	0.03	0.050	O	|	|	|	|	0.07
159.917	0.00	0.03	0.050	O	|	|	|	|	0.07
160.000	0.00	0.03	0.050	O	|	|	|	|	0.07
160.083	0.00	0.03	0.050	O	|	|	|	|	0.07
160.167	0.00	0.03	0.049	O	|	|	|	|	0.07
160.250	0.00	0.03	0.049	O	|	|	|	|	0.07
160.333	0.00	0.03	0.049	O	|	|	|	|	0.07
160.417	0.00	0.03	0.049	O	|	|	|	|	0.07
160.500	0.00	0.03	0.049	O	|	|	|	|	0.07
160.583	0.00	0.03	0.048	O	|	|	|	|	0.07
160.667	0.00	0.03	0.048	O	|	|	|	|	0.07
160.750	0.00	0.03	0.048	O	|	|	|	|	0.06
160.833	0.00	0.03	0.048	O	|	|	|	|	0.06
160.917	0.00	0.03	0.047	O	|	|	|	|	0.06
161.000	0.00	0.03	0.047	O	|	|	|	|	0.06
161.083	0.00	0.03	0.047	O	|	|	|	|	0.06
161.167	0.00	0.03	0.047	O	|	|	|	|	0.06
161.250	0.00	0.03	0.047	O	|	|	|	|	0.06
161.333	0.00	0.03	0.046	O	|	|	|	|	0.06
161.417	0.00	0.03	0.046	O	|	|	|	|	0.06
161.500	0.00	0.03	0.046	O	|	|	|	|	0.06
161.583	0.00	0.03	0.046	O	|	|	|	|	0.06
161.667	0.00	0.03	0.045	O	|	|	|	|	0.06
161.750	0.00	0.03	0.045	O	|	|	|	|	0.06
161.833	0.00	0.03	0.045	O	|	|	|	|	0.06
161.917	0.00	0.03	0.045	O	|	|	|	|	0.06
162.000	0.00	0.03	0.045	O	|	|	|	|	0.06
162.083	0.00	0.03	0.044	O	|	|	|	|	0.06
162.167	0.00	0.03	0.044	O	|	|	|	|	0.06
162.250	0.00	0.03	0.044	O	|	|	|	|	0.06
162.333	0.00	0.03	0.044	O	|	|	|	|	0.06
162.417	0.00	0.03	0.044	O	|	|	|	|	0.06
162.500	0.00	0.03	0.043	O	|	|	|	|	0.06
162.583	0.00	0.03	0.043	O	|	|	|	|	0.06
162.667	0.00	0.03	0.043	O	|	|	|	|	0.06
162.750	0.00	0.03	0.043	O	|	|	|	|	0.06
162.833	0.00	0.03	0.043	O	|	|	|	|	0.06
162.917	0.00	0.03	0.042	O	|	|	|	|	0.06
163.000	0.00	0.03	0.042	O	|	|	|	|	0.06
163.083	0.00	0.03	0.042	O	|	|	|	|	0.06
163.167	0.00	0.03	0.042	O	|	|	|	|	0.06
163.250	0.00	0.03	0.042	O	|	|	|	|	0.06
163.333	0.00	0.03	0.041	O	|	|	|	|	0.06
163.417	0.00	0.03	0.041	O	|	|	|	|	0.06
163.500	0.00	0.03	0.041	O	|	|	|	|	0.06
163.583	0.00	0.03	0.041	O	|	|	|	|	0.06
163.667	0.00	0.03	0.041	O	|	|	|	|	0.05
163.750	0.00	0.03	0.040	O	|	|	|	|	0.05
163.833	0.00	0.03	0.040	O	|	|	|	|	0.05
163.917	0.00	0.03	0.040	O	|	|	|	|	0.05
164.000	0.00	0.03	0.040	O	|	|	|	|	0.05
164.083	0.00	0.03	0.040	O	|	|	|	|	0.05
164.167	0.00	0.03	0.040	O	|	|	|	|	0.05
164.250	0.00	0.03	0.039	O	|	|	|	|	0.05
164.333	0.00	0.03	0.039	O	|	|	|	|	0.05
164.417	0.00	0.03	0.039	O	|	|	|	|	0.05
164.500	0.00	0.03	0.039	O	|	|	|	|	0.05
164.583	0.00	0.03	0.039	O	|	|	|	|	0.05
164.667	0.00	0.03	0.038	O	|	|	|	|	0.05
164.750	0.00	0.03	0.038	O	|	|	|	|	0.05
164.833	0.00	0.03	0.038	O	|	|	|	|	0.05
164.917	0.00	0.03	0.038	O	|	|	|	|	0.05
165.000	0.00	0.03	0.038	O	|	|	|	|	0.05
165.083	0.00	0.03	0.038	O	|	|	|	|	0.05
165.167	0.00	0.03	0.037	O	|	|	|	|	0.05
165.250	0.00	0.03	0.037	O	|	|	|	|	0.05
165.333	0.00	0.03	0.037	O	|	|	|	|	0.05

165.417	0.00	0.02	0.037	O	|	|	|	0.05
165.500	0.00	0.02	0.037	O	|	|	|	0.05
165.583	0.00	0.02	0.037	O	|	|	|	0.05
165.667	0.00	0.02	0.036	O	|	|	|	0.05
165.750	0.00	0.02	0.036	O	|	|	|	0.05
165.833	0.00	0.02	0.036	O	|	|	|	0.05
165.917	0.00	0.02	0.036	O	|	|	|	0.05
166.000	0.00	0.02	0.036	O	|	|	|	0.05
166.083	0.00	0.02	0.035	O	|	|	|	0.05
166.167	0.00	0.02	0.035	O	|	|	|	0.05
166.250	0.00	0.02	0.035	O	|	|	|	0.05
166.333	0.00	0.02	0.035	O	|	|	|	0.05
166.417	0.00	0.02	0.035	O	|	|	|	0.05
166.500	0.00	0.02	0.035	O	|	|	|	0.05
166.583	0.00	0.02	0.035	O	|	|	|	0.05
166.667	0.00	0.02	0.034	O	|	|	|	0.05

Remaining water in basin = 0.03 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 2.807 (CFS)
Total volume = 12.911 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 01/06/20

HILLWOOD - APOLLO PROJECT
10 YEAR STORM EVENT BASIN ROUTING
1930BR2410
DS

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 1930PUH102410.rte
**********HYDROGRAPH DATA**********
Number of intervals = 301
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 36.410 (CFS)
Total volume = 18.495 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 301
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

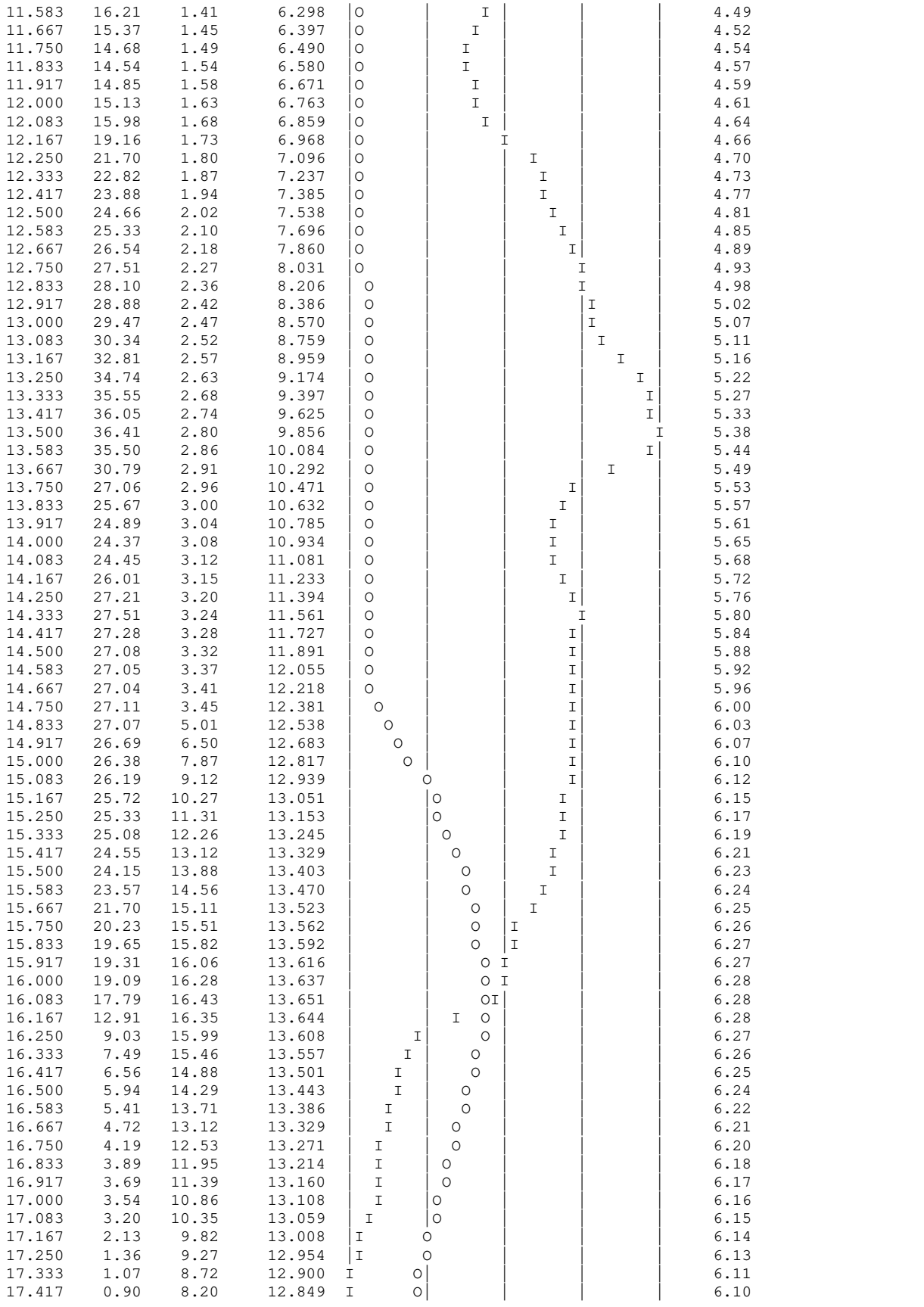
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.739	0.500	0.737	0.741
2.000	2.218	0.860	2.215	2.221
3.000	3.327	1.120	3.323	3.331
4.000	4.435	1.320	4.430	4.440
4.500	6.323	1.410	6.318	6.328
5.000	8.291	2.400	8.283	8.299
6.000	12.386	3.450	12.374	12.398
7.000	16.882	49.560	16.711	17.053
8.000	21.702	68.940	21.465	21.939
9.000	26.849	83.890	26.560	27.138

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 9.1 18.20 27.31 36.41	Depth (Ft.)
0.083	0.18	0.00	0.001	O	0.00
0.167	0.91	0.00	0.004	O	0.01
0.250	1.49	0.01	0.013	OI	0.02
0.333	1.80	0.02	0.024	OI	0.03
0.417	2.30	0.03	0.038	O I	0.05
0.500	2.68	0.04	0.055	O I	0.07
0.583	2.86	0.05	0.074	O I	0.10
0.667	2.97	0.06	0.093	O I	0.13
0.750	3.06	0.08	0.114	O I	0.15
0.833	3.20	0.09	0.134	O I	0.18
0.917	3.61	0.11	0.157	O I	0.21
1.000	3.94	0.12	0.182	O I	0.25
1.083	3.99	0.14	0.209	O I	0.28
1.167	3.71	0.16	0.234	O I	0.32
1.250	3.47	0.17	0.258	O I	0.35
1.333	3.40	0.19	0.280	O I	0.38
1.417	3.36	0.20	0.302	O I	0.41
1.500	3.34	0.22	0.324	O I	0.44
1.583	3.32	0.23	0.345	O I	0.47
1.667	3.31	0.25	0.366	O I	0.50
1.750	3.29	0.26	0.387	O I	0.52
1.833	3.38	0.28	0.409	O I	0.55
1.917	3.74	0.29	0.431	O I	0.58
2.000	4.02	0.31	0.456	O I	0.62
2.083	4.13	0.33	0.482	O I	0.65
2.167	4.19	0.34	0.508	O I	0.69
2.250	4.23	0.36	0.534	O I	0.72
2.333	4.26	0.38	0.561	O I	0.76
2.417	4.29	0.40	0.588	O I	0.80
2.500	4.31	0.42	0.615	O I	0.83
2.583	4.41	0.43	0.642	O I	0.87
2.667	4.78	0.45	0.670	O I	0.91
2.750	5.08	0.47	0.701	O I	0.95
2.833	5.20	0.50	0.733	O I	0.99
2.917	5.27	0.51	0.766	O I	1.02
3.000	5.32	0.51	0.799	O I	1.04
3.083	5.35	0.52	0.832	O I	1.06
3.167	5.37	0.53	0.865	O I	1.09
3.250	5.39	0.54	0.899	O I	1.11
3.333	5.41	0.55	0.932	O I	1.13
3.417	5.42	0.56	0.966	O I	1.15
3.500	5.43	0.56	0.999	O I	1.18
3.583	5.43	0.57	1.033	O I	1.20
3.667	5.44	0.58	1.066	O I	1.22
3.750	5.44	0.59	1.099	O I	1.24
3.833	5.53	0.60	1.133	O I	1.27
3.917	5.89	0.60	1.168	O I	1.29
4.000	6.18	0.61	1.206	O I	1.32
4.083	6.30	0.62	1.244	O I	1.34
4.167	6.36	0.63	1.284	O I	1.37
4.250	6.41	0.64	1.323	O I	1.40
4.333	6.53	0.65	1.363	O I	1.42
4.417	6.92	0.66	1.405	O I	1.45
4.500	7.23	0.67	1.449	O I	1.48
4.583	7.35	0.68	1.495	O I	1.51
4.667	7.43	0.70	1.541	O I	1.54
4.750	7.48	0.71	1.587	O I	1.57
4.833	7.61	0.72	1.634	O I	1.61
4.917	8.00	0.73	1.683	O I	1.64
5.000	8.31	0.74	1.734	O I	1.67
5.083	8.26	0.75	1.786	O I	1.71
5.167	7.61	0.77	1.836	O I	1.74
5.250	7.08	0.78	1.881	O I	1.77
5.333	6.98	0.79	1.924	O I	1.80
5.417	7.24	0.80	1.968	O I	1.83
5.500	7.46	0.81	2.013	O I	1.86
5.583	7.61	0.82	2.059	O I	1.89

5.667	8.01	0.83	2.107	O	I				1.92
5.750	8.32	0.85	2.157	O	I				1.96
5.833	8.44	0.86	2.209	O	I				1.99
5.917	8.51	0.87	2.262	O	I				2.04
6.000	8.56	0.88	2.314	O	I				2.09
6.083	7.89	0.89	2.365	O	I				2.13
6.167	4.99	0.90	2.403	O	I				2.17
6.250	2.72	0.91	2.423	O	I				2.19
6.333	1.87	0.91	2.433	OI					2.19
6.417	1.39	0.91	2.438	OI					2.20
6.500	1.09	0.91	2.440	O					2.20
6.583	0.99	0.91	2.441	O					2.20
6.667	1.31	0.91	2.443	OI					2.20
6.750	1.56	0.91	2.446	OI					2.21
6.833	1.64	0.91	2.451	OI					2.21
6.917	1.69	0.92	2.456	OI					2.21
7.000	1.73	0.92	2.462	OI					2.22
7.083	1.77	0.92	2.467	OI					2.22
7.167	1.80	0.92	2.473	OI					2.23
7.250	1.88	0.92	2.480	OI					2.24
7.333	2.05	0.92	2.487	OI					2.24
7.417	2.56	0.93	2.497	O	I				2.25
7.500	2.98	0.93	2.509	O	I				2.26
7.583	3.28	0.93	2.524	O	I				2.28
7.667	3.87	0.94	2.543	O	I				2.29
7.750	4.33	0.94	2.564	O	I				2.31
7.833	4.66	0.95	2.589	O	I				2.33
7.917	5.27	0.95	2.616	O	I				2.36
8.000	5.75	0.96	2.648	O	I				2.39
8.083	6.21	0.97	2.682	O	I				2.42
8.167	7.28	0.98	2.722	O	I				2.45
8.250	8.12	0.99	2.768	O	I				2.50
8.333	8.51	1.00	2.819	O	I				2.54
8.417	8.77	1.01	2.871	O	I				2.59
8.500	8.96	1.03	2.925	O	I				2.64
8.583	9.22	1.04	2.981	O	I				2.69
8.667	9.79	1.05	3.039	O	I				2.74
8.750	10.25	1.07	3.101	O	I				2.80
8.833	10.59	1.08	3.165	O	I				2.85
8.917	11.20	1.10	3.233	O	I				2.92
9.000	11.68	1.11	3.304	O	I				2.98
9.083	12.13	1.13	3.378	O	I				3.05
9.167	13.20	1.14	3.458	O	I				3.12
9.250	14.03	1.16	3.543	O	I				3.20
9.333	14.52	1.18	3.634	O	I				3.28
9.417	15.22	1.19	3.728	O	I				3.36
9.500	15.76	1.21	3.826	O	I				3.45
9.583	16.16	1.23	3.928	O	I				3.54
9.667	16.81	1.25	4.033	O	I				3.64
9.750	17.32	1.27	4.142	O	I				3.74
9.833	17.69	1.29	4.253	O	I				3.84
9.917	18.33	1.31	4.369	O	I				3.94
10.000	18.82	1.32	4.487	O	I				4.01
10.083	18.33	1.33	4.606	O	I				4.05
10.167	15.39	1.33	4.713	O	I				4.07
10.250	13.04	1.34	4.802	O	I				4.10
10.333	12.19	1.34	4.880	O	I				4.12
10.417	11.71	1.34	4.953	O	I				4.14
10.500	11.40	1.35	5.023	O	I				4.16
10.583	11.74	1.35	5.093	O	I				4.17
10.667	13.84	1.36	5.172	O	I				4.20
10.750	15.51	1.36	5.264	O	I				4.22
10.833	16.13	1.36	5.363	O	I				4.25
10.917	16.50	1.37	5.466	O	I				4.27
11.000	16.76	1.37	5.571	O	I				4.30
11.083	16.84	1.38	5.678	O	I				4.33
11.167	16.52	1.38	5.783	O	I				4.36
11.250	16.32	1.39	5.887	O	I				4.38
11.333	16.32	1.39	5.989	O	I				4.41
11.417	16.34	1.40	6.092	O	I				4.44
11.500	16.38	1.40	6.195	O	I				4.47



17.500	0.80	7.69	12.800	I O				6.09
17.583	0.74	7.22	12.754	I O				6.08
17.667	0.70	6.78	12.711	I O				6.07
17.750	0.68	6.36	12.670	I O				6.06
17.833	0.97	5.99	12.633	I O				6.05
17.917	2.21	5.69	12.604	I O				6.05
18.000	3.19	5.48	12.584	I O				6.04
18.083	3.57	5.34	12.570	IO				6.04
18.167	3.78	5.23	12.559	IO				6.04
18.250	3.94	5.13	12.550	IO				6.04
18.333	4.05	5.05	12.542	IO				6.03
18.417	4.13	4.99	12.536	IO				6.03
18.500	4.20	4.93	12.531	IO				6.03
18.583	4.16	4.88	12.526	IO				6.03
18.667	3.83	4.82	12.520	IO				6.03
18.750	3.56	4.74	12.512	IO				6.03
18.833	3.38	4.66	12.504	I O				6.03
18.917	2.97	4.56	12.494	I O				6.02
19.000	2.64	4.44	12.482	IO				6.02
19.083	2.58	4.31	12.470	IO				6.02
19.167	2.86	4.20	12.459	IO				6.02
19.250	3.08	4.12	12.451	IO				6.01
19.333	3.24	4.05	12.445	IO				6.01
19.417	3.64	4.01	12.441	O				6.01
19.500	3.95	4.00	12.439	O				6.01
19.583	3.98	3.99	12.439	O				6.01
19.667	3.69	3.98	12.438	O				6.01
19.750	3.46	3.96	12.435	O				6.01
19.833	3.29	3.92	12.431	IO				6.01
19.917	2.89	3.86	12.426	IO				6.01
20.000	2.58	3.78	12.418	IO				6.01
20.083	2.54	3.70	12.410	IO				6.01
20.167	2.84	3.63	12.404	IO				6.00
20.250	3.07	3.58	12.399	IO				6.00
20.333	3.14	3.55	12.396	IO				6.00
20.417	3.18	3.53	12.393	IO				6.00
20.500	3.20	3.50	12.391	IO				6.00
20.583	3.21	3.48	12.389	IO				6.00
20.667	3.22	3.46	12.387	IO				6.00
20.750	3.23	3.45	12.386	IO				6.00
20.833	3.15	3.45	12.384	IO				6.00
20.917	2.79	3.45	12.381	IO				6.00
21.000	2.51	3.45	12.375	IO				6.00
21.083	2.49	3.45	12.369	IO				6.00
21.167	2.79	3.44	12.363	IO				5.99
21.250	3.04	3.44	12.359	IO				5.99
21.333	3.03	3.44	12.357	IO				5.99
21.417	2.71	3.44	12.353	IO				5.99
21.500	2.44	3.44	12.347	IO				5.99
21.583	2.44	3.44	12.340	IO				5.99
21.667	2.75	3.44	12.334	IO				5.99
21.750	3.01	3.44	12.330	IO				5.99
21.833	3.01	3.43	12.327	IO				5.99
21.917	2.69	3.43	12.323	IO				5.98
22.000	2.43	3.43	12.317	IO				5.98
22.083	2.43	3.43	12.310	IO				5.98
22.167	2.75	3.43	12.305	IO				5.98
22.250	3.01	3.43	12.301	IO				5.98
22.333	3.01	3.43	12.298	IO				5.98
22.417	2.69	3.43	12.294	IO				5.98
22.500	2.43	3.42	12.288	IO				5.98
22.583	2.34	3.42	12.281	IO				5.97
22.667	2.30	3.42	12.273	IO				5.97
22.750	2.26	3.42	12.265	I O				5.97
22.833	2.24	3.42	12.257	I O				5.97
22.917	2.22	3.41	12.249	I O				5.97
23.000	2.21	3.41	12.241	IO				5.96
23.083	2.20	3.41	12.232	IO				5.96
23.167	2.20	3.41	12.224	IO				5.96
23.250	2.19	3.41	12.216	IO				5.96
23.333	2.18	3.40	12.207	IO				5.96

23.417	2.18	3.40	12.199	IO				5.95
23.500	2.18	3.40	12.190	IO				5.95
23.583	2.18	3.40	12.182	IO				5.95
23.667	2.18	3.40	12.174	IO				5.95
23.750	2.18	3.39	12.165	IO				5.95
23.833	2.18	3.39	12.157	IO				5.94
23.917	2.18	3.39	12.148	IO				5.94
24.000	2.18	3.39	12.140	IO				5.94
24.083	2.00	3.38	12.131	IO				5.94
24.167	1.27	3.38	12.119	IO				5.93
24.250	0.69	3.38	12.103	I O				5.93
24.333	0.46	3.37	12.083	I O				5.93
24.417	0.33	3.37	12.063	I O				5.92
24.500	0.24	3.36	12.042	I O				5.92
24.583	0.17	3.36	12.020	I O				5.91
24.667	0.13	3.35	11.998	I O				5.91
24.750	0.09	3.34	11.975	I O				5.90
24.833	0.06	3.34	11.953	I O				5.89
24.917	0.04	3.33	11.930	I O				5.89
25.000	0.03	3.33	11.908	I O				5.88
25.083	0.01	3.32	11.885	I O				5.88
25.167	0.00	3.32	11.862	I O				5.87
25.250	0.00	3.31	11.839	I O				5.87
25.333	0.00	3.30	11.816	I O				5.86
25.417	0.00	3.30	11.794	I O				5.86
25.500	0.00	3.29	11.771	I O				5.85
25.583	0.00	3.29	11.748	I O				5.84
25.667	0.00	3.28	11.726	I O				5.84
25.750	0.00	3.27	11.703	I O				5.83
25.833	0.00	3.27	11.681	I O				5.83
25.917	0.00	3.26	11.658	I O				5.82
26.000	0.00	3.26	11.636	I O				5.82
26.083	0.00	3.25	11.613	I O				5.81
26.167	0.00	3.25	11.591	I O				5.81
26.250	0.00	3.24	11.569	I O				5.80
26.333	0.00	3.23	11.546	I O				5.79
26.417	0.00	3.23	11.524	I O				5.79
26.500	0.00	3.22	11.502	I O				5.78
26.583	0.00	3.22	11.480	I O				5.78
26.667	0.00	3.21	11.457	I O				5.77
26.750	0.00	3.21	11.435	I O				5.77
26.833	0.00	3.20	11.413	I O				5.76
26.917	0.00	3.19	11.391	I O				5.76
27.000	0.00	3.19	11.369	I O				5.75
27.083	0.00	3.18	11.347	I O				5.75
27.167	0.00	3.18	11.325	I O				5.74
27.250	0.00	3.17	11.304	I O				5.74
27.333	0.00	3.17	11.282	I O				5.73
27.417	0.00	3.16	11.260	I O				5.73
27.500	0.00	3.16	11.238	I O				5.72
27.583	0.00	3.15	11.216	I O				5.71
27.667	0.00	3.14	11.195	I O				5.71
27.750	0.00	3.14	11.173	I O				5.70
27.833	0.00	3.13	11.152	I O				5.70
27.917	0.00	3.13	11.130	I O				5.69
28.000	0.00	3.12	11.108	I O				5.69
28.083	0.00	3.12	11.087	I O				5.68
28.167	0.00	3.11	11.066	I O				5.68
28.250	0.00	3.11	11.044	I O				5.67
28.333	0.00	3.10	11.023	I O				5.67
28.417	0.00	3.09	11.001	I O				5.66
28.500	0.00	3.09	10.980	I O				5.66
28.583	0.00	3.08	10.959	I O				5.65
28.667	0.00	3.08	10.938	I O				5.65
28.750	0.00	3.07	10.916	I O				5.64
28.833	0.00	3.07	10.895	I O				5.64
28.917	0.00	3.06	10.874	I O				5.63
29.000	0.00	3.06	10.853	I O				5.63
29.083	0.00	3.05	10.832	I O				5.62
29.167	0.00	3.05	10.811	I O				5.62
29.250	0.00	3.04	10.790	I O				5.61

29.333	0.00	3.04	10.769	I	O				5.61
29.417	0.00	3.03	10.748	I	O				5.60
29.500	0.00	3.02	10.727	I	O				5.59
29.583	0.00	3.02	10.707	I	O				5.59
29.667	0.00	3.01	10.686	I	O				5.58
29.750	0.00	3.01	10.665	I	O				5.58
29.833	0.00	3.00	10.644	I	O				5.57
29.917	0.00	3.00	10.624	I	O				5.57
30.000	0.00	2.99	10.603	I	O				5.56
30.083	0.00	2.99	10.583	I	O				5.56
30.167	0.00	2.98	10.562	I	O				5.55
30.250	0.00	2.98	10.541	I	O				5.55
30.333	0.00	2.97	10.521	I	O				5.54
30.417	0.00	2.97	10.501	I	O				5.54
30.500	0.00	2.96	10.480	I	O				5.53
30.583	0.00	2.96	10.460	I	O				5.53
30.667	0.00	2.95	10.439	I	O				5.52
30.750	0.00	2.95	10.419	I	O				5.52
30.833	0.00	2.94	10.399	I	O				5.51
30.917	0.00	2.94	10.379	I	O				5.51
31.000	0.00	2.93	10.358	I	O				5.50
31.083	0.00	2.92	10.338	I	O				5.50
31.167	0.00	2.92	10.318	I	O				5.50
31.250	0.00	2.91	10.298	I	O				5.49
31.333	0.00	2.91	10.278	I	O				5.49
31.417	0.00	2.90	10.258	I	O				5.48
31.500	0.00	2.90	10.238	I	O				5.48
31.583	0.00	2.89	10.218	I	O				5.47
31.667	0.00	2.89	10.198	I	O				5.47
31.750	0.00	2.88	10.178	I	O				5.46
31.833	0.00	2.88	10.158	I	O				5.46
31.917	0.00	2.87	10.139	I	O				5.45
32.000	0.00	2.87	10.119	I	O				5.45
32.083	0.00	2.86	10.099	I	O				5.44
32.167	0.00	2.86	10.079	I	O				5.44
32.250	0.00	2.85	10.060	I	O				5.43
32.333	0.00	2.85	10.040	I	O				5.43
32.417	0.00	2.84	10.020	I	O				5.42
32.500	0.00	2.84	10.001	I	O				5.42
32.583	0.00	2.83	9.981	I	O				5.41
32.667	0.00	2.83	9.962	I	O				5.41
32.750	0.00	2.82	9.942	I	O				5.40
32.833	0.00	2.82	9.923	I	O				5.40
32.917	0.00	2.81	9.904	I	O				5.39
33.000	0.00	2.81	9.884	I	O				5.39
33.083	0.00	2.80	9.865	I	O				5.38
33.167	0.00	2.80	9.846	I	O				5.38
33.250	0.00	2.79	9.826	I	O				5.37
33.333	0.00	2.79	9.807	I	O				5.37
33.417	0.00	2.78	9.788	I	O				5.37
33.500	0.00	2.78	9.769	I	O				5.36
33.583	0.00	2.77	9.750	I	O				5.36
33.667	0.00	2.77	9.731	I	O				5.35
33.750	0.00	2.76	9.711	I	O				5.35
33.833	0.00	2.76	9.692	I	O				5.34
33.917	0.00	2.75	9.673	I	O				5.34
34.000	0.00	2.75	9.655	I	O				5.33
34.083	0.00	2.74	9.636	I	O				5.33
34.167	0.00	2.74	9.617	I	O				5.32
34.250	0.00	2.74	9.598	I	O				5.32
34.333	0.00	2.73	9.579	I	O				5.31
34.417	0.00	2.73	9.560	I	O				5.31
34.500	0.00	2.72	9.542	I	O				5.31
34.583	0.00	2.72	9.523	I	O				5.30
34.667	0.00	2.71	9.504	I	O				5.30
34.750	0.00	2.71	9.485	I	O				5.29
34.833	0.00	2.70	9.467	I	O				5.29
34.917	0.00	2.70	9.448	I	O				5.28
35.000	0.00	2.69	9.430	I	O				5.28
35.083	0.00	2.69	9.411	I	O				5.27
35.167	0.00	2.68	9.393	I	O				5.27

35.250	0.00	2.68	9.374	I	O				5.26
35.333	0.00	2.67	9.356	I	O				5.26
35.417	0.00	2.67	9.337	I	O				5.26
35.500	0.00	2.66	9.319	I	O				5.25
35.583	0.00	2.66	9.301	I	O				5.25
35.667	0.00	2.65	9.282	I	O				5.24
35.750	0.00	2.65	9.264	I	O				5.24
35.833	0.00	2.64	9.246	I	O				5.23
35.917	0.00	2.64	9.228	I	O				5.23
36.000	0.00	2.64	9.210	I	O				5.22
36.083	0.00	2.63	9.191	I	O				5.22
36.167	0.00	2.63	9.173	I	O				5.22
36.250	0.00	2.62	9.155	I	O				5.21
36.333	0.00	2.62	9.137	I	O				5.21
36.417	0.00	2.61	9.119	I	O				5.20
36.500	0.00	2.61	9.101	I	O				5.20
36.583	0.00	2.60	9.083	I	O				5.19
36.667	0.00	2.60	9.065	I	O				5.19
36.750	0.00	2.59	9.047	I	O				5.18
36.833	0.00	2.59	9.030	I	O				5.18
36.917	0.00	2.58	9.012	I	O				5.18
37.000	0.00	2.58	8.994	I	O				5.17
37.083	0.00	2.58	8.976	I	O				5.17
37.167	0.00	2.57	8.959	I	O				5.16
37.250	0.00	2.57	8.941	I	O				5.16
37.333	0.00	2.56	8.923	I	O				5.15
37.417	0.00	2.56	8.906	I	O				5.15
37.500	0.00	2.55	8.888	I	O				5.15
37.583	0.00	2.55	8.870	I	O				5.14
37.667	0.00	2.54	8.853	I	O				5.14
37.750	0.00	2.54	8.835	I	O				5.13
37.833	0.00	2.54	8.818	I	O				5.13
37.917	0.00	2.53	8.800	I	O				5.12
38.000	0.00	2.53	8.783	I	O				5.12
38.083	0.00	2.52	8.766	I	O				5.12
38.167	0.00	2.52	8.748	I	O				5.11
38.250	0.00	2.51	8.731	I	O				5.11
38.333	0.00	2.51	8.714	I	O				5.10
38.417	0.00	2.50	8.696	I	O				5.10
38.500	0.00	2.50	8.679	I	O				5.09
38.583	0.00	2.50	8.662	I	O				5.09
38.667	0.00	2.49	8.645	I	O				5.09
38.750	0.00	2.49	8.628	I	O				5.08
38.833	0.00	2.48	8.611	I	O				5.08
38.917	0.00	2.48	8.593	I	O				5.07
39.000	0.00	2.47	8.576	I	O				5.07
39.083	0.00	2.47	8.559	I	O				5.07
39.167	0.00	2.46	8.542	I	O				5.06
39.250	0.00	2.46	8.525	I	O				5.06
39.333	0.00	2.46	8.509	I	O				5.05
39.417	0.00	2.45	8.492	I	O				5.05
39.500	0.00	2.45	8.475	I	O				5.04
39.583	0.00	2.44	8.458	I	O				5.04
39.667	0.00	2.44	8.441	I	O				5.04
39.750	0.00	2.43	8.424	I	O				5.03
39.833	0.00	2.43	8.408	I	O				5.03
39.917	0.00	2.43	8.391	I	O				5.02
40.000	0.00	2.42	8.374	I	O				5.02
40.083	0.00	2.42	8.358	I	O				5.02
40.167	0.00	2.41	8.341	I	O				5.01
40.250	0.00	2.41	8.324	I	O				5.01
40.333	0.00	2.40	8.308	I	O				5.00
40.417	0.00	2.40	8.291	I	O				5.00
40.500	0.00	2.39	8.275	I	O				5.00
40.583	0.00	2.38	8.258	I	O				4.99
40.667	0.00	2.38	8.242	I	O				4.99
40.750	0.00	2.37	8.226	I	O				4.98
40.833	0.00	2.36	8.209	I	O				4.98
40.917	0.00	2.35	8.193	I	O				4.98
41.000	0.00	2.34	8.177	I	O				4.97
41.083	0.00	2.33	8.161	I	O				4.97

41.167	0.00	2.33	8.145	I O				4.96
41.250	0.00	2.32	8.129	I O				4.96
41.333	0.00	2.31	8.113	I O				4.95
41.417	0.00	2.30	8.097	I O				4.95
41.500	0.00	2.29	8.081	I O				4.95
41.583	0.00	2.29	8.065	I O				4.94
41.667	0.00	2.28	8.050	I O				4.94
41.750	0.00	2.27	8.034	IO				4.93
41.833	0.00	2.26	8.018	IO				4.93
41.917	0.00	2.25	8.003	IO				4.93
42.000	0.00	2.25	7.987	IO				4.92
42.083	0.00	2.24	7.972	IO				4.92
42.167	0.00	2.23	7.956	IO				4.91
42.250	0.00	2.22	7.941	IO				4.91
42.333	0.00	2.22	7.926	IO				4.91
42.417	0.00	2.21	7.911	IO				4.90
42.500	0.00	2.20	7.895	IO				4.90
42.583	0.00	2.19	7.880	IO				4.90
42.667	0.00	2.19	7.865	IO				4.89
42.750	0.00	2.18	7.850	IO				4.89
42.833	0.00	2.17	7.835	IO				4.88
42.917	0.00	2.16	7.820	IO				4.88
43.000	0.00	2.16	7.805	IO				4.88
43.083	0.00	2.15	7.791	IO				4.87
43.167	0.00	2.14	7.776	IO				4.87
43.250	0.00	2.13	7.761	IO				4.87
43.333	0.00	2.13	7.746	IO				4.86
43.417	0.00	2.12	7.732	IO				4.86
43.500	0.00	2.11	7.717	IO				4.85
43.583	0.00	2.10	7.703	IO				4.85
43.667	0.00	2.10	7.688	IO				4.85
43.750	0.00	2.09	7.674	IO				4.84
43.833	0.00	2.08	7.659	IO				4.84
43.917	0.00	2.08	7.645	IO				4.84
44.000	0.00	2.07	7.631	IO				4.83
44.083	0.00	2.06	7.617	IO				4.83
44.167	0.00	2.05	7.602	IO				4.83
44.250	0.00	2.05	7.588	IO				4.82
44.333	0.00	2.04	7.574	IO				4.82
44.417	0.00	2.03	7.560	IO				4.81
44.500	0.00	2.03	7.546	IO				4.81
44.583	0.00	2.02	7.532	IO				4.81
44.667	0.00	2.01	7.518	IO				4.80
44.750	0.00	2.00	7.505	IO				4.80
44.833	0.00	2.00	7.491	IO				4.80
44.917	0.00	1.99	7.477	IO				4.79
45.000	0.00	1.98	7.463	IO				4.79
45.083	0.00	1.98	7.450	IO				4.79
45.167	0.00	1.97	7.436	IO				4.78
45.250	0.00	1.96	7.423	IO				4.78
45.333	0.00	1.96	7.409	IO				4.78
45.417	0.00	1.95	7.396	IO				4.77
45.500	0.00	1.94	7.382	IO				4.77
45.583	0.00	1.94	7.369	IO				4.77
45.667	0.00	1.93	7.356	IO				4.76
45.750	0.00	1.92	7.342	IO				4.76
45.833	0.00	1.92	7.329	IO				4.76
45.917	0.00	1.91	7.316	IO				4.75
46.000	0.00	1.90	7.303	IO				4.75
46.083	0.00	1.90	7.290	IO				4.75
46.167	0.00	1.89	7.277	IO				4.74
46.250	0.00	1.88	7.264	IO				4.74
46.333	0.00	1.88	7.251	IO				4.74
46.417	0.00	1.87	7.238	IO				4.73
46.500	0.00	1.86	7.225	IO				4.73
46.583	0.00	1.86	7.212	IO				4.73
46.667	0.00	1.85	7.199	IO				4.72
46.750	0.00	1.84	7.187	IO				4.72
46.833	0.00	1.84	7.174	IO				4.72
46.917	0.00	1.83	7.161	IO				4.71
47.000	0.00	1.83	7.149	IO				4.71

47.083	0.00	1.82	7.136	IO				4.71
47.167	0.00	1.81	7.124	IO				4.70
47.250	0.00	1.81	7.111	IO				4.70
47.333	0.00	1.80	7.099	IO				4.70
47.417	0.00	1.79	7.086	IO				4.69
47.500	0.00	1.79	7.074	IO				4.69
47.583	0.00	1.78	7.062	IO				4.69
47.667	0.00	1.78	7.050	IO				4.68
47.750	0.00	1.77	7.037	IO				4.68
47.833	0.00	1.76	7.025	IO				4.68
47.917	0.00	1.76	7.013	IO				4.68
48.000	0.00	1.75	7.001	IO				4.67
48.083	0.00	1.75	6.989	IO				4.67
48.167	0.00	1.74	6.977	IO				4.67
48.250	0.00	1.73	6.965	IO				4.66
48.333	0.00	1.73	6.953	IO				4.66
48.417	0.00	1.72	6.941	IO				4.66
48.500	0.00	1.72	6.929	IO				4.65
48.583	0.00	1.71	6.918	IO				4.65
48.667	0.00	1.70	6.906	IO				4.65
48.750	0.00	1.70	6.894	IO				4.65
48.833	0.00	1.69	6.883	IO				4.64
48.917	0.00	1.69	6.871	IO				4.64
49.000	0.00	1.68	6.859	IO				4.64
49.083	0.00	1.67	6.848	IO				4.63
49.167	0.00	1.67	6.836	IO				4.63
49.250	0.00	1.66	6.825	IO				4.63
49.333	0.00	1.66	6.813	IO				4.62
49.417	0.00	1.65	6.802	IO				4.62
49.500	0.00	1.65	6.791	IO				4.62
49.583	0.00	1.64	6.779	IO				4.62
49.667	0.00	1.63	6.768	IO				4.61
49.750	0.00	1.63	6.757	IO				4.61
49.833	0.00	1.62	6.746	IO				4.61
49.917	0.00	1.62	6.734	IO				4.60
50.000	0.00	1.61	6.723	IO				4.60
50.083	0.00	1.61	6.712	IO				4.60
50.167	0.00	1.60	6.701	IO				4.60
50.250	0.00	1.59	6.690	IO				4.59
50.333	0.00	1.59	6.679	IO				4.59
50.417	0.00	1.58	6.668	IO				4.59
50.500	0.00	1.58	6.657	IO				4.58
50.583	0.00	1.57	6.647	IO				4.58
50.667	0.00	1.57	6.636	IO				4.58
50.750	0.00	1.56	6.625	IO				4.58
50.833	0.00	1.56	6.614	IO				4.57
50.917	0.00	1.55	6.604	IO				4.57
51.000	0.00	1.55	6.593	IO				4.57
51.083	0.00	1.54	6.582	IO				4.57
51.167	0.00	1.54	6.572	IO				4.56
51.250	0.00	1.53	6.561	IO				4.56
51.333	0.00	1.52	6.551	IO				4.56
51.417	0.00	1.52	6.540	IO				4.56
51.500	0.00	1.51	6.530	IO				4.55
51.583	0.00	1.51	6.519	IO				4.55
51.667	0.00	1.50	6.509	IO				4.55
51.750	0.00	1.50	6.499	IO				4.54
51.833	0.00	1.49	6.488	IO				4.54
51.917	0.00	1.49	6.478	IO				4.54
52.000	0.00	1.48	6.468	IO				4.54
52.083	0.00	1.48	6.458	IO				4.53
52.167	0.00	1.47	6.447	IO				4.53
52.250	0.00	1.47	6.437	IO				4.53
52.333	0.00	1.46	6.427	IO				4.53
52.417	0.00	1.46	6.417	IO				4.52
52.500	0.00	1.45	6.407	IO				4.52
52.583	0.00	1.45	6.397	IO				4.52
52.667	0.00	1.44	6.387	IO				4.52
52.750	0.00	1.44	6.377	IO				4.51
52.833	0.00	1.43	6.367	IO				4.51
52.917	0.00	1.43	6.358	IO				4.51

53.000	0.00	1.42	6.348	IO				4.51
53.083	0.00	1.42	6.338	IO				4.50
53.167	0.00	1.41	6.328	IO				4.50
53.250	0.00	1.41	6.318	IO				4.50
53.333	0.00	1.41	6.309	IO				4.50
53.417	0.00	1.41	6.299	IO				4.49
53.500	0.00	1.41	6.289	IO				4.49
53.583	0.00	1.41	6.280	IO				4.49
53.667	0.00	1.41	6.270	IO				4.49
53.750	0.00	1.41	6.260	IO				4.48
53.833	0.00	1.41	6.251	IO				4.48
53.917	0.00	1.41	6.241	IO				4.48
54.000	0.00	1.41	6.231	IO				4.48
54.083	0.00	1.41	6.222	IO				4.47
54.167	0.00	1.40	6.212	IO				4.47
54.250	0.00	1.40	6.202	IO				4.47
54.333	0.00	1.40	6.193	IO				4.47
54.417	0.00	1.40	6.183	IO				4.46
54.500	0.00	1.40	6.173	IO				4.46
54.583	0.00	1.40	6.164	IO				4.46
54.667	0.00	1.40	6.154	IO				4.46
54.750	0.00	1.40	6.144	IO				4.45
54.833	0.00	1.40	6.135	IO				4.45
54.917	0.00	1.40	6.125	IO				4.45
55.000	0.00	1.40	6.115	IO				4.44
55.083	0.00	1.40	6.106	IO				4.44
55.167	0.00	1.40	6.096	IO				4.44
55.250	0.00	1.40	6.086	IO				4.44
55.333	0.00	1.40	6.077	IO				4.43
55.417	0.00	1.40	6.067	IO				4.43
55.500	0.00	1.40	6.057	IO				4.43
55.583	0.00	1.40	6.048	IO				4.43
55.667	0.00	1.40	6.038	IO				4.42
55.750	0.00	1.40	6.029	IO				4.42
55.833	0.00	1.40	6.019	IO				4.42
55.917	0.00	1.40	6.009	IO				4.42
56.000	0.00	1.39	6.000	IO				4.41
56.083	0.00	1.39	5.990	IO				4.41
56.167	0.00	1.39	5.981	IO				4.41
56.250	0.00	1.39	5.971	IO				4.41
56.333	0.00	1.39	5.961	IO				4.40
56.417	0.00	1.39	5.952	IO				4.40
56.500	0.00	1.39	5.942	IO				4.40
56.583	0.00	1.39	5.933	IO				4.40
56.667	0.00	1.39	5.923	IO				4.39
56.750	0.00	1.39	5.913	IO				4.39
56.833	0.00	1.39	5.904	IO				4.39
56.917	0.00	1.39	5.894	IO				4.39
57.000	0.00	1.39	5.885	IO				4.38
57.083	0.00	1.39	5.875	IO				4.38
57.167	0.00	1.39	5.866	IO				4.38
57.250	0.00	1.39	5.856	IO				4.38
57.333	0.00	1.39	5.847	IO				4.37
57.417	0.00	1.39	5.837	IO				4.37
57.500	0.00	1.39	5.827	IO				4.37
57.583	0.00	1.39	5.818	IO				4.37
57.667	0.00	1.39	5.808	IO				4.36
57.750	0.00	1.39	5.799	IO				4.36
57.833	0.00	1.38	5.789	IO				4.36
57.917	0.00	1.38	5.780	IO				4.36
58.000	0.00	1.38	5.770	IO				4.35
58.083	0.00	1.38	5.761	IO				4.35
58.167	0.00	1.38	5.751	IO				4.35
58.250	0.00	1.38	5.742	IO				4.35
58.333	0.00	1.38	5.732	IO				4.34
58.417	0.00	1.38	5.723	IO				4.34
58.500	0.00	1.38	5.713	IO				4.34
58.583	0.00	1.38	5.704	IO				4.34
58.667	0.00	1.38	5.694	IO				4.33
58.750	0.00	1.38	5.685	IO				4.33
58.833	0.00	1.38	5.675	IO				4.33

58.917	0.00	1.38	5.666	IO				4.33
59.000	0.00	1.38	5.656	IO				4.32
59.083	0.00	1.38	5.647	IO				4.32
59.167	0.00	1.38	5.637	IO				4.32
59.250	0.00	1.38	5.628	IO				4.32
59.333	0.00	1.38	5.618	IO				4.31
59.417	0.00	1.38	5.609	IO				4.31
59.500	0.00	1.38	5.599	IO				4.31
59.583	0.00	1.38	5.590	IO				4.31
59.667	0.00	1.37	5.580	IO				4.30
59.750	0.00	1.37	5.571	IO				4.30
59.833	0.00	1.37	5.561	IO				4.30
59.917	0.00	1.37	5.552	IO				4.30
60.000	0.00	1.37	5.542	IO				4.29
60.083	0.00	1.37	5.533	IO				4.29
60.167	0.00	1.37	5.523	IO				4.29
60.250	0.00	1.37	5.514	IO				4.29
60.333	0.00	1.37	5.505	IO				4.28
60.417	0.00	1.37	5.495	IO				4.28
60.500	0.00	1.37	5.486	IO				4.28
60.583	0.00	1.37	5.476	IO				4.28
60.667	0.00	1.37	5.467	IO				4.27
60.750	0.00	1.37	5.457	IO				4.27
60.833	0.00	1.37	5.448	IO				4.27
60.917	0.00	1.37	5.439	IO				4.27
61.000	0.00	1.37	5.429	IO				4.26
61.083	0.00	1.37	5.420	IO				4.26
61.167	0.00	1.37	5.410	IO				4.26
61.250	0.00	1.37	5.401	IO				4.26
61.333	0.00	1.37	5.391	IO				4.25
61.417	0.00	1.37	5.382	IO				4.25
61.500	0.00	1.36	5.373	IO				4.25
61.583	0.00	1.36	5.363	IO				4.25
61.667	0.00	1.36	5.354	IO				4.24
61.750	0.00	1.36	5.345	IO				4.24
61.833	0.00	1.36	5.335	IO				4.24
61.917	0.00	1.36	5.326	IO				4.24
62.000	0.00	1.36	5.316	IO				4.23
62.083	0.00	1.36	5.307	IO				4.23
62.167	0.00	1.36	5.298	IO				4.23
62.250	0.00	1.36	5.288	IO				4.23
62.333	0.00	1.36	5.279	IO				4.22
62.417	0.00	1.36	5.269	IO				4.22
62.500	0.00	1.36	5.260	IO				4.22
62.583	0.00	1.36	5.251	IO				4.22
62.667	0.00	1.36	5.241	IO				4.21
62.750	0.00	1.36	5.232	IO				4.21
62.833	0.00	1.36	5.223	IO				4.21
62.917	0.00	1.36	5.213	IO				4.21
63.000	0.00	1.36	5.204	IO				4.20
63.083	0.00	1.36	5.195	IO				4.20
63.167	0.00	1.36	5.185	IO				4.20
63.250	0.00	1.36	5.176	IO				4.20
63.333	0.00	1.35	5.167	IO				4.19
63.417	0.00	1.35	5.157	IO				4.19
63.500	0.00	1.35	5.148	IO				4.19
63.583	0.00	1.35	5.139	IO				4.19
63.667	0.00	1.35	5.129	IO				4.18
63.750	0.00	1.35	5.120	IO				4.18
63.833	0.00	1.35	5.111	IO				4.18
63.917	0.00	1.35	5.101	IO				4.18
64.000	0.00	1.35	5.092	IO				4.17
64.083	0.00	1.35	5.083	IO				4.17
64.167	0.00	1.35	5.074	IO				4.17
64.250	0.00	1.35	5.064	IO				4.17
64.333	0.00	1.35	5.055	IO				4.16
64.417	0.00	1.35	5.046	IO				4.16
64.500	0.00	1.35	5.036	IO				4.16
64.583	0.00	1.35	5.027	IO				4.16
64.667	0.00	1.35	5.018	IO				4.15
64.750	0.00	1.35	5.008	IO				4.15

64.833	0.00	1.35	4.999	IO				4.15
64.917	0.00	1.35	4.990	IO				4.15
65.000	0.00	1.35	4.981	IO				4.14
65.083	0.00	1.35	4.971	IO				4.14
65.167	0.00	1.35	4.962	IO				4.14
65.250	0.00	1.34	4.953	IO				4.14
65.333	0.00	1.34	4.944	IO				4.13
65.417	0.00	1.34	4.934	IO				4.13
65.500	0.00	1.34	4.925	IO				4.13
65.583	0.00	1.34	4.916	IO				4.13
65.667	0.00	1.34	4.907	IO				4.12
65.750	0.00	1.34	4.897	IO				4.12
65.833	0.00	1.34	4.888	IO				4.12
65.917	0.00	1.34	4.879	IO				4.12
66.000	0.00	1.34	4.870	IO				4.12
66.083	0.00	1.34	4.860	IO				4.11
66.167	0.00	1.34	4.851	IO				4.11
66.250	0.00	1.34	4.842	IO				4.11
66.333	0.00	1.34	4.833	IO				4.11
66.417	0.00	1.34	4.824	IO				4.10
66.500	0.00	1.34	4.814	IO				4.10
66.583	0.00	1.34	4.805	IO				4.10
66.667	0.00	1.34	4.796	IO				4.10
66.750	0.00	1.34	4.787	IO				4.09
66.833	0.00	1.34	4.777	IO				4.09
66.917	0.00	1.34	4.768	IO				4.09
67.000	0.00	1.34	4.759	IO				4.09
67.083	0.00	1.34	4.750	IO				4.08
67.167	0.00	1.33	4.741	IO				4.08
67.250	0.00	1.33	4.731	IO				4.08
67.333	0.00	1.33	4.722	IO				4.08
67.417	0.00	1.33	4.713	IO				4.07
67.500	0.00	1.33	4.704	IO				4.07
67.583	0.00	1.33	4.695	IO				4.07
67.667	0.00	1.33	4.686	IO				4.07
67.750	0.00	1.33	4.676	IO				4.06
67.833	0.00	1.33	4.667	IO				4.06
67.917	0.00	1.33	4.658	IO				4.06
68.000	0.00	1.33	4.649	IO				4.06
68.083	0.00	1.33	4.640	IO				4.05
68.167	0.00	1.33	4.631	IO				4.05
68.250	0.00	1.33	4.621	IO				4.05
68.333	0.00	1.33	4.612	IO				4.05
68.417	0.00	1.33	4.603	IO				4.04
68.500	0.00	1.33	4.594	IO				4.04
68.583	0.00	1.33	4.585	IO				4.04
68.667	0.00	1.33	4.576	IO				4.04
68.750	0.00	1.33	4.567	IO				4.03
68.833	0.00	1.33	4.557	IO				4.03
68.917	0.00	1.33	4.548	IO				4.03
69.000	0.00	1.32	4.539	IO				4.03
69.083	0.00	1.32	4.530	IO				4.03
69.167	0.00	1.32	4.521	IO				4.02
69.250	0.00	1.32	4.512	IO				4.02
69.333	0.00	1.32	4.503	IO				4.02
69.417	0.00	1.32	4.494	IO				4.02
69.500	0.00	1.32	4.484	IO				4.01
69.583	0.00	1.32	4.475	IO				4.01
69.667	0.00	1.32	4.466	IO				4.01
69.750	0.00	1.32	4.457	IO				4.01
69.833	0.00	1.32	4.448	IO				4.00
69.917	0.00	1.32	4.439	IO				4.00
70.000	0.00	1.32	4.430	IO				4.00
70.083	0.00	1.32	4.421	IO				3.99
70.167	0.00	1.32	4.412	IO				3.98
70.250	0.00	1.31	4.403	IO				3.97
70.333	0.00	1.31	4.394	IO				3.96
70.417	0.00	1.31	4.385	IO				3.95
70.500	0.00	1.31	4.376	IO				3.95
70.583	0.00	1.31	4.367	IO				3.94
70.667	0.00	1.31	4.358	IO				3.93

70.750	0.00	1.30	4.349	IO				3.92
70.833	0.00	1.30	4.340	IO				3.91
70.917	0.00	1.30	4.331	IO				3.91
71.000	0.00	1.30	4.322	IO				3.90
71.083	0.00	1.30	4.313	IO				3.89
71.167	0.00	1.30	4.304	IO				3.88
71.250	0.00	1.29	4.295	IO				3.87
71.333	0.00	1.29	4.286	IO				3.87
71.417	0.00	1.29	4.277	IO				3.86
71.500	0.00	1.29	4.268	IO				3.85
71.583	0.00	1.29	4.259	IO				3.84
71.667	0.00	1.29	4.250	IO				3.83
71.750	0.00	1.29	4.242	IO				3.83
71.833	0.00	1.28	4.233	IO				3.82
71.917	0.00	1.28	4.224	IO				3.81
72.000	0.00	1.28	4.215	IO				3.80
72.083	0.00	1.28	4.206	IO				3.79
72.167	0.00	1.28	4.197	IO				3.79
72.250	0.00	1.28	4.189	IO				3.78
72.333	0.00	1.27	4.180	IO				3.77
72.417	0.00	1.27	4.171	IO				3.76
72.500	0.00	1.27	4.162	IO				3.75
72.583	0.00	1.27	4.154	IO				3.75
72.667	0.00	1.27	4.145	IO				3.74
72.750	0.00	1.27	4.136	IO				3.73
72.833	0.00	1.26	4.127	IO				3.72
72.917	0.00	1.26	4.119	IO				3.71
73.000	0.00	1.26	4.110	IO				3.71
73.083	0.00	1.26	4.101	IO				3.70
73.167	0.00	1.26	4.093	IO				3.69
73.250	0.00	1.26	4.084	IO				3.68
73.333	0.00	1.26	4.075	IO				3.68
73.417	0.00	1.25	4.067	IO				3.67
73.500	0.00	1.25	4.058	IO				3.66
73.583	0.00	1.25	4.050	IO				3.65
73.667	0.00	1.25	4.041	IO				3.64
73.750	0.00	1.25	4.032	IO				3.64
73.833	0.00	1.25	4.024	IO				3.63
73.917	0.00	1.24	4.015	IO				3.62
74.000	0.00	1.24	4.007	IO				3.61
74.083	0.00	1.24	3.998	IO				3.61
74.167	0.00	1.24	3.989	IO				3.60
74.250	0.00	1.24	3.981	IO				3.59
74.333	0.00	1.24	3.972	IO				3.58
74.417	0.00	1.23	3.964	IO				3.57
74.500	0.00	1.23	3.955	IO				3.57
74.583	0.00	1.23	3.947	IO				3.56
74.667	0.00	1.23	3.938	IO				3.55
74.750	0.00	1.23	3.930	IO				3.54
74.833	0.00	1.23	3.922	IO				3.54
74.917	0.00	1.23	3.913	IO				3.53
75.000	0.00	1.22	3.905	IO				3.52
75.083	0.00	1.22	3.896	IO				3.51
75.167	0.00	1.22	3.888	IO				3.51
75.250	0.00	1.22	3.879	IO				3.50
75.333	0.00	1.22	3.871	IO				3.49
75.417	0.00	1.22	3.863	IO				3.48
75.500	0.00	1.22	3.854	IO				3.48
75.583	0.00	1.21	3.846	IO				3.47
75.667	0.00	1.21	3.838	IO				3.46
75.750	0.00	1.21	3.829	IO				3.45
75.833	0.00	1.21	3.821	IO				3.45
75.917	0.00	1.21	3.813	IO				3.44
76.000	0.00	1.21	3.804	IO				3.43
76.083	0.00	1.20	3.796	IO				3.42
76.167	0.00	1.20	3.788	IO				3.42
76.250	0.00	1.20	3.779	IO				3.41
76.333	0.00	1.20	3.771	IO				3.40
76.417	0.00	1.20	3.763	IO				3.39
76.500	0.00	1.20	3.755	IO				3.39
76.583	0.00	1.20	3.746	IO				3.38

76.667	0.00	1.19	3.738	IO				3.37
76.750	0.00	1.19	3.730	IO				3.36
76.833	0.00	1.19	3.722	IO				3.36
76.917	0.00	1.19	3.713	IO				3.35
77.000	0.00	1.19	3.705	IO				3.34
77.083	0.00	1.19	3.697	IO				3.33
77.167	0.00	1.19	3.689	IO				3.33
77.250	0.00	1.18	3.681	IO				3.32
77.333	0.00	1.18	3.673	IO				3.31
77.417	0.00	1.18	3.664	IO				3.30
77.500	0.00	1.18	3.656	IO				3.30
77.583	0.00	1.18	3.648	IO				3.29
77.667	0.00	1.18	3.640	IO				3.28
77.750	0.00	1.18	3.632	IO				3.28
77.833	0.00	1.17	3.624	IO				3.27
77.917	0.00	1.17	3.616	IO				3.26
78.000	0.00	1.17	3.608	IO				3.25
78.083	0.00	1.17	3.600	IO				3.25
78.167	0.00	1.17	3.592	IO				3.24
78.250	0.00	1.17	3.584	IO				3.23
78.333	0.00	1.16	3.576	IO				3.22
78.417	0.00	1.16	3.568	IO				3.22
78.500	0.00	1.16	3.560	IO				3.21
78.583	0.00	1.16	3.552	IO				3.20
78.667	0.00	1.16	3.544	IO				3.20
78.750	0.00	1.16	3.536	IO				3.19
78.833	0.00	1.16	3.528	IO				3.18
78.917	0.00	1.15	3.520	IO				3.17
79.000	0.00	1.15	3.512	IO				3.17
79.083	0.00	1.15	3.504	IO				3.16
79.167	0.00	1.15	3.496	IO				3.15
79.250	0.00	1.15	3.488	IO				3.15
79.333	0.00	1.15	3.480	IO				3.14
79.417	0.00	1.15	3.472	IO				3.13
79.500	0.00	1.14	3.464	IO				3.12
79.583	0.00	1.14	3.456	IO				3.12
79.667	0.00	1.14	3.449	IO				3.11
79.750	0.00	1.14	3.441	IO				3.10
79.833	0.00	1.14	3.433	IO				3.10
79.917	0.00	1.14	3.425	O				3.09
80.000	0.00	1.14	3.417	O				3.08
80.083	0.00	1.13	3.409	O				3.07
80.167	0.00	1.13	3.402	O				3.07
80.250	0.00	1.13	3.394	O				3.06
80.333	0.00	1.13	3.386	O				3.05
80.417	0.00	1.13	3.378	O				3.05
80.500	0.00	1.13	3.370	O				3.04
80.583	0.00	1.13	3.363	O				3.03
80.667	0.00	1.13	3.355	O				3.03
80.750	0.00	1.12	3.347	O				3.02
80.833	0.00	1.12	3.339	O				3.01
80.917	0.00	1.12	3.332	O				3.00
81.000	0.00	1.12	3.324	O				3.00
81.083	0.00	1.12	3.316	O				2.99
81.167	0.00	1.12	3.309	O				2.98
81.250	0.00	1.11	3.301	O				2.98
81.333	0.00	1.11	3.293	O				2.97
81.417	0.00	1.11	3.286	O				2.96
81.500	0.00	1.11	3.278	O				2.96
81.583	0.00	1.11	3.270	O				2.95
81.667	0.00	1.10	3.263	O				2.94
81.750	0.00	1.10	3.255	O				2.94
81.833	0.00	1.10	3.247	O				2.93
81.917	0.00	1.10	3.240	O				2.92
82.000	0.00	1.10	3.232	O				2.91
82.083	0.00	1.10	3.225	O				2.91
82.167	0.00	1.09	3.217	O				2.90
82.250	0.00	1.09	3.210	O				2.89
82.333	0.00	1.09	3.202	O				2.89
82.417	0.00	1.09	3.195	O				2.88
82.500	0.00	1.09	3.187	O				2.87

82.583	0.00	1.09	3.180	O					2.87
82.667	0.00	1.08	3.172	O					2.86
82.750	0.00	1.08	3.165	O					2.85
82.833	0.00	1.08	3.157	O					2.85
82.917	0.00	1.08	3.150	O					2.84
83.000	0.00	1.08	3.142	O					2.83
83.083	0.00	1.08	3.135	O					2.83
83.167	0.00	1.07	3.128	O					2.82
83.250	0.00	1.07	3.120	O					2.81
83.333	0.00	1.07	3.113	O					2.81
83.417	0.00	1.07	3.106	O					2.80
83.500	0.00	1.07	3.098	O					2.79
83.583	0.00	1.06	3.091	O					2.79
83.667	0.00	1.06	3.084	O					2.78
83.750	0.00	1.06	3.076	O					2.77
83.833	0.00	1.06	3.069	O					2.77
83.917	0.00	1.06	3.062	O					2.76
84.000	0.00	1.06	3.054	O					2.75
84.083	0.00	1.05	3.047	O					2.75
84.167	0.00	1.05	3.040	O					2.74
84.250	0.00	1.05	3.033	O					2.73
84.333	0.00	1.05	3.025	O					2.73
84.417	0.00	1.05	3.018	O					2.72
84.500	0.00	1.05	3.011	O					2.71
84.583	0.00	1.04	3.004	O					2.71
84.667	0.00	1.04	2.997	O					2.70
84.750	0.00	1.04	2.989	O					2.70
84.833	0.00	1.04	2.982	O					2.69
84.917	0.00	1.04	2.975	O					2.68
85.000	0.00	1.04	2.968	O					2.68
85.083	0.00	1.03	2.961	O					2.67
85.167	0.00	1.03	2.954	O					2.66
85.250	0.00	1.03	2.947	O					2.66
85.333	0.00	1.03	2.939	O					2.65
85.417	0.00	1.03	2.932	O					2.64
85.500	0.00	1.03	2.925	O					2.64
85.583	0.00	1.02	2.918	O					2.63
85.667	0.00	1.02	2.911	O					2.63
85.750	0.00	1.02	2.904	O					2.62
85.833	0.00	1.02	2.897	O					2.61
85.917	0.00	1.02	2.890	O					2.61
86.000	0.00	1.02	2.883	O					2.60
86.083	0.00	1.01	2.876	O					2.59
86.167	0.00	1.01	2.869	O					2.59
86.250	0.00	1.01	2.862	O					2.58
86.333	0.00	1.01	2.855	O					2.57
86.417	0.00	1.01	2.848	O					2.57
86.500	0.00	1.01	2.841	O					2.56
86.583	0.00	1.00	2.834	O					2.56
86.667	0.00	1.00	2.828	O					2.55
86.750	0.00	1.00	2.821	O					2.54
86.833	0.00	1.00	2.814	O					2.54
86.917	0.00	1.00	2.807	O					2.53
87.000	0.00	1.00	2.800	O					2.52
87.083	0.00	0.99	2.793	O					2.52
87.167	0.00	0.99	2.786	O					2.51
87.250	0.00	0.99	2.779	O					2.51
87.333	0.00	0.99	2.773	O					2.50
87.417	0.00	0.99	2.766	O					2.49
87.500	0.00	0.99	2.759	O					2.49
87.583	0.00	0.99	2.752	O					2.48
87.667	0.00	0.98	2.745	O					2.48
87.750	0.00	0.98	2.739	O					2.47
87.833	0.00	0.98	2.732	O					2.46
87.917	0.00	0.98	2.725	O					2.46
88.000	0.00	0.98	2.718	O					2.45
88.083	0.00	0.98	2.712	O					2.45
88.167	0.00	0.97	2.705	O					2.44
88.250	0.00	0.97	2.698	O					2.43
88.333	0.00	0.97	2.692	O					2.43
88.417	0.00	0.97	2.685	O					2.42

88.500	0.00	0.97	2.678	O					2.42
88.583	0.00	0.97	2.672	O					2.41
88.667	0.00	0.96	2.665	O					2.40
88.750	0.00	0.96	2.658	O					2.40
88.833	0.00	0.96	2.652	O					2.39
88.917	0.00	0.96	2.645	O					2.39
89.000	0.00	0.96	2.638	O					2.38
89.083	0.00	0.96	2.632	O					2.37
89.167	0.00	0.96	2.625	O					2.37
89.250	0.00	0.95	2.619	O					2.36
89.333	0.00	0.95	2.612	O					2.36
89.417	0.00	0.95	2.606	O					2.35
89.500	0.00	0.95	2.599	O					2.34
89.583	0.00	0.95	2.592	O					2.34
89.667	0.00	0.95	2.586	O					2.33
89.750	0.00	0.94	2.579	O					2.33
89.833	0.00	0.94	2.573	O					2.32
89.917	0.00	0.94	2.566	O					2.31
90.000	0.00	0.94	2.560	O					2.31
90.083	0.00	0.94	2.554	O					2.30
90.167	0.00	0.94	2.547	O					2.30
90.250	0.00	0.94	2.541	O					2.29
90.333	0.00	0.93	2.534	O					2.29
90.417	0.00	0.93	2.528	O					2.28
90.500	0.00	0.93	2.521	O					2.27
90.583	0.00	0.93	2.515	O					2.27
90.667	0.00	0.93	2.509	O					2.26
90.750	0.00	0.93	2.502	O					2.26
90.833	0.00	0.93	2.496	O					2.25
90.917	0.00	0.92	2.489	O					2.24
91.000	0.00	0.92	2.483	O					2.24
91.083	0.00	0.92	2.477	O					2.23
91.167	0.00	0.92	2.470	O					2.23
91.250	0.00	0.92	2.464	O					2.22
91.333	0.00	0.92	2.458	O					2.22
91.417	0.00	0.91	2.451	O					2.21
91.500	0.00	0.91	2.445	O					2.20
91.583	0.00	0.91	2.439	O					2.20
91.667	0.00	0.91	2.433	O					2.19
91.750	0.00	0.91	2.426	O					2.19
91.833	0.00	0.91	2.420	O					2.18
91.917	0.00	0.91	2.414	O					2.18
92.000	0.00	0.90	2.408	O					2.17
92.083	0.00	0.90	2.401	O					2.17
92.167	0.00	0.90	2.395	O					2.16
92.250	0.00	0.90	2.389	O					2.15
92.333	0.00	0.90	2.383	O					2.15
92.417	0.00	0.90	2.377	O					2.14
92.500	0.00	0.90	2.370	O					2.14
92.583	0.00	0.89	2.364	O					2.13
92.667	0.00	0.89	2.358	O					2.13
92.750	0.00	0.89	2.352	O					2.12
92.833	0.00	0.89	2.346	O					2.12
92.917	0.00	0.89	2.340	O					2.11
93.000	0.00	0.89	2.334	O					2.10
93.083	0.00	0.89	2.327	O					2.10
93.167	0.00	0.88	2.321	O					2.09
93.250	0.00	0.88	2.315	O					2.09
93.333	0.00	0.88	2.309	O					2.08
93.417	0.00	0.88	2.303	O					2.08
93.500	0.00	0.88	2.297	O					2.07
93.583	0.00	0.88	2.291	O					2.07
93.667	0.00	0.88	2.285	O					2.06
93.750	0.00	0.87	2.279	O					2.05
93.833	0.00	0.87	2.273	O					2.05
93.917	0.00	0.87	2.267	O					2.04
94.000	0.00	0.87	2.261	O					2.04
94.083	0.00	0.87	2.255	O					2.03
94.167	0.00	0.87	2.249	O					2.03
94.250	0.00	0.87	2.243	O					2.02
94.333	0.00	0.86	2.237	O					2.02

94.417	0.00	0.86	2.231	O					2.01
94.500	0.00	0.86	2.225	O					2.01
94.583	0.00	0.86	2.219	O					2.00
94.667	0.00	0.86	2.213	O					2.00
94.750	0.00	0.86	2.207	O					1.99
94.833	0.00	0.86	2.201	O					1.99
94.917	0.00	0.85	2.196	O					1.98
95.000	0.00	0.85	2.190	O					1.98
95.083	0.00	0.85	2.184	O					1.98
95.167	0.00	0.85	2.178	O					1.97
95.250	0.00	0.85	2.172	O					1.97
95.333	0.00	0.85	2.166	O					1.97
95.417	0.00	0.85	2.160	O					1.96
95.500	0.00	0.84	2.155	O					1.96
95.583	0.00	0.84	2.149	O					1.95
95.667	0.00	0.84	2.143	O					1.95
95.750	0.00	0.84	2.137	O					1.95
95.833	0.00	0.84	2.131	O					1.94
95.917	0.00	0.84	2.126	O					1.94
96.000	0.00	0.84	2.120	O					1.93
96.083	0.00	0.83	2.114	O					1.93
96.167	0.00	0.83	2.108	O					1.93
96.250	0.00	0.83	2.103	O					1.92
96.333	0.00	0.83	2.097	O					1.92
96.417	0.00	0.83	2.091	O					1.91
96.500	0.00	0.83	2.086	O					1.91
96.583	0.00	0.83	2.080	O					1.91
96.667	0.00	0.82	2.074	O					1.90
96.750	0.00	0.82	2.068	O					1.90
96.833	0.00	0.82	2.063	O					1.90
96.917	0.00	0.82	2.057	O					1.89
97.000	0.00	0.82	2.051	O					1.89
97.083	0.00	0.82	2.046	O					1.88
97.167	0.00	0.82	2.040	O					1.88
97.250	0.00	0.82	2.035	O					1.88
97.333	0.00	0.81	2.029	O					1.87
97.417	0.00	0.81	2.023	O					1.87
97.500	0.00	0.81	2.018	O					1.86
97.583	0.00	0.81	2.012	O					1.86
97.667	0.00	0.81	2.007	O					1.86
97.750	0.00	0.81	2.001	O					1.85
97.833	0.00	0.81	1.996	O					1.85
97.917	0.00	0.80	1.990	O					1.85
98.000	0.00	0.80	1.984	O					1.84
98.083	0.00	0.80	1.979	O					1.84
98.167	0.00	0.80	1.973	O					1.83
98.250	0.00	0.80	1.968	O					1.83
98.333	0.00	0.80	1.962	O					1.83
98.417	0.00	0.80	1.957	O					1.82
98.500	0.00	0.80	1.951	O					1.82
98.583	0.00	0.79	1.946	O					1.82
98.667	0.00	0.79	1.940	O					1.81
98.750	0.00	0.79	1.935	O					1.81
98.833	0.00	0.79	1.930	O					1.80
98.917	0.00	0.79	1.924	O					1.80
99.000	0.00	0.79	1.919	O					1.80
99.083	0.00	0.79	1.913	O					1.79
99.167	0.00	0.78	1.908	O					1.79
99.250	0.00	0.78	1.903	O					1.79
99.333	0.00	0.78	1.897	O					1.78
99.417	0.00	0.78	1.892	O					1.78
99.500	0.00	0.78	1.886	O					1.78
99.583	0.00	0.78	1.881	O					1.77
99.667	0.00	0.78	1.876	O					1.77
99.750	0.00	0.78	1.870	O					1.76
99.833	0.00	0.77	1.865	O					1.76
99.917	0.00	0.77	1.860	O					1.76
100.000	0.00	0.77	1.854	O					1.75
100.083	0.00	0.77	1.849	O					1.75
100.167	0.00	0.77	1.844	O					1.75
100.250	0.00	0.77	1.838	O					1.74

100.333	0.00	0.77	1.833	O					1.74
100.417	0.00	0.77	1.828	O					1.74
100.500	0.00	0.76	1.823	O					1.73
100.583	0.00	0.76	1.817	O					1.73
100.667	0.00	0.76	1.812	O					1.73
100.750	0.00	0.76	1.807	O					1.72
100.833	0.00	0.76	1.802	O					1.72
100.917	0.00	0.76	1.796	O					1.71
101.000	0.00	0.76	1.791	O					1.71
101.083	0.00	0.75	1.786	O					1.71
101.167	0.00	0.75	1.781	O					1.70
101.250	0.00	0.75	1.776	O					1.70
101.333	0.00	0.75	1.770	O					1.70
101.417	0.00	0.75	1.765	O					1.69
101.500	0.00	0.75	1.760	O					1.69
101.583	0.00	0.75	1.755	O					1.69
101.667	0.00	0.75	1.750	O					1.68
101.750	0.00	0.74	1.745	O					1.68
101.833	0.00	0.74	1.740	O					1.68
101.917	0.00	0.74	1.734	O					1.67
102.000	0.00	0.74	1.729	O					1.67
102.083	0.00	0.74	1.724	O					1.67
102.167	0.00	0.74	1.719	O					1.66
102.250	0.00	0.74	1.714	O					1.66
102.333	0.00	0.74	1.709	O					1.66
102.417	0.00	0.73	1.704	O					1.65
102.500	0.00	0.73	1.699	O					1.65
102.583	0.00	0.73	1.694	O					1.65
102.667	0.00	0.73	1.689	O					1.64
102.750	0.00	0.73	1.684	O					1.64
102.833	0.00	0.73	1.679	O					1.64
102.917	0.00	0.73	1.674	O					1.63
103.000	0.00	0.73	1.669	O					1.63
103.083	0.00	0.73	1.664	O					1.63
103.167	0.00	0.72	1.659	O					1.62
103.250	0.00	0.72	1.654	O					1.62
103.333	0.00	0.72	1.649	O					1.62
103.417	0.00	0.72	1.644	O					1.61
103.500	0.00	0.72	1.639	O					1.61
103.583	0.00	0.72	1.634	O					1.61
103.667	0.00	0.72	1.629	O					1.60
103.750	0.00	0.72	1.624	O					1.60
103.833	0.00	0.71	1.619	O					1.60
103.917	0.00	0.71	1.614	O					1.59
104.000	0.00	0.71	1.609	O					1.59
104.083	0.00	0.71	1.604	O					1.59
104.167	0.00	0.71	1.599	O					1.58
104.250	0.00	0.71	1.595	O					1.58
104.333	0.00	0.71	1.590	O					1.58
104.417	0.00	0.71	1.585	O					1.57
104.500	0.00	0.70	1.580	O					1.57
104.583	0.00	0.70	1.575	O					1.57
104.667	0.00	0.70	1.570	O					1.56
104.750	0.00	0.70	1.565	O					1.56
104.833	0.00	0.70	1.561	O					1.56
104.917	0.00	0.70	1.556	O					1.55
105.000	0.00	0.70	1.551	O					1.55
105.083	0.00	0.70	1.546	O					1.55
105.167	0.00	0.70	1.541	O					1.54
105.250	0.00	0.69	1.537	O					1.54
105.333	0.00	0.69	1.532	O					1.54
105.417	0.00	0.69	1.527	O					1.53
105.500	0.00	0.69	1.522	O					1.53
105.583	0.00	0.69	1.518	O					1.53
105.667	0.00	0.69	1.513	O					1.52
105.750	0.00	0.69	1.508	O					1.52
105.833	0.00	0.69	1.503	O					1.52
105.917	0.00	0.68	1.499	O					1.51
106.000	0.00	0.68	1.494	O					1.51
106.083	0.00	0.68	1.489	O					1.51
106.167	0.00	0.68	1.485	O					1.50

106.250	0.00	0.68	1.480	O					1.50
106.333	0.00	0.68	1.475	O					1.50
106.417	0.00	0.68	1.471	O					1.49
106.500	0.00	0.68	1.466	O					1.49
106.583	0.00	0.68	1.461	O					1.49
106.667	0.00	0.67	1.457	O					1.49
106.750	0.00	0.67	1.452	O					1.48
106.833	0.00	0.67	1.447	O					1.48
106.917	0.00	0.67	1.443	O					1.48
107.000	0.00	0.67	1.438	O					1.47
107.083	0.00	0.67	1.433	O					1.47
107.167	0.00	0.67	1.429	O					1.47
107.250	0.00	0.67	1.424	O					1.46
107.333	0.00	0.67	1.420	O					1.46
107.417	0.00	0.66	1.415	O					1.46
107.500	0.00	0.66	1.410	O					1.45
107.583	0.00	0.66	1.406	O					1.45
107.667	0.00	0.66	1.401	O					1.45
107.750	0.00	0.66	1.397	O					1.44
107.833	0.00	0.66	1.392	O					1.44
107.917	0.00	0.66	1.388	O					1.44
108.000	0.00	0.66	1.383	O					1.44
108.083	0.00	0.66	1.379	O					1.43
108.167	0.00	0.65	1.374	O					1.43
108.250	0.00	0.65	1.370	O					1.43
108.333	0.00	0.65	1.365	O					1.42
108.417	0.00	0.65	1.361	O					1.42
108.500	0.00	0.65	1.356	O					1.42
108.583	0.00	0.65	1.352	O					1.41
108.667	0.00	0.65	1.347	O					1.41
108.750	0.00	0.65	1.343	O					1.41
108.833	0.00	0.65	1.338	O					1.41
108.917	0.00	0.64	1.334	O					1.40
109.000	0.00	0.64	1.329	O					1.40
109.083	0.00	0.64	1.325	O					1.40
109.167	0.00	0.64	1.321	O					1.39
109.250	0.00	0.64	1.316	O					1.39
109.333	0.00	0.64	1.312	O					1.39
109.417	0.00	0.64	1.307	O					1.38
109.500	0.00	0.64	1.303	O					1.38
109.583	0.00	0.64	1.299	O					1.38
109.667	0.00	0.64	1.294	O					1.38
109.750	0.00	0.63	1.290	O					1.37
109.833	0.00	0.63	1.285	O					1.37
109.917	0.00	0.63	1.281	O					1.37
110.000	0.00	0.63	1.277	O					1.36
110.083	0.00	0.63	1.272	O					1.36
110.167	0.00	0.63	1.268	O					1.36
110.250	0.00	0.63	1.264	O					1.35
110.333	0.00	0.63	1.259	O					1.35
110.417	0.00	0.63	1.255	O					1.35
110.500	0.00	0.62	1.251	O					1.35
110.583	0.00	0.62	1.247	O					1.34
110.667	0.00	0.62	1.242	O					1.34
110.750	0.00	0.62	1.238	O					1.34
110.833	0.00	0.62	1.234	O					1.33
110.917	0.00	0.62	1.229	O					1.33
111.000	0.00	0.62	1.225	O					1.33
111.083	0.00	0.62	1.221	O					1.33
111.167	0.00	0.62	1.217	O					1.32
111.250	0.00	0.62	1.212	O					1.32
111.333	0.00	0.61	1.208	O					1.32
111.417	0.00	0.61	1.204	O					1.31
111.500	0.00	0.61	1.200	O					1.31
111.583	0.00	0.61	1.196	O					1.31
111.667	0.00	0.61	1.191	O					1.31
111.750	0.00	0.61	1.187	O					1.30
111.833	0.00	0.61	1.183	O					1.30
111.917	0.00	0.61	1.179	O					1.30
112.000	0.00	0.61	1.175	O					1.29
112.083	0.00	0.61	1.170	O					1.29

112.167	0.00	0.60	1.166	O					1.29
112.250	0.00	0.60	1.162	O					1.29
112.333	0.00	0.60	1.158	O					1.28
112.417	0.00	0.60	1.154	O					1.28
112.500	0.00	0.60	1.150	O					1.28
112.583	0.00	0.60	1.146	O					1.27
112.667	0.00	0.60	1.141	O					1.27
112.750	0.00	0.60	1.137	O					1.27
112.833	0.00	0.60	1.133	O					1.27
112.917	0.00	0.59	1.129	O					1.26
113.000	0.00	0.59	1.125	O					1.26
113.083	0.00	0.59	1.121	O					1.26
113.167	0.00	0.59	1.117	O					1.26
113.250	0.00	0.59	1.113	O					1.25
113.333	0.00	0.59	1.109	O					1.25
113.417	0.00	0.59	1.105	O					1.25
113.500	0.00	0.59	1.101	O					1.24
113.583	0.00	0.59	1.097	O					1.24
113.667	0.00	0.59	1.092	O					1.24
113.750	0.00	0.59	1.088	O					1.24
113.833	0.00	0.58	1.084	O					1.23
113.917	0.00	0.58	1.080	O					1.23
114.000	0.00	0.58	1.076	O					1.23
114.083	0.00	0.58	1.072	O					1.23
114.167	0.00	0.58	1.068	O					1.22
114.250	0.00	0.58	1.064	O					1.22
114.333	0.00	0.58	1.060	O					1.22
114.417	0.00	0.58	1.056	O					1.21
114.500	0.00	0.58	1.052	O					1.21
114.583	0.00	0.58	1.048	O					1.21
114.667	0.00	0.57	1.045	O					1.21
114.750	0.00	0.57	1.041	O					1.20
114.833	0.00	0.57	1.037	O					1.20
114.917	0.00	0.57	1.033	O					1.20
115.000	0.00	0.57	1.029	O					1.20
115.083	0.00	0.57	1.025	O					1.19
115.167	0.00	0.57	1.021	O					1.19
115.250	0.00	0.57	1.017	O					1.19
115.333	0.00	0.57	1.013	O					1.19
115.417	0.00	0.57	1.009	O					1.18
115.500	0.00	0.56	1.005	O					1.18
115.583	0.00	0.56	1.001	O					1.18
115.667	0.00	0.56	0.998	O					1.17
115.750	0.00	0.56	0.994	O					1.17
115.833	0.00	0.56	0.990	O					1.17
115.917	0.00	0.56	0.986	O					1.17
116.000	0.00	0.56	0.982	O					1.16
116.083	0.00	0.56	0.978	O					1.16
116.167	0.00	0.56	0.974	O					1.16
116.250	0.00	0.56	0.971	O					1.16
116.333	0.00	0.56	0.967	O					1.15
116.417	0.00	0.55	0.963	O					1.15
116.500	0.00	0.55	0.959	O					1.15
116.583	0.00	0.55	0.955	O					1.15
116.667	0.00	0.55	0.951	O					1.14
116.750	0.00	0.55	0.948	O					1.14
116.833	0.00	0.55	0.944	O					1.14
116.917	0.00	0.55	0.940	O					1.14
117.000	0.00	0.55	0.936	O					1.13
117.083	0.00	0.55	0.933	O					1.13
117.167	0.00	0.55	0.929	O					1.13
117.250	0.00	0.55	0.925	O					1.13
117.333	0.00	0.54	0.921	O					1.12
117.417	0.00	0.54	0.918	O					1.12
117.500	0.00	0.54	0.914	O					1.12
117.583	0.00	0.54	0.910	O					1.12
117.667	0.00	0.54	0.906	O					1.11
117.750	0.00	0.54	0.903	O					1.11
117.833	0.00	0.54	0.899	O					1.11
117.917	0.00	0.54	0.895	O					1.11
118.000	0.00	0.54	0.891	O					1.10

118.083	0.00	0.54	0.888	O					1.10
118.167	0.00	0.54	0.884	O					1.10
118.250	0.00	0.53	0.880	O					1.10
118.333	0.00	0.53	0.877	O					1.09
118.417	0.00	0.53	0.873	O					1.09
118.500	0.00	0.53	0.869	O					1.09
118.583	0.00	0.53	0.866	O					1.09
118.667	0.00	0.53	0.862	O					1.08
118.750	0.00	0.53	0.858	O					1.08
118.833	0.00	0.53	0.855	O					1.08
118.917	0.00	0.53	0.851	O					1.08
119.000	0.00	0.53	0.848	O					1.07
119.083	0.00	0.53	0.844	O					1.07
119.167	0.00	0.52	0.840	O					1.07
119.250	0.00	0.52	0.837	O					1.07
119.333	0.00	0.52	0.833	O					1.06
119.417	0.00	0.52	0.829	O					1.06
119.500	0.00	0.52	0.826	O					1.06
119.583	0.00	0.52	0.822	O					1.06
119.667	0.00	0.52	0.819	O					1.05
119.750	0.00	0.52	0.815	O					1.05
119.833	0.00	0.52	0.812	O					1.05
119.917	0.00	0.52	0.808	O					1.05
120.000	0.00	0.52	0.804	O					1.04
120.083	0.00	0.52	0.801	O					1.04
120.167	0.00	0.51	0.797	O					1.04
120.250	0.00	0.51	0.794	O					1.04
120.333	0.00	0.51	0.790	O					1.03
120.417	0.00	0.51	0.787	O					1.03
120.500	0.00	0.51	0.783	O					1.03
120.583	0.00	0.51	0.780	O					1.03
120.667	0.00	0.51	0.776	O					1.03
120.750	0.00	0.51	0.773	O					1.02
120.833	0.00	0.51	0.769	O					1.02
120.917	0.00	0.51	0.766	O					1.02
121.000	0.00	0.51	0.762	O					1.02
121.083	0.00	0.50	0.759	O					1.01
121.167	0.00	0.50	0.755	O					1.01
121.250	0.00	0.50	0.752	O					1.01
121.333	0.00	0.50	0.748	O					1.01
121.417	0.00	0.50	0.745	O					1.00
121.500	0.00	0.50	0.741	O					1.00
121.583	0.00	0.50	0.738	O					1.00
121.667	0.00	0.50	0.735	O					0.99
121.750	0.00	0.49	0.731	O					0.99
121.833	0.00	0.49	0.728	O					0.98
121.917	0.00	0.49	0.724	O					0.98
122.000	0.00	0.49	0.721	O					0.98
122.083	0.00	0.49	0.718	O					0.97
122.167	0.00	0.48	0.714	O					0.97
122.250	0.00	0.48	0.711	O					0.96
122.333	0.00	0.48	0.708	O					0.96
122.417	0.00	0.48	0.704	O					0.95
122.500	0.00	0.47	0.701	O					0.95
122.583	0.00	0.47	0.698	O					0.94
122.667	0.00	0.47	0.695	O					0.94
122.750	0.00	0.47	0.691	O					0.94
122.833	0.00	0.47	0.688	O					0.93
122.917	0.00	0.46	0.685	O					0.93
123.000	0.00	0.46	0.682	O					0.92
123.083	0.00	0.46	0.679	O					0.92
123.167	0.00	0.46	0.675	O					0.91
123.250	0.00	0.45	0.672	O					0.91
123.333	0.00	0.45	0.669	O					0.91
123.417	0.00	0.45	0.666	O					0.90
123.500	0.00	0.45	0.663	O					0.90
123.583	0.00	0.45	0.660	O					0.89
123.667	0.00	0.44	0.657	O					0.89
123.750	0.00	0.44	0.654	O					0.88
123.833	0.00	0.44	0.651	O					0.88
123.917	0.00	0.44	0.648	O					0.88

124.000	0.00	0.44	0.645	O					0.87
124.083	0.00	0.43	0.642	O					0.87
124.167	0.00	0.43	0.639	O					0.86
124.250	0.00	0.43	0.636	O					0.86
124.333	0.00	0.43	0.633	O					0.86
124.417	0.00	0.43	0.630	O					0.85
124.500	0.00	0.42	0.627	O					0.85
124.583	0.00	0.42	0.624	O					0.84
124.667	0.00	0.42	0.621	O					0.84
124.750	0.00	0.42	0.618	O					0.84
124.833	0.00	0.42	0.615	O					0.83
124.917	0.00	0.41	0.613	O					0.83
125.000	0.00	0.41	0.610	O					0.83
125.083	0.00	0.41	0.607	O					0.82
125.167	0.00	0.41	0.604	O					0.82
125.250	0.00	0.41	0.601	O					0.81
125.333	0.00	0.40	0.598	O					0.81
125.417	0.00	0.40	0.596	O					0.81
125.500	0.00	0.40	0.593	O					0.80
125.583	0.00	0.40	0.590	O					0.80
125.667	0.00	0.40	0.587	O					0.79
125.750	0.00	0.40	0.585	O					0.79
125.833	0.00	0.39	0.582	O					0.79
125.917	0.00	0.39	0.579	O					0.78
126.000	0.00	0.39	0.577	O					0.78
126.083	0.00	0.39	0.574	O					0.78
126.167	0.00	0.39	0.571	O					0.77
126.250	0.00	0.38	0.569	O					0.77
126.333	0.00	0.38	0.566	O					0.77
126.417	0.00	0.38	0.563	O					0.76
126.500	0.00	0.38	0.561	O					0.76
126.583	0.00	0.38	0.558	O					0.76
126.667	0.00	0.38	0.555	O					0.75
126.750	0.00	0.37	0.553	O					0.75
126.833	0.00	0.37	0.550	O					0.74
126.917	0.00	0.37	0.548	O					0.74
127.000	0.00	0.37	0.545	O					0.74
127.083	0.00	0.37	0.543	O					0.73
127.167	0.00	0.37	0.540	O					0.73
127.250	0.00	0.36	0.538	O					0.73
127.333	0.00	0.36	0.535	O					0.72
127.417	0.00	0.36	0.533	O					0.72
127.500	0.00	0.36	0.530	O					0.72
127.583	0.00	0.36	0.528	O					0.71
127.667	0.00	0.36	0.525	O					0.71
127.750	0.00	0.35	0.523	O					0.71
127.833	0.00	0.35	0.520	O					0.70
127.917	0.00	0.35	0.518	O					0.70
128.000	0.00	0.35	0.516	O					0.70
128.083	0.00	0.35	0.513	O					0.69
128.167	0.00	0.35	0.511	O					0.69
128.250	0.00	0.34	0.508	O					0.69
128.333	0.00	0.34	0.506	O					0.68
128.417	0.00	0.34	0.504	O					0.68
128.500	0.00	0.34	0.501	O					0.68
128.583	0.00	0.34	0.499	O					0.68
128.667	0.00	0.34	0.497	O					0.67
128.750	0.00	0.33	0.494	O					0.67
128.833	0.00	0.33	0.492	O					0.67
128.917	0.00	0.33	0.490	O					0.66
129.000	0.00	0.33	0.487	O					0.66
129.083	0.00	0.33	0.485	O					0.66
129.167	0.00	0.33	0.483	O					0.65
129.250	0.00	0.33	0.481	O					0.65
129.333	0.00	0.32	0.478	O					0.65
129.417	0.00	0.32	0.476	O					0.64
129.500	0.00	0.32	0.474	O					0.64
129.583	0.00	0.32	0.472	O					0.64
129.667	0.00	0.32	0.470	O					0.64
129.750	0.00	0.32	0.467	O					0.63
129.833	0.00	0.31	0.465	O					0.63

129.917	0.00	0.31	0.463	O					0.63
130.000	0.00	0.31	0.461	O					0.62
130.083	0.00	0.31	0.459	O					0.62
130.167	0.00	0.31	0.457	O					0.62
130.250	0.00	0.31	0.455	O					0.62
130.333	0.00	0.31	0.452	O					0.61
130.417	0.00	0.30	0.450	O					0.61
130.500	0.00	0.30	0.448	O					0.61
130.583	0.00	0.30	0.446	O					0.60
130.667	0.00	0.30	0.444	O					0.60
130.750	0.00	0.30	0.442	O					0.60
130.833	0.00	0.30	0.440	O					0.60
130.917	0.00	0.30	0.438	O					0.59
131.000	0.00	0.29	0.436	O					0.59
131.083	0.00	0.29	0.434	O					0.59
131.167	0.00	0.29	0.432	O					0.58
131.250	0.00	0.29	0.430	O					0.58
131.333	0.00	0.29	0.428	O					0.58
131.417	0.00	0.29	0.426	O					0.58
131.500	0.00	0.29	0.424	O					0.57
131.583	0.00	0.29	0.422	O					0.57
131.667	0.00	0.28	0.420	O					0.57
131.750	0.00	0.28	0.418	O					0.57
131.833	0.00	0.28	0.416	O					0.56
131.917	0.00	0.28	0.414	O					0.56
132.000	0.00	0.28	0.412	O					0.56
132.083	0.00	0.28	0.410	O					0.56
132.167	0.00	0.28	0.408	O					0.55
132.250	0.00	0.28	0.406	O					0.55
132.333	0.00	0.27	0.405	O					0.55
132.417	0.00	0.27	0.403	O					0.54
132.500	0.00	0.27	0.401	O					0.54
132.583	0.00	0.27	0.399	O					0.54
132.667	0.00	0.27	0.397	O					0.54
132.750	0.00	0.27	0.395	O					0.53
132.833	0.00	0.27	0.393	O					0.53
132.917	0.00	0.26	0.392	O					0.53
133.000	0.00	0.26	0.390	O					0.53
133.083	0.00	0.26	0.388	O					0.52
133.167	0.00	0.26	0.386	O					0.52
133.250	0.00	0.26	0.384	O					0.52
133.333	0.00	0.26	0.383	O					0.52
133.417	0.00	0.26	0.381	O					0.52
133.500	0.00	0.26	0.379	O					0.51
133.583	0.00	0.26	0.377	O					0.51
133.667	0.00	0.25	0.376	O					0.51
133.750	0.00	0.25	0.374	O					0.51
133.833	0.00	0.25	0.372	O					0.50
133.917	0.00	0.25	0.370	O					0.50
134.000	0.00	0.25	0.369	O					0.50
134.083	0.00	0.25	0.367	O					0.50
134.167	0.00	0.25	0.365	O					0.49
134.250	0.00	0.25	0.363	O					0.49
134.333	0.00	0.24	0.362	O					0.49
134.417	0.00	0.24	0.360	O					0.49
134.500	0.00	0.24	0.358	O					0.49
134.583	0.00	0.24	0.357	O					0.48
134.667	0.00	0.24	0.355	O					0.48
134.750	0.00	0.24	0.353	O					0.48
134.833	0.00	0.24	0.352	O					0.48
134.917	0.00	0.24	0.350	O					0.47
135.000	0.00	0.24	0.349	O					0.47
135.083	0.00	0.23	0.347	O					0.47
135.167	0.00	0.23	0.345	O					0.47
135.250	0.00	0.23	0.344	O					0.47
135.333	0.00	0.23	0.342	O					0.46
135.417	0.00	0.23	0.341	O					0.46
135.500	0.00	0.23	0.339	O					0.46
135.583	0.00	0.23	0.337	O					0.46
135.667	0.00	0.23	0.336	O					0.45
135.750	0.00	0.23	0.334	O					0.45

135.833	0.00	0.23	0.333	O	|	|	|	|	0.45
135.917	0.00	0.22	0.331	O	|	|	|	|	0.45
136.000	0.00	0.22	0.330	O	|	|	|	|	0.45
136.083	0.00	0.22	0.328	O	|	|	|	|	0.44
136.167	0.00	0.22	0.327	O	|	|	|	|	0.44
136.250	0.00	0.22	0.325	O	|	|	|	|	0.44
136.333	0.00	0.22	0.324	O	|	|	|	|	0.44
136.417	0.00	0.22	0.322	O	|	|	|	|	0.44
136.500	0.00	0.22	0.321	O	|	|	|	|	0.43
136.583	0.00	0.22	0.319	O	|	|	|	|	0.43
136.667	0.00	0.21	0.318	O	|	|	|	|	0.43
136.750	0.00	0.21	0.316	O	|	|	|	|	0.43
136.833	0.00	0.21	0.315	O	|	|	|	|	0.43
136.917	0.00	0.21	0.313	O	|	|	|	|	0.42
137.000	0.00	0.21	0.312	O	|	|	|	|	0.42
137.083	0.00	0.21	0.310	O	|	|	|	|	0.42
137.167	0.00	0.21	0.309	O	|	|	|	|	0.42
137.250	0.00	0.21	0.307	O	|	|	|	|	0.42
137.333	0.00	0.21	0.306	O	|	|	|	|	0.41
137.417	0.00	0.21	0.304	O	|	|	|	|	0.41
137.500	0.00	0.21	0.303	O	|	|	|	|	0.41
137.583	0.00	0.20	0.302	O	|	|	|	|	0.41
137.667	0.00	0.20	0.300	O	|	|	|	|	0.41
137.750	0.00	0.20	0.299	O	|	|	|	|	0.40
137.833	0.00	0.20	0.297	O	|	|	|	|	0.40
137.917	0.00	0.20	0.296	O	|	|	|	|	0.40
138.000	0.00	0.20	0.295	O	|	|	|	|	0.40
138.083	0.00	0.20	0.293	O	|	|	|	|	0.40
138.167	0.00	0.20	0.292	O	|	|	|	|	0.40
138.250	0.00	0.20	0.291	O	|	|	|	|	0.39
138.333	0.00	0.20	0.289	O	|	|	|	|	0.39
138.417	0.00	0.19	0.288	O	|	|	|	|	0.39
138.500	0.00	0.19	0.287	O	|	|	|	|	0.39
138.583	0.00	0.19	0.285	O	|	|	|	|	0.39
138.667	0.00	0.19	0.284	O	|	|	|	|	0.38
138.750	0.00	0.19	0.283	O	|	|	|	|	0.38
138.833	0.00	0.19	0.281	O	|	|	|	|	0.38
138.917	0.00	0.19	0.280	O	|	|	|	|	0.38
139.000	0.00	0.19	0.279	O	|	|	|	|	0.38
139.083	0.00	0.19	0.277	O	|	|	|	|	0.38
139.167	0.00	0.19	0.276	O	|	|	|	|	0.37
139.250	0.00	0.19	0.275	O	|	|	|	|	0.37
139.333	0.00	0.19	0.274	O	|	|	|	|	0.37
139.417	0.00	0.18	0.272	O	|	|	|	|	0.37
139.500	0.00	0.18	0.271	O	|	|	|	|	0.37
139.583	0.00	0.18	0.270	O	|	|	|	|	0.37
139.667	0.00	0.18	0.268	O	|	|	|	|	0.36
139.750	0.00	0.18	0.267	O	|	|	|	|	0.36
139.833	0.00	0.18	0.266	O	|	|	|	|	0.36
139.917	0.00	0.18	0.265	O	|	|	|	|	0.36
140.000	0.00	0.18	0.264	O	|	|	|	|	0.36
140.083	0.00	0.18	0.262	O	|	|	|	|	0.35
140.167	0.00	0.18	0.261	O	|	|	|	|	0.35
140.250	0.00	0.18	0.260	O	|	|	|	|	0.35
140.333	0.00	0.18	0.259	O	|	|	|	|	0.35
140.417	0.00	0.17	0.257	O	|	|	|	|	0.35
140.500	0.00	0.17	0.256	O	|	|	|	|	0.35
140.583	0.00	0.17	0.255	O	|	|	|	|	0.35
140.667	0.00	0.17	0.254	O	|	|	|	|	0.34
140.750	0.00	0.17	0.253	O	|	|	|	|	0.34
140.833	0.00	0.17	0.252	O	|	|	|	|	0.34
140.917	0.00	0.17	0.250	O	|	|	|	|	0.34
141.000	0.00	0.17	0.249	O	|	|	|	|	0.34
141.083	0.00	0.17	0.248	O	|	|	|	|	0.34
141.167	0.00	0.17	0.247	O	|	|	|	|	0.33
141.250	0.00	0.17	0.246	O	|	|	|	|	0.33
141.333	0.00	0.17	0.245	O	|	|	|	|	0.33
141.417	0.00	0.16	0.243	O	|	|	|	|	0.33
141.500	0.00	0.16	0.242	O	|	|	|	|	0.33
141.583	0.00	0.16	0.241	O	|	|	|	|	0.33
141.667	0.00	0.16	0.240	O	|	|	|	|	0.32

141.750	0.00	0.16	0.239	O				0.32
141.833	0.00	0.16	0.238	O				0.32
141.917	0.00	0.16	0.237	O				0.32
142.000	0.00	0.16	0.236	O				0.32
142.083	0.00	0.16	0.235	O				0.32
142.167	0.00	0.16	0.233	O				0.32
142.250	0.00	0.16	0.232	O				0.31
142.333	0.00	0.16	0.231	O				0.31
142.417	0.00	0.16	0.230	O				0.31
142.500	0.00	0.16	0.229	O				0.31
142.583	0.00	0.15	0.228	O				0.31
142.667	0.00	0.15	0.227	O				0.31
142.750	0.00	0.15	0.226	O				0.31
142.833	0.00	0.15	0.225	O				0.30
142.917	0.00	0.15	0.224	O				0.30
143.000	0.00	0.15	0.223	O				0.30
143.083	0.00	0.15	0.222	O				0.30
143.167	0.00	0.15	0.221	O				0.30
143.250	0.00	0.15	0.220	O				0.30
143.333	0.00	0.15	0.219	O				0.30
143.417	0.00	0.15	0.218	O				0.29
143.500	0.00	0.15	0.217	O				0.29
143.583	0.00	0.15	0.216	O				0.29
143.667	0.00	0.15	0.215	O				0.29
143.750	0.00	0.14	0.214	O				0.29
143.833	0.00	0.14	0.213	O				0.29
143.917	0.00	0.14	0.212	O				0.29
144.000	0.00	0.14	0.211	O				0.29
144.083	0.00	0.14	0.210	O				0.28
144.167	0.00	0.14	0.209	O				0.28
144.250	0.00	0.14	0.208	O				0.28
144.333	0.00	0.14	0.207	O				0.28
144.417	0.00	0.14	0.206	O				0.28
144.500	0.00	0.14	0.205	O				0.28
144.583	0.00	0.14	0.204	O				0.28
144.667	0.00	0.14	0.203	O				0.27
144.750	0.00	0.14	0.202	O				0.27
144.833	0.00	0.14	0.201	O				0.27
144.917	0.00	0.14	0.200	O				0.27
145.000	0.00	0.13	0.199	O				0.27
145.083	0.00	0.13	0.198	O				0.27
145.167	0.00	0.13	0.197	O				0.27
145.250	0.00	0.13	0.196	O				0.27
145.333	0.00	0.13	0.196	O				0.26
145.417	0.00	0.13	0.195	O				0.26
145.500	0.00	0.13	0.194	O				0.26
145.583	0.00	0.13	0.193	O				0.26
145.667	0.00	0.13	0.192	O				0.26
145.750	0.00	0.13	0.191	O				0.26
145.833	0.00	0.13	0.190	O				0.26
145.917	0.00	0.13	0.189	O				0.26
146.000	0.00	0.13	0.188	O				0.25
146.083	0.00	0.13	0.188	O				0.25
146.167	0.00	0.13	0.187	O				0.25
146.250	0.00	0.13	0.186	O				0.25
146.333	0.00	0.13	0.185	O				0.25
146.417	0.00	0.12	0.184	O				0.25
146.500	0.00	0.12	0.183	O				0.25
146.583	0.00	0.12	0.182	O				0.25
146.667	0.00	0.12	0.182	O				0.25
146.750	0.00	0.12	0.181	O				0.24
146.833	0.00	0.12	0.180	O				0.24
146.917	0.00	0.12	0.179	O				0.24
147.000	0.00	0.12	0.178	O				0.24
147.083	0.00	0.12	0.177	O				0.24
147.167	0.00	0.12	0.177	O				0.24
147.250	0.00	0.12	0.176	O				0.24
147.333	0.00	0.12	0.175	O				0.24
147.417	0.00	0.12	0.174	O				0.24
147.500	0.00	0.12	0.173	O				0.23
147.583	0.00	0.12	0.172	O				0.23

147.667	0.00	0.12	0.172	O				0.23
147.750	0.00	0.12	0.171	O				0.23
147.833	0.00	0.12	0.170	O				0.23
147.917	0.00	0.11	0.169	O				0.23
148.000	0.00	0.11	0.168	O				0.23
148.083	0.00	0.11	0.168	O				0.23
148.167	0.00	0.11	0.167	O				0.23
148.250	0.00	0.11	0.166	O				0.22
148.333	0.00	0.11	0.165	O				0.22
148.417	0.00	0.11	0.165	O				0.22
148.500	0.00	0.11	0.164	O				0.22
148.583	0.00	0.11	0.163	O				0.22
148.667	0.00	0.11	0.162	O				0.22
148.750	0.00	0.11	0.162	O				0.22
148.833	0.00	0.11	0.161	O				0.22
148.917	0.00	0.11	0.160	O				0.22
149.000	0.00	0.11	0.159	O				0.22
149.083	0.00	0.11	0.159	O				0.21
149.167	0.00	0.11	0.158	O				0.21
149.250	0.00	0.11	0.157	O				0.21
149.333	0.00	0.11	0.156	O				0.21
149.417	0.00	0.11	0.156	O				0.21
149.500	0.00	0.10	0.155	O				0.21
149.583	0.00	0.10	0.154	O				0.21
149.667	0.00	0.10	0.153	O				0.21
149.750	0.00	0.10	0.153	O				0.21
149.833	0.00	0.10	0.152	O				0.21
149.917	0.00	0.10	0.151	O				0.20
150.000	0.00	0.10	0.151	O				0.20
150.083	0.00	0.10	0.150	O				0.20
150.167	0.00	0.10	0.149	O				0.20
150.250	0.00	0.10	0.149	O				0.20
150.333	0.00	0.10	0.148	O				0.20
150.417	0.00	0.10	0.147	O				0.20
150.500	0.00	0.10	0.147	O				0.20
150.583	0.00	0.10	0.146	O				0.20
150.667	0.00	0.10	0.145	O				0.20
150.750	0.00	0.10	0.144	O				0.20
150.833	0.00	0.10	0.144	O				0.19
150.917	0.00	0.10	0.143	O				0.19
151.000	0.00	0.10	0.142	O				0.19
151.083	0.00	0.10	0.142	O				0.19
151.167	0.00	0.10	0.141	O				0.19
151.250	0.00	0.10	0.140	O				0.19
151.333	0.00	0.09	0.140	O				0.19
151.417	0.00	0.09	0.139	O				0.19
151.500	0.00	0.09	0.139	O				0.19
151.583	0.00	0.09	0.138	O				0.19
151.667	0.00	0.09	0.137	O				0.19
151.750	0.00	0.09	0.137	O				0.18
151.833	0.00	0.09	0.136	O				0.18
151.917	0.00	0.09	0.135	O				0.18
152.000	0.00	0.09	0.135	O				0.18
152.083	0.00	0.09	0.134	O				0.18
152.167	0.00	0.09	0.133	O				0.18
152.250	0.00	0.09	0.133	O				0.18
152.333	0.00	0.09	0.132	O				0.18
152.417	0.00	0.09	0.132	O				0.18
152.500	0.00	0.09	0.131	O				0.18
152.583	0.00	0.09	0.130	O				0.18
152.667	0.00	0.09	0.130	O				0.18
152.750	0.00	0.09	0.129	O				0.17
152.833	0.00	0.09	0.129	O				0.17
152.917	0.00	0.09	0.128	O				0.17
153.000	0.00	0.09	0.127	O				0.17
153.083	0.00	0.09	0.127	O				0.17
153.167	0.00	0.09	0.126	O				0.17
153.250	0.00	0.08	0.126	O				0.17
153.333	0.00	0.08	0.125	O				0.17
153.417	0.00	0.08	0.124	O				0.17
153.500	0.00	0.08	0.124	O				0.17

153.583	0.00	0.08	0.123	O	|	|	|	|	0.17
153.667	0.00	0.08	0.123	O	|	|	|	|	0.17
153.750	0.00	0.08	0.122	O	|	|	|	|	0.17
153.833	0.00	0.08	0.122	O	|	|	|	|	0.16
153.917	0.00	0.08	0.121	O	|	|	|	|	0.16
154.000	0.00	0.08	0.120	O	|	|	|	|	0.16
154.083	0.00	0.08	0.120	O	|	|	|	|	0.16
154.167	0.00	0.08	0.119	O	|	|	|	|	0.16
154.250	0.00	0.08	0.119	O	|	|	|	|	0.16
154.333	0.00	0.08	0.118	O	|	|	|	|	0.16
154.417	0.00	0.08	0.118	O	|	|	|	|	0.16
154.500	0.00	0.08	0.117	O	|	|	|	|	0.16
154.583	0.00	0.08	0.117	O	|	|	|	|	0.16
154.667	0.00	0.08	0.116	O	|	|	|	|	0.16
154.750	0.00	0.08	0.116	O	|	|	|	|	0.16
154.833	0.00	0.08	0.115	O	|	|	|	|	0.16
154.917	0.00	0.08	0.114	O	|	|	|	|	0.15
155.000	0.00	0.08	0.114	O	|	|	|	|	0.15
155.083	0.00	0.08	0.113	O	|	|	|	|	0.15
155.167	0.00	0.08	0.113	O	|	|	|	|	0.15
155.250	0.00	0.08	0.112	O	|	|	|	|	0.15
155.333	0.00	0.08	0.112	O	|	|	|	|	0.15
155.417	0.00	0.08	0.111	O	|	|	|	|	0.15
155.500	0.00	0.07	0.111	O	|	|	|	|	0.15
155.583	0.00	0.07	0.110	O	|	|	|	|	0.15
155.667	0.00	0.07	0.110	O	|	|	|	|	0.15
155.750	0.00	0.07	0.109	O	|	|	|	|	0.15
155.833	0.00	0.07	0.109	O	|	|	|	|	0.15
155.917	0.00	0.07	0.108	O	|	|	|	|	0.15
156.000	0.00	0.07	0.108	O	|	|	|	|	0.15
156.083	0.00	0.07	0.107	O	|	|	|	|	0.15
156.167	0.00	0.07	0.107	O	|	|	|	|	0.14
156.250	0.00	0.07	0.106	O	|	|	|	|	0.14
156.333	0.00	0.07	0.106	O	|	|	|	|	0.14
156.417	0.00	0.07	0.105	O	|	|	|	|	0.14
156.500	0.00	0.07	0.105	O	|	|	|	|	0.14
156.583	0.00	0.07	0.104	O	|	|	|	|	0.14
156.667	0.00	0.07	0.104	O	|	|	|	|	0.14
156.750	0.00	0.07	0.103	O	|	|	|	|	0.14
156.833	0.00	0.07	0.103	O	|	|	|	|	0.14
156.917	0.00	0.07	0.102	O	|	|	|	|	0.14
157.000	0.00	0.07	0.102	O	|	|	|	|	0.14
157.083	0.00	0.07	0.101	O	|	|	|	|	0.14
157.167	0.00	0.07	0.101	O	|	|	|	|	0.14
157.250	0.00	0.07	0.100	O	|	|	|	|	0.14
157.333	0.00	0.07	0.100	O	|	|	|	|	0.14
157.417	0.00	0.07	0.100	O	|	|	|	|	0.13
157.500	0.00	0.07	0.099	O	|	|	|	|	0.13
157.583	0.00	0.07	0.099	O	|	|	|	|	0.13
157.667	0.00	0.07	0.098	O	|	|	|	|	0.13
157.750	0.00	0.07	0.098	O	|	|	|	|	0.13
157.833	0.00	0.07	0.097	O	|	|	|	|	0.13
157.917	0.00	0.07	0.097	O	|	|	|	|	0.13
158.000	0.00	0.07	0.096	O	|	|	|	|	0.13
158.083	0.00	0.06	0.096	O	|	|	|	|	0.13
158.167	0.00	0.06	0.095	O	|	|	|	|	0.13
158.250	0.00	0.06	0.095	O	|	|	|	|	0.13
158.333	0.00	0.06	0.095	O	|	|	|	|	0.13
158.417	0.00	0.06	0.094	O	|	|	|	|	0.13
158.500	0.00	0.06	0.094	O	|	|	|	|	0.13
158.583	0.00	0.06	0.093	O	|	|	|	|	0.13
158.667	0.00	0.06	0.093	O	|	|	|	|	0.13
158.750	0.00	0.06	0.092	O	|	|	|	|	0.12
158.833	0.00	0.06	0.092	O	|	|	|	|	0.12
158.917	0.00	0.06	0.092	O	|	|	|	|	0.12
159.000	0.00	0.06	0.091	O	|	|	|	|	0.12
159.083	0.00	0.06	0.091	O	|	|	|	|	0.12
159.167	0.00	0.06	0.090	O	|	|	|	|	0.12
159.250	0.00	0.06	0.090	O	|	|	|	|	0.12
159.333	0.00	0.06	0.089	O	|	|	|	|	0.12
159.417	0.00	0.06	0.089	O	|	|	|	|	0.12

159.500	0.00	0.06	0.089	O					0.12
159.583	0.00	0.06	0.088	O					0.12
159.667	0.00	0.06	0.088	O					0.12
159.750	0.00	0.06	0.087	O					0.12
159.833	0.00	0.06	0.087	O					0.12
159.917	0.00	0.06	0.087	O					0.12
160.000	0.00	0.06	0.086	O					0.12
160.083	0.00	0.06	0.086	O					0.12
160.167	0.00	0.06	0.085	O					0.12
160.250	0.00	0.06	0.085	O					0.11
160.333	0.00	0.06	0.085	O					0.11
160.417	0.00	0.06	0.084	O					0.11
160.500	0.00	0.06	0.084	O					0.11
160.583	0.00	0.06	0.083	O					0.11
160.667	0.00	0.06	0.083	O					0.11
160.750	0.00	0.06	0.083	O					0.11
160.833	0.00	0.06	0.082	O					0.11
160.917	0.00	0.06	0.082	O					0.11
161.000	0.00	0.06	0.081	O					0.11
161.083	0.00	0.05	0.081	O					0.11
161.167	0.00	0.05	0.081	O					0.11
161.250	0.00	0.05	0.080	O					0.11
161.333	0.00	0.05	0.080	O					0.11
161.417	0.00	0.05	0.080	O					0.11
161.500	0.00	0.05	0.079	O					0.11
161.583	0.00	0.05	0.079	O					0.11
161.667	0.00	0.05	0.078	O					0.11
161.750	0.00	0.05	0.078	O					0.11
161.833	0.00	0.05	0.078	O					0.11
161.917	0.00	0.05	0.077	O					0.10
162.000	0.00	0.05	0.077	O					0.10
162.083	0.00	0.05	0.077	O					0.10
162.167	0.00	0.05	0.076	O					0.10
162.250	0.00	0.05	0.076	O					0.10
162.333	0.00	0.05	0.076	O					0.10
162.417	0.00	0.05	0.075	O					0.10
162.500	0.00	0.05	0.075	O					0.10
162.583	0.00	0.05	0.075	O					0.10
162.667	0.00	0.05	0.074	O					0.10
162.750	0.00	0.05	0.074	O					0.10
162.833	0.00	0.05	0.074	O					0.10
162.917	0.00	0.05	0.073	O					0.10
163.000	0.00	0.05	0.073	O					0.10
163.083	0.00	0.05	0.072	O					0.10
163.167	0.00	0.05	0.072	O					0.10
163.250	0.00	0.05	0.072	O					0.10
163.333	0.00	0.05	0.071	O					0.10
163.417	0.00	0.05	0.071	O					0.10
163.500	0.00	0.05	0.071	O					0.10
163.583	0.00	0.05	0.070	O					0.10
163.667	0.00	0.05	0.070	O					0.09
163.750	0.00	0.05	0.070	O					0.09
163.833	0.00	0.05	0.070	O					0.09
163.917	0.00	0.05	0.069	O					0.09
164.000	0.00	0.05	0.069	O					0.09
164.083	0.00	0.05	0.069	O					0.09
164.167	0.00	0.05	0.068	O					0.09
164.250	0.00	0.05	0.068	O					0.09
164.333	0.00	0.05	0.068	O					0.09
164.417	0.00	0.05	0.067	O					0.09
164.500	0.00	0.05	0.067	O					0.09
164.583	0.00	0.05	0.067	O					0.09
164.667	0.00	0.04	0.066	O					0.09
164.750	0.00	0.04	0.066	O					0.09
164.833	0.00	0.04	0.066	O					0.09
164.917	0.00	0.04	0.065	O					0.09
165.000	0.00	0.04	0.065	O					0.09
165.083	0.00	0.04	0.065	O					0.09
165.167	0.00	0.04	0.065	O					0.09
165.250	0.00	0.04	0.064	O					0.09
165.333	0.00	0.04	0.064	O					0.09

165.417	0.00	0.04	0.064	O	|	|	|	0.09
165.500	0.00	0.04	0.063	O	|	|	|	0.09
165.583	0.00	0.04	0.063	O	|	|	|	0.09
165.667	0.00	0.04	0.063	O	|	|	|	0.08
165.750	0.00	0.04	0.062	O	|	|	|	0.08
165.833	0.00	0.04	0.062	O	|	|	|	0.08
165.917	0.00	0.04	0.062	O	|	|	|	0.08
166.000	0.00	0.04	0.062	O	|	|	|	0.08
166.083	0.00	0.04	0.061	O	|	|	|	0.08
166.167	0.00	0.04	0.061	O	|	|	|	0.08
166.250	0.00	0.04	0.061	O	|	|	|	0.08
166.333	0.00	0.04	0.060	O	|	|	|	0.08
166.417	0.00	0.04	0.060	O	|	|	|	0.08
166.500	0.00	0.04	0.060	O	|	|	|	0.08
166.583	0.00	0.04	0.060	O	|	|	|	0.08
166.667	0.00	0.04	0.059	O	|	|	|	0.08

Remaining water in basin = 0.06 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 16.426 (CFS)
Total volume = 18.435 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 01/06/20

HILLWOOD - APOLLO PROJECT
25 YEAR STORM EVENT BASIN ROUTING
1930BR2425
DS

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 1930PUH252425.rte
**********HYDROGRAPH DATA**********
Number of intervals = 301
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 46.032 (CFS)
Total volume = 23.154 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 301
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

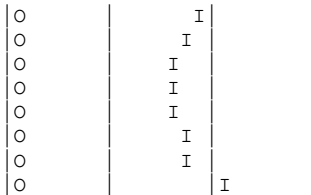
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.739	0.500	0.737	0.741
2.000	2.218	0.860	2.215	2.221
3.000	3.327	1.120	3.323	3.331
4.000	4.435	1.320	4.430	4.440
4.500	6.323	1.410	6.318	6.328
5.000	8.291	2.400	8.283	8.299
6.000	12.386	3.450	12.374	12.398
7.000	16.882	49.560	16.711	17.053
8.000	21.702	68.940	21.465	21.939
9.000	26.849	83.890	26.560	27.138

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	11.5	23.02	34.52	46.03	Depth (Ft.)
0.083	0.21	0.00	0.001	O					0.00
0.167	1.11	0.00	0.005	O					0.01
0.250	1.81	0.01	0.015	OI					0.02
0.333	2.20	0.02	0.029	OI					0.04
0.417	2.80	0.03	0.046	OI					0.06
0.500	3.27	0.05	0.067	O I					0.09
0.583	3.48	0.06	0.090	O I					0.12
0.667	3.62	0.08	0.113	O I					0.15
0.750	3.72	0.09	0.138	O I					0.19
0.833	3.90	0.11	0.164	O I					0.22
0.917	4.40	0.13	0.191	O I					0.26
1.000	4.79	0.15	0.222	O I					0.30
1.083	4.86	0.17	0.254	O I					0.34
1.167	4.52	0.19	0.285	O I					0.39
1.250	4.23	0.21	0.314	O I					0.42
1.333	4.14	0.23	0.341	O I					0.46
1.417	4.09	0.25	0.368	O I					0.50
1.500	4.06	0.27	0.394	O I					0.53
1.583	4.04	0.28	0.420	O I					0.57
1.667	4.02	0.30	0.446	O I					0.60
1.750	4.01	0.32	0.472	O I					0.64
1.833	4.11	0.34	0.497	O I					0.67
1.917	4.55	0.36	0.525	O I					0.71
2.000	4.89	0.38	0.555	O I					0.75
2.083	5.02	0.40	0.586	O I					0.79
2.167	5.10	0.42	0.618	O I					0.84
2.250	5.15	0.44	0.651	O I					0.88
2.333	5.19	0.46	0.683	O I					0.92
2.417	5.22	0.48	0.716	O I					0.97
2.500	5.24	0.50	0.748	O I					1.01
2.583	5.37	0.51	0.781	O I					1.03
2.667	5.82	0.52	0.816	O I					1.05
2.750	6.19	0.53	0.854	O I					1.08
2.833	6.33	0.54	0.893	O I					1.10
2.917	6.42	0.55	0.934	O I					1.13
3.000	6.48	0.56	0.974	O I					1.16
3.083	6.51	0.57	1.015	O I					1.19
3.167	6.54	0.58	1.056	O I					1.21
3.250	6.56	0.59	1.097	O I					1.24
3.333	6.58	0.60	1.138	O I					1.27
3.417	6.59	0.61	1.180	O I					1.30
3.500	6.60	0.62	1.221	O I					1.33
3.583	6.61	0.63	1.262	O I					1.35
3.667	6.62	0.64	1.303	O I					1.38
3.750	6.62	0.65	1.345	O I					1.41
3.833	6.73	0.66	1.386	O I					1.44
3.917	7.17	0.67	1.429	O I					1.47
4.000	7.53	0.68	1.475	O I					1.50
4.083	7.66	0.69	1.523	O I					1.53
4.167	7.74	0.70	1.571	O I					1.56
4.250	7.80	0.71	1.620	O I					1.60
4.333	7.95	0.73	1.669	O I					1.63
4.417	8.42	0.74	1.720	O I					1.66
4.500	8.80	0.75	1.774	O I					1.70
4.583	8.95	0.77	1.830	O I					1.74
4.667	9.04	0.78	1.887	O I					1.78
4.750	9.11	0.79	1.944	O I					1.81
4.833	8.42	0.81	1.999	O I					1.85
4.917	5.40	0.82	2.041	O I					1.88
5.000	3.01	0.82	2.064	O I					1.90
5.083	2.74	0.83	2.078	OI					1.91
5.167	4.79	0.83	2.099	O I					1.92
5.250	6.48	0.84	2.132	O I					1.94
5.333	7.13	0.85	2.173	O I					1.97
5.417	7.86	0.86	2.218	O I					2.00
5.500	8.38	0.87	2.268	O I					2.05
5.583	7.94	0.88	2.318	O I					2.09

5.667	5.20	0.89	2.358	O I					2.13
5.750	3.05	0.90	2.380	O I					2.15
5.833	2.27	0.90	2.392	OI					2.16
5.917	1.84	0.90	2.400	OI					2.16
6.000	1.61	0.90	2.406	OI					2.17
6.083	1.59	0.91	2.410	OI					2.17
6.167	2.06	0.91	2.417	OI					2.18
6.250	2.40	0.91	2.426	OI					2.19
6.333	2.52	0.91	2.437	OI					2.20
6.417	2.60	0.91	2.448	OI					2.21
6.500	2.65	0.92	2.460	OI					2.22
6.583	2.83	0.92	2.472	OI					2.23
6.667	3.41	0.92	2.487	O I					2.24
6.750	3.93	0.93	2.506	O I					2.26
6.833	4.17	0.93	2.528	O I					2.28
6.917	4.33	0.94	2.551	O I					2.30
7.000	4.46	0.94	2.574	O I					2.32
7.083	4.57	0.95	2.599	O I					2.34
7.167	4.67	0.96	2.624	O I					2.37
7.250	4.75	0.96	2.650	O I					2.39
7.333	4.95	0.97	2.677	O I					2.41
7.417	5.56	0.97	2.706	O I					2.44
7.500	6.05	0.98	2.740	O I					2.47
7.583	6.41	0.99	2.776	O I					2.50
7.667	7.12	1.00	2.815	O I					2.54
7.750	7.66	1.01	2.859	O I					2.58
7.833	8.06	1.02	2.907	O I					2.62
7.917	8.79	1.03	2.958	O I					2.67
8.000	9.36	1.05	3.013	O I					2.72
8.083	9.91	1.06	3.072	O I					2.77
8.167	11.20	1.08	3.137	O I					2.83
8.250	12.22	1.09	3.210	O I					2.89
8.333	12.68	1.11	3.289	O I					2.97
8.417	12.99	1.13	3.369	O I					3.04
8.500	13.21	1.14	3.452	O I					3.11
8.583	13.51	1.16	3.536	O I					3.19
8.667	14.20	1.17	3.623	O I					3.27
8.750	14.75	1.19	3.715	O I					3.35
8.833	15.14	1.21	3.809	O I					3.44
8.917	15.88	1.22	3.908	O I					3.52
9.000	16.44	1.24	4.011	O I					3.62
9.083	16.99	1.26	4.117	O I					3.71
9.167	18.27	1.28	4.230	O I					3.81
9.250	19.28	1.30	4.350	O I					3.92
9.333	19.86	1.32	4.476	O I					4.01
9.417	20.70	1.33	4.607	O I					4.05
9.500	21.35	1.33	4.742	O I					4.08
9.583	21.83	1.34	4.882	O I					4.12
9.667	22.61	1.35	5.025	O I					4.16
9.750	23.22	1.36	5.174	O I					4.20
9.833	23.66	1.36	5.326	O I					4.24
9.917	24.43	1.37	5.482	O I					4.28
10.000	25.02	1.38	5.643	O I					4.32
10.083	24.41	1.39	5.804	O I					4.36
10.167	20.82	1.39	5.950	O I					4.40
10.250	17.95	1.40	6.074	O I					4.43
10.333	16.90	1.40	6.184	O I					4.46
10.417	16.31	1.41	6.289	O I					4.49
10.500	15.93	1.44	6.390	O I					4.52
10.583	16.33	1.49	6.491	O I					4.54
10.667	18.88	1.55	6.602	O I					4.57
10.750	20.90	1.61	6.728	O I					4.60
10.833	21.65	1.68	6.863	O I					4.64
10.917	22.09	1.75	7.002	O I					4.67
11.000	22.39	1.82	7.143	O I					4.71
11.083	22.47	1.89	7.284	O I					4.74
11.167	22.08	1.96	7.424	O I					4.78
11.250	21.83	2.03	7.562	O I					4.81
11.333	21.81	2.10	7.698	O I					4.85
11.417	21.83	2.17	7.834	O I					4.88
11.500	21.87	2.24	7.969	O I					4.92

11.583	21.65	2.31	8.103		4.95
11.667	20.62	2.37	8.232		4.99
11.750	19.77	2.42	8.355		5.02
11.833	19.59	2.45	8.474		5.04
11.917	19.96	2.48	8.593		5.07
12.000	20.29	2.51	8.715		5.10
12.083	21.31	2.54	8.840		5.13
12.167	25.18	2.58	8.983		5.17
12.250	28.26	2.62	9.149		5.21
12.333	29.61	2.67	9.330		5.25
12.417	30.89	2.72	9.520		5.30
12.500	31.84	2.77	9.717		5.35
12.583	32.65	2.82	9.920		5.40
12.667	34.10	2.87	10.130		5.45
12.750	35.28	2.93	10.349		5.50
12.833	35.99	2.99	10.574		5.56
12.917	36.93	3.04	10.805		5.61
13.000	37.64	3.10	11.040		5.67
13.083	38.69	3.17	11.281		5.73
13.167	41.69	3.23	11.536		5.79
13.250	44.02	3.30	11.809		5.86
13.333	45.00	3.37	12.092		5.93
13.417	45.61	3.45	12.381		6.00
13.500	46.03	6.29	12.663		6.06
13.583	44.91	8.96	12.923		6.12
13.667	39.18	11.22	13.144		6.17
13.750	34.62	12.97	13.314		6.21
13.833	32.93	14.39	13.453		6.24
13.917	31.97	15.62	13.573		6.26
14.000	31.33	16.72	13.679		6.29
14.083	31.41	17.72	13.777		6.31
14.167	33.30	18.71	13.874		6.33
14.250	34.76	19.76	13.976		6.35
14.333	35.11	20.79	14.077		6.38
14.417	34.83	21.76	14.171		6.40
14.500	34.58	22.64	14.258		6.42
14.583	34.53	23.46	14.337		6.43
14.667	34.51	24.21	14.410		6.45
14.750	34.59	24.92	14.479		6.47
14.833	34.53	25.57	14.543		6.48
14.917	34.05	26.17	14.601		6.49
15.000	33.68	26.69	14.652		6.50
15.083	33.43	27.16	14.698		6.51
15.167	32.85	27.57	14.738		6.52
15.250	32.37	27.91	14.771		6.53
15.333	32.05	28.21	14.800		6.54
15.417	31.41	28.45	14.823		6.54
15.500	30.92	28.63	14.841		6.55
15.583	30.19	28.76	14.854		6.55
15.667	27.91	28.78	14.856		6.55
15.750	26.11	28.66	14.844		6.55
15.833	25.40	28.46	14.825		6.54
15.917	24.98	28.24	14.803		6.54
16.000	24.71	28.01	14.781		6.53
16.083	23.00	27.72	14.753		6.53
16.167	16.57	27.18	14.700		6.51
16.250	11.45	26.28	14.612		6.50
16.333	9.42	25.20	14.507		6.47
16.417	8.21	24.09	14.398		6.45
16.500	7.39	22.97	14.290		6.42
16.583	6.70	21.89	14.184		6.40
16.667	5.83	20.82	14.080		6.38
16.750	5.15	19.78	13.978		6.35
16.833	4.78	18.77	13.879		6.33
16.917	4.52	17.80	13.785		6.31
17.000	4.33	16.89	13.696		6.29
17.083	4.01	16.02	13.612		6.27
17.167	3.16	15.17	13.529		6.25
17.250	2.58	14.33	13.447		6.24
17.333	2.36	13.52	13.368		6.22
17.417	2.24	12.76	13.294		6.20

17.500	2.17	12.04	13.223	I O				6.19
17.583	2.12	11.36	13.158	I O				6.17
17.667	2.10	10.73	13.096	I O				6.16
17.750	2.09	10.14	13.039	I O				6.15
17.833	1.96	9.59	12.985	I O				6.13
17.917	1.43	9.05	12.932	I O				6.12
18.000	1.01	8.52	12.880	I O				6.11
18.083	0.86	8.00	12.830	I O				6.10
18.167	0.78	7.51	12.782	I O				6.09
18.250	0.74	7.05	12.737	I O				6.08
18.333	0.72	6.62	12.695	I O				6.07
18.417	0.72	6.22	12.656	I O				6.06
18.500	0.72	5.84	12.619	I O				6.05
18.583	0.99	5.50	12.586	I O				6.04
18.667	2.08	5.23	12.560	I O				6.04
18.750	2.95	5.04	12.541	IO				6.03
18.833	3.17	4.91	12.528	IO				6.03
18.917	2.92	4.78	12.516	IO				6.03
19.000	2.71	4.65	12.503	I O				6.03
19.083	2.77	4.52	12.490	I O				6.02
19.167	3.21	4.41	12.480	IO				6.02
19.250	3.56	4.34	12.473	IO				6.02
19.333	3.46	4.29	12.468	O				6.02
19.417	2.55	4.20	12.459	IO				6.02
19.500	1.82	4.06	12.446	IO				6.01
19.583	1.80	3.91	12.431	IO				6.01
19.667	2.65	3.79	12.419	IO				6.01
19.750	3.32	3.74	12.414	O				6.01
19.833	3.44	3.71	12.412	O				6.01
19.917	3.12	3.68	12.409	O				6.01
20.000	2.85	3.64	12.404	IO				6.00
20.083	2.88	3.58	12.399	O				6.00
20.167	3.28	3.55	12.396	O				6.00
20.250	3.61	3.54	12.395	O				6.00
20.333	3.73	3.55	12.396	O				6.00
20.417	3.80	3.57	12.397	O				6.00
20.500	3.85	3.58	12.399	O				6.00
20.583	3.89	3.60	12.401	O				6.00
20.667	3.92	3.62	12.403	O				6.00
20.750	3.93	3.64	12.405	O				6.00
20.833	3.83	3.66	12.406	O				6.00
20.917	3.39	3.66	12.406	O				6.00
21.000	3.05	3.63	12.403	O				6.00
21.083	3.03	3.59	12.399	O				6.00
21.167	3.40	3.56	12.397	O				6.00
21.250	3.70	3.56	12.397	O				6.00
21.333	3.69	3.57	12.398	O				6.00
21.417	3.30	3.56	12.397	O				6.00
21.500	2.98	3.54	12.394	O				6.00
21.583	2.97	3.50	12.391	O				6.00
21.667	3.35	3.47	12.388	O				6.00
21.750	3.66	3.48	12.388	O				6.00
21.833	3.66	3.49	12.390	O				6.00
21.917	3.27	3.49	12.390	O				6.00
22.000	2.96	3.46	12.387	O				6.00
22.083	2.64	3.45	12.383	IO				6.00
22.167	1.72	3.45	12.374	IO				6.00
22.250	0.99	3.44	12.359	I O				5.99
22.333	0.91	3.44	12.342	I O				5.99
22.417	1.59	3.43	12.327	IO				5.99
22.500	2.16	3.43	12.317	IO				5.98
22.583	2.34	3.43	12.308	IO				5.98
22.667	2.44	3.43	12.301	IO				5.98
22.750	2.49	3.43	12.295	IO				5.98
22.833	2.52	3.42	12.288	IO				5.98
22.917	2.55	3.42	12.282	IO				5.97
23.000	2.57	3.42	12.276	IO				5.97
23.083	2.59	3.42	12.270	IO				5.97
23.167	2.60	3.42	12.265	IO				5.97
23.250	2.62	3.42	12.259	IO				5.97
23.333	2.63	3.42	12.254	IO				5.97

23.417	2.65	3.41	12.248	IO				5.97
23.500	2.65	3.41	12.243	IO				5.97
23.583	2.65	3.41	12.238	IO				5.96
23.667	2.65	3.41	12.233	IO				5.96
23.750	2.65	3.41	12.227	IO				5.96
23.833	2.65	3.41	12.222	IO				5.96
23.917	2.65	3.41	12.217	IO				5.96
24.000	2.65	3.41	12.212	IO				5.96
24.083	2.43	3.40	12.206	IO				5.96
24.167	1.54	3.40	12.196	IO				5.95
24.250	0.83	3.40	12.181	I O				5.95
24.333	0.56	3.39	12.162	I O				5.95
24.417	0.40	3.39	12.142	I O				5.94
24.500	0.29	3.38	12.121	I O				5.94
24.583	0.21	3.38	12.100	I O				5.93
24.667	0.15	3.37	12.078	I O				5.92
24.750	0.11	3.37	12.055	I O				5.92
24.833	0.07	3.36	12.033	I O				5.91
24.917	0.05	3.35	12.010	I O				5.91
25.000	0.03	3.35	11.987	I O				5.90
25.083	0.01	3.34	11.964	I O				5.90
25.167	0.00	3.34	11.941	I O				5.89
25.250	0.00	3.33	11.918	I O				5.89
25.333	0.00	3.32	11.896	I O				5.88
25.417	0.00	3.32	11.873	I O				5.87
25.500	0.00	3.31	11.850	I O				5.87
25.583	0.00	3.31	11.827	I O				5.86
25.667	0.00	3.30	11.804	I O				5.86
25.750	0.00	3.30	11.782	I O				5.85
25.833	0.00	3.29	11.759	I O				5.85
25.917	0.00	3.28	11.736	I O				5.84
26.000	0.00	3.28	11.714	I O				5.84
26.083	0.00	3.27	11.691	I O				5.83
26.167	0.00	3.27	11.669	I O				5.82
26.250	0.00	3.26	11.646	I O				5.82
26.333	0.00	3.25	11.624	I O				5.81
26.417	0.00	3.25	11.601	I O				5.81
26.500	0.00	3.24	11.579	I O				5.80
26.583	0.00	3.24	11.557	I O				5.80
26.667	0.00	3.23	11.534	I O				5.79
26.750	0.00	3.23	11.512	I O				5.79
26.833	0.00	3.22	11.490	I O				5.78
26.917	0.00	3.21	11.468	I O				5.78
27.000	0.00	3.21	11.446	I O				5.77
27.083	0.00	3.20	11.424	I O				5.76
27.167	0.00	3.20	11.402	I O				5.76
27.250	0.00	3.19	11.380	I O				5.75
27.333	0.00	3.19	11.358	I O				5.75
27.417	0.00	3.18	11.336	I O				5.74
27.500	0.00	3.18	11.314	I O				5.74
27.583	0.00	3.17	11.292	I O				5.73
27.667	0.00	3.16	11.270	I O				5.73
27.750	0.00	3.16	11.248	I O				5.72
27.833	0.00	3.15	11.227	I O				5.72
27.917	0.00	3.15	11.205	I O				5.71
28.000	0.00	3.14	11.183	I O				5.71
28.083	0.00	3.14	11.162	I O				5.70
28.167	0.00	3.13	11.140	I O				5.70
28.250	0.00	3.13	11.119	I O				5.69
28.333	0.00	3.12	11.097	I O				5.69
28.417	0.00	3.11	11.076	I O				5.68
28.500	0.00	3.11	11.054	I O				5.67
28.583	0.00	3.10	11.033	I O				5.67
28.667	0.00	3.10	11.011	I O				5.66
28.750	0.00	3.09	10.990	I O				5.66
28.833	0.00	3.09	10.969	I O				5.65
28.917	0.00	3.08	10.948	I O				5.65
29.000	0.00	3.08	10.926	I O				5.64
29.083	0.00	3.07	10.905	I O				5.64
29.167	0.00	3.06	10.884	I O				5.63
29.250	0.00	3.06	10.863	I O				5.63

29.333	0.00	3.05	10.842	I O				5.62
29.417	0.00	3.05	10.821	I O				5.62
29.500	0.00	3.04	10.800	I O				5.61
29.583	0.00	3.04	10.779	I O				5.61
29.667	0.00	3.03	10.758	I O				5.60
29.750	0.00	3.03	10.737	I O				5.60
29.833	0.00	3.02	10.716	I O				5.59
29.917	0.00	3.02	10.696	I O				5.59
30.000	0.00	3.01	10.675	I O				5.58
30.083	0.00	3.01	10.654	I O				5.58
30.167	0.00	3.00	10.633	I O				5.57
30.250	0.00	3.00	10.613	I O				5.57
30.333	0.00	2.99	10.592	I O				5.56
30.417	0.00	2.98	10.572	I O				5.56
30.500	0.00	2.98	10.551	I O				5.55
30.583	0.00	2.97	10.531	I O				5.55
30.667	0.00	2.97	10.510	I O				5.54
30.750	0.00	2.96	10.490	I O				5.54
30.833	0.00	2.96	10.469	I O				5.53
30.917	0.00	2.95	10.449	I O				5.53
31.000	0.00	2.95	10.429	I O				5.52
31.083	0.00	2.94	10.408	I O				5.52
31.167	0.00	2.94	10.388	I O				5.51
31.250	0.00	2.93	10.368	I O				5.51
31.333	0.00	2.93	10.348	I O				5.50
31.417	0.00	2.92	10.328	I O				5.50
31.500	0.00	2.92	10.307	I O				5.49
31.583	0.00	2.91	10.287	I O				5.49
31.667	0.00	2.91	10.267	I O				5.48
31.750	0.00	2.90	10.247	I O				5.48
31.833	0.00	2.90	10.227	I O				5.47
31.917	0.00	2.89	10.207	I O				5.47
32.000	0.00	2.89	10.188	I O				5.46
32.083	0.00	2.88	10.168	I O				5.46
32.167	0.00	2.88	10.148	IO				5.45
32.250	0.00	2.87	10.128	IO				5.45
32.333	0.00	2.87	10.108	IO				5.44
32.417	0.00	2.86	10.089	IO				5.44
32.500	0.00	2.86	10.069	IO				5.43
32.583	0.00	2.85	10.049	IO				5.43
32.667	0.00	2.85	10.030	IO				5.42
32.750	0.00	2.84	10.010	IO				5.42
32.833	0.00	2.84	9.990	IO				5.42
32.917	0.00	2.83	9.971	IO				5.41
33.000	0.00	2.83	9.951	IO				5.41
33.083	0.00	2.82	9.932	IO				5.40
33.167	0.00	2.82	9.913	IO				5.40
33.250	0.00	2.81	9.893	IO				5.39
33.333	0.00	2.81	9.874	IO				5.39
33.417	0.00	2.80	9.855	IO				5.38
33.500	0.00	2.80	9.835	IO				5.38
33.583	0.00	2.79	9.816	IO				5.37
33.667	0.00	2.79	9.797	IO				5.37
33.750	0.00	2.78	9.778	IO				5.36
33.833	0.00	2.78	9.759	IO				5.36
33.917	0.00	2.77	9.739	IO				5.35
34.000	0.00	2.77	9.720	IO				5.35
34.083	0.00	2.76	9.701	IO				5.34
34.167	0.00	2.76	9.682	IO				5.34
34.250	0.00	2.75	9.663	IO				5.34
34.333	0.00	2.75	9.644	IO				5.33
34.417	0.00	2.74	9.626	IO				5.33
34.500	0.00	2.74	9.607	IO				5.32
34.583	0.00	2.73	9.588	IO				5.32
34.667	0.00	2.73	9.569	IO				5.31
34.750	0.00	2.72	9.550	IO				5.31
34.833	0.00	2.72	9.532	IO				5.30
34.917	0.00	2.71	9.513	IO				5.30
35.000	0.00	2.71	9.494	IO				5.29
35.083	0.00	2.70	9.476	IO				5.29
35.167	0.00	2.70	9.457	IO				5.28

35.250	0.00	2.69	9.438	IO				5.28
35.333	0.00	2.69	9.420	IO				5.28
35.417	0.00	2.68	9.401	IO				5.27
35.500	0.00	2.68	9.383	IO				5.27
35.583	0.00	2.68	9.364	IO				5.26
35.667	0.00	2.67	9.346	IO				5.26
35.750	0.00	2.67	9.328	IO				5.25
35.833	0.00	2.66	9.309	IO				5.25
35.917	0.00	2.66	9.291	IO				5.24
36.000	0.00	2.65	9.273	IO				5.24
36.083	0.00	2.65	9.254	IO				5.24
36.167	0.00	2.64	9.236	IO				5.23
36.250	0.00	2.64	9.218	IO				5.23
36.333	0.00	2.63	9.200	IO				5.22
36.417	0.00	2.63	9.182	IO				5.22
36.500	0.00	2.62	9.164	IO				5.21
36.583	0.00	2.62	9.146	IO				5.21
36.667	0.00	2.61	9.128	IO				5.20
36.750	0.00	2.61	9.110	IO				5.20
36.833	0.00	2.61	9.092	IO				5.20
36.917	0.00	2.60	9.074	IO				5.19
37.000	0.00	2.60	9.056	IO				5.19
37.083	0.00	2.59	9.038	IO				5.18
37.167	0.00	2.59	9.020	IO				5.18
37.250	0.00	2.58	9.002	IO				5.17
37.333	0.00	2.58	8.985	IO				5.17
37.417	0.00	2.57	8.967	IO				5.17
37.500	0.00	2.57	8.949	IO				5.16
37.583	0.00	2.56	8.931	IO				5.16
37.667	0.00	2.56	8.914	IO				5.15
37.750	0.00	2.56	8.896	IO				5.15
37.833	0.00	2.55	8.879	IO				5.14
37.917	0.00	2.55	8.861	IO				5.14
38.000	0.00	2.54	8.844	IO				5.13
38.083	0.00	2.54	8.826	IO				5.13
38.167	0.00	2.53	8.809	IO				5.13
38.250	0.00	2.53	8.791	IO				5.12
38.333	0.00	2.52	8.774	IO				5.12
38.417	0.00	2.52	8.756	IO				5.11
38.500	0.00	2.51	8.739	IO				5.11
38.583	0.00	2.51	8.722	IO				5.11
38.667	0.00	2.51	8.704	IO				5.10
38.750	0.00	2.50	8.687	IO				5.10
38.833	0.00	2.50	8.670	IO				5.09
38.917	0.00	2.49	8.653	IO				5.09
39.000	0.00	2.49	8.636	IO				5.08
39.083	0.00	2.48	8.619	IO				5.08
39.167	0.00	2.48	8.601	IO				5.08
39.250	0.00	2.48	8.584	IO				5.07
39.333	0.00	2.47	8.567	IO				5.07
39.417	0.00	2.47	8.550	IO				5.06
39.500	0.00	2.46	8.533	IO				5.06
39.583	0.00	2.46	8.516	IO				5.06
39.667	0.00	2.45	8.500	IO				5.05
39.750	0.00	2.45	8.483	IO				5.05
39.833	0.00	2.44	8.466	IO				5.04
39.917	0.00	2.44	8.449	IO				5.04
40.000	0.00	2.44	8.432	IO				5.03
40.083	0.00	2.43	8.415	IO				5.03
40.167	0.00	2.43	8.399	IO				5.03
40.250	0.00	2.42	8.382	IO				5.02
40.333	0.00	2.42	8.365	IO				5.02
40.417	0.00	2.41	8.349	IO				5.01
40.500	0.00	2.41	8.332	IO				5.01
40.583	0.00	2.41	8.315	IO				5.01
40.667	0.00	2.40	8.299	IO				5.00
40.750	0.00	2.40	8.282	IO				5.00
40.833	0.00	2.39	8.266	IO				4.99
40.917	0.00	2.38	8.250	IO				4.99
41.000	0.00	2.37	8.233	IO				4.99
41.083	0.00	2.36	8.217	IO				4.98

41.167	0.00	2.35	8.201	IO				4.98
41.250	0.00	2.35	8.184	IO				4.97
41.333	0.00	2.34	8.168	IO				4.97
41.417	0.00	2.33	8.152	IO				4.96
41.500	0.00	2.32	8.136	IO				4.96
41.583	0.00	2.31	8.120	IO				4.96
41.667	0.00	2.31	8.104	IO				4.95
41.750	0.00	2.30	8.088	IO				4.95
41.833	0.00	2.29	8.073	IO				4.94
41.917	0.00	2.28	8.057	IO				4.94
42.000	0.00	2.27	8.041	IO				4.94
42.083	0.00	2.27	8.026	IO				4.93
42.167	0.00	2.26	8.010	IO				4.93
42.250	0.00	2.25	7.994	IO				4.92
42.333	0.00	2.24	7.979	IO				4.92
42.417	0.00	2.24	7.964	IO				4.92
42.500	0.00	2.23	7.948	IO				4.91
42.583	0.00	2.22	7.933	IO				4.91
42.667	0.00	2.21	7.918	IO				4.91
42.750	0.00	2.20	7.902	IO				4.90
42.833	0.00	2.20	7.887	IO				4.90
42.917	0.00	2.19	7.872	IO				4.89
43.000	0.00	2.18	7.857	IO				4.89
43.083	0.00	2.17	7.842	IO				4.89
43.167	0.00	2.17	7.827	IO				4.88
43.250	0.00	2.16	7.812	IO				4.88
43.333	0.00	2.15	7.797	IO				4.87
43.417	0.00	2.14	7.783	IO				4.87
43.500	0.00	2.14	7.768	IO				4.87
43.583	0.00	2.13	7.753	IO				4.86
43.667	0.00	2.12	7.739	IO				4.86
43.750	0.00	2.11	7.724	IO				4.86
43.833	0.00	2.11	7.709	IO				4.85
43.917	0.00	2.10	7.695	IO				4.85
44.000	0.00	2.09	7.681	IO				4.84
44.083	0.00	2.09	7.666	IO				4.84
44.167	0.00	2.08	7.652	IO				4.84
44.250	0.00	2.07	7.637	IO				4.83
44.333	0.00	2.06	7.623	IO				4.83
44.417	0.00	2.06	7.609	IO				4.83
44.500	0.00	2.05	7.595	IO				4.82
44.583	0.00	2.04	7.581	IO				4.82
44.667	0.00	2.04	7.567	IO				4.82
44.750	0.00	2.03	7.553	IO				4.81
44.833	0.00	2.02	7.539	IO				4.81
44.917	0.00	2.01	7.525	IO				4.81
45.000	0.00	2.01	7.511	IO				4.80
45.083	0.00	2.00	7.497	IO				4.80
45.167	0.00	1.99	7.484	IO				4.79
45.250	0.00	1.99	7.470	IO				4.79
45.333	0.00	1.98	7.456	IO				4.79
45.417	0.00	1.97	7.443	IO				4.78
45.500	0.00	1.97	7.429	IO				4.78
45.583	0.00	1.96	7.415	IO				4.78
45.667	0.00	1.95	7.402	IO				4.77
45.750	0.00	1.95	7.389	IO				4.77
45.833	0.00	1.94	7.375	IO				4.77
45.917	0.00	1.93	7.362	IO				4.76
46.000	0.00	1.93	7.349	IO				4.76
46.083	0.00	1.92	7.335	IO				4.76
46.167	0.00	1.91	7.322	IO				4.75
46.250	0.00	1.91	7.309	IO				4.75
46.333	0.00	1.90	7.296	IO				4.75
46.417	0.00	1.89	7.283	IO				4.74
46.500	0.00	1.89	7.270	IO				4.74
46.583	0.00	1.88	7.257	IO				4.74
46.667	0.00	1.87	7.244	IO				4.73
46.750	0.00	1.87	7.231	IO				4.73
46.833	0.00	1.86	7.218	IO				4.73
46.917	0.00	1.85	7.205	IO				4.72
47.000	0.00	1.85	7.193	IO				4.72

47.083	0.00	1.84	7.180	IO				4.72
47.167	0.00	1.83	7.167	IO				4.71
47.250	0.00	1.83	7.155	IO				4.71
47.333	0.00	1.82	7.142	IO				4.71
47.417	0.00	1.82	7.130	IO				4.70
47.500	0.00	1.81	7.117	IO				4.70
47.583	0.00	1.80	7.105	IO				4.70
47.667	0.00	1.80	7.092	IO				4.70
47.750	0.00	1.79	7.080	IO				4.69
47.833	0.00	1.78	7.068	IO				4.69
47.917	0.00	1.78	7.055	IO				4.69
48.000	0.00	1.77	7.043	IO				4.68
48.083	0.00	1.77	7.031	IO				4.68
48.167	0.00	1.76	7.019	IO				4.68
48.250	0.00	1.75	7.007	IO				4.67
48.333	0.00	1.75	6.995	IO				4.67
48.417	0.00	1.74	6.983	IO				4.67
48.500	0.00	1.74	6.971	IO				4.66
48.583	0.00	1.73	6.959	IO				4.66
48.667	0.00	1.72	6.947	IO				4.66
48.750	0.00	1.72	6.935	IO				4.66
48.833	0.00	1.71	6.923	IO				4.65
48.917	0.00	1.71	6.911	IO				4.65
49.000	0.00	1.70	6.900	IO				4.65
49.083	0.00	1.69	6.888	IO				4.64
49.167	0.00	1.69	6.876	IO				4.64
49.250	0.00	1.68	6.865	IO				4.64
49.333	0.00	1.68	6.853	IO				4.63
49.417	0.00	1.67	6.842	IO				4.63
49.500	0.00	1.67	6.830	IO				4.63
49.583	0.00	1.66	6.819	IO				4.63
49.667	0.00	1.65	6.807	IO				4.62
49.750	0.00	1.65	6.796	IO				4.62
49.833	0.00	1.64	6.785	IO				4.62
49.917	0.00	1.64	6.773	IO				4.61
50.000	0.00	1.63	6.762	IO				4.61
50.083	0.00	1.63	6.751	IO				4.61
50.167	0.00	1.62	6.740	IO				4.61
50.250	0.00	1.61	6.729	IO				4.60
50.333	0.00	1.61	6.717	IO				4.60
50.417	0.00	1.60	6.706	IO				4.60
50.500	0.00	1.60	6.695	IO				4.59
50.583	0.00	1.59	6.684	IO				4.59
50.667	0.00	1.59	6.673	IO				4.59
50.750	0.00	1.58	6.662	IO				4.59
50.833	0.00	1.58	6.652	IO				4.58
50.917	0.00	1.57	6.641	IO				4.58
51.000	0.00	1.56	6.630	IO				4.58
51.083	0.00	1.56	6.619	IO				4.58
51.167	0.00	1.55	6.609	IO				4.57
51.250	0.00	1.55	6.598	IO				4.57
51.333	0.00	1.54	6.587	IO				4.57
51.417	0.00	1.54	6.577	IO				4.56
51.500	0.00	1.53	6.566	IO				4.56
51.583	0.00	1.53	6.555	IO				4.56
51.667	0.00	1.52	6.545	IO				4.56
51.750	0.00	1.52	6.535	IO				4.55
51.833	0.00	1.51	6.524	IO				4.55
51.917	0.00	1.51	6.514	IO				4.55
52.000	0.00	1.50	6.503	IO				4.55
52.083	0.00	1.50	6.493	IO				4.54
52.167	0.00	1.49	6.483	IO				4.54
52.250	0.00	1.49	6.473	IO				4.54
52.333	0.00	1.48	6.462	IO				4.54
52.417	0.00	1.47	6.452	IO				4.53
52.500	0.00	1.47	6.442	IO				4.53
52.583	0.00	1.46	6.432	IO				4.53
52.667	0.00	1.46	6.422	IO				4.53
52.750	0.00	1.45	6.412	IO				4.52
52.833	0.00	1.45	6.402	IO				4.52
52.917	0.00	1.44	6.392	IO				4.52

53.000	0.00	1.44	6.382	IO				4.51
53.083	0.00	1.43	6.372	O				4.51
53.167	0.00	1.43	6.362	O				4.51
53.250	0.00	1.42	6.352	O				4.51
53.333	0.00	1.42	6.342	O				4.50
53.417	0.00	1.41	6.333	O				4.50
53.500	0.00	1.41	6.323	O				4.50
53.583	0.00	1.41	6.313	O				4.50
53.667	0.00	1.41	6.304	O				4.49
53.750	0.00	1.41	6.294	O				4.49
53.833	0.00	1.41	6.284	O				4.49
53.917	0.00	1.41	6.274	O				4.49
54.000	0.00	1.41	6.265	O				4.48
54.083	0.00	1.41	6.255	O				4.48
54.167	0.00	1.41	6.245	O				4.48
54.250	0.00	1.41	6.236	O				4.48
54.333	0.00	1.41	6.226	O				4.47
54.417	0.00	1.40	6.216	O				4.47
54.500	0.00	1.40	6.207	O				4.47
54.583	0.00	1.40	6.197	O				4.47
54.667	0.00	1.40	6.187	O				4.46
54.750	0.00	1.40	6.178	O				4.46
54.833	0.00	1.40	6.168	O				4.46
54.917	0.00	1.40	6.158	O				4.46
55.000	0.00	1.40	6.149	O				4.45
55.083	0.00	1.40	6.139	O				4.45
55.167	0.00	1.40	6.129	O				4.45
55.250	0.00	1.40	6.120	O				4.45
55.333	0.00	1.40	6.110	O				4.44
55.417	0.00	1.40	6.100	O				4.44
55.500	0.00	1.40	6.091	O				4.44
55.583	0.00	1.40	6.081	O				4.44
55.667	0.00	1.40	6.072	O				4.43
55.750	0.00	1.40	6.062	O				4.43
55.833	0.00	1.40	6.052	O				4.43
55.917	0.00	1.40	6.043	O				4.43
56.000	0.00	1.40	6.033	O				4.42
56.083	0.00	1.40	6.023	O				4.42
56.167	0.00	1.40	6.014	O				4.42
56.250	0.00	1.39	6.004	O				4.42
56.333	0.00	1.39	5.995	O				4.41
56.417	0.00	1.39	5.985	O				4.41
56.500	0.00	1.39	5.975	O				4.41
56.583	0.00	1.39	5.966	O				4.41
56.667	0.00	1.39	5.956	O				4.40
56.750	0.00	1.39	5.947	O				4.40
56.833	0.00	1.39	5.937	O				4.40
56.917	0.00	1.39	5.928	O				4.40
57.000	0.00	1.39	5.918	O				4.39
57.083	0.00	1.39	5.908	O				4.39
57.167	0.00	1.39	5.899	O				4.39
57.250	0.00	1.39	5.889	O				4.39
57.333	0.00	1.39	5.880	O				4.38
57.417	0.00	1.39	5.870	O				4.38
57.500	0.00	1.39	5.861	O				4.38
57.583	0.00	1.39	5.851	O				4.37
57.667	0.00	1.39	5.841	O				4.37
57.750	0.00	1.39	5.832	O				4.37
57.833	0.00	1.39	5.822	O				4.37
57.917	0.00	1.39	5.813	O				4.36
58.000	0.00	1.39	5.803	O				4.36
58.083	0.00	1.38	5.794	O				4.36
58.167	0.00	1.38	5.784	O				4.36
58.250	0.00	1.38	5.775	O				4.35
58.333	0.00	1.38	5.765	O				4.35
58.417	0.00	1.38	5.756	O				4.35
58.500	0.00	1.38	5.746	O				4.35
58.583	0.00	1.38	5.737	O				4.34
58.667	0.00	1.38	5.727	O				4.34
58.750	0.00	1.38	5.718	O				4.34
58.833	0.00	1.38	5.708	O				4.34

58.917	0.00	1.38	5.698	O					4.33
59.000	0.00	1.38	5.689	O					4.33
59.083	0.00	1.38	5.679	O					4.33
59.167	0.00	1.38	5.670	O					4.33
59.250	0.00	1.38	5.660	O					4.32
59.333	0.00	1.38	5.651	O					4.32
59.417	0.00	1.38	5.642	O					4.32
59.500	0.00	1.38	5.632	O					4.32
59.583	0.00	1.38	5.623	O					4.31
59.667	0.00	1.38	5.613	O					4.31
59.750	0.00	1.38	5.604	O					4.31
59.833	0.00	1.38	5.594	O					4.31
59.917	0.00	1.37	5.585	O					4.30
60.000	0.00	1.37	5.575	O					4.30
60.083	0.00	1.37	5.566	O					4.30
60.167	0.00	1.37	5.556	O					4.30
60.250	0.00	1.37	5.547	O					4.29
60.333	0.00	1.37	5.537	O					4.29
60.417	0.00	1.37	5.528	O					4.29
60.500	0.00	1.37	5.518	O					4.29
60.583	0.00	1.37	5.509	O					4.28
60.667	0.00	1.37	5.500	O					4.28
60.750	0.00	1.37	5.490	O					4.28
60.833	0.00	1.37	5.481	O					4.28
60.917	0.00	1.37	5.471	O					4.27
61.000	0.00	1.37	5.462	O					4.27
61.083	0.00	1.37	5.452	O					4.27
61.167	0.00	1.37	5.443	O					4.27
61.250	0.00	1.37	5.434	O					4.26
61.333	0.00	1.37	5.424	O					4.26
61.417	0.00	1.37	5.415	O					4.26
61.500	0.00	1.37	5.405	O					4.26
61.583	0.00	1.37	5.396	O					4.25
61.667	0.00	1.37	5.386	O					4.25
61.750	0.00	1.36	5.377	O					4.25
61.833	0.00	1.36	5.368	O					4.25
61.917	0.00	1.36	5.358	O					4.24
62.000	0.00	1.36	5.349	O					4.24
62.083	0.00	1.36	5.340	O					4.24
62.167	0.00	1.36	5.330	O					4.24
62.250	0.00	1.36	5.321	O					4.23
62.333	0.00	1.36	5.311	O					4.23
62.417	0.00	1.36	5.302	O					4.23
62.500	0.00	1.36	5.293	O					4.23
62.583	0.00	1.36	5.283	O					4.22
62.667	0.00	1.36	5.274	O					4.22
62.750	0.00	1.36	5.265	O					4.22
62.833	0.00	1.36	5.255	O					4.22
62.917	0.00	1.36	5.246	O					4.21
63.000	0.00	1.36	5.236	O					4.21
63.083	0.00	1.36	5.227	O					4.21
63.167	0.00	1.36	5.218	O					4.21
63.250	0.00	1.36	5.208	O					4.20
63.333	0.00	1.36	5.199	O					4.20
63.417	0.00	1.36	5.190	O					4.20
63.500	0.00	1.36	5.180	O					4.20
63.583	0.00	1.36	5.171	O					4.19
63.667	0.00	1.35	5.162	O					4.19
63.750	0.00	1.35	5.152	O					4.19
63.833	0.00	1.35	5.143	O					4.19
63.917	0.00	1.35	5.134	O					4.19
64.000	0.00	1.35	5.124	O					4.18
64.083	0.00	1.35	5.115	O					4.18
64.167	0.00	1.35	5.106	O					4.18
64.250	0.00	1.35	5.096	O					4.18
64.333	0.00	1.35	5.087	O					4.17
64.417	0.00	1.35	5.078	O					4.17
64.500	0.00	1.35	5.069	O					4.17
64.583	0.00	1.35	5.059	O					4.17
64.667	0.00	1.35	5.050	O					4.16
64.750	0.00	1.35	5.041	O					4.16

64.833	0.00	1.35	5.031	O					4.16
64.917	0.00	1.35	5.022	O					4.16
65.000	0.00	1.35	5.013	O					4.15
65.083	0.00	1.35	5.004	O					4.15
65.167	0.00	1.35	4.994	O					4.15
65.250	0.00	1.35	4.985	O					4.15
65.333	0.00	1.35	4.976	O					4.14
65.417	0.00	1.35	4.966	O					4.14
65.500	0.00	1.34	4.957	O					4.14
65.583	0.00	1.34	4.948	O					4.14
65.667	0.00	1.34	4.939	O					4.13
65.750	0.00	1.34	4.929	O					4.13
65.833	0.00	1.34	4.920	O					4.13
65.917	0.00	1.34	4.911	O					4.13
66.000	0.00	1.34	4.902	O					4.12
66.083	0.00	1.34	4.892	O					4.12
66.167	0.00	1.34	4.883	O					4.12
66.250	0.00	1.34	4.874	O					4.12
66.333	0.00	1.34	4.865	O					4.11
66.417	0.00	1.34	4.855	O					4.11
66.500	0.00	1.34	4.846	O					4.11
66.583	0.00	1.34	4.837	O					4.11
66.667	0.00	1.34	4.828	O					4.10
66.750	0.00	1.34	4.819	O					4.10
66.833	0.00	1.34	4.809	O					4.10
66.917	0.00	1.34	4.800	O					4.10
67.000	0.00	1.34	4.791	O					4.09
67.083	0.00	1.34	4.782	O					4.09
67.167	0.00	1.34	4.773	O					4.09
67.250	0.00	1.34	4.763	O					4.09
67.333	0.00	1.34	4.754	O					4.08
67.417	0.00	1.33	4.745	O					4.08
67.500	0.00	1.33	4.736	O					4.08
67.583	0.00	1.33	4.727	O					4.08
67.667	0.00	1.33	4.717	O					4.07
67.750	0.00	1.33	4.708	O					4.07
67.833	0.00	1.33	4.699	O					4.07
67.917	0.00	1.33	4.690	O					4.07
68.000	0.00	1.33	4.681	O					4.07
68.083	0.00	1.33	4.672	O					4.06
68.167	0.00	1.33	4.662	O					4.06
68.250	0.00	1.33	4.653	O					4.06
68.333	0.00	1.33	4.644	O					4.06
68.417	0.00	1.33	4.635	O					4.05
68.500	0.00	1.33	4.626	O					4.05
68.583	0.00	1.33	4.617	O					4.05
68.667	0.00	1.33	4.607	O					4.05
68.750	0.00	1.33	4.598	O					4.04
68.833	0.00	1.33	4.589	O					4.04
68.917	0.00	1.33	4.580	O					4.04
69.000	0.00	1.33	4.571	O					4.04
69.083	0.00	1.33	4.562	O					4.03
69.167	0.00	1.33	4.553	O					4.03
69.250	0.00	1.33	4.543	O					4.03
69.333	0.00	1.32	4.534	O					4.03
69.417	0.00	1.32	4.525	O					4.02
69.500	0.00	1.32	4.516	O					4.02
69.583	0.00	1.32	4.507	O					4.02
69.667	0.00	1.32	4.498	O					4.02
69.750	0.00	1.32	4.489	O					4.01
69.833	0.00	1.32	4.480	O					4.01
69.917	0.00	1.32	4.471	O					4.01
70.000	0.00	1.32	4.461	O					4.01
70.083	0.00	1.32	4.452	O					4.00
70.167	0.00	1.32	4.443	O					4.00
70.250	0.00	1.32	4.434	O					4.00
70.333	0.00	1.32	4.425	O					3.99
70.417	0.00	1.32	4.416	O					3.98
70.500	0.00	1.31	4.407	O					3.97
70.583	0.00	1.31	4.398	O					3.97
70.667	0.00	1.31	4.389	O					3.96

70.750	0.00	1.31	4.380	O					3.95
70.833	0.00	1.31	4.371	O					3.94
70.917	0.00	1.31	4.362	O					3.93
71.000	0.00	1.31	4.353	O					3.93
71.083	0.00	1.30	4.344	O					3.92
71.167	0.00	1.30	4.335	O					3.91
71.250	0.00	1.30	4.326	O					3.90
71.333	0.00	1.30	4.317	O					3.89
71.417	0.00	1.30	4.308	O					3.89
71.500	0.00	1.30	4.299	O					3.88
71.583	0.00	1.29	4.290	O					3.87
71.667	0.00	1.29	4.281	O					3.86
71.750	0.00	1.29	4.272	O					3.85
71.833	0.00	1.29	4.263	O					3.85
71.917	0.00	1.29	4.255	O					3.84
72.000	0.00	1.29	4.246	O					3.83
72.083	0.00	1.28	4.237	O					3.82
72.167	0.00	1.28	4.228	O					3.81
72.250	0.00	1.28	4.219	O					3.81
72.333	0.00	1.28	4.210	O					3.80
72.417	0.00	1.28	4.202	O					3.79
72.500	0.00	1.28	4.193	O					3.78
72.583	0.00	1.27	4.184	O					3.77
72.667	0.00	1.27	4.175	O					3.77
72.750	0.00	1.27	4.166	O					3.76
72.833	0.00	1.27	4.158	O					3.75
72.917	0.00	1.27	4.149	O					3.74
73.000	0.00	1.27	4.140	O					3.73
73.083	0.00	1.27	4.132	O					3.73
73.167	0.00	1.26	4.123	O					3.72
73.250	0.00	1.26	4.114	O					3.71
73.333	0.00	1.26	4.105	O					3.70
73.417	0.00	1.26	4.097	O					3.69
73.500	0.00	1.26	4.088	O					3.69
73.583	0.00	1.26	4.079	O					3.68
73.667	0.00	1.25	4.071	O					3.67
73.750	0.00	1.25	4.062	O					3.66
73.833	0.00	1.25	4.054	O					3.66
73.917	0.00	1.25	4.045	O					3.65
74.000	0.00	1.25	4.036	O					3.64
74.083	0.00	1.25	4.028	O					3.63
74.167	0.00	1.24	4.019	O					3.62
74.250	0.00	1.24	4.011	O					3.62
74.333	0.00	1.24	4.002	O					3.61
74.417	0.00	1.24	3.993	O					3.60
74.500	0.00	1.24	3.985	O					3.59
74.583	0.00	1.24	3.976	O					3.59
74.667	0.00	1.24	3.968	O					3.58
74.750	0.00	1.23	3.959	O					3.57
74.833	0.00	1.23	3.951	O					3.56
74.917	0.00	1.23	3.942	O					3.56
75.000	0.00	1.23	3.934	O					3.55
75.083	0.00	1.23	3.925	O					3.54
75.167	0.00	1.23	3.917	O					3.53
75.250	0.00	1.22	3.909	O					3.52
75.333	0.00	1.22	3.900	O					3.52
75.417	0.00	1.22	3.892	O					3.51
75.500	0.00	1.22	3.883	O					3.50
75.583	0.00	1.22	3.875	O					3.49
75.667	0.00	1.22	3.867	O					3.49
75.750	0.00	1.22	3.858	O					3.48
75.833	0.00	1.21	3.850	O					3.47
75.917	0.00	1.21	3.841	O					3.46
76.000	0.00	1.21	3.833	O					3.46
76.083	0.00	1.21	3.825	O					3.45
76.167	0.00	1.21	3.816	O					3.44
76.250	0.00	1.21	3.808	O					3.43
76.333	0.00	1.21	3.800	O					3.43
76.417	0.00	1.20	3.792	O					3.42
76.500	0.00	1.20	3.783	O					3.41
76.583	0.00	1.20	3.775	O					3.40

76.667	0.00	1.20	3.767	O					3.40
76.750	0.00	1.20	3.758	O					3.39
76.833	0.00	1.20	3.750	O					3.38
76.917	0.00	1.19	3.742	O					3.37
77.000	0.00	1.19	3.734	O					3.37
77.083	0.00	1.19	3.726	O					3.36
77.167	0.00	1.19	3.717	O					3.35
77.250	0.00	1.19	3.709	O					3.34
77.333	0.00	1.19	3.701	O					3.34
77.417	0.00	1.19	3.693	O					3.33
77.500	0.00	1.18	3.685	O					3.32
77.583	0.00	1.18	3.676	O					3.32
77.667	0.00	1.18	3.668	O					3.31
77.750	0.00	1.18	3.660	O					3.30
77.833	0.00	1.18	3.652	O					3.29
77.917	0.00	1.18	3.644	O					3.29
78.000	0.00	1.18	3.636	O					3.28
78.083	0.00	1.17	3.628	O					3.27
78.167	0.00	1.17	3.620	O					3.26
78.250	0.00	1.17	3.612	O					3.26
78.333	0.00	1.17	3.604	O					3.25
78.417	0.00	1.17	3.595	O					3.24
78.500	0.00	1.17	3.587	O					3.24
78.583	0.00	1.17	3.579	O					3.23
78.667	0.00	1.16	3.571	O					3.22
78.750	0.00	1.16	3.563	O					3.21
78.833	0.00	1.16	3.555	O					3.21
78.917	0.00	1.16	3.547	O					3.20
79.000	0.00	1.16	3.539	O					3.19
79.083	0.00	1.16	3.531	O					3.18
79.167	0.00	1.16	3.523	O					3.18
79.250	0.00	1.15	3.515	O					3.17
79.333	0.00	1.15	3.508	O					3.16
79.417	0.00	1.15	3.500	O					3.16
79.500	0.00	1.15	3.492	O					3.15
79.583	0.00	1.15	3.484	O					3.14
79.667	0.00	1.15	3.476	O					3.13
79.750	0.00	1.15	3.468	O					3.13
79.833	0.00	1.14	3.460	O					3.12
79.917	0.00	1.14	3.452	O					3.11
80.000	0.00	1.14	3.444	O					3.11
80.083	0.00	1.14	3.437	O					3.10
80.167	0.00	1.14	3.429	O					3.09
80.250	0.00	1.14	3.421	O					3.08
80.333	0.00	1.14	3.413	O					3.08
80.417	0.00	1.13	3.405	O					3.07
80.500	0.00	1.13	3.397	O					3.06
80.583	0.00	1.13	3.390	O					3.06
80.667	0.00	1.13	3.382	O					3.05
80.750	0.00	1.13	3.374	O					3.04
80.833	0.00	1.13	3.366	O					3.04
80.917	0.00	1.13	3.359	O					3.03
81.000	0.00	1.12	3.351	O					3.02
81.083	0.00	1.12	3.343	O					3.01
81.167	0.00	1.12	3.335	O					3.01
81.250	0.00	1.12	3.328	O					3.00
81.333	0.00	1.12	3.320	O					2.99
81.417	0.00	1.12	3.312	O					2.99
81.500	0.00	1.11	3.304	O					2.98
81.583	0.00	1.11	3.297	O					2.97
81.667	0.00	1.11	3.289	O					2.97
81.750	0.00	1.11	3.282	O					2.96
81.833	0.00	1.11	3.274	O					2.95
81.917	0.00	1.11	3.266	O					2.95
82.000	0.00	1.10	3.259	O					2.94
82.083	0.00	1.10	3.251	O					2.93
82.167	0.00	1.10	3.243	O					2.92
82.250	0.00	1.10	3.236	O					2.92
82.333	0.00	1.10	3.228	O					2.91
82.417	0.00	1.10	3.221	O					2.90
82.500	0.00	1.09	3.213	O					2.90

82.583	0.00	1.09	3.206	O					2.89
82.667	0.00	1.09	3.198	O					2.88
82.750	0.00	1.09	3.191	O					2.88
82.833	0.00	1.09	3.183	O					2.87
82.917	0.00	1.08	3.176	O					2.86
83.000	0.00	1.08	3.168	O					2.86
83.083	0.00	1.08	3.161	O					2.85
83.167	0.00	1.08	3.153	O					2.84
83.250	0.00	1.08	3.146	O					2.84
83.333	0.00	1.08	3.139	O					2.83
83.417	0.00	1.07	3.131	O					2.82
83.500	0.00	1.07	3.124	O					2.82
83.583	0.00	1.07	3.116	O					2.81
83.667	0.00	1.07	3.109	O					2.80
83.750	0.00	1.07	3.102	O					2.80
83.833	0.00	1.07	3.094	O					2.79
83.917	0.00	1.06	3.087	O					2.78
84.000	0.00	1.06	3.080	O					2.78
84.083	0.00	1.06	3.072	O					2.77
84.167	0.00	1.06	3.065	O					2.76
84.250	0.00	1.06	3.058	O					2.76
84.333	0.00	1.06	3.050	O					2.75
84.417	0.00	1.05	3.043	O					2.74
84.500	0.00	1.05	3.036	O					2.74
84.583	0.00	1.05	3.029	O					2.73
84.667	0.00	1.05	3.022	O					2.72
84.750	0.00	1.05	3.014	O					2.72
84.833	0.00	1.05	3.007	O					2.71
84.917	0.00	1.04	3.000	O					2.71
85.000	0.00	1.04	2.993	O					2.70
85.083	0.00	1.04	2.986	O					2.69
85.167	0.00	1.04	2.978	O					2.69
85.250	0.00	1.04	2.971	O					2.68
85.333	0.00	1.03	2.964	O					2.67
85.417	0.00	1.03	2.957	O					2.67
85.500	0.00	1.03	2.950	O					2.66
85.583	0.00	1.03	2.943	O					2.65
85.667	0.00	1.03	2.936	O					2.65
85.750	0.00	1.03	2.929	O					2.64
85.833	0.00	1.02	2.922	O					2.63
85.917	0.00	1.02	2.915	O					2.63
86.000	0.00	1.02	2.907	O					2.62
86.083	0.00	1.02	2.900	O					2.62
86.167	0.00	1.02	2.893	O					2.61
86.250	0.00	1.02	2.886	O					2.60
86.333	0.00	1.02	2.879	O					2.60
86.417	0.00	1.01	2.872	O					2.59
86.500	0.00	1.01	2.865	O					2.58
86.583	0.00	1.01	2.858	O					2.58
86.667	0.00	1.01	2.852	O					2.57
86.750	0.00	1.01	2.845	O					2.57
86.833	0.00	1.01	2.838	O					2.56
86.917	0.00	1.00	2.831	O					2.55
87.000	0.00	1.00	2.824	O					2.55
87.083	0.00	1.00	2.817	O					2.54
87.167	0.00	1.00	2.810	O					2.53
87.250	0.00	1.00	2.803	O					2.53
87.333	0.00	1.00	2.796	O					2.52
87.417	0.00	0.99	2.789	O					2.52
87.500	0.00	0.99	2.783	O					2.51
87.583	0.00	0.99	2.776	O					2.50
87.667	0.00	0.99	2.769	O					2.50
87.750	0.00	0.99	2.762	O					2.49
87.833	0.00	0.99	2.755	O					2.48
87.917	0.00	0.98	2.749	O					2.48
88.000	0.00	0.98	2.742	O					2.47
88.083	0.00	0.98	2.735	O					2.47
88.167	0.00	0.98	2.728	O					2.46
88.250	0.00	0.98	2.722	O					2.45
88.333	0.00	0.98	2.715	O					2.45
88.417	0.00	0.97	2.708	O					2.44

88.500	0.00	0.97	2.701	O					2.44
88.583	0.00	0.97	2.695	O					2.43
88.667	0.00	0.97	2.688	O					2.42
88.750	0.00	0.97	2.681	O					2.42
88.833	0.00	0.97	2.675	O					2.41
88.917	0.00	0.97	2.668	O					2.41
89.000	0.00	0.96	2.661	O					2.40
89.083	0.00	0.96	2.655	O					2.39
89.167	0.00	0.96	2.648	O					2.39
89.250	0.00	0.96	2.642	O					2.38
89.333	0.00	0.96	2.635	O					2.38
89.417	0.00	0.96	2.628	O					2.37
89.500	0.00	0.95	2.622	O					2.36
89.583	0.00	0.95	2.615	O					2.36
89.667	0.00	0.95	2.609	O					2.35
89.750	0.00	0.95	2.602	O					2.35
89.833	0.00	0.95	2.596	O					2.34
89.917	0.00	0.95	2.589	O					2.33
90.000	0.00	0.95	2.582	O					2.33
90.083	0.00	0.94	2.576	O					2.32
90.167	0.00	0.94	2.569	O					2.32
90.250	0.00	0.94	2.563	O					2.31
90.333	0.00	0.94	2.557	O					2.31
90.417	0.00	0.94	2.550	O					2.30
90.500	0.00	0.94	2.544	O					2.29
90.583	0.00	0.93	2.537	O					2.29
90.667	0.00	0.93	2.531	O					2.28
90.750	0.00	0.93	2.524	O					2.28
90.833	0.00	0.93	2.518	O					2.27
90.917	0.00	0.93	2.512	O					2.26
91.000	0.00	0.93	2.505	O					2.26
91.083	0.00	0.93	2.499	O					2.25
91.167	0.00	0.92	2.492	O					2.25
91.250	0.00	0.92	2.486	O					2.24
91.333	0.00	0.92	2.480	O					2.24
91.417	0.00	0.92	2.473	O					2.23
91.500	0.00	0.92	2.467	O					2.22
91.583	0.00	0.92	2.461	O					2.22
91.667	0.00	0.92	2.454	O					2.21
91.750	0.00	0.91	2.448	O					2.21
91.833	0.00	0.91	2.442	O					2.20
91.917	0.00	0.91	2.435	O					2.20
92.000	0.00	0.91	2.429	O					2.19
92.083	0.00	0.91	2.423	O					2.18
92.167	0.00	0.91	2.417	O					2.18
92.250	0.00	0.91	2.410	O					2.17
92.333	0.00	0.90	2.404	O					2.17
92.417	0.00	0.90	2.398	O					2.16
92.500	0.00	0.90	2.392	O					2.16
92.583	0.00	0.90	2.386	O					2.15
92.667	0.00	0.90	2.379	O					2.15
92.750	0.00	0.90	2.373	O					2.14
92.833	0.00	0.89	2.367	O					2.13
92.917	0.00	0.89	2.361	O					2.13
93.000	0.00	0.89	2.355	O					2.12
93.083	0.00	0.89	2.349	O					2.12
93.167	0.00	0.89	2.343	O					2.11
93.250	0.00	0.89	2.336	O					2.11
93.333	0.00	0.89	2.330	O					2.10
93.417	0.00	0.88	2.324	O					2.10
93.500	0.00	0.88	2.318	O					2.09
93.583	0.00	0.88	2.312	O					2.08
93.667	0.00	0.88	2.306	O					2.08
93.750	0.00	0.88	2.300	O					2.07
93.833	0.00	0.88	2.294	O					2.07
93.917	0.00	0.88	2.288	O					2.06
94.000	0.00	0.87	2.282	O					2.06
94.083	0.00	0.87	2.276	O					2.05
94.167	0.00	0.87	2.270	O					2.05
94.250	0.00	0.87	2.264	O					2.04
94.333	0.00	0.87	2.258	O					2.04

94.417	0.00	0.87	2.252	O					2.03
94.500	0.00	0.87	2.246	O					2.03
94.583	0.00	0.87	2.240	O					2.02
94.667	0.00	0.86	2.234	O					2.01
94.750	0.00	0.86	2.228	O					2.01
94.833	0.00	0.86	2.222	O					2.00
94.917	0.00	0.86	2.216	O					2.00
95.000	0.00	0.86	2.210	O					1.99
95.083	0.00	0.86	2.204	O					1.99
95.167	0.00	0.86	2.198	O					1.99
95.250	0.00	0.85	2.192	O					1.98
95.333	0.00	0.85	2.187	O					1.98
95.417	0.00	0.85	2.181	O					1.97
95.500	0.00	0.85	2.175	O					1.97
95.583	0.00	0.85	2.169	O					1.97
95.667	0.00	0.85	2.163	O					1.96
95.750	0.00	0.85	2.157	O					1.96
95.833	0.00	0.84	2.152	O					1.96
95.917	0.00	0.84	2.146	O					1.95
96.000	0.00	0.84	2.140	O					1.95
96.083	0.00	0.84	2.134	O					1.94
96.167	0.00	0.84	2.128	O					1.94
96.250	0.00	0.84	2.123	O					1.94
96.333	0.00	0.84	2.117	O					1.93
96.417	0.00	0.83	2.111	O					1.93
96.500	0.00	0.83	2.105	O					1.92
96.583	0.00	0.83	2.100	O					1.92
96.667	0.00	0.83	2.094	O					1.92
96.750	0.00	0.83	2.088	O					1.91
96.833	0.00	0.83	2.082	O					1.91
96.917	0.00	0.83	2.077	O					1.90
97.000	0.00	0.82	2.071	O					1.90
97.083	0.00	0.82	2.065	O					1.90
97.167	0.00	0.82	2.060	O					1.89
97.250	0.00	0.82	2.054	O					1.89
97.333	0.00	0.82	2.048	O					1.89
97.417	0.00	0.82	2.043	O					1.88
97.500	0.00	0.82	2.037	O					1.88
97.583	0.00	0.81	2.032	O					1.87
97.667	0.00	0.81	2.026	O					1.87
97.750	0.00	0.81	2.020	O					1.87
97.833	0.00	0.81	2.015	O					1.86
97.917	0.00	0.81	2.009	O					1.86
98.000	0.00	0.81	2.004	O					1.86
98.083	0.00	0.81	1.998	O					1.85
98.167	0.00	0.81	1.993	O					1.85
98.250	0.00	0.80	1.987	O					1.84
98.333	0.00	0.80	1.982	O					1.84
98.417	0.00	0.80	1.976	O					1.84
98.500	0.00	0.80	1.970	O					1.83
98.583	0.00	0.80	1.965	O					1.83
98.667	0.00	0.80	1.959	O					1.83
98.750	0.00	0.80	1.954	O					1.82
98.833	0.00	0.79	1.949	O					1.82
98.917	0.00	0.79	1.943	O					1.81
99.000	0.00	0.79	1.938	O					1.81
99.083	0.00	0.79	1.932	O					1.81
99.167	0.00	0.79	1.927	O					1.80
99.250	0.00	0.79	1.921	O					1.80
99.333	0.00	0.79	1.916	O					1.80
99.417	0.00	0.79	1.910	O					1.79
99.500	0.00	0.78	1.905	O					1.79
99.583	0.00	0.78	1.900	O					1.78
99.667	0.00	0.78	1.894	O					1.78
99.750	0.00	0.78	1.889	O					1.78
99.833	0.00	0.78	1.884	O					1.77
99.917	0.00	0.78	1.878	O					1.77
100.000	0.00	0.78	1.873	O					1.77
100.083	0.00	0.77	1.867	O					1.76
100.167	0.00	0.77	1.862	O					1.76
100.250	0.00	0.77	1.857	O					1.76

100.333	0.00	0.77	1.852	O					1.75
100.417	0.00	0.77	1.846	O					1.75
100.500	0.00	0.77	1.841	O					1.75
100.583	0.00	0.77	1.836	O					1.74
100.667	0.00	0.77	1.830	O					1.74
100.750	0.00	0.76	1.825	O					1.73
100.833	0.00	0.76	1.820	O					1.73
100.917	0.00	0.76	1.815	O					1.73
101.000	0.00	0.76	1.809	O					1.72
101.083	0.00	0.76	1.804	O					1.72
101.167	0.00	0.76	1.799	O					1.72
101.250	0.00	0.76	1.794	O					1.71
101.333	0.00	0.76	1.788	O					1.71
101.417	0.00	0.75	1.783	O					1.71
101.500	0.00	0.75	1.778	O					1.70
101.583	0.00	0.75	1.773	O					1.70
101.667	0.00	0.75	1.768	O					1.70
101.750	0.00	0.75	1.763	O					1.69
101.833	0.00	0.75	1.757	O					1.69
101.917	0.00	0.75	1.752	O					1.69
102.000	0.00	0.75	1.747	O					1.68
102.083	0.00	0.74	1.742	O					1.68
102.167	0.00	0.74	1.737	O					1.67
102.250	0.00	0.74	1.732	O					1.67
102.333	0.00	0.74	1.727	O					1.67
102.417	0.00	0.74	1.722	O					1.66
102.500	0.00	0.74	1.716	O					1.66
102.583	0.00	0.74	1.711	O					1.66
102.667	0.00	0.74	1.706	O					1.65
102.750	0.00	0.73	1.701	O					1.65
102.833	0.00	0.73	1.696	O					1.65
102.917	0.00	0.73	1.691	O					1.64
103.000	0.00	0.73	1.686	O					1.64
103.083	0.00	0.73	1.681	O					1.64
103.167	0.00	0.73	1.676	O					1.63
103.250	0.00	0.73	1.671	O					1.63
103.333	0.00	0.73	1.666	O					1.63
103.417	0.00	0.72	1.661	O					1.62
103.500	0.00	0.72	1.656	O					1.62
103.583	0.00	0.72	1.651	O					1.62
103.667	0.00	0.72	1.646	O					1.61
103.750	0.00	0.72	1.641	O					1.61
103.833	0.00	0.72	1.636	O					1.61
103.917	0.00	0.72	1.631	O					1.60
104.000	0.00	0.72	1.626	O					1.60
104.083	0.00	0.71	1.621	O					1.60
104.167	0.00	0.71	1.616	O					1.59
104.250	0.00	0.71	1.612	O					1.59
104.333	0.00	0.71	1.607	O					1.59
104.417	0.00	0.71	1.602	O					1.58
104.500	0.00	0.71	1.597	O					1.58
104.583	0.00	0.71	1.592	O					1.58
104.667	0.00	0.71	1.587	O					1.57
104.750	0.00	0.71	1.582	O					1.57
104.833	0.00	0.70	1.577	O					1.57
104.917	0.00	0.70	1.573	O					1.56
105.000	0.00	0.70	1.568	O					1.56
105.083	0.00	0.70	1.563	O					1.56
105.167	0.00	0.70	1.558	O					1.55
105.250	0.00	0.70	1.553	O					1.55
105.333	0.00	0.70	1.548	O					1.55
105.417	0.00	0.70	1.544	O					1.54
105.500	0.00	0.69	1.539	O					1.54
105.583	0.00	0.69	1.534	O					1.54
105.667	0.00	0.69	1.529	O					1.53
105.750	0.00	0.69	1.525	O					1.53
105.833	0.00	0.69	1.520	O					1.53
105.917	0.00	0.69	1.515	O					1.52
106.000	0.00	0.69	1.510	O					1.52
106.083	0.00	0.69	1.506	O					1.52
106.167	0.00	0.69	1.501	O					1.52

106.250	0.00	0.68	1.496	O					1.51
106.333	0.00	0.68	1.491	O					1.51
106.417	0.00	0.68	1.487	O					1.51
106.500	0.00	0.68	1.482	O					1.50
106.583	0.00	0.68	1.477	O					1.50
106.667	0.00	0.68	1.473	O					1.50
106.750	0.00	0.68	1.468	O					1.49
106.833	0.00	0.68	1.463	O					1.49
106.917	0.00	0.68	1.459	O					1.49
107.000	0.00	0.67	1.454	O					1.48
107.083	0.00	0.67	1.449	O					1.48
107.167	0.00	0.67	1.445	O					1.48
107.250	0.00	0.67	1.440	O					1.47
107.333	0.00	0.67	1.436	O					1.47
107.417	0.00	0.67	1.431	O					1.47
107.500	0.00	0.67	1.426	O					1.46
107.583	0.00	0.67	1.422	O					1.46
107.667	0.00	0.67	1.417	O					1.46
107.750	0.00	0.66	1.413	O					1.46
107.833	0.00	0.66	1.408	O					1.45
107.917	0.00	0.66	1.403	O					1.45
108.000	0.00	0.66	1.399	O					1.45
108.083	0.00	0.66	1.394	O					1.44
108.167	0.00	0.66	1.390	O					1.44
108.250	0.00	0.66	1.385	O					1.44
108.333	0.00	0.66	1.381	O					1.43
108.417	0.00	0.66	1.376	O					1.43
108.500	0.00	0.65	1.372	O					1.43
108.583	0.00	0.65	1.367	O					1.42
108.667	0.00	0.65	1.363	O					1.42
108.750	0.00	0.65	1.358	O					1.42
108.833	0.00	0.65	1.354	O					1.42
108.917	0.00	0.65	1.349	O					1.41
109.000	0.00	0.65	1.345	O					1.41
109.083	0.00	0.65	1.340	O					1.41
109.167	0.00	0.65	1.336	O					1.40
109.250	0.00	0.64	1.332	O					1.40
109.333	0.00	0.64	1.327	O					1.40
109.417	0.00	0.64	1.323	O					1.39
109.500	0.00	0.64	1.318	O					1.39
109.583	0.00	0.64	1.314	O					1.39
109.667	0.00	0.64	1.309	O					1.39
109.750	0.00	0.64	1.305	O					1.38
109.833	0.00	0.64	1.301	O					1.38
109.917	0.00	0.64	1.296	O					1.38
110.000	0.00	0.63	1.292	O					1.37
110.083	0.00	0.63	1.288	O					1.37
110.167	0.00	0.63	1.283	O					1.37
110.250	0.00	0.63	1.279	O					1.36
110.333	0.00	0.63	1.274	O					1.36
110.417	0.00	0.63	1.270	O					1.36
110.500	0.00	0.63	1.266	O					1.36
110.583	0.00	0.63	1.261	O					1.35
110.667	0.00	0.63	1.257	O					1.35
110.750	0.00	0.63	1.253	O					1.35
110.833	0.00	0.62	1.249	O					1.34
110.917	0.00	0.62	1.244	O					1.34
111.000	0.00	0.62	1.240	O					1.34
111.083	0.00	0.62	1.236	O					1.34
111.167	0.00	0.62	1.231	O					1.33
111.250	0.00	0.62	1.227	O					1.33
111.333	0.00	0.62	1.223	O					1.33
111.417	0.00	0.62	1.219	O					1.32
111.500	0.00	0.62	1.214	O					1.32
111.583	0.00	0.61	1.210	O					1.32
111.667	0.00	0.61	1.206	O					1.32
111.750	0.00	0.61	1.202	O					1.31
111.833	0.00	0.61	1.197	O					1.31
111.917	0.00	0.61	1.193	O					1.31
112.000	0.00	0.61	1.189	O					1.30
112.083	0.00	0.61	1.185	O					1.30

112.167	0.00	0.61	1.181	O	|	|	|	|	1.30
112.250	0.00	0.61	1.177	O	|	|	|	|	1.30
112.333	0.00	0.61	1.172	O	|	|	|	|	1.29
112.417	0.00	0.60	1.168	O	|	|	|	|	1.29
112.500	0.00	0.60	1.164	O	|	|	|	|	1.29
112.583	0.00	0.60	1.160	O	|	|	|	|	1.28
112.667	0.00	0.60	1.156	O	|	|	|	|	1.28
112.750	0.00	0.60	1.152	O	|	|	|	|	1.28
112.833	0.00	0.60	1.147	O	|	|	|	|	1.28
112.917	0.00	0.60	1.143	O	|	|	|	|	1.27
113.000	0.00	0.60	1.139	O	|	|	|	|	1.27
113.083	0.00	0.60	1.135	O	|	|	|	|	1.27
113.167	0.00	0.60	1.131	O	|	|	|	|	1.27
113.250	0.00	0.59	1.127	O	|	|	|	|	1.26
113.333	0.00	0.59	1.123	O	|	|	|	|	1.26
113.417	0.00	0.59	1.119	O	|	|	|	|	1.26
113.500	0.00	0.59	1.115	O	|	|	|	|	1.25
113.583	0.00	0.59	1.111	O	|	|	|	|	1.25
113.667	0.00	0.59	1.107	O	|	|	|	|	1.25
113.750	0.00	0.59	1.102	O	|	|	|	|	1.25
113.833	0.00	0.59	1.098	O	|	|	|	|	1.24
113.917	0.00	0.59	1.094	O	|	|	|	|	1.24
114.000	0.00	0.59	1.090	O	|	|	|	|	1.24
114.083	0.00	0.58	1.086	O	|	|	|	|	1.23
114.167	0.00	0.58	1.082	O	|	|	|	|	1.23
114.250	0.00	0.58	1.078	O	|	|	|	|	1.23
114.333	0.00	0.58	1.074	O	|	|	|	|	1.23
114.417	0.00	0.58	1.070	O	|	|	|	|	1.22
114.500	0.00	0.58	1.066	O	|	|	|	|	1.22
114.583	0.00	0.58	1.062	O	|	|	|	|	1.22
114.667	0.00	0.58	1.058	O	|	|	|	|	1.22
114.750	0.00	0.58	1.054	O	|	|	|	|	1.21
114.833	0.00	0.58	1.050	O	|	|	|	|	1.21
114.917	0.00	0.57	1.046	O	|	|	|	|	1.21
115.000	0.00	0.57	1.042	O	|	|	|	|	1.21
115.083	0.00	0.57	1.038	O	|	|	|	|	1.20
115.167	0.00	0.57	1.035	O	|	|	|	|	1.20
115.250	0.00	0.57	1.031	O	|	|	|	|	1.20
115.333	0.00	0.57	1.027	O	|	|	|	|	1.19
115.417	0.00	0.57	1.023	O	|	|	|	|	1.19
115.500	0.00	0.57	1.019	O	|	|	|	|	1.19
115.583	0.00	0.57	1.015	O	|	|	|	|	1.19
115.667	0.00	0.57	1.011	O	|	|	|	|	1.18
115.750	0.00	0.57	1.007	O	|	|	|	|	1.18
115.833	0.00	0.56	1.003	O	|	|	|	|	1.18
115.917	0.00	0.56	0.999	O	|	|	|	|	1.18
116.000	0.00	0.56	0.995	O	|	|	|	|	1.17
116.083	0.00	0.56	0.992	O	|	|	|	|	1.17
116.167	0.00	0.56	0.988	O	|	|	|	|	1.17
116.250	0.00	0.56	0.984	O	|	|	|	|	1.17
116.333	0.00	0.56	0.980	O	|	|	|	|	1.16
116.417	0.00	0.56	0.976	O	|	|	|	|	1.16
116.500	0.00	0.56	0.972	O	|	|	|	|	1.16
116.583	0.00	0.56	0.969	O	|	|	|	|	1.16
116.667	0.00	0.55	0.965	O	|	|	|	|	1.15
116.750	0.00	0.55	0.961	O	|	|	|	|	1.15
116.833	0.00	0.55	0.957	O	|	|	|	|	1.15
116.917	0.00	0.55	0.953	O	|	|	|	|	1.14
117.000	0.00	0.55	0.949	O	|	|	|	|	1.14
117.083	0.00	0.55	0.946	O	|	|	|	|	1.14
117.167	0.00	0.55	0.942	O	|	|	|	|	1.14
117.250	0.00	0.55	0.938	O	|	|	|	|	1.13
117.333	0.00	0.55	0.934	O	|	|	|	|	1.13
117.417	0.00	0.55	0.931	O	|	|	|	|	1.13
117.500	0.00	0.55	0.927	O	|	|	|	|	1.13
117.583	0.00	0.54	0.923	O	|	|	|	|	1.12
117.667	0.00	0.54	0.919	O	|	|	|	|	1.12
117.750	0.00	0.54	0.916	O	|	|	|	|	1.12
117.833	0.00	0.54	0.912	O	|	|	|	|	1.12
117.917	0.00	0.54	0.908	O	|	|	|	|	1.11
118.000	0.00	0.54	0.904	O	|	|	|	|	1.11

118.083	0.00	0.54	0.901	O					1.11
118.167	0.00	0.54	0.897	O					1.11
118.250	0.00	0.54	0.893	O					1.10
118.333	0.00	0.54	0.890	O					1.10
118.417	0.00	0.54	0.886	O					1.10
118.500	0.00	0.53	0.882	O					1.10
118.583	0.00	0.53	0.878	O					1.09
118.667	0.00	0.53	0.875	O					1.09
118.750	0.00	0.53	0.871	O					1.09
118.833	0.00	0.53	0.867	O					1.09
118.917	0.00	0.53	0.864	O					1.08
119.000	0.00	0.53	0.860	O					1.08
119.083	0.00	0.53	0.857	O					1.08
119.167	0.00	0.53	0.853	O					1.08
119.250	0.00	0.53	0.849	O					1.07
119.333	0.00	0.53	0.846	O					1.07
119.417	0.00	0.53	0.842	O					1.07
119.500	0.00	0.52	0.838	O					1.07
119.583	0.00	0.52	0.835	O					1.06
119.667	0.00	0.52	0.831	O					1.06
119.750	0.00	0.52	0.828	O					1.06
119.833	0.00	0.52	0.824	O					1.06
119.917	0.00	0.52	0.820	O					1.06
120.000	0.00	0.52	0.817	O					1.05
120.083	0.00	0.52	0.813	O					1.05
120.167	0.00	0.52	0.810	O					1.05
120.250	0.00	0.52	0.806	O					1.05
120.333	0.00	0.52	0.803	O					1.04
120.417	0.00	0.51	0.799	O					1.04
120.500	0.00	0.51	0.795	O					1.04
120.583	0.00	0.51	0.792	O					1.04
120.667	0.00	0.51	0.788	O					1.03
120.750	0.00	0.51	0.785	O					1.03
120.833	0.00	0.51	0.781	O					1.03
120.917	0.00	0.51	0.778	O					1.03
121.000	0.00	0.51	0.774	O					1.02
121.083	0.00	0.51	0.771	O					1.02
121.167	0.00	0.51	0.767	O					1.02
121.250	0.00	0.51	0.764	O					1.02
121.333	0.00	0.51	0.760	O					1.01
121.417	0.00	0.50	0.757	O					1.01
121.500	0.00	0.50	0.753	O					1.01
121.583	0.00	0.50	0.750	O					1.01
121.667	0.00	0.50	0.747	O					1.01
121.750	0.00	0.50	0.743	O					1.00
121.833	0.00	0.50	0.740	O					1.00
121.917	0.00	0.50	0.736	O					1.00
122.000	0.00	0.50	0.733	O					0.99
122.083	0.00	0.49	0.729	O					0.99
122.167	0.00	0.49	0.726	O					0.98
122.250	0.00	0.49	0.723	O					0.98
122.333	0.00	0.49	0.719	O					0.97
122.417	0.00	0.48	0.716	O					0.97
122.500	0.00	0.48	0.713	O					0.96
122.583	0.00	0.48	0.709	O					0.96
122.667	0.00	0.48	0.706	O					0.96
122.750	0.00	0.48	0.703	O					0.95
122.833	0.00	0.47	0.699	O					0.95
122.917	0.00	0.47	0.696	O					0.94
123.000	0.00	0.47	0.693	O					0.94
123.083	0.00	0.47	0.690	O					0.93
123.167	0.00	0.46	0.686	O					0.93
123.250	0.00	0.46	0.683	O					0.92
123.333	0.00	0.46	0.680	O					0.92
123.417	0.00	0.46	0.677	O					0.92
123.500	0.00	0.46	0.674	O					0.91
123.583	0.00	0.45	0.671	O					0.91
123.667	0.00	0.45	0.668	O					0.90
123.750	0.00	0.45	0.664	O					0.90
123.833	0.00	0.45	0.661	O					0.89
123.917	0.00	0.45	0.658	O					0.89

124.000	0.00	0.44	0.655	O					0.89
124.083	0.00	0.44	0.652	O					0.88
124.167	0.00	0.44	0.649	O					0.88
124.250	0.00	0.44	0.646	O					0.87
124.333	0.00	0.44	0.643	O					0.87
124.417	0.00	0.43	0.640	O					0.87
124.500	0.00	0.43	0.637	O					0.86
124.583	0.00	0.43	0.634	O					0.86
124.667	0.00	0.43	0.631	O					0.85
124.750	0.00	0.43	0.628	O					0.85
124.833	0.00	0.42	0.625	O					0.85
124.917	0.00	0.42	0.623	O					0.84
125.000	0.00	0.42	0.620	O					0.84
125.083	0.00	0.42	0.617	O					0.83
125.167	0.00	0.42	0.614	O					0.83
125.250	0.00	0.41	0.611	O					0.83
125.333	0.00	0.41	0.608	O					0.82
125.417	0.00	0.41	0.605	O					0.82
125.500	0.00	0.41	0.603	O					0.82
125.583	0.00	0.41	0.600	O					0.81
125.667	0.00	0.40	0.597	O					0.81
125.750	0.00	0.40	0.594	O					0.80
125.833	0.00	0.40	0.591	O					0.80
125.917	0.00	0.40	0.589	O					0.80
126.000	0.00	0.40	0.586	O					0.79
126.083	0.00	0.39	0.583	O					0.79
126.167	0.00	0.39	0.580	O					0.79
126.250	0.00	0.39	0.578	O					0.78
126.333	0.00	0.39	0.575	O					0.78
126.417	0.00	0.39	0.572	O					0.77
126.500	0.00	0.39	0.570	O					0.77
126.583	0.00	0.38	0.567	O					0.77
126.667	0.00	0.38	0.564	O					0.76
126.750	0.00	0.38	0.562	O					0.76
126.833	0.00	0.38	0.559	O					0.76
126.917	0.00	0.38	0.557	O					0.75
127.000	0.00	0.37	0.554	O					0.75
127.083	0.00	0.37	0.551	O					0.75
127.167	0.00	0.37	0.549	O					0.74
127.250	0.00	0.37	0.546	O					0.74
127.333	0.00	0.37	0.544	O					0.74
127.417	0.00	0.37	0.541	O					0.73
127.500	0.00	0.36	0.539	O					0.73
127.583	0.00	0.36	0.536	O					0.73
127.667	0.00	0.36	0.534	O					0.72
127.750	0.00	0.36	0.531	O					0.72
127.833	0.00	0.36	0.529	O					0.72
127.917	0.00	0.36	0.526	O					0.71
128.000	0.00	0.35	0.524	O					0.71
128.083	0.00	0.35	0.521	O					0.71
128.167	0.00	0.35	0.519	O					0.70
128.250	0.00	0.35	0.517	O					0.70
128.333	0.00	0.35	0.514	O					0.70
128.417	0.00	0.35	0.512	O					0.69
128.500	0.00	0.34	0.509	O					0.69
128.583	0.00	0.34	0.507	O					0.69
128.667	0.00	0.34	0.505	O					0.68
128.750	0.00	0.34	0.502	O					0.68
128.833	0.00	0.34	0.500	O					0.68
128.917	0.00	0.34	0.498	O					0.67
129.000	0.00	0.34	0.495	O					0.67
129.083	0.00	0.33	0.493	O					0.67
129.167	0.00	0.33	0.491	O					0.66
129.250	0.00	0.33	0.489	O					0.66
129.333	0.00	0.33	0.486	O					0.66
129.417	0.00	0.33	0.484	O					0.65
129.500	0.00	0.33	0.482	O					0.65
129.583	0.00	0.32	0.480	O					0.65
129.667	0.00	0.32	0.477	O					0.65
129.750	0.00	0.32	0.475	O					0.64
129.833	0.00	0.32	0.473	O					0.64

129.917	0.00	0.32	0.471	O	|	|	|	|	0.64
130.000	0.00	0.32	0.468	O	|	|	|	|	0.63
130.083	0.00	0.32	0.466	O	|	|	|	|	0.63
130.167	0.00	0.31	0.464	O	|	|	|	|	0.63
130.250	0.00	0.31	0.462	O	|	|	|	|	0.63
130.333	0.00	0.31	0.460	O	|	|	|	|	0.62
130.417	0.00	0.31	0.458	O	|	|	|	|	0.62
130.500	0.00	0.31	0.456	O	|	|	|	|	0.62
130.583	0.00	0.31	0.453	O	|	|	|	|	0.61
130.667	0.00	0.31	0.451	O	|	|	|	|	0.61
130.750	0.00	0.30	0.449	O	|	|	|	|	0.61
130.833	0.00	0.30	0.447	O	|	|	|	|	0.61
130.917	0.00	0.30	0.445	O	|	|	|	|	0.60
131.000	0.00	0.30	0.443	O	|	|	|	|	0.60
131.083	0.00	0.30	0.441	O	|	|	|	|	0.60
131.167	0.00	0.30	0.439	O	|	|	|	|	0.59
131.250	0.00	0.30	0.437	O	|	|	|	|	0.59
131.333	0.00	0.29	0.435	O	|	|	|	|	0.59
131.417	0.00	0.29	0.433	O	|	|	|	|	0.59
131.500	0.00	0.29	0.431	O	|	|	|	|	0.58
131.583	0.00	0.29	0.429	O	|	|	|	|	0.58
131.667	0.00	0.29	0.427	O	|	|	|	|	0.58
131.750	0.00	0.29	0.425	O	|	|	|	|	0.57
131.833	0.00	0.29	0.423	O	|	|	|	|	0.57
131.917	0.00	0.28	0.421	O	|	|	|	|	0.57
132.000	0.00	0.28	0.419	O	|	|	|	|	0.57
132.083	0.00	0.28	0.417	O	|	|	|	|	0.56
132.167	0.00	0.28	0.415	O	|	|	|	|	0.56
132.250	0.00	0.28	0.413	O	|	|	|	|	0.56
132.333	0.00	0.28	0.411	O	|	|	|	|	0.56
132.417	0.00	0.28	0.409	O	|	|	|	|	0.55
132.500	0.00	0.28	0.407	O	|	|	|	|	0.55
132.583	0.00	0.27	0.405	O	|	|	|	|	0.55
132.667	0.00	0.27	0.404	O	|	|	|	|	0.55
132.750	0.00	0.27	0.402	O	|	|	|	|	0.54
132.833	0.00	0.27	0.400	O	|	|	|	|	0.54
132.917	0.00	0.27	0.398	O	|	|	|	|	0.54
133.000	0.00	0.27	0.396	O	|	|	|	|	0.54
133.083	0.00	0.27	0.394	O	|	|	|	|	0.53
133.167	0.00	0.27	0.392	O	|	|	|	|	0.53
133.250	0.00	0.26	0.391	O	|	|	|	|	0.53
133.333	0.00	0.26	0.389	O	|	|	|	|	0.53
133.417	0.00	0.26	0.387	O	|	|	|	|	0.52
133.500	0.00	0.26	0.385	O	|	|	|	|	0.52
133.583	0.00	0.26	0.383	O	|	|	|	|	0.52
133.667	0.00	0.26	0.382	O	|	|	|	|	0.52
133.750	0.00	0.26	0.380	O	|	|	|	|	0.51
133.833	0.00	0.26	0.378	O	|	|	|	|	0.51
133.917	0.00	0.25	0.376	O	|	|	|	|	0.51
134.000	0.00	0.25	0.375	O	|	|	|	|	0.51
134.083	0.00	0.25	0.373	O	|	|	|	|	0.50
134.167	0.00	0.25	0.371	O	|	|	|	|	0.50
134.250	0.00	0.25	0.369	O	|	|	|	|	0.50
134.333	0.00	0.25	0.368	O	|	|	|	|	0.50
134.417	0.00	0.25	0.366	O	|	|	|	|	0.50
134.500	0.00	0.25	0.364	O	|	|	|	|	0.49
134.583	0.00	0.25	0.363	O	|	|	|	|	0.49
134.667	0.00	0.24	0.361	O	|	|	|	|	0.49
134.750	0.00	0.24	0.359	O	|	|	|	|	0.49
134.833	0.00	0.24	0.358	O	|	|	|	|	0.48
134.917	0.00	0.24	0.356	O	|	|	|	|	0.48
135.000	0.00	0.24	0.354	O	|	|	|	|	0.48
135.083	0.00	0.24	0.353	O	|	|	|	|	0.48
135.167	0.00	0.24	0.351	O	|	|	|	|	0.47
135.250	0.00	0.24	0.349	O	|	|	|	|	0.47
135.333	0.00	0.24	0.348	O	|	|	|	|	0.47
135.417	0.00	0.23	0.346	O	|	|	|	|	0.47
135.500	0.00	0.23	0.344	O	|	|	|	|	0.47
135.583	0.00	0.23	0.343	O	|	|	|	|	0.46
135.667	0.00	0.23	0.341	O	|	|	|	|	0.46
135.750	0.00	0.23	0.340	O	|	|	|	|	0.46

135.833	0.00	0.23	0.338	O					0.46
135.917	0.00	0.23	0.337	O					0.46
136.000	0.00	0.23	0.335	O					0.45
136.083	0.00	0.23	0.333	O					0.45
136.167	0.00	0.22	0.332	O					0.45
136.250	0.00	0.22	0.330	O					0.45
136.333	0.00	0.22	0.329	O					0.44
136.417	0.00	0.22	0.327	O					0.44
136.500	0.00	0.22	0.326	O					0.44
136.583	0.00	0.22	0.324	O					0.44
136.667	0.00	0.22	0.323	O					0.44
136.750	0.00	0.22	0.321	O					0.43
136.833	0.00	0.22	0.320	O					0.43
136.917	0.00	0.22	0.318	O					0.43
137.000	0.00	0.21	0.317	O					0.43
137.083	0.00	0.21	0.315	O					0.43
137.167	0.00	0.21	0.314	O					0.42
137.250	0.00	0.21	0.312	O					0.42
137.333	0.00	0.21	0.311	O					0.42
137.417	0.00	0.21	0.309	O					0.42
137.500	0.00	0.21	0.308	O					0.42
137.583	0.00	0.21	0.307	O					0.41
137.667	0.00	0.21	0.305	O					0.41
137.750	0.00	0.21	0.304	O					0.41
137.833	0.00	0.20	0.302	O					0.41
137.917	0.00	0.20	0.301	O					0.41
138.000	0.00	0.20	0.300	O					0.41
138.083	0.00	0.20	0.298	O					0.40
138.167	0.00	0.20	0.297	O					0.40
138.250	0.00	0.20	0.295	O					0.40
138.333	0.00	0.20	0.294	O					0.40
138.417	0.00	0.20	0.293	O					0.40
138.500	0.00	0.20	0.291	O					0.39
138.583	0.00	0.20	0.290	O					0.39
138.667	0.00	0.20	0.289	O					0.39
138.750	0.00	0.19	0.287	O					0.39
138.833	0.00	0.19	0.286	O					0.39
138.917	0.00	0.19	0.285	O					0.39
139.000	0.00	0.19	0.283	O					0.38
139.083	0.00	0.19	0.282	O					0.38
139.167	0.00	0.19	0.281	O					0.38
139.250	0.00	0.19	0.279	O					0.38
139.333	0.00	0.19	0.278	O					0.38
139.417	0.00	0.19	0.277	O					0.37
139.500	0.00	0.19	0.275	O					0.37
139.583	0.00	0.19	0.274	O					0.37
139.667	0.00	0.18	0.273	O					0.37
139.750	0.00	0.18	0.272	O					0.37
139.833	0.00	0.18	0.270	O					0.37
139.917	0.00	0.18	0.269	O					0.36
140.000	0.00	0.18	0.268	O					0.36
140.083	0.00	0.18	0.267	O					0.36
140.167	0.00	0.18	0.265	O					0.36
140.250	0.00	0.18	0.264	O					0.36
140.333	0.00	0.18	0.263	O					0.36
140.417	0.00	0.18	0.262	O					0.35
140.500	0.00	0.18	0.260	O					0.35
140.583	0.00	0.18	0.259	O					0.35
140.667	0.00	0.17	0.258	O					0.35
140.750	0.00	0.17	0.257	O					0.35
140.833	0.00	0.17	0.256	O					0.35
140.917	0.00	0.17	0.254	O					0.34
141.000	0.00	0.17	0.253	O					0.34
141.083	0.00	0.17	0.252	O					0.34
141.167	0.00	0.17	0.251	O					0.34
141.250	0.00	0.17	0.250	O					0.34
141.333	0.00	0.17	0.249	O					0.34
141.417	0.00	0.17	0.247	O					0.33
141.500	0.00	0.17	0.246	O					0.33
141.583	0.00	0.17	0.245	O					0.33
141.667	0.00	0.17	0.244	O					0.33

141.750	0.00	0.16	0.243	O					0.33
141.833	0.00	0.16	0.242	O					0.33
141.917	0.00	0.16	0.241	O					0.33
142.000	0.00	0.16	0.239	O					0.32
142.083	0.00	0.16	0.238	O					0.32
142.167	0.00	0.16	0.237	O					0.32
142.250	0.00	0.16	0.236	O					0.32
142.333	0.00	0.16	0.235	O					0.32
142.417	0.00	0.16	0.234	O					0.32
142.500	0.00	0.16	0.233	O					0.32
142.583	0.00	0.16	0.232	O					0.31
142.667	0.00	0.16	0.231	O					0.31
142.750	0.00	0.16	0.230	O					0.31
142.833	0.00	0.15	0.229	O					0.31
142.917	0.00	0.15	0.228	O					0.31
143.000	0.00	0.15	0.226	O					0.31
143.083	0.00	0.15	0.225	O					0.31
143.167	0.00	0.15	0.224	O					0.30
143.250	0.00	0.15	0.223	O					0.30
143.333	0.00	0.15	0.222	O					0.30
143.417	0.00	0.15	0.221	O					0.30
143.500	0.00	0.15	0.220	O					0.30
143.583	0.00	0.15	0.219	O					0.30
143.667	0.00	0.15	0.218	O					0.30
143.750	0.00	0.15	0.217	O					0.29
143.833	0.00	0.15	0.216	O					0.29
143.917	0.00	0.15	0.215	O					0.29
144.000	0.00	0.14	0.214	O					0.29
144.083	0.00	0.14	0.213	O					0.29
144.167	0.00	0.14	0.212	O					0.29
144.250	0.00	0.14	0.211	O					0.29
144.333	0.00	0.14	0.210	O					0.28
144.417	0.00	0.14	0.209	O					0.28
144.500	0.00	0.14	0.208	O					0.28
144.583	0.00	0.14	0.207	O					0.28
144.667	0.00	0.14	0.206	O					0.28
144.750	0.00	0.14	0.205	O					0.28
144.833	0.00	0.14	0.204	O					0.28
144.917	0.00	0.14	0.203	O					0.28
145.000	0.00	0.14	0.203	O					0.27
145.083	0.00	0.14	0.202	O					0.27
145.167	0.00	0.14	0.201	O					0.27
145.250	0.00	0.14	0.200	O					0.27
145.333	0.00	0.13	0.199	O					0.27
145.417	0.00	0.13	0.198	O					0.27
145.500	0.00	0.13	0.197	O					0.27
145.583	0.00	0.13	0.196	O					0.27
145.667	0.00	0.13	0.195	O					0.26
145.750	0.00	0.13	0.194	O					0.26
145.833	0.00	0.13	0.193	O					0.26
145.917	0.00	0.13	0.192	O					0.26
146.000	0.00	0.13	0.191	O					0.26
146.083	0.00	0.13	0.191	O					0.26
146.167	0.00	0.13	0.190	O					0.26
146.250	0.00	0.13	0.189	O					0.26
146.333	0.00	0.13	0.188	O					0.25
146.417	0.00	0.13	0.187	O					0.25
146.500	0.00	0.13	0.186	O					0.25
146.583	0.00	0.13	0.185	O					0.25
146.667	0.00	0.12	0.184	O					0.25
146.750	0.00	0.12	0.184	O					0.25
146.833	0.00	0.12	0.183	O					0.25
146.917	0.00	0.12	0.182	O					0.25
147.000	0.00	0.12	0.181	O					0.25
147.083	0.00	0.12	0.180	O					0.24
147.167	0.00	0.12	0.179	O					0.24
147.250	0.00	0.12	0.179	O					0.24
147.333	0.00	0.12	0.178	O					0.24
147.417	0.00	0.12	0.177	O					0.24
147.500	0.00	0.12	0.176	O					0.24
147.583	0.00	0.12	0.175	O					0.24

147.667	0.00	0.12	0.174	O					0.24
147.750	0.00	0.12	0.174	O					0.23
147.833	0.00	0.12	0.173	O					0.23
147.917	0.00	0.12	0.172	O					0.23
148.000	0.00	0.12	0.171	O					0.23
148.083	0.00	0.12	0.170	O					0.23
148.167	0.00	0.11	0.170	O					0.23
148.250	0.00	0.11	0.169	O					0.23
148.333	0.00	0.11	0.168	O					0.23
148.417	0.00	0.11	0.167	O					0.23
148.500	0.00	0.11	0.167	O					0.23
148.583	0.00	0.11	0.166	O					0.22
148.667	0.00	0.11	0.165	O					0.22
148.750	0.00	0.11	0.164	O					0.22
148.833	0.00	0.11	0.163	O					0.22
148.917	0.00	0.11	0.163	O					0.22
149.000	0.00	0.11	0.162	O					0.22
149.083	0.00	0.11	0.161	O					0.22
149.167	0.00	0.11	0.160	O					0.22
149.250	0.00	0.11	0.160	O					0.22
149.333	0.00	0.11	0.159	O					0.22
149.417	0.00	0.11	0.158	O					0.21
149.500	0.00	0.11	0.157	O					0.21
149.583	0.00	0.11	0.157	O					0.21
149.667	0.00	0.11	0.156	O					0.21
149.750	0.00	0.11	0.155	O					0.21
149.833	0.00	0.10	0.155	O					0.21
149.917	0.00	0.10	0.154	O					0.21
150.000	0.00	0.10	0.153	O					0.21
150.083	0.00	0.10	0.152	O					0.21
150.167	0.00	0.10	0.152	O					0.21
150.250	0.00	0.10	0.151	O					0.20
150.333	0.00	0.10	0.150	O					0.20
150.417	0.00	0.10	0.150	O					0.20
150.500	0.00	0.10	0.149	O					0.20
150.583	0.00	0.10	0.148	O					0.20
150.667	0.00	0.10	0.148	O					0.20
150.750	0.00	0.10	0.147	O					0.20
150.833	0.00	0.10	0.146	O					0.20
150.917	0.00	0.10	0.145	O					0.20
151.000	0.00	0.10	0.145	O					0.20
151.083	0.00	0.10	0.144	O					0.20
151.167	0.00	0.10	0.143	O					0.19
151.250	0.00	0.10	0.143	O					0.19
151.333	0.00	0.10	0.142	O					0.19
151.417	0.00	0.10	0.141	O					0.19
151.500	0.00	0.10	0.141	O					0.19
151.583	0.00	0.09	0.140	O					0.19
151.667	0.00	0.09	0.139	O					0.19
151.750	0.00	0.09	0.139	O					0.19
151.833	0.00	0.09	0.138	O					0.19
151.917	0.00	0.09	0.138	O					0.19
152.000	0.00	0.09	0.137	O					0.19
152.083	0.00	0.09	0.136	O					0.18
152.167	0.00	0.09	0.136	O					0.18
152.250	0.00	0.09	0.135	O					0.18
152.333	0.00	0.09	0.134	O					0.18
152.417	0.00	0.09	0.134	O					0.18
152.500	0.00	0.09	0.133	O					0.18
152.583	0.00	0.09	0.133	O					0.18
152.667	0.00	0.09	0.132	O					0.18
152.750	0.00	0.09	0.131	O					0.18
152.833	0.00	0.09	0.131	O					0.18
152.917	0.00	0.09	0.130	O					0.18
153.000	0.00	0.09	0.129	O					0.18
153.083	0.00	0.09	0.129	O					0.17
153.167	0.00	0.09	0.128	O					0.17
153.250	0.00	0.09	0.128	O					0.17
153.333	0.00	0.09	0.127	O					0.17
153.417	0.00	0.09	0.126	O					0.17
153.500	0.00	0.09	0.126	O					0.17

153.583	0.00	0.08	0.125	O	|	|	|	|	0.17
153.667	0.00	0.08	0.125	O	|	|	|	|	0.17
153.750	0.00	0.08	0.124	O	|	|	|	|	0.17
153.833	0.00	0.08	0.124	O	|	|	|	|	0.17
153.917	0.00	0.08	0.123	O	|	|	|	|	0.17
154.000	0.00	0.08	0.122	O	|	|	|	|	0.17
154.083	0.00	0.08	0.122	O	|	|	|	|	0.16
154.167	0.00	0.08	0.121	O	|	|	|	|	0.16
154.250	0.00	0.08	0.121	O	|	|	|	|	0.16
154.333	0.00	0.08	0.120	O	|	|	|	|	0.16
154.417	0.00	0.08	0.120	O	|	|	|	|	0.16
154.500	0.00	0.08	0.119	O	|	|	|	|	0.16
154.583	0.00	0.08	0.118	O	|	|	|	|	0.16
154.667	0.00	0.08	0.118	O	|	|	|	|	0.16
154.750	0.00	0.08	0.117	O	|	|	|	|	0.16
154.833	0.00	0.08	0.117	O	|	|	|	|	0.16
154.917	0.00	0.08	0.116	O	|	|	|	|	0.16
155.000	0.00	0.08	0.116	O	|	|	|	|	0.16
155.083	0.00	0.08	0.115	O	|	|	|	|	0.16
155.167	0.00	0.08	0.115	O	|	|	|	|	0.16
155.250	0.00	0.08	0.114	O	|	|	|	|	0.15
155.333	0.00	0.08	0.114	O	|	|	|	|	0.15
155.417	0.00	0.08	0.113	O	|	|	|	|	0.15
155.500	0.00	0.08	0.113	O	|	|	|	|	0.15
155.583	0.00	0.08	0.112	O	|	|	|	|	0.15
155.667	0.00	0.08	0.112	O	|	|	|	|	0.15
155.750	0.00	0.08	0.111	O	|	|	|	|	0.15
155.833	0.00	0.07	0.110	O	|	|	|	|	0.15
155.917	0.00	0.07	0.110	O	|	|	|	|	0.15
156.000	0.00	0.07	0.109	O	|	|	|	|	0.15
156.083	0.00	0.07	0.109	O	|	|	|	|	0.15
156.167	0.00	0.07	0.108	O	|	|	|	|	0.15
156.250	0.00	0.07	0.108	O	|	|	|	|	0.15
156.333	0.00	0.07	0.107	O	|	|	|	|	0.15
156.417	0.00	0.07	0.107	O	|	|	|	|	0.14
156.500	0.00	0.07	0.106	O	|	|	|	|	0.14
156.583	0.00	0.07	0.106	O	|	|	|	|	0.14
156.667	0.00	0.07	0.105	O	|	|	|	|	0.14
156.750	0.00	0.07	0.105	O	|	|	|	|	0.14
156.833	0.00	0.07	0.104	O	|	|	|	|	0.14
156.917	0.00	0.07	0.104	O	|	|	|	|	0.14
157.000	0.00	0.07	0.104	O	|	|	|	|	0.14
157.083	0.00	0.07	0.103	O	|	|	|	|	0.14
157.167	0.00	0.07	0.103	O	|	|	|	|	0.14
157.250	0.00	0.07	0.102	O	|	|	|	|	0.14
157.333	0.00	0.07	0.102	O	|	|	|	|	0.14
157.417	0.00	0.07	0.101	O	|	|	|	|	0.14
157.500	0.00	0.07	0.101	O	|	|	|	|	0.14
157.583	0.00	0.07	0.100	O	|	|	|	|	0.14
157.667	0.00	0.07	0.100	O	|	|	|	|	0.13
157.750	0.00	0.07	0.099	O	|	|	|	|	0.13
157.833	0.00	0.07	0.099	O	|	|	|	|	0.13
157.917	0.00	0.07	0.098	O	|	|	|	|	0.13
158.000	0.00	0.07	0.098	O	|	|	|	|	0.13
158.083	0.00	0.07	0.097	O	|	|	|	|	0.13
158.167	0.00	0.07	0.097	O	|	|	|	|	0.13
158.250	0.00	0.07	0.097	O	|	|	|	|	0.13
158.333	0.00	0.07	0.096	O	|	|	|	|	0.13
158.417	0.00	0.06	0.096	O	|	|	|	|	0.13
158.500	0.00	0.06	0.095	O	|	|	|	|	0.13
158.583	0.00	0.06	0.095	O	|	|	|	|	0.13
158.667	0.00	0.06	0.094	O	|	|	|	|	0.13
158.750	0.00	0.06	0.094	O	|	|	|	|	0.13
158.833	0.00	0.06	0.093	O	|	|	|	|	0.13
158.917	0.00	0.06	0.093	O	|	|	|	|	0.13
159.000	0.00	0.06	0.093	O	|	|	|	|	0.13
159.083	0.00	0.06	0.092	O	|	|	|	|	0.12
159.167	0.00	0.06	0.092	O	|	|	|	|	0.12
159.250	0.00	0.06	0.091	O	|	|	|	|	0.12
159.333	0.00	0.06	0.091	O	|	|	|	|	0.12
159.417	0.00	0.06	0.090	O	|	|	|	|	0.12

159.500	0.00	0.06	0.090	O				0.12
159.583	0.00	0.06	0.090	O				0.12
159.667	0.00	0.06	0.089	O				0.12
159.750	0.00	0.06	0.089	O				0.12
159.833	0.00	0.06	0.088	O				0.12
159.917	0.00	0.06	0.088	O				0.12
160.000	0.00	0.06	0.088	O				0.12
160.083	0.00	0.06	0.087	O				0.12
160.167	0.00	0.06	0.087	O				0.12
160.250	0.00	0.06	0.086	O				0.12
160.333	0.00	0.06	0.086	O				0.12
160.417	0.00	0.06	0.086	O				0.12
160.500	0.00	0.06	0.085	O				0.12
160.583	0.00	0.06	0.085	O				0.11
160.667	0.00	0.06	0.084	O				0.11
160.750	0.00	0.06	0.084	O				0.11
160.833	0.00	0.06	0.084	O				0.11
160.917	0.00	0.06	0.083	O				0.11
161.000	0.00	0.06	0.083	O				0.11
161.083	0.00	0.06	0.082	O				0.11
161.167	0.00	0.06	0.082	O				0.11
161.250	0.00	0.06	0.082	O				0.11
161.333	0.00	0.05	0.081	O				0.11
161.417	0.00	0.05	0.081	O				0.11
161.500	0.00	0.05	0.080	O				0.11
161.583	0.00	0.05	0.080	O				0.11
161.667	0.00	0.05	0.080	O				0.11
161.750	0.00	0.05	0.079	O				0.11
161.833	0.00	0.05	0.079	O				0.11
161.917	0.00	0.05	0.079	O				0.11
162.000	0.00	0.05	0.078	O				0.11
162.083	0.00	0.05	0.078	O				0.11
162.167	0.00	0.05	0.078	O				0.10
162.250	0.00	0.05	0.077	O				0.10
162.333	0.00	0.05	0.077	O				0.10
162.417	0.00	0.05	0.076	O				0.10
162.500	0.00	0.05	0.076	O				0.10
162.583	0.00	0.05	0.076	O				0.10
162.667	0.00	0.05	0.075	O				0.10
162.750	0.00	0.05	0.075	O				0.10
162.833	0.00	0.05	0.075	O				0.10
162.917	0.00	0.05	0.074	O				0.10
163.000	0.00	0.05	0.074	O				0.10
163.083	0.00	0.05	0.074	O				0.10
163.167	0.00	0.05	0.073	O				0.10
163.250	0.00	0.05	0.073	O				0.10
163.333	0.00	0.05	0.073	O				0.10
163.417	0.00	0.05	0.072	O				0.10
163.500	0.00	0.05	0.072	O				0.10
163.583	0.00	0.05	0.072	O				0.10
163.667	0.00	0.05	0.071	O				0.10
163.750	0.00	0.05	0.071	O				0.10
163.833	0.00	0.05	0.071	O				0.10
163.917	0.00	0.05	0.070	O				0.10
164.000	0.00	0.05	0.070	O				0.09
164.083	0.00	0.05	0.070	O				0.09
164.167	0.00	0.05	0.069	O				0.09
164.250	0.00	0.05	0.069	O				0.09
164.333	0.00	0.05	0.069	O				0.09
164.417	0.00	0.05	0.068	O				0.09
164.500	0.00	0.05	0.068	O				0.09
164.583	0.00	0.05	0.068	O				0.09
164.667	0.00	0.05	0.067	O				0.09
164.750	0.00	0.05	0.067	O				0.09
164.833	0.00	0.05	0.067	O				0.09
164.917	0.00	0.04	0.066	O				0.09
165.000	0.00	0.04	0.066	O				0.09
165.083	0.00	0.04	0.066	O				0.09
165.167	0.00	0.04	0.066	O				0.09
165.250	0.00	0.04	0.065	O				0.09
165.333	0.00	0.04	0.065	O				0.09

165.417	0.00	0.04	0.065	O	|	|	|	0.09
165.500	0.00	0.04	0.064	O	|	|	|	0.09
165.583	0.00	0.04	0.064	O	|	|	|	0.09
165.667	0.00	0.04	0.064	O	|	|	|	0.09
165.750	0.00	0.04	0.063	O	|	|	|	0.09
165.833	0.00	0.04	0.063	O	|	|	|	0.09
165.917	0.00	0.04	0.063	O	|	|	|	0.09
166.000	0.00	0.04	0.063	O	|	|	|	0.08
166.083	0.00	0.04	0.062	O	|	|	|	0.08
166.167	0.00	0.04	0.062	O	|	|	|	0.08
166.250	0.00	0.04	0.062	O	|	|	|	0.08
166.333	0.00	0.04	0.061	O	|	|	|	0.08
166.417	0.00	0.04	0.061	O	|	|	|	0.08
166.500	0.00	0.04	0.061	O	|	|	|	0.08
166.583	0.00	0.04	0.061	O	|	|	|	0.08
166.667	0.00	0.04	0.060	O	|	|	|	0.08

Remaining water in basin = 0.06 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 28.783 (CFS)
Total volume = 23.093 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 01/06/20

HILLWOOD - APOLLO PROJECT
100 YEAR STORM EVENT BASIN ROUTING 24 HOUR
1930BR24100
DS

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 1930PUH10024100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 301
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 64.371 (CFS)
Total volume = 33.863 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
_____

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 301
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

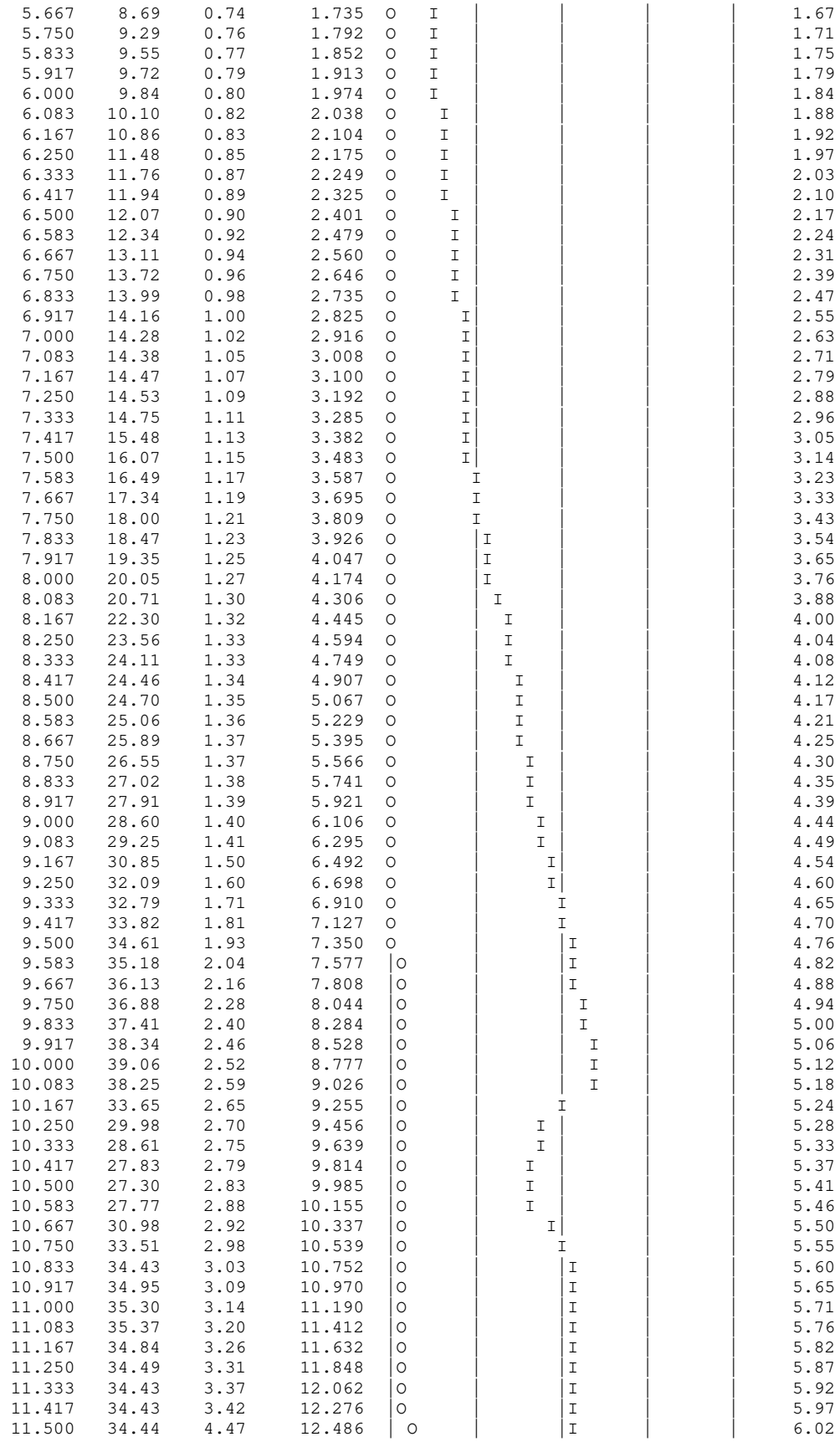
Depth vs. Storage and Depth vs. Discharge data:

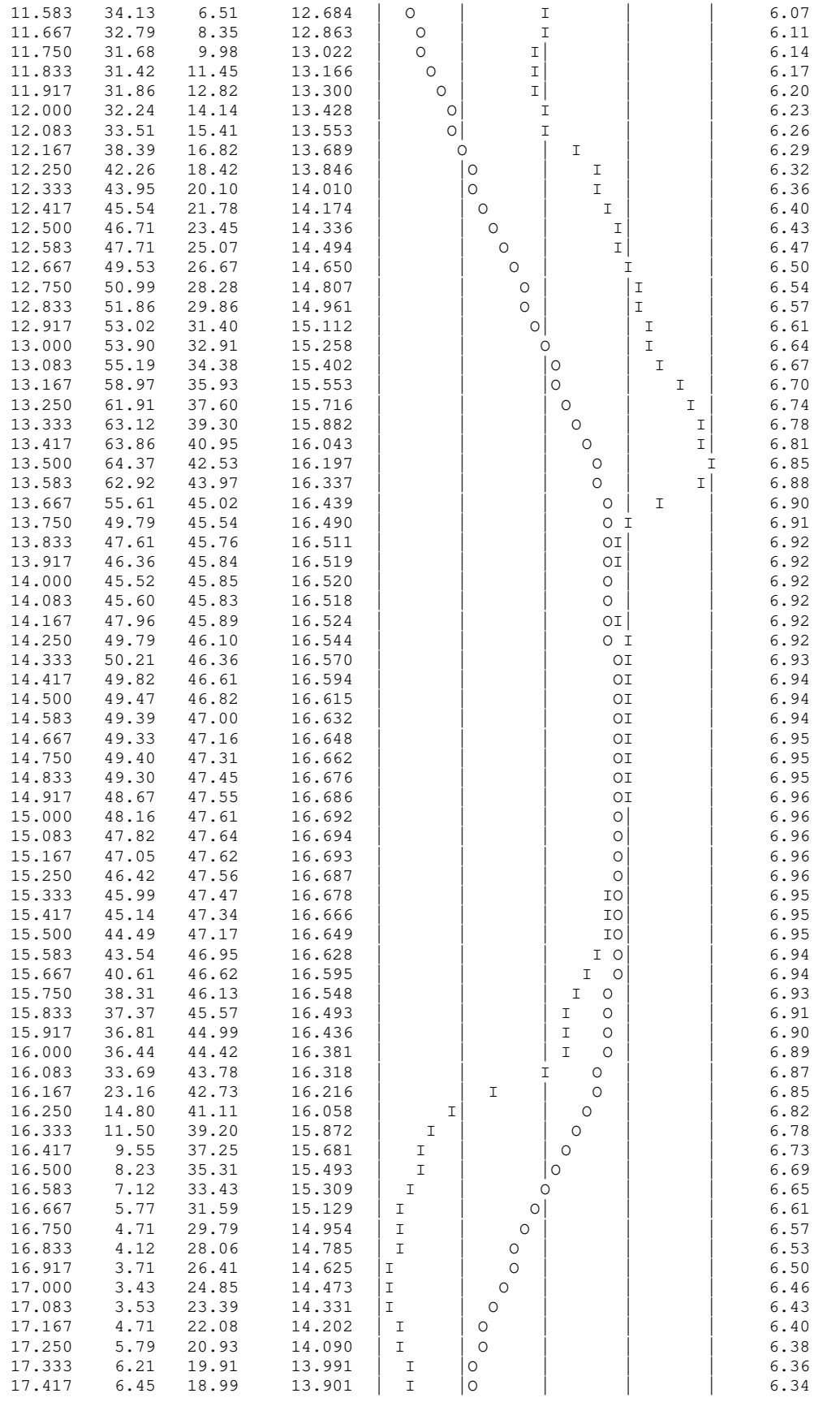
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.739	0.500	0.737	0.741
2.000	2.218	0.860	2.215	2.221
3.000	3.327	1.120	3.323	3.331
4.000	4.435	1.320	4.430	4.440
4.500	6.323	1.410	6.318	6.328
5.000	8.291	2.400	8.283	8.299
6.000	12.386	3.450	12.374	12.398
7.000	16.882	49.560	16.711	17.053
8.000	21.702	68.940	21.465	21.939
9.000	26.849	83.890	26.560	27.138

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	16.1	32.19	48.28	64.37	Depth (Ft.)
0.083	0.27	0.00	0.001	O					0.00
0.167	1.40	0.00	0.007	O					0.01
0.250	2.30	0.01	0.019	OI					0.03
0.333	2.79	0.02	0.037	OI					0.05
0.417	3.56	0.04	0.058	OI					0.08
0.500	4.15	0.06	0.085	O I					0.11
0.583	4.42	0.08	0.114	O I					0.15
0.667	4.60	0.10	0.144	O I					0.20
0.750	4.72	0.12	0.175	O I					0.24
0.833	4.42	0.14	0.206	O I					0.28
0.917	2.83	0.16	0.230	OI					0.31
1.000	1.58	0.17	0.244	O					0.33
1.083	1.52	0.17	0.254	O					0.34
1.167	2.90	0.18	0.268	OI					0.36
1.250	4.02	0.20	0.290	OI					0.39
1.333	4.39	0.21	0.318	O I					0.43
1.417	4.60	0.23	0.347	O I					0.47
1.500	4.71	0.26	0.377	O I					0.51
1.583	4.80	0.28	0.408	O I					0.55
1.667	4.85	0.30	0.440	O I					0.59
1.750	4.90	0.32	0.471	O I					0.64
1.833	4.56	0.34	0.501	O I					0.68
1.917	3.06	0.36	0.525	OI					0.71
2.000	1.89	0.37	0.540	O					0.73
2.083	1.47	0.37	0.549	O					0.74
2.167	1.24	0.38	0.556	O					0.75
2.250	1.08	0.38	0.561	O					0.76
2.333	0.97	0.38	0.565	O					0.77
2.417	0.91	0.39	0.569	O					0.77
2.500	0.86	0.39	0.573	O					0.78
2.583	1.00	0.39	0.576	O					0.78
2.667	1.67	0.39	0.583	O					0.79
2.750	2.22	0.40	0.594	OI					0.80
2.833	2.43	0.41	0.607	OI					0.82
2.917	2.56	0.42	0.621	OI					0.84
3.000	2.68	0.43	0.636	OI					0.86
3.083	2.77	0.44	0.652	OI					0.88
3.167	2.84	0.45	0.668	OI					0.90
3.250	2.91	0.46	0.685	OI					0.93
3.333	2.96	0.47	0.702	OI					0.95
3.417	3.01	0.49	0.719	OI					0.97
3.500	3.06	0.50	0.737	OI					1.00
3.583	3.10	0.50	0.754	OI					1.01
3.667	3.14	0.51	0.772	OI					1.02
3.750	3.17	0.51	0.791	OI					1.03
3.833	3.37	0.52	0.810	OI					1.05
3.917	4.09	0.52	0.832	O I					1.06
4.000	4.66	0.53	0.858	O I					1.08
4.083	4.91	0.54	0.888	O I					1.10
4.167	5.06	0.54	0.918	O I					1.12
4.250	5.18	0.55	0.950	O I					1.14
4.333	5.43	0.56	0.982	O I					1.16
4.417	6.19	0.57	1.019	O I					1.19
4.500	6.81	0.58	1.059	O I					1.22
4.583	7.08	0.59	1.103	O I					1.25
4.667	7.25	0.60	1.148	O I					1.28
4.750	7.38	0.61	1.195	O I					1.31
4.833	7.65	0.62	1.242	O I					1.34
4.917	8.42	0.63	1.293	O I					1.37
5.000	9.03	0.65	1.349	O I					1.41
5.083	8.97	0.66	1.406	O I					1.45
5.167	7.76	0.68	1.459	O I					1.49
5.250	6.79	0.69	1.505	O I					1.52
5.333	6.63	0.70	1.546	O I					1.55
5.417	7.16	0.71	1.589	O I					1.57
5.500	7.60	0.72	1.635	O I					1.61
5.583	7.91	0.73	1.683	O I					1.64





11.583	34.13	6.51	12.684	6.07
11.667	32.79	8.35	12.863	6.11
11.750	31.68	9.98	13.022	6.14
11.833	31.42	11.45	13.166	6.17
11.917	31.86	12.82	13.300	6.20
12.000	32.24	14.14	13.428	6.23
12.083	33.51	15.41	13.553	6.26
12.167	38.39	16.82	13.689	6.29
12.250	42.26	18.42	13.846	6.32
12.333	43.95	20.10	14.010	6.36
12.417	45.54	21.78	14.174	6.40
12.500	46.71	23.45	14.336	6.43
12.583	47.71	25.07	14.494	6.47
12.667	49.53	26.67	14.650	6.50
12.750	50.99	28.28	14.807	6.54
12.833	51.86	29.86	14.961	6.57
12.917	53.02	31.40	15.112	6.61
13.000	53.90	32.91	15.258	6.64
13.083	55.19	34.38	15.402	6.67
13.167	58.97	35.93	15.553	6.70
13.250	61.91	37.60	15.716	6.74
13.333	63.12	39.30	15.882	6.78
13.417	63.86	40.95	16.043	6.81
13.500	64.37	42.53	16.197	6.85
13.583	62.92	43.97	16.337	6.88
13.667	55.61	45.02	16.439	6.90
13.750	49.79	45.54	16.490	6.91
13.833	47.61	45.76	16.511	6.92
13.917	46.36	45.84	16.519	6.92
14.000	45.52	45.85	16.520	6.92
14.083	45.60	45.83	16.518	6.92
14.167	47.96	45.89	16.524	6.92
14.250	49.79	46.10	16.544	6.92
14.333	50.21	46.36	16.570	6.93
14.417	49.82	46.61	16.594	6.94
14.500	49.47	46.82	16.615	6.94
14.583	49.39	47.00	16.632	6.94
14.667	49.33	47.16	16.648	6.95
14.750	49.40	47.31	16.662	6.95
14.833	49.30	47.45	16.676	6.95
14.917	48.67	47.55	16.686	6.96
15.000	48.16	47.61	16.692	6.96
15.083	47.82	47.64	16.694	6.96
15.167	47.05	47.62	16.693	6.96
15.250	46.42	47.56	16.687	6.96
15.333	45.99	47.47	16.678	6.95
15.417	45.14	47.34	16.666	6.95
15.500	44.49	47.17	16.649	6.95
15.583	43.54	46.95	16.628	6.94
15.667	40.61	46.62	16.595	6.94
15.750	38.31	46.13	16.548	6.93
15.833	37.37	45.57	16.493	6.91
15.917	36.81	44.99	16.436	6.90
16.000	36.44	44.42	16.381	6.89
16.083	33.69	43.78	16.318	6.87
16.167	23.16	42.73	16.216	6.85
16.250	14.80	41.11	16.058	6.82
16.333	11.50	39.20	15.872	6.78
16.417	9.55	37.25	15.681	6.73
16.500	8.23	35.31	15.493	6.69
16.583	7.12	33.43	15.309	6.65
16.667	5.77	31.59	15.129	6.61
16.750	4.71	29.79	14.954	6.57
16.833	4.12	28.06	14.785	6.53
16.917	3.71	26.41	14.625	6.50
17.000	3.43	24.85	14.473	6.46
17.083	3.53	23.39	14.331	6.43
17.167	4.71	22.08	14.202	6.40
17.250	5.79	20.93	14.090	6.38
17.333	6.21	19.91	13.991	6.36
17.417	6.45	18.99	13.901	6.34

17.500	6.63	18.14	13.818	| I |O	|	|	|	6.32
17.583	6.75	17.36	13.742	| I O	|	|	|	6.30
17.667	6.84	16.63	13.672	| I O	|	|	|	6.29
17.750	6.93	15.97	13.607	| I O|	|	|	|	6.27
17.833	6.83	15.35	13.546	| I O|	|	|	|	6.26
17.917	6.19	14.75	13.487	| I O|	|	|	|	6.24
18.000	5.69	14.15	13.429	| I O|	|	|	|	6.23
18.083	5.52	13.56	13.372	| I O |	|	|	|	6.22
18.167	5.43	13.01	13.318	| I O |	|	|	|	6.21
18.250	5.36	12.49	13.268	| I O |	|	|	|	6.20
18.333	5.31	12.00	13.220	| I O |	|	|	|	6.19
18.417	5.29	11.55	13.175	| I O |	|	|	|	6.18
18.500	5.27	11.12	13.134	| I O |	|	|	|	6.17
18.583	5.09	10.71	13.094	| I O |	|	|	|	6.16
18.667	4.39	10.31	13.054	| I O |	|	|	|	6.15
18.750	3.85	9.88	13.013	|I O |	|	|	|	6.14
18.833	3.47	9.46	12.972	|I O |	|	|	|	6.13
18.917	2.66	9.02	12.929	|I O |	|	|	|	6.12
19.000	2.04	8.57	12.885	|I O |	|	|	|	6.11
19.083	1.94	8.12	12.841	I O |	|	|	|	6.10
19.167	2.48	7.72	12.802	|I O |	|	|	|	6.09
19.250	2.92	7.37	12.769	|I O |	|	|	|	6.09
19.333	3.23	7.08	12.740	|I O |	|	|	|	6.08
19.417	3.99	6.84	12.717	|I O |	|	|	|	6.07
19.500	4.59	6.67	12.700	| IO |	|	|	|	6.07
19.583	4.67	6.53	12.686	| IO |	|	|	|	6.07
19.667	4.13	6.39	12.672	| IO |	|	|	|	6.06
19.750	3.70	6.22	12.656	|I O |	|	|	|	6.06
19.833	3.41	6.04	12.638	|I O |	|	|	|	6.06
19.917	2.66	5.83	12.618	|IO |	|	|	|	6.05
20.000	2.09	5.59	12.595	|IO |	|	|	|	6.05
20.083	2.03	5.35	12.572	|IO |	|	|	|	6.04
20.167	2.60	5.15	12.551	|IO |	|	|	|	6.04
20.250	3.05	4.99	12.536	|IO |	|	|	|	6.03
20.333	3.20	4.86	12.524	|IO |	|	|	|	6.03
20.417	3.29	4.75	12.513	|IO |	|	|	|	6.03
20.500	3.34	4.65	12.503	|IO |	|	|	|	6.03
20.583	3.37	4.56	12.495	|IO |	|	|	|	6.02
20.667	3.39	4.48	12.487	|IO |	|	|	|	6.02
20.750	3.42	4.41	12.480	|IO |	|	|	|	6.02
20.833	3.28	4.34	12.473	|IO |	|	|	|	6.02
20.917	2.61	4.24	12.463	|IO |	|	|	|	6.02
21.000	2.09	4.11	12.451	|IO |	|	|	|	6.01
21.083	2.07	3.98	12.437	|O |	|	|	|	6.01
21.167	2.65	3.87	12.426	|O |	|	|	|	6.01
21.250	3.13	3.80	12.420	|O |	|	|	|	6.01
21.333	3.12	3.75	12.416	|O |	|	|	|	6.01
21.417	2.53	3.69	12.409	|O |	|	|	|	6.01
21.500	2.04	3.59	12.400	|O |	|	|	|	6.00
21.583	2.04	3.49	12.390	|O |	|	|	|	6.00
21.667	2.63	3.45	12.382	|O |	|	|	|	6.00
21.750	3.12	3.45	12.378	|O |	|	|	|	6.00
21.833	3.13	3.45	12.376	|O |	|	|	|	6.00
21.917	2.55	3.45	12.371	|O |	|	|	|	6.00
22.000	2.07	3.44	12.364	|O |	|	|	|	5.99
22.083	2.08	3.44	12.354	|O |	|	|	|	5.99
22.167	2.69	3.44	12.347	|O |	|	|	|	5.99
22.250	3.18	3.44	12.343	|O |	|	|	|	5.99
22.333	3.19	3.44	12.342	|O |	|	|	|	5.99
22.417	2.60	3.44	12.338	|O |	|	|	|	5.99
22.500	2.12	3.44	12.330	|O |	|	|	|	5.99
22.583	1.96	3.43	12.321	IO |	|	|	|	5.98
22.667	1.88	3.43	12.310	IO |	|	|	|	5.98
22.750	1.82	3.43	12.300	IO |	|	|	|	5.98
22.833	1.78	3.42	12.288	IO |	|	|	|	5.98
22.917	1.75	3.42	12.277	IO |	|	|	|	5.97
23.000	1.74	3.42	12.265	IO |	|	|	|	5.97
23.083	1.73	3.42	12.254	IO |	|	|	|	5.97
23.167	1.73	3.41	12.242	IO |	|	|	|	5.96
23.250	1.72	3.41	12.231	IO |	|	|	|	5.96
23.333	1.71	3.41	12.219	IO |	|	|	|	5.96

23.417	1.71	3.40	12.207	IO				5.96
23.500	1.71	3.40	12.196	IO				5.95
23.583	1.72	3.40	12.184	IO				5.95
23.667	1.72	3.40	12.172	IO				5.95
23.750	1.72	3.39	12.161	IO				5.95
23.833	1.73	3.39	12.149	IO				5.94
23.917	1.73	3.39	12.138	IO				5.94
24.000	1.73	3.38	12.127	IO				5.94
24.083	1.59	3.38	12.115	IO				5.93
24.167	1.01	3.38	12.101	IO				5.93
24.250	0.55	3.37	12.083	IO				5.93
24.333	0.37	3.37	12.063	IO				5.92
24.417	0.26	3.36	12.042	IO				5.92
24.500	0.19	3.36	12.020	IO				5.91
24.583	0.14	3.35	11.998	IO				5.91
24.667	0.10	3.34	11.976	IO				5.90
24.750	0.07	3.34	11.953	IO				5.89
24.833	0.05	3.33	11.931	IO				5.89
24.917	0.03	3.33	11.908	IO				5.88
25.000	0.02	3.32	11.885	IO				5.88
25.083	0.01	3.32	11.863	IO				5.87
25.167	0.00	3.31	11.840	IO				5.87
25.250	0.00	3.30	11.817	IO				5.86
25.333	0.00	3.30	11.794	IO				5.86
25.417	0.00	3.29	11.772	IO				5.85
25.500	0.00	3.29	11.749	IO				5.84
25.583	0.00	3.28	11.726	IO				5.84
25.667	0.00	3.28	11.704	IO				5.83
25.750	0.00	3.27	11.681	IO				5.83
25.833	0.00	3.26	11.659	IO				5.82
25.917	0.00	3.26	11.636	IO				5.82
26.000	0.00	3.25	11.614	IO				5.81
26.083	0.00	3.25	11.592	IO				5.81
26.167	0.00	3.24	11.569	IO				5.80
26.250	0.00	3.23	11.547	IO				5.80
26.333	0.00	3.23	11.525	IO				5.79
26.417	0.00	3.22	11.502	IO				5.78
26.500	0.00	3.22	11.480	IO				5.78
26.583	0.00	3.21	11.458	IO				5.77
26.667	0.00	3.21	11.436	IO				5.77
26.750	0.00	3.20	11.414	IO				5.76
26.833	0.00	3.20	11.392	IO				5.76
26.917	0.00	3.19	11.370	IO				5.75
27.000	0.00	3.18	11.348	IO				5.75
27.083	0.00	3.18	11.326	IO				5.74
27.167	0.00	3.17	11.304	IO				5.74
27.250	0.00	3.17	11.282	IO				5.73
27.333	0.00	3.16	11.261	IO				5.73
27.417	0.00	3.16	11.239	IO				5.72
27.500	0.00	3.15	11.217	IO				5.71
27.583	0.00	3.14	11.195	IO				5.71
27.667	0.00	3.14	11.174	IO				5.70
27.750	0.00	3.13	11.152	IO				5.70
27.833	0.00	3.13	11.131	IO				5.69
27.917	0.00	3.12	11.109	IO				5.69
28.000	0.00	3.12	11.088	IO				5.68
28.083	0.00	3.11	11.066	IO				5.68
28.167	0.00	3.11	11.045	IO				5.67
28.250	0.00	3.10	11.023	IO				5.67
28.333	0.00	3.10	11.002	IO				5.66
28.417	0.00	3.09	10.981	IO				5.66
28.500	0.00	3.08	10.959	IO				5.65
28.583	0.00	3.08	10.938	IO				5.65
28.667	0.00	3.07	10.917	IO				5.64
28.750	0.00	3.07	10.896	IO				5.64
28.833	0.00	3.06	10.875	IO				5.63
28.917	0.00	3.06	10.854	IO				5.63
29.000	0.00	3.05	10.833	IO				5.62
29.083	0.00	3.05	10.812	IO				5.62
29.167	0.00	3.04	10.791	IO				5.61
29.250	0.00	3.04	10.770	IO				5.61

29.333	0.00	3.03	10.749	IO				5.60
29.417	0.00	3.02	10.728	IO				5.60
29.500	0.00	3.02	10.707	IO				5.59
29.583	0.00	3.01	10.687	IO				5.58
29.667	0.00	3.01	10.666	IO				5.58
29.750	0.00	3.00	10.645	IO				5.57
29.833	0.00	3.00	10.624	IO				5.57
29.917	0.00	2.99	10.604	IO				5.56
30.000	0.00	2.99	10.583	IO				5.56
30.083	0.00	2.98	10.563	IO				5.55
30.167	0.00	2.98	10.542	IO				5.55
30.250	0.00	2.97	10.522	IO				5.54
30.333	0.00	2.97	10.501	IO				5.54
30.417	0.00	2.96	10.481	IO				5.53
30.500	0.00	2.96	10.460	IO				5.53
30.583	0.00	2.95	10.440	IO				5.52
30.667	0.00	2.95	10.420	IO				5.52
30.750	0.00	2.94	10.399	IO				5.51
30.833	0.00	2.94	10.379	IO				5.51
30.917	0.00	2.93	10.359	IO				5.51
31.000	0.00	2.93	10.339	IO				5.50
31.083	0.00	2.92	10.319	IO				5.50
31.167	0.00	2.91	10.299	IO				5.49
31.250	0.00	2.91	10.279	IO				5.49
31.333	0.00	2.90	10.259	IO				5.48
31.417	0.00	2.90	10.239	IO				5.48
31.500	0.00	2.89	10.219	IO				5.47
31.583	0.00	2.89	10.199	IO				5.47
31.667	0.00	2.88	10.179	IO				5.46
31.750	0.00	2.88	10.159	IO				5.46
31.833	0.00	2.87	10.139	IO				5.45
31.917	0.00	2.87	10.119	IO				5.45
32.000	0.00	2.86	10.100	IO				5.44
32.083	0.00	2.86	10.080	IO				5.44
32.167	0.00	2.85	10.060	IO				5.43
32.250	0.00	2.85	10.041	IO				5.43
32.333	0.00	2.84	10.021	IO				5.42
32.417	0.00	2.84	10.001	IO				5.42
32.500	0.00	2.83	9.982	IO				5.41
32.583	0.00	2.83	9.962	IO				5.41
32.667	0.00	2.82	9.943	IO				5.40
32.750	0.00	2.82	9.924	IO				5.40
32.833	0.00	2.81	9.904	IO				5.39
32.917	0.00	2.81	9.885	IO				5.39
33.000	0.00	2.80	9.865	IO				5.38
33.083	0.00	2.80	9.846	IO				5.38
33.167	0.00	2.79	9.827	IO				5.38
33.250	0.00	2.79	9.808	IO				5.37
33.333	0.00	2.78	9.788	IO				5.37
33.417	0.00	2.78	9.769	IO				5.36
33.500	0.00	2.77	9.750	IO				5.36
33.583	0.00	2.77	9.731	IO				5.35
33.667	0.00	2.76	9.712	IO				5.35
33.750	0.00	2.76	9.693	IO				5.34
33.833	0.00	2.75	9.674	IO				5.34
33.917	0.00	2.75	9.655	IO				5.33
34.000	0.00	2.74	9.636	IO				5.33
34.083	0.00	2.74	9.617	IO				5.32
34.167	0.00	2.74	9.598	IO				5.32
34.250	0.00	2.73	9.580	IO				5.31
34.333	0.00	2.73	9.561	IO				5.31
34.417	0.00	2.72	9.542	IO				5.31
34.500	0.00	2.72	9.523	IO				5.30
34.583	0.00	2.71	9.505	IO				5.30
34.667	0.00	2.71	9.486	IO				5.29
34.750	0.00	2.70	9.467	IO				5.29
34.833	0.00	2.70	9.449	IO				5.28
34.917	0.00	2.69	9.430	IO				5.28
35.000	0.00	2.69	9.412	IO				5.27
35.083	0.00	2.68	9.393	IO				5.27
35.167	0.00	2.68	9.375	IO				5.26

35.250	0.00	2.67	9.356	IO				5.26
35.333	0.00	2.67	9.338	IO				5.26
35.417	0.00	2.66	9.320	IO				5.25
35.500	0.00	2.66	9.301	IO				5.25
35.583	0.00	2.65	9.283	IO				5.24
35.667	0.00	2.65	9.265	IO				5.24
35.750	0.00	2.64	9.246	IO				5.23
35.833	0.00	2.64	9.228	IO				5.23
35.917	0.00	2.64	9.210	IO				5.22
36.000	0.00	2.63	9.192	IO				5.22
36.083	0.00	2.63	9.174	IO				5.22
36.167	0.00	2.62	9.156	IO				5.21
36.250	0.00	2.62	9.138	IO				5.21
36.333	0.00	2.61	9.120	IO				5.20
36.417	0.00	2.61	9.102	IO				5.20
36.500	0.00	2.60	9.084	IO				5.19
36.583	0.00	2.60	9.066	IO				5.19
36.667	0.00	2.59	9.048	IO				5.18
36.750	0.00	2.59	9.030	IO				5.18
36.833	0.00	2.58	9.012	IO				5.18
36.917	0.00	2.58	8.995	IO				5.17
37.000	0.00	2.58	8.977	IO				5.17
37.083	0.00	2.57	8.959	IO				5.16
37.167	0.00	2.57	8.941	IO				5.16
37.250	0.00	2.56	8.924	IO				5.15
37.333	0.00	2.56	8.906	IO				5.15
37.417	0.00	2.55	8.888	IO				5.15
37.500	0.00	2.55	8.871	IO				5.14
37.583	0.00	2.54	8.853	IO				5.14
37.667	0.00	2.54	8.836	IO				5.13
37.750	0.00	2.54	8.818	IO				5.13
37.833	0.00	2.53	8.801	IO				5.12
37.917	0.00	2.53	8.784	IO				5.12
38.000	0.00	2.52	8.766	IO				5.12
38.083	0.00	2.52	8.749	IO				5.11
38.167	0.00	2.51	8.731	IO				5.11
38.250	0.00	2.51	8.714	IO				5.10
38.333	0.00	2.50	8.697	IO				5.10
38.417	0.00	2.50	8.680	IO				5.09
38.500	0.00	2.50	8.663	IO				5.09
38.583	0.00	2.49	8.645	IO				5.09
38.667	0.00	2.49	8.628	IO				5.08
38.750	0.00	2.48	8.611	IO				5.08
38.833	0.00	2.48	8.594	IO				5.07
38.917	0.00	2.47	8.577	IO				5.07
39.000	0.00	2.47	8.560	IO				5.07
39.083	0.00	2.46	8.543	IO				5.06
39.167	0.00	2.46	8.526	IO				5.06
39.250	0.00	2.46	8.509	IO				5.05
39.333	0.00	2.45	8.492	IO				5.05
39.417	0.00	2.45	8.475	IO				5.05
39.500	0.00	2.44	8.458	IO				5.04
39.583	0.00	2.44	8.442	IO				5.04
39.667	0.00	2.43	8.425	IO				5.03
39.750	0.00	2.43	8.408	IO				5.03
39.833	0.00	2.43	8.391	IO				5.02
39.917	0.00	2.42	8.375	IO				5.02
40.000	0.00	2.42	8.358	IO				5.02
40.083	0.00	2.41	8.341	IO				5.01
40.167	0.00	2.41	8.325	IO				5.01
40.250	0.00	2.40	8.308	IO				5.00
40.333	0.00	2.40	8.292	IO				5.00
40.417	0.00	2.39	8.275	IO				5.00
40.500	0.00	2.38	8.259	IO				4.99
40.583	0.00	2.38	8.242	IO				4.99
40.667	0.00	2.37	8.226	IO				4.98
40.750	0.00	2.36	8.210	IO				4.98
40.833	0.00	2.35	8.194	IO				4.98
40.917	0.00	2.34	8.177	IO				4.97
41.000	0.00	2.33	8.161	IO				4.97
41.083	0.00	2.33	8.145	IO				4.96

41.167	0.00	2.32	8.129	IO				4.96
41.250	0.00	2.31	8.113	IO				4.95
41.333	0.00	2.30	8.097	IO				4.95
41.417	0.00	2.29	8.082	IO				4.95
41.500	0.00	2.29	8.066	IO				4.94
41.583	0.00	2.28	8.050	IO				4.94
41.667	0.00	2.27	8.034	IO				4.93
41.750	0.00	2.26	8.019	IO				4.93
41.833	0.00	2.26	8.003	IO				4.93
41.917	0.00	2.25	7.988	IO				4.92
42.000	0.00	2.24	7.972	IO				4.92
42.083	0.00	2.23	7.957	IO				4.92
42.167	0.00	2.22	7.942	IO				4.91
42.250	0.00	2.22	7.926	IO				4.91
42.333	0.00	2.21	7.911	IO				4.90
42.417	0.00	2.20	7.896	IO				4.90
42.500	0.00	2.19	7.881	IO				4.90
42.583	0.00	2.19	7.866	IO				4.89
42.667	0.00	2.18	7.851	IO				4.89
42.750	0.00	2.17	7.836	IO				4.88
42.833	0.00	2.16	7.821	IO				4.88
42.917	0.00	2.16	7.806	IO				4.88
43.000	0.00	2.15	7.791	IO				4.87
43.083	0.00	2.14	7.776	IO				4.87
43.167	0.00	2.13	7.761	IO				4.87
43.250	0.00	2.13	7.747	IO				4.86
43.333	0.00	2.12	7.732	IO				4.86
43.417	0.00	2.11	7.718	IO				4.85
43.500	0.00	2.10	7.703	IO				4.85
43.583	0.00	2.10	7.689	IO				4.85
43.667	0.00	2.09	7.674	IO				4.84
43.750	0.00	2.08	7.660	IO				4.84
43.833	0.00	2.08	7.646	IO				4.84
43.917	0.00	2.07	7.631	IO				4.83
44.000	0.00	2.06	7.617	IO				4.83
44.083	0.00	2.05	7.603	IO				4.83
44.167	0.00	2.05	7.589	IO				4.82
44.250	0.00	2.04	7.575	IO				4.82
44.333	0.00	2.03	7.561	IO				4.81
44.417	0.00	2.03	7.547	IO				4.81
44.500	0.00	2.02	7.533	IO				4.81
44.583	0.00	2.01	7.519	O				4.80
44.667	0.00	2.00	7.505	O				4.80
44.750	0.00	2.00	7.491	O				4.80
44.833	0.00	1.99	7.478	O				4.79
44.917	0.00	1.98	7.464	O				4.79
45.000	0.00	1.98	7.450	O				4.79
45.083	0.00	1.97	7.437	O				4.78
45.167	0.00	1.96	7.423	O				4.78
45.250	0.00	1.96	7.410	O				4.78
45.333	0.00	1.95	7.396	O				4.77
45.417	0.00	1.94	7.383	O				4.77
45.500	0.00	1.94	7.369	O				4.77
45.583	0.00	1.93	7.356	O				4.76
45.667	0.00	1.92	7.343	O				4.76
45.750	0.00	1.92	7.330	O				4.76
45.833	0.00	1.91	7.316	O				4.75
45.917	0.00	1.90	7.303	O				4.75
46.000	0.00	1.90	7.290	O				4.75
46.083	0.00	1.89	7.277	O				4.74
46.167	0.00	1.88	7.264	O				4.74
46.250	0.00	1.88	7.251	O				4.74
46.333	0.00	1.87	7.238	O				4.73
46.417	0.00	1.86	7.225	O				4.73
46.500	0.00	1.86	7.213	O				4.73
46.583	0.00	1.85	7.200	O				4.72
46.667	0.00	1.84	7.187	O				4.72
46.750	0.00	1.84	7.174	O				4.72
46.833	0.00	1.83	7.162	O				4.71
46.917	0.00	1.83	7.149	O				4.71
47.000	0.00	1.82	7.137	O				4.71

47.083	0.00	1.81	7.124	O					4.70
47.167	0.00	1.81	7.112	O					4.70
47.250	0.00	1.80	7.099	O					4.70
47.333	0.00	1.79	7.087	O					4.69
47.417	0.00	1.79	7.075	O					4.69
47.500	0.00	1.78	7.062	O					4.69
47.583	0.00	1.78	7.050	O					4.68
47.667	0.00	1.77	7.038	O					4.68
47.750	0.00	1.76	7.026	O					4.68
47.833	0.00	1.76	7.013	O					4.68
47.917	0.00	1.75	7.001	O					4.67
48.000	0.00	1.75	6.989	O					4.67
48.083	0.00	1.74	6.977	O					4.67
48.167	0.00	1.73	6.965	O					4.66
48.250	0.00	1.73	6.953	O					4.66
48.333	0.00	1.72	6.942	O					4.66
48.417	0.00	1.72	6.930	O					4.65
48.500	0.00	1.71	6.918	O					4.65
48.583	0.00	1.70	6.906	O					4.65
48.667	0.00	1.70	6.895	O					4.65
48.750	0.00	1.69	6.883	O					4.64
48.833	0.00	1.69	6.871	O					4.64
48.917	0.00	1.68	6.860	O					4.64
49.000	0.00	1.67	6.848	O					4.63
49.083	0.00	1.67	6.837	O					4.63
49.167	0.00	1.66	6.825	O					4.63
49.250	0.00	1.66	6.814	O					4.62
49.333	0.00	1.65	6.802	O					4.62
49.417	0.00	1.65	6.791	O					4.62
49.500	0.00	1.64	6.780	O					4.62
49.583	0.00	1.63	6.768	O					4.61
49.667	0.00	1.63	6.757	O					4.61
49.750	0.00	1.62	6.746	O					4.61
49.833	0.00	1.62	6.735	O					4.60
49.917	0.00	1.61	6.724	O					4.60
50.000	0.00	1.61	6.713	O					4.60
50.083	0.00	1.60	6.702	O					4.60
50.167	0.00	1.59	6.691	O					4.59
50.250	0.00	1.59	6.680	O					4.59
50.333	0.00	1.58	6.669	O					4.59
50.417	0.00	1.58	6.658	O					4.59
50.500	0.00	1.57	6.647	O					4.58
50.583	0.00	1.57	6.636	O					4.58
50.667	0.00	1.56	6.625	O					4.58
50.750	0.00	1.56	6.615	O					4.57
50.833	0.00	1.55	6.604	O					4.57
50.917	0.00	1.55	6.593	O					4.57
51.000	0.00	1.54	6.583	O					4.57
51.083	0.00	1.54	6.572	O					4.56
51.167	0.00	1.53	6.561	O					4.56
51.250	0.00	1.52	6.551	O					4.56
51.333	0.00	1.52	6.540	O					4.56
51.417	0.00	1.51	6.530	O					4.55
51.500	0.00	1.51	6.520	O					4.55
51.583	0.00	1.50	6.509	O					4.55
51.667	0.00	1.50	6.499	O					4.54
51.750	0.00	1.49	6.489	O					4.54
51.833	0.00	1.49	6.478	O					4.54
51.917	0.00	1.48	6.468	O					4.54
52.000	0.00	1.48	6.458	O					4.53
52.083	0.00	1.47	6.448	O					4.53
52.167	0.00	1.47	6.438	O					4.53
52.250	0.00	1.46	6.427	O					4.53
52.333	0.00	1.46	6.417	O					4.52
52.417	0.00	1.45	6.407	O					4.52
52.500	0.00	1.45	6.397	O					4.52
52.583	0.00	1.44	6.387	O					4.52
52.667	0.00	1.44	6.378	O					4.51
52.750	0.00	1.43	6.368	O					4.51
52.833	0.00	1.43	6.358	O					4.51
52.917	0.00	1.42	6.348	O					4.51

53.000	0.00	1.42	6.338	O					4.50
53.083	0.00	1.41	6.328	O					4.50
53.167	0.00	1.41	6.319	O					4.50
53.250	0.00	1.41	6.309	O					4.50
53.333	0.00	1.41	6.299	O					4.49
53.417	0.00	1.41	6.290	O					4.49
53.500	0.00	1.41	6.280	O					4.49
53.583	0.00	1.41	6.270	O					4.49
53.667	0.00	1.41	6.261	O					4.48
53.750	0.00	1.41	6.251	O					4.48
53.833	0.00	1.41	6.241	O					4.48
53.917	0.00	1.41	6.232	O					4.48
54.000	0.00	1.41	6.222	O					4.47
54.083	0.00	1.40	6.212	O					4.47
54.167	0.00	1.40	6.202	O					4.47
54.250	0.00	1.40	6.193	O					4.47
54.333	0.00	1.40	6.183	O					4.46
54.417	0.00	1.40	6.173	O					4.46
54.500	0.00	1.40	6.164	O					4.46
54.583	0.00	1.40	6.154	O					4.46
54.667	0.00	1.40	6.145	O					4.45
54.750	0.00	1.40	6.135	O					4.45
54.833	0.00	1.40	6.125	O					4.45
54.917	0.00	1.40	6.116	O					4.45
55.000	0.00	1.40	6.106	O					4.44
55.083	0.00	1.40	6.096	O					4.44
55.167	0.00	1.40	6.087	O					4.44
55.250	0.00	1.40	6.077	O					4.43
55.333	0.00	1.40	6.067	O					4.43
55.417	0.00	1.40	6.058	O					4.43
55.500	0.00	1.40	6.048	O					4.43
55.583	0.00	1.40	6.039	O					4.42
55.667	0.00	1.40	6.029	O					4.42
55.750	0.00	1.40	6.019	O					4.42
55.833	0.00	1.40	6.010	O					4.42
55.917	0.00	1.39	6.000	O					4.41
56.000	0.00	1.39	5.990	O					4.41
56.083	0.00	1.39	5.981	O					4.41
56.167	0.00	1.39	5.971	O					4.41
56.250	0.00	1.39	5.962	O					4.40
56.333	0.00	1.39	5.952	O					4.40
56.417	0.00	1.39	5.943	O					4.40
56.500	0.00	1.39	5.933	O					4.40
56.583	0.00	1.39	5.923	O					4.39
56.667	0.00	1.39	5.914	O					4.39
56.750	0.00	1.39	5.904	O					4.39
56.833	0.00	1.39	5.895	O					4.39
56.917	0.00	1.39	5.885	O					4.38
57.000	0.00	1.39	5.875	O					4.38
57.083	0.00	1.39	5.866	O					4.38
57.167	0.00	1.39	5.856	O					4.38
57.250	0.00	1.39	5.847	O					4.37
57.333	0.00	1.39	5.837	O					4.37
57.417	0.00	1.39	5.828	O					4.37
57.500	0.00	1.39	5.818	O					4.37
57.583	0.00	1.39	5.809	O					4.36
57.667	0.00	1.39	5.799	O					4.36
57.750	0.00	1.38	5.790	O					4.36
57.833	0.00	1.38	5.780	O					4.36
57.917	0.00	1.38	5.770	O					4.35
58.000	0.00	1.38	5.761	O					4.35
58.083	0.00	1.38	5.751	O					4.35
58.167	0.00	1.38	5.742	O					4.35
58.250	0.00	1.38	5.732	O					4.34
58.333	0.00	1.38	5.723	O					4.34
58.417	0.00	1.38	5.713	O					4.34
58.500	0.00	1.38	5.704	O					4.34
58.583	0.00	1.38	5.694	O					4.33
58.667	0.00	1.38	5.685	O					4.33
58.750	0.00	1.38	5.675	O					4.33
58.833	0.00	1.38	5.666	O					4.33

58.917	0.00	1.38	5.656	O					4.32
59.000	0.00	1.38	5.647	O					4.32
59.083	0.00	1.38	5.637	O					4.32
59.167	0.00	1.38	5.628	O					4.32
59.250	0.00	1.38	5.618	O					4.31
59.333	0.00	1.38	5.609	O					4.31
59.417	0.00	1.38	5.599	O					4.31
59.500	0.00	1.38	5.590	O					4.31
59.583	0.00	1.37	5.581	O					4.30
59.667	0.00	1.37	5.571	O					4.30
59.750	0.00	1.37	5.562	O					4.30
59.833	0.00	1.37	5.552	O					4.30
59.917	0.00	1.37	5.543	O					4.29
60.000	0.00	1.37	5.533	O					4.29
60.083	0.00	1.37	5.524	O					4.29
60.167	0.00	1.37	5.514	O					4.29
60.250	0.00	1.37	5.505	O					4.28
60.333	0.00	1.37	5.495	O					4.28
60.417	0.00	1.37	5.486	O					4.28
60.500	0.00	1.37	5.477	O					4.28
60.583	0.00	1.37	5.467	O					4.27
60.667	0.00	1.37	5.458	O					4.27
60.750	0.00	1.37	5.448	O					4.27
60.833	0.00	1.37	5.439	O					4.27
60.917	0.00	1.37	5.429	O					4.26
61.000	0.00	1.37	5.420	O					4.26
61.083	0.00	1.37	5.411	O					4.26
61.167	0.00	1.37	5.401	O					4.26
61.250	0.00	1.37	5.392	O					4.25
61.333	0.00	1.37	5.382	O					4.25
61.417	0.00	1.36	5.373	O					4.25
61.500	0.00	1.36	5.364	O					4.25
61.583	0.00	1.36	5.354	O					4.24
61.667	0.00	1.36	5.345	O					4.24
61.750	0.00	1.36	5.335	O					4.24
61.833	0.00	1.36	5.326	O					4.24
61.917	0.00	1.36	5.317	O					4.23
62.000	0.00	1.36	5.307	O					4.23
62.083	0.00	1.36	5.298	O					4.23
62.167	0.00	1.36	5.289	O					4.23
62.250	0.00	1.36	5.279	O					4.22
62.333	0.00	1.36	5.270	O					4.22
62.417	0.00	1.36	5.260	O					4.22
62.500	0.00	1.36	5.251	O					4.22
62.583	0.00	1.36	5.242	O					4.21
62.667	0.00	1.36	5.232	O					4.21
62.750	0.00	1.36	5.223	O					4.21
62.833	0.00	1.36	5.214	O					4.21
62.917	0.00	1.36	5.204	O					4.20
63.000	0.00	1.36	5.195	O					4.20
63.083	0.00	1.36	5.186	O					4.20
63.167	0.00	1.36	5.176	O					4.20
63.250	0.00	1.35	5.167	O					4.19
63.333	0.00	1.35	5.158	O					4.19
63.417	0.00	1.35	5.148	O					4.19
63.500	0.00	1.35	5.139	O					4.19
63.583	0.00	1.35	5.130	O					4.18
63.667	0.00	1.35	5.120	O					4.18
63.750	0.00	1.35	5.111	O					4.18
63.833	0.00	1.35	5.102	O					4.18
63.917	0.00	1.35	5.092	O					4.17
64.000	0.00	1.35	5.083	O					4.17
64.083	0.00	1.35	5.074	O					4.17
64.167	0.00	1.35	5.064	O					4.17
64.250	0.00	1.35	5.055	O					4.16
64.333	0.00	1.35	5.046	O					4.16
64.417	0.00	1.35	5.037	O					4.16
64.500	0.00	1.35	5.027	O					4.16
64.583	0.00	1.35	5.018	O					4.15
64.667	0.00	1.35	5.009	O					4.15
64.750	0.00	1.35	4.999	O					4.15

64.833	0.00	1.35	4.990	O					4.15
64.917	0.00	1.35	4.981	O					4.14
65.000	0.00	1.35	4.972	O					4.14
65.083	0.00	1.35	4.962	O					4.14
65.167	0.00	1.34	4.953	O					4.14
65.250	0.00	1.34	4.944	O					4.13
65.333	0.00	1.34	4.935	O					4.13
65.417	0.00	1.34	4.925	O					4.13
65.500	0.00	1.34	4.916	O					4.13
65.583	0.00	1.34	4.907	O					4.12
65.667	0.00	1.34	4.898	O					4.12
65.750	0.00	1.34	4.888	O					4.12
65.833	0.00	1.34	4.879	O					4.12
65.917	0.00	1.34	4.870	O					4.12
66.000	0.00	1.34	4.861	O					4.11
66.083	0.00	1.34	4.851	O					4.11
66.167	0.00	1.34	4.842	O					4.11
66.250	0.00	1.34	4.833	O					4.11
66.333	0.00	1.34	4.824	O					4.10
66.417	0.00	1.34	4.815	O					4.10
66.500	0.00	1.34	4.805	O					4.10
66.583	0.00	1.34	4.796	O					4.10
66.667	0.00	1.34	4.787	O					4.09
66.750	0.00	1.34	4.778	O					4.09
66.833	0.00	1.34	4.769	O					4.09
66.917	0.00	1.34	4.759	O					4.09
67.000	0.00	1.34	4.750	O					4.08
67.083	0.00	1.33	4.741	O					4.08
67.167	0.00	1.33	4.732	O					4.08
67.250	0.00	1.33	4.723	O					4.08
67.333	0.00	1.33	4.713	O					4.07
67.417	0.00	1.33	4.704	O					4.07
67.500	0.00	1.33	4.695	O					4.07
67.583	0.00	1.33	4.686	O					4.07
67.667	0.00	1.33	4.677	O					4.06
67.750	0.00	1.33	4.668	O					4.06
67.833	0.00	1.33	4.658	O					4.06
67.917	0.00	1.33	4.649	O					4.06
68.000	0.00	1.33	4.640	O					4.05
68.083	0.00	1.33	4.631	O					4.05
68.167	0.00	1.33	4.622	O					4.05
68.250	0.00	1.33	4.613	O					4.05
68.333	0.00	1.33	4.603	O					4.04
68.417	0.00	1.33	4.594	O					4.04
68.500	0.00	1.33	4.585	O					4.04
68.583	0.00	1.33	4.576	O					4.04
68.667	0.00	1.33	4.567	O					4.03
68.750	0.00	1.33	4.558	O					4.03
68.833	0.00	1.33	4.549	O					4.03
68.917	0.00	1.32	4.539	O					4.03
69.000	0.00	1.32	4.530	O					4.03
69.083	0.00	1.32	4.521	O					4.02
69.167	0.00	1.32	4.512	O					4.02
69.250	0.00	1.32	4.503	O					4.02
69.333	0.00	1.32	4.494	O					4.02
69.417	0.00	1.32	4.485	O					4.01
69.500	0.00	1.32	4.476	O					4.01
69.583	0.00	1.32	4.467	O					4.01
69.667	0.00	1.32	4.457	O					4.01
69.750	0.00	1.32	4.448	O					4.00
69.833	0.00	1.32	4.439	O					4.00
69.917	0.00	1.32	4.430	O					4.00
70.000	0.00	1.32	4.421	O					3.99
70.083	0.00	1.32	4.412	O					3.98
70.167	0.00	1.31	4.403	O					3.97
70.250	0.00	1.31	4.394	O					3.96
70.333	0.00	1.31	4.385	O					3.95
70.417	0.00	1.31	4.376	O					3.95
70.500	0.00	1.31	4.367	O					3.94
70.583	0.00	1.31	4.358	O					3.93
70.667	0.00	1.30	4.349	O					3.92

70.750	0.00	1.30	4.340	O					3.91
70.833	0.00	1.30	4.331	O					3.91
70.917	0.00	1.30	4.322	O					3.90
71.000	0.00	1.30	4.313	O					3.89
71.083	0.00	1.30	4.304	O					3.88
71.167	0.00	1.29	4.295	O					3.87
71.250	0.00	1.29	4.286	O					3.87
71.333	0.00	1.29	4.277	O					3.86
71.417	0.00	1.29	4.268	O					3.85
71.500	0.00	1.29	4.260	O					3.84
71.583	0.00	1.29	4.251	O					3.83
71.667	0.00	1.29	4.242	O					3.83
71.750	0.00	1.28	4.233	O					3.82
71.833	0.00	1.28	4.224	O					3.81
71.917	0.00	1.28	4.215	O					3.80
72.000	0.00	1.28	4.207	O					3.79
72.083	0.00	1.28	4.198	O					3.79
72.167	0.00	1.28	4.189	O					3.78
72.250	0.00	1.27	4.180	O					3.77
72.333	0.00	1.27	4.171	O					3.76
72.417	0.00	1.27	4.163	O					3.75
72.500	0.00	1.27	4.154	O					3.75
72.583	0.00	1.27	4.145	O					3.74
72.667	0.00	1.27	4.136	O					3.73
72.750	0.00	1.26	4.128	O					3.72
72.833	0.00	1.26	4.119	O					3.71
72.917	0.00	1.26	4.110	O					3.71
73.000	0.00	1.26	4.102	O					3.70
73.083	0.00	1.26	4.093	O					3.69
73.167	0.00	1.26	4.084	O					3.68
73.250	0.00	1.26	4.076	O					3.68
73.333	0.00	1.25	4.067	O					3.67
73.417	0.00	1.25	4.058	O					3.66
73.500	0.00	1.25	4.050	O					3.65
73.583	0.00	1.25	4.041	O					3.64
73.667	0.00	1.25	4.033	O					3.64
73.750	0.00	1.25	4.024	O					3.63
73.833	0.00	1.24	4.015	O					3.62
73.917	0.00	1.24	4.007	O					3.61
74.000	0.00	1.24	3.998	O					3.61
74.083	0.00	1.24	3.990	O					3.60
74.167	0.00	1.24	3.981	O					3.59
74.250	0.00	1.24	3.973	O					3.58
74.333	0.00	1.24	3.964	O					3.58
74.417	0.00	1.23	3.956	O					3.57
74.500	0.00	1.23	3.947	O					3.56
74.583	0.00	1.23	3.939	O					3.55
74.667	0.00	1.23	3.930	O					3.54
74.750	0.00	1.23	3.922	O					3.54
74.833	0.00	1.23	3.913	O					3.53
74.917	0.00	1.22	3.905	O					3.52
75.000	0.00	1.22	3.896	O					3.51
75.083	0.00	1.22	3.888	O					3.51
75.167	0.00	1.22	3.880	O					3.50
75.250	0.00	1.22	3.871	O					3.49
75.333	0.00	1.22	3.863	O					3.48
75.417	0.00	1.22	3.855	O					3.48
75.500	0.00	1.21	3.846	O					3.47
75.583	0.00	1.21	3.838	O					3.46
75.667	0.00	1.21	3.829	O					3.45
75.750	0.00	1.21	3.821	O					3.45
75.833	0.00	1.21	3.813	O					3.44
75.917	0.00	1.21	3.804	O					3.43
76.000	0.00	1.20	3.796	O					3.42
76.083	0.00	1.20	3.788	O					3.42
76.167	0.00	1.20	3.780	O					3.41
76.250	0.00	1.20	3.771	O					3.40
76.333	0.00	1.20	3.763	O					3.39
76.417	0.00	1.20	3.755	O					3.39
76.500	0.00	1.20	3.747	O					3.38
76.583	0.00	1.19	3.738	O					3.37

76.667	0.00	1.19	3.730	O					3.36
76.750	0.00	1.19	3.722	O					3.36
76.833	0.00	1.19	3.714	O					3.35
76.917	0.00	1.19	3.706	O					3.34
77.000	0.00	1.19	3.697	O					3.33
77.083	0.00	1.19	3.689	O					3.33
77.167	0.00	1.18	3.681	O					3.32
77.250	0.00	1.18	3.673	O					3.31
77.333	0.00	1.18	3.665	O					3.30
77.417	0.00	1.18	3.657	O					3.30
77.500	0.00	1.18	3.648	O					3.29
77.583	0.00	1.18	3.640	O					3.28
77.667	0.00	1.18	3.632	O					3.28
77.750	0.00	1.17	3.624	O					3.27
77.833	0.00	1.17	3.616	O					3.26
77.917	0.00	1.17	3.608	O					3.25
78.000	0.00	1.17	3.600	O					3.25
78.083	0.00	1.17	3.592	O					3.24
78.167	0.00	1.17	3.584	O					3.23
78.250	0.00	1.16	3.576	O					3.22
78.333	0.00	1.16	3.568	O					3.22
78.417	0.00	1.16	3.560	O					3.21
78.500	0.00	1.16	3.552	O					3.20
78.583	0.00	1.16	3.544	O					3.20
78.667	0.00	1.16	3.536	O					3.19
78.750	0.00	1.16	3.528	O					3.18
78.833	0.00	1.15	3.520	O					3.17
78.917	0.00	1.15	3.512	O					3.17
79.000	0.00	1.15	3.504	O					3.16
79.083	0.00	1.15	3.496	O					3.15
79.167	0.00	1.15	3.488	O					3.15
79.250	0.00	1.15	3.480	O					3.14
79.333	0.00	1.15	3.472	O					3.13
79.417	0.00	1.14	3.465	O					3.12
79.500	0.00	1.14	3.457	O					3.12
79.583	0.00	1.14	3.449	O					3.11
79.667	0.00	1.14	3.441	O					3.10
79.750	0.00	1.14	3.433	O					3.10
79.833	0.00	1.14	3.425	O					3.09
79.917	0.00	1.14	3.417	O					3.08
80.000	0.00	1.13	3.410	O					3.07
80.083	0.00	1.13	3.402	O					3.07
80.167	0.00	1.13	3.394	O					3.06
80.250	0.00	1.13	3.386	O					3.05
80.333	0.00	1.13	3.378	O					3.05
80.417	0.00	1.13	3.371	O					3.04
80.500	0.00	1.13	3.363	O					3.03
80.583	0.00	1.13	3.355	O					3.03
80.667	0.00	1.12	3.347	O					3.02
80.750	0.00	1.12	3.340	O					3.01
80.833	0.00	1.12	3.332	O					3.00
80.917	0.00	1.12	3.324	O					3.00
81.000	0.00	1.12	3.316	O					2.99
81.083	0.00	1.12	3.309	O					2.98
81.167	0.00	1.11	3.301	O					2.98
81.250	0.00	1.11	3.293	O					2.97
81.333	0.00	1.11	3.286	O					2.96
81.417	0.00	1.11	3.278	O					2.96
81.500	0.00	1.11	3.271	O					2.95
81.583	0.00	1.10	3.263	O					2.94
81.667	0.00	1.10	3.255	O					2.94
81.750	0.00	1.10	3.248	O					2.93
81.833	0.00	1.10	3.240	O					2.92
81.917	0.00	1.10	3.233	O					2.91
82.000	0.00	1.10	3.225	O					2.91
82.083	0.00	1.09	3.217	O					2.90
82.167	0.00	1.09	3.210	O					2.89
82.250	0.00	1.09	3.202	O					2.89
82.333	0.00	1.09	3.195	O					2.88
82.417	0.00	1.09	3.187	O					2.87
82.500	0.00	1.09	3.180	O					2.87

82.583	0.00	1.08	3.172	O					2.86
82.667	0.00	1.08	3.165	O					2.85
82.750	0.00	1.08	3.158	O					2.85
82.833	0.00	1.08	3.150	O					2.84
82.917	0.00	1.08	3.143	O					2.83
83.000	0.00	1.08	3.135	O					2.83
83.083	0.00	1.07	3.128	O					2.82
83.167	0.00	1.07	3.121	O					2.81
83.250	0.00	1.07	3.113	O					2.81
83.333	0.00	1.07	3.106	O					2.80
83.417	0.00	1.07	3.098	O					2.79
83.500	0.00	1.06	3.091	O					2.79
83.583	0.00	1.06	3.084	O					2.78
83.667	0.00	1.06	3.076	O					2.77
83.750	0.00	1.06	3.069	O					2.77
83.833	0.00	1.06	3.062	O					2.76
83.917	0.00	1.06	3.055	O					2.75
84.000	0.00	1.05	3.047	O					2.75
84.083	0.00	1.05	3.040	O					2.74
84.167	0.00	1.05	3.033	O					2.73
84.250	0.00	1.05	3.026	O					2.73
84.333	0.00	1.05	3.018	O					2.72
84.417	0.00	1.05	3.011	O					2.72
84.500	0.00	1.04	3.004	O					2.71
84.583	0.00	1.04	2.997	O					2.70
84.667	0.00	1.04	2.990	O					2.70
84.750	0.00	1.04	2.982	O					2.69
84.833	0.00	1.04	2.975	O					2.68
84.917	0.00	1.04	2.968	O					2.68
85.000	0.00	1.03	2.961	O					2.67
85.083	0.00	1.03	2.954	O					2.66
85.167	0.00	1.03	2.947	O					2.66
85.250	0.00	1.03	2.940	O					2.65
85.333	0.00	1.03	2.933	O					2.64
85.417	0.00	1.03	2.926	O					2.64
85.500	0.00	1.02	2.918	O					2.63
85.583	0.00	1.02	2.911	O					2.63
85.667	0.00	1.02	2.904	O					2.62
85.750	0.00	1.02	2.897	O					2.61
85.833	0.00	1.02	2.890	O					2.61
85.917	0.00	1.02	2.883	O					2.60
86.000	0.00	1.01	2.876	O					2.59
86.083	0.00	1.01	2.869	O					2.59
86.167	0.00	1.01	2.862	O					2.58
86.250	0.00	1.01	2.855	O					2.57
86.333	0.00	1.01	2.849	O					2.57
86.417	0.00	1.01	2.842	O					2.56
86.500	0.00	1.00	2.835	O					2.56
86.583	0.00	1.00	2.828	O					2.55
86.667	0.00	1.00	2.821	O					2.54
86.750	0.00	1.00	2.814	O					2.54
86.833	0.00	1.00	2.807	O					2.53
86.917	0.00	1.00	2.800	O					2.52
87.000	0.00	0.99	2.793	O					2.52
87.083	0.00	0.99	2.786	O					2.51
87.167	0.00	0.99	2.780	O					2.51
87.250	0.00	0.99	2.773	O					2.50
87.333	0.00	0.99	2.766	O					2.49
87.417	0.00	0.99	2.759	O					2.49
87.500	0.00	0.99	2.752	O					2.48
87.583	0.00	0.98	2.746	O					2.48
87.667	0.00	0.98	2.739	O					2.47
87.750	0.00	0.98	2.732	O					2.46
87.833	0.00	0.98	2.725	O					2.46
87.917	0.00	0.98	2.719	O					2.45
88.000	0.00	0.98	2.712	O					2.45
88.083	0.00	0.97	2.705	O					2.44
88.167	0.00	0.97	2.698	O					2.43
88.250	0.00	0.97	2.692	O					2.43
88.333	0.00	0.97	2.685	O					2.42
88.417	0.00	0.97	2.678	O					2.42

88.500	0.00	0.97	2.672	O					2.41
88.583	0.00	0.96	2.665	O					2.40
88.667	0.00	0.96	2.658	O					2.40
88.750	0.00	0.96	2.652	O					2.39
88.833	0.00	0.96	2.645	O					2.39
88.917	0.00	0.96	2.639	O					2.38
89.000	0.00	0.96	2.632	O					2.37
89.083	0.00	0.96	2.625	O					2.37
89.167	0.00	0.95	2.619	O					2.36
89.250	0.00	0.95	2.612	O					2.36
89.333	0.00	0.95	2.606	O					2.35
89.417	0.00	0.95	2.599	O					2.34
89.500	0.00	0.95	2.593	O					2.34
89.583	0.00	0.95	2.586	O					2.33
89.667	0.00	0.94	2.580	O					2.33
89.750	0.00	0.94	2.573	O					2.32
89.833	0.00	0.94	2.567	O					2.31
89.917	0.00	0.94	2.560	O					2.31
90.000	0.00	0.94	2.554	O					2.30
90.083	0.00	0.94	2.547	O					2.30
90.167	0.00	0.94	2.541	O					2.29
90.250	0.00	0.93	2.534	O					2.29
90.333	0.00	0.93	2.528	O					2.28
90.417	0.00	0.93	2.522	O					2.27
90.500	0.00	0.93	2.515	O					2.27
90.583	0.00	0.93	2.509	O					2.26
90.667	0.00	0.93	2.502	O					2.26
90.750	0.00	0.93	2.496	O					2.25
90.833	0.00	0.92	2.490	O					2.24
90.917	0.00	0.92	2.483	O					2.24
91.000	0.00	0.92	2.477	O					2.23
91.083	0.00	0.92	2.471	O					2.23
91.167	0.00	0.92	2.464	O					2.22
91.250	0.00	0.92	2.458	O					2.22
91.333	0.00	0.91	2.452	O					2.21
91.417	0.00	0.91	2.445	O					2.20
91.500	0.00	0.91	2.439	O					2.20
91.583	0.00	0.91	2.433	O					2.19
91.667	0.00	0.91	2.426	O					2.19
91.750	0.00	0.91	2.420	O					2.18
91.833	0.00	0.91	2.414	O					2.18
91.917	0.00	0.90	2.408	O					2.17
92.000	0.00	0.90	2.402	O					2.17
92.083	0.00	0.90	2.395	O					2.16
92.167	0.00	0.90	2.389	O					2.15
92.250	0.00	0.90	2.383	O					2.15
92.333	0.00	0.90	2.377	O					2.14
92.417	0.00	0.90	2.371	O					2.14
92.500	0.00	0.89	2.364	O					2.13
92.583	0.00	0.89	2.358	O					2.13
92.667	0.00	0.89	2.352	O					2.12
92.750	0.00	0.89	2.346	O					2.12
92.833	0.00	0.89	2.340	O					2.11
92.917	0.00	0.89	2.334	O					2.10
93.000	0.00	0.89	2.328	O					2.10
93.083	0.00	0.88	2.322	O					2.09
93.167	0.00	0.88	2.315	O					2.09
93.250	0.00	0.88	2.309	O					2.08
93.333	0.00	0.88	2.303	O					2.08
93.417	0.00	0.88	2.297	O					2.07
93.500	0.00	0.88	2.291	O					2.07
93.583	0.00	0.88	2.285	O					2.06
93.667	0.00	0.87	2.279	O					2.06
93.750	0.00	0.87	2.273	O					2.05
93.833	0.00	0.87	2.267	O					2.04
93.917	0.00	0.87	2.261	O					2.04
94.000	0.00	0.87	2.255	O					2.03
94.083	0.00	0.87	2.249	O					2.03
94.167	0.00	0.87	2.243	O					2.02
94.250	0.00	0.86	2.237	O					2.02
94.333	0.00	0.86	2.231	O					2.01

94.417	0.00	0.86	2.225	O					2.01
94.500	0.00	0.86	2.219	O					2.00
94.583	0.00	0.86	2.213	O					2.00
94.667	0.00	0.86	2.208	O					1.99
94.750	0.00	0.86	2.202	O					1.99
94.833	0.00	0.85	2.196	O					1.98
94.917	0.00	0.85	2.190	O					1.98
95.000	0.00	0.85	2.184	O					1.98
95.083	0.00	0.85	2.178	O					1.97
95.167	0.00	0.85	2.172	O					1.97
95.250	0.00	0.85	2.166	O					1.97
95.333	0.00	0.85	2.161	O					1.96
95.417	0.00	0.84	2.155	O					1.96
95.500	0.00	0.84	2.149	O					1.95
95.583	0.00	0.84	2.143	O					1.95
95.667	0.00	0.84	2.137	O					1.95
95.750	0.00	0.84	2.132	O					1.94
95.833	0.00	0.84	2.126	O					1.94
95.917	0.00	0.84	2.120	O					1.93
96.000	0.00	0.83	2.114	O					1.93
96.083	0.00	0.83	2.109	O					1.93
96.167	0.00	0.83	2.103	O					1.92
96.250	0.00	0.83	2.097	O					1.92
96.333	0.00	0.83	2.091	O					1.91
96.417	0.00	0.83	2.086	O					1.91
96.500	0.00	0.83	2.080	O					1.91
96.583	0.00	0.83	2.074	O					1.90
96.667	0.00	0.82	2.069	O					1.90
96.750	0.00	0.82	2.063	O					1.90
96.833	0.00	0.82	2.057	O					1.89
96.917	0.00	0.82	2.052	O					1.89
97.000	0.00	0.82	2.046	O					1.88
97.083	0.00	0.82	2.040	O					1.88
97.167	0.00	0.82	2.035	O					1.88
97.250	0.00	0.81	2.029	O					1.87
97.333	0.00	0.81	2.024	O					1.87
97.417	0.00	0.81	2.018	O					1.86
97.500	0.00	0.81	2.012	O					1.86
97.583	0.00	0.81	2.007	O					1.86
97.667	0.00	0.81	2.001	O					1.85
97.750	0.00	0.81	1.996	O					1.85
97.833	0.00	0.80	1.990	O					1.85
97.917	0.00	0.80	1.985	O					1.84
98.000	0.00	0.80	1.979	O					1.84
98.083	0.00	0.80	1.974	O					1.83
98.167	0.00	0.80	1.968	O					1.83
98.250	0.00	0.80	1.963	O					1.83
98.333	0.00	0.80	1.957	O					1.82
98.417	0.00	0.80	1.952	O					1.82
98.500	0.00	0.79	1.946	O					1.82
98.583	0.00	0.79	1.941	O					1.81
98.667	0.00	0.79	1.935	O					1.81
98.750	0.00	0.79	1.930	O					1.81
98.833	0.00	0.79	1.924	O					1.80
98.917	0.00	0.79	1.919	O					1.80
99.000	0.00	0.79	1.913	O					1.79
99.083	0.00	0.78	1.908	O					1.79
99.167	0.00	0.78	1.903	O					1.79
99.250	0.00	0.78	1.897	O					1.78
99.333	0.00	0.78	1.892	O					1.78
99.417	0.00	0.78	1.887	O					1.78
99.500	0.00	0.78	1.881	O					1.77
99.583	0.00	0.78	1.876	O					1.77
99.667	0.00	0.78	1.870	O					1.77
99.750	0.00	0.77	1.865	O					1.76
99.833	0.00	0.77	1.860	O					1.76
99.917	0.00	0.77	1.854	O					1.75
100.000	0.00	0.77	1.849	O					1.75
100.083	0.00	0.77	1.844	O					1.75
100.167	0.00	0.77	1.839	O					1.74
100.250	0.00	0.77	1.833	O					1.74

100.333	0.00	0.77	1.828	O					1.74
100.417	0.00	0.76	1.823	O					1.73
100.500	0.00	0.76	1.818	O					1.73
100.583	0.00	0.76	1.812	O					1.73
100.667	0.00	0.76	1.807	O					1.72
100.750	0.00	0.76	1.802	O					1.72
100.833	0.00	0.76	1.797	O					1.72
100.917	0.00	0.76	1.791	O					1.71
101.000	0.00	0.75	1.786	O					1.71
101.083	0.00	0.75	1.781	O					1.70
101.167	0.00	0.75	1.776	O					1.70
101.250	0.00	0.75	1.771	O					1.70
101.333	0.00	0.75	1.765	O					1.69
101.417	0.00	0.75	1.760	O					1.69
101.500	0.00	0.75	1.755	O					1.69
101.583	0.00	0.75	1.750	O					1.68
101.667	0.00	0.74	1.745	O					1.68
101.750	0.00	0.74	1.740	O					1.68
101.833	0.00	0.74	1.735	O					1.67
101.917	0.00	0.74	1.729	O					1.67
102.000	0.00	0.74	1.724	O					1.67
102.083	0.00	0.74	1.719	O					1.66
102.167	0.00	0.74	1.714	O					1.66
102.250	0.00	0.74	1.709	O					1.66
102.333	0.00	0.73	1.704	O					1.65
102.417	0.00	0.73	1.699	O					1.65
102.500	0.00	0.73	1.694	O					1.65
102.583	0.00	0.73	1.689	O					1.64
102.667	0.00	0.73	1.684	O					1.64
102.750	0.00	0.73	1.679	O					1.64
102.833	0.00	0.73	1.674	O					1.63
102.917	0.00	0.73	1.669	O					1.63
103.000	0.00	0.73	1.664	O					1.63
103.083	0.00	0.72	1.659	O					1.62
103.167	0.00	0.72	1.654	O					1.62
103.250	0.00	0.72	1.649	O					1.62
103.333	0.00	0.72	1.644	O					1.61
103.417	0.00	0.72	1.639	O					1.61
103.500	0.00	0.72	1.634	O					1.61
103.583	0.00	0.72	1.629	O					1.60
103.667	0.00	0.72	1.624	O					1.60
103.750	0.00	0.71	1.619	O					1.60
103.833	0.00	0.71	1.614	O					1.59
103.917	0.00	0.71	1.609	O					1.59
104.000	0.00	0.71	1.605	O					1.59
104.083	0.00	0.71	1.600	O					1.58
104.167	0.00	0.71	1.595	O					1.58
104.250	0.00	0.71	1.590	O					1.58
104.333	0.00	0.71	1.585	O					1.57
104.417	0.00	0.70	1.580	O					1.57
104.500	0.00	0.70	1.575	O					1.57
104.583	0.00	0.70	1.570	O					1.56
104.667	0.00	0.70	1.566	O					1.56
104.750	0.00	0.70	1.561	O					1.56
104.833	0.00	0.70	1.556	O					1.55
104.917	0.00	0.70	1.551	O					1.55
105.000	0.00	0.70	1.546	O					1.55
105.083	0.00	0.70	1.542	O					1.54
105.167	0.00	0.69	1.537	O					1.54
105.250	0.00	0.69	1.532	O					1.54
105.333	0.00	0.69	1.527	O					1.53
105.417	0.00	0.69	1.523	O					1.53
105.500	0.00	0.69	1.518	O					1.53
105.583	0.00	0.69	1.513	O					1.52
105.667	0.00	0.69	1.508	O					1.52
105.750	0.00	0.69	1.504	O					1.52
105.833	0.00	0.68	1.499	O					1.51
105.917	0.00	0.68	1.494	O					1.51
106.000	0.00	0.68	1.489	O					1.51
106.083	0.00	0.68	1.485	O					1.50
106.167	0.00	0.68	1.480	O					1.50

106.250	0.00	0.68	1.475	O					1.50
106.333	0.00	0.68	1.471	O					1.49
106.417	0.00	0.68	1.466	O					1.49
106.500	0.00	0.68	1.461	O					1.49
106.583	0.00	0.67	1.457	O					1.49
106.667	0.00	0.67	1.452	O					1.48
106.750	0.00	0.67	1.447	O					1.48
106.833	0.00	0.67	1.443	O					1.48
106.917	0.00	0.67	1.438	O					1.47
107.000	0.00	0.67	1.434	O					1.47
107.083	0.00	0.67	1.429	O					1.47
107.167	0.00	0.67	1.424	O					1.46
107.250	0.00	0.67	1.420	O					1.46
107.333	0.00	0.66	1.415	O					1.46
107.417	0.00	0.66	1.411	O					1.45
107.500	0.00	0.66	1.406	O					1.45
107.583	0.00	0.66	1.401	O					1.45
107.667	0.00	0.66	1.397	O					1.44
107.750	0.00	0.66	1.392	O					1.44
107.833	0.00	0.66	1.388	O					1.44
107.917	0.00	0.66	1.383	O					1.44
108.000	0.00	0.66	1.379	O					1.43
108.083	0.00	0.65	1.374	O					1.43
108.167	0.00	0.65	1.370	O					1.43
108.250	0.00	0.65	1.365	O					1.42
108.333	0.00	0.65	1.361	O					1.42
108.417	0.00	0.65	1.356	O					1.42
108.500	0.00	0.65	1.352	O					1.41
108.583	0.00	0.65	1.347	O					1.41
108.667	0.00	0.65	1.343	O					1.41
108.750	0.00	0.65	1.338	O					1.41
108.833	0.00	0.64	1.334	O					1.40
108.917	0.00	0.64	1.330	O					1.40
109.000	0.00	0.64	1.325	O					1.40
109.083	0.00	0.64	1.321	O					1.39
109.167	0.00	0.64	1.316	O					1.39
109.250	0.00	0.64	1.312	O					1.39
109.333	0.00	0.64	1.308	O					1.38
109.417	0.00	0.64	1.303	O					1.38
109.500	0.00	0.64	1.299	O					1.38
109.583	0.00	0.64	1.294	O					1.38
109.667	0.00	0.63	1.290	O					1.37
109.750	0.00	0.63	1.286	O					1.37
109.833	0.00	0.63	1.281	O					1.37
109.917	0.00	0.63	1.277	O					1.36
110.000	0.00	0.63	1.273	O					1.36
110.083	0.00	0.63	1.268	O					1.36
110.167	0.00	0.63	1.264	O					1.35
110.250	0.00	0.63	1.260	O					1.35
110.333	0.00	0.63	1.255	O					1.35
110.417	0.00	0.62	1.251	O					1.35
110.500	0.00	0.62	1.247	O					1.34
110.583	0.00	0.62	1.242	O					1.34
110.667	0.00	0.62	1.238	O					1.34
110.750	0.00	0.62	1.234	O					1.33
110.833	0.00	0.62	1.230	O					1.33
110.917	0.00	0.62	1.225	O					1.33
111.000	0.00	0.62	1.221	O					1.33
111.083	0.00	0.62	1.217	O					1.32
111.167	0.00	0.62	1.213	O					1.32
111.250	0.00	0.61	1.208	O					1.32
111.333	0.00	0.61	1.204	O					1.31
111.417	0.00	0.61	1.200	O					1.31
111.500	0.00	0.61	1.196	O					1.31
111.583	0.00	0.61	1.191	O					1.31
111.667	0.00	0.61	1.187	O					1.30
111.750	0.00	0.61	1.183	O					1.30
111.833	0.00	0.61	1.179	O					1.30
111.917	0.00	0.61	1.175	O					1.29
112.000	0.00	0.61	1.171	O					1.29
112.083	0.00	0.60	1.166	O					1.29

112.167	0.00	0.60	1.162	O				1.29
112.250	0.00	0.60	1.158	O				1.28
112.333	0.00	0.60	1.154	O				1.28
112.417	0.00	0.60	1.150	O				1.28
112.500	0.00	0.60	1.146	O				1.27
112.583	0.00	0.60	1.142	O				1.27
112.667	0.00	0.60	1.137	O				1.27
112.750	0.00	0.60	1.133	O				1.27
112.833	0.00	0.59	1.129	O				1.26
112.917	0.00	0.59	1.125	O				1.26
113.000	0.00	0.59	1.121	O				1.26
113.083	0.00	0.59	1.117	O				1.26
113.167	0.00	0.59	1.113	O				1.25
113.250	0.00	0.59	1.109	O				1.25
113.333	0.00	0.59	1.105	O				1.25
113.417	0.00	0.59	1.101	O				1.24
113.500	0.00	0.59	1.097	O				1.24
113.583	0.00	0.59	1.093	O				1.24
113.667	0.00	0.59	1.089	O				1.24
113.750	0.00	0.58	1.085	O				1.23
113.833	0.00	0.58	1.081	O				1.23
113.917	0.00	0.58	1.077	O				1.23
114.000	0.00	0.58	1.073	O				1.23
114.083	0.00	0.58	1.069	O				1.22
114.167	0.00	0.58	1.065	O				1.22
114.250	0.00	0.58	1.061	O				1.22
114.333	0.00	0.58	1.057	O				1.21
114.417	0.00	0.58	1.053	O				1.21
114.500	0.00	0.58	1.049	O				1.21
114.583	0.00	0.57	1.045	O				1.21
114.667	0.00	0.57	1.041	O				1.20
114.750	0.00	0.57	1.037	O				1.20
114.833	0.00	0.57	1.033	O				1.20
114.917	0.00	0.57	1.029	O				1.20
115.000	0.00	0.57	1.025	O				1.19
115.083	0.00	0.57	1.021	O				1.19
115.167	0.00	0.57	1.017	O				1.19
115.250	0.00	0.57	1.013	O				1.19
115.333	0.00	0.57	1.009	O				1.18
115.417	0.00	0.56	1.005	O				1.18
115.500	0.00	0.56	1.002	O				1.18
115.583	0.00	0.56	0.998	O				1.17
115.667	0.00	0.56	0.994	O				1.17
115.750	0.00	0.56	0.990	O				1.17
115.833	0.00	0.56	0.986	O				1.17
115.917	0.00	0.56	0.982	O				1.16
116.000	0.00	0.56	0.978	O				1.16
116.083	0.00	0.56	0.975	O				1.16
116.167	0.00	0.56	0.971	O				1.16
116.250	0.00	0.56	0.967	O				1.15
116.333	0.00	0.55	0.963	O				1.15
116.417	0.00	0.55	0.959	O				1.15
116.500	0.00	0.55	0.955	O				1.15
116.583	0.00	0.55	0.952	O				1.14
116.667	0.00	0.55	0.948	O				1.14
116.750	0.00	0.55	0.944	O				1.14
116.833	0.00	0.55	0.940	O				1.14
116.917	0.00	0.55	0.936	O				1.13
117.000	0.00	0.55	0.933	O				1.13
117.083	0.00	0.55	0.929	O				1.13
117.167	0.00	0.55	0.925	O				1.13
117.250	0.00	0.54	0.921	O				1.12
117.333	0.00	0.54	0.918	O				1.12
117.417	0.00	0.54	0.914	O				1.12
117.500	0.00	0.54	0.910	O				1.12
117.583	0.00	0.54	0.906	O				1.11
117.667	0.00	0.54	0.903	O				1.11
117.750	0.00	0.54	0.899	O				1.11
117.833	0.00	0.54	0.895	O				1.11
117.917	0.00	0.54	0.892	O				1.10
118.000	0.00	0.54	0.888	O				1.10

118.083	0.00	0.54	0.884	O					1.10
118.167	0.00	0.53	0.881	O					1.10
118.250	0.00	0.53	0.877	O					1.09
118.333	0.00	0.53	0.873	O					1.09
118.417	0.00	0.53	0.870	O					1.09
118.500	0.00	0.53	0.866	O					1.09
118.583	0.00	0.53	0.862	O					1.08
118.667	0.00	0.53	0.859	O					1.08
118.750	0.00	0.53	0.855	O					1.08
118.833	0.00	0.53	0.851	O					1.08
118.917	0.00	0.53	0.848	O					1.07
119.000	0.00	0.53	0.844	O					1.07
119.083	0.00	0.52	0.840	O					1.07
119.167	0.00	0.52	0.837	O					1.07
119.250	0.00	0.52	0.833	O					1.06
119.333	0.00	0.52	0.830	O					1.06
119.417	0.00	0.52	0.826	O					1.06
119.500	0.00	0.52	0.822	O					1.06
119.583	0.00	0.52	0.819	O					1.05
119.667	0.00	0.52	0.815	O					1.05
119.750	0.00	0.52	0.812	O					1.05
119.833	0.00	0.52	0.808	O					1.05
119.917	0.00	0.52	0.805	O					1.04
120.000	0.00	0.52	0.801	O					1.04
120.083	0.00	0.51	0.797	O					1.04
120.167	0.00	0.51	0.794	O					1.04
120.250	0.00	0.51	0.790	O					1.03
120.333	0.00	0.51	0.787	O					1.03
120.417	0.00	0.51	0.783	O					1.03
120.500	0.00	0.51	0.780	O					1.03
120.583	0.00	0.51	0.776	O					1.03
120.667	0.00	0.51	0.773	O					1.02
120.750	0.00	0.51	0.769	O					1.02
120.833	0.00	0.51	0.766	O					1.02
120.917	0.00	0.51	0.762	O					1.02
121.000	0.00	0.50	0.759	O					1.01
121.083	0.00	0.50	0.755	O					1.01
121.167	0.00	0.50	0.752	O					1.01
121.250	0.00	0.50	0.748	O					1.01
121.333	0.00	0.50	0.745	O					1.00
121.417	0.00	0.50	0.742	O					1.00
121.500	0.00	0.50	0.738	O					1.00
121.583	0.00	0.50	0.735	O					0.99
121.667	0.00	0.49	0.731	O					0.99
121.750	0.00	0.49	0.728	O					0.98
121.833	0.00	0.49	0.724	O					0.98
121.917	0.00	0.49	0.721	O					0.98
122.000	0.00	0.49	0.718	O					0.97
122.083	0.00	0.48	0.714	O					0.97
122.167	0.00	0.48	0.711	O					0.96
122.250	0.00	0.48	0.708	O					0.96
122.333	0.00	0.48	0.705	O					0.95
122.417	0.00	0.47	0.701	O					0.95
122.500	0.00	0.47	0.698	O					0.94
122.583	0.00	0.47	0.695	O					0.94
122.667	0.00	0.47	0.692	O					0.94
122.750	0.00	0.47	0.688	O					0.93
122.833	0.00	0.46	0.685	O					0.93
122.917	0.00	0.46	0.682	O					0.92
123.000	0.00	0.46	0.679	O					0.92
123.083	0.00	0.46	0.676	O					0.91
123.167	0.00	0.45	0.672	O					0.91
123.250	0.00	0.45	0.669	O					0.91
123.333	0.00	0.45	0.666	O					0.90
123.417	0.00	0.45	0.663	O					0.90
123.500	0.00	0.45	0.660	O					0.89
123.583	0.00	0.44	0.657	O					0.89
123.667	0.00	0.44	0.654	O					0.88
123.750	0.00	0.44	0.651	O					0.88
123.833	0.00	0.44	0.648	O					0.88
123.917	0.00	0.44	0.645	O					0.87

124.000	0.00	0.43	0.642	O				0.87
124.083	0.00	0.43	0.639	O				0.86
124.167	0.00	0.43	0.636	O				0.86
124.250	0.00	0.43	0.633	O				0.86
124.333	0.00	0.43	0.630	O				0.85
124.417	0.00	0.42	0.627	O				0.85
124.500	0.00	0.42	0.624	O				0.84
124.583	0.00	0.42	0.621	O				0.84
124.667	0.00	0.42	0.618	O				0.84
124.750	0.00	0.42	0.615	O				0.83
124.833	0.00	0.41	0.613	O				0.83
124.917	0.00	0.41	0.610	O				0.83
125.000	0.00	0.41	0.607	O				0.82
125.083	0.00	0.41	0.604	O				0.82
125.167	0.00	0.41	0.601	O				0.81
125.250	0.00	0.40	0.599	O				0.81
125.333	0.00	0.40	0.596	O				0.81
125.417	0.00	0.40	0.593	O				0.80
125.500	0.00	0.40	0.590	O				0.80
125.583	0.00	0.40	0.587	O				0.79
125.667	0.00	0.40	0.585	O				0.79
125.750	0.00	0.39	0.582	O				0.79
125.833	0.00	0.39	0.579	O				0.78
125.917	0.00	0.39	0.577	O				0.78
126.000	0.00	0.39	0.574	O				0.78
126.083	0.00	0.39	0.571	O				0.77
126.167	0.00	0.38	0.569	O				0.77
126.250	0.00	0.38	0.566	O				0.77
126.333	0.00	0.38	0.563	O				0.76
126.417	0.00	0.38	0.561	O				0.76
126.500	0.00	0.38	0.558	O				0.76
126.583	0.00	0.38	0.556	O				0.75
126.667	0.00	0.37	0.553	O				0.75
126.750	0.00	0.37	0.550	O				0.74
126.833	0.00	0.37	0.548	O				0.74
126.917	0.00	0.37	0.545	O				0.74
127.000	0.00	0.37	0.543	O				0.73
127.083	0.00	0.37	0.540	O				0.73
127.167	0.00	0.36	0.538	O				0.73
127.250	0.00	0.36	0.535	O				0.72
127.333	0.00	0.36	0.533	O				0.72
127.417	0.00	0.36	0.530	O				0.72
127.500	0.00	0.36	0.528	O				0.71
127.583	0.00	0.36	0.525	O				0.71
127.667	0.00	0.35	0.523	O				0.71
127.750	0.00	0.35	0.520	O				0.70
127.833	0.00	0.35	0.518	O				0.70
127.917	0.00	0.35	0.516	O				0.70
128.000	0.00	0.35	0.513	O				0.69
128.083	0.00	0.35	0.511	O				0.69
128.167	0.00	0.34	0.508	O				0.69
128.250	0.00	0.34	0.506	O				0.68
128.333	0.00	0.34	0.504	O				0.68
128.417	0.00	0.34	0.501	O				0.68
128.500	0.00	0.34	0.499	O				0.68
128.583	0.00	0.34	0.497	O				0.67
128.667	0.00	0.33	0.494	O				0.67
128.750	0.00	0.33	0.492	O				0.67
128.833	0.00	0.33	0.490	O				0.66
128.917	0.00	0.33	0.488	O				0.66
129.000	0.00	0.33	0.485	O				0.66
129.083	0.00	0.33	0.483	O				0.65
129.167	0.00	0.33	0.481	O				0.65
129.250	0.00	0.32	0.479	O				0.65
129.333	0.00	0.32	0.476	O				0.64
129.417	0.00	0.32	0.474	O				0.64
129.500	0.00	0.32	0.472	O				0.64
129.583	0.00	0.32	0.470	O				0.64
129.667	0.00	0.32	0.468	O				0.63
129.750	0.00	0.31	0.465	O				0.63
129.833	0.00	0.31	0.463	O				0.63

129.917	0.00	0.31	0.461	O					0.62
130.000	0.00	0.31	0.459	O					0.62
130.083	0.00	0.31	0.457	O					0.62
130.167	0.00	0.31	0.455	O					0.62
130.250	0.00	0.31	0.453	O					0.61
130.333	0.00	0.30	0.450	O					0.61
130.417	0.00	0.30	0.448	O					0.61
130.500	0.00	0.30	0.446	O					0.60
130.583	0.00	0.30	0.444	O					0.60
130.667	0.00	0.30	0.442	O					0.60
130.750	0.00	0.30	0.440	O					0.60
130.833	0.00	0.30	0.438	O					0.59
130.917	0.00	0.29	0.436	O					0.59
131.000	0.00	0.29	0.434	O					0.59
131.083	0.00	0.29	0.432	O					0.58
131.167	0.00	0.29	0.430	O					0.58
131.250	0.00	0.29	0.428	O					0.58
131.333	0.00	0.29	0.426	O					0.58
131.417	0.00	0.29	0.424	O					0.57
131.500	0.00	0.29	0.422	O					0.57
131.583	0.00	0.28	0.420	O					0.57
131.667	0.00	0.28	0.418	O					0.57
131.750	0.00	0.28	0.416	O					0.56
131.833	0.00	0.28	0.414	O					0.56
131.917	0.00	0.28	0.412	O					0.56
132.000	0.00	0.28	0.410	O					0.56
132.083	0.00	0.28	0.408	O					0.55
132.167	0.00	0.28	0.407	O					0.55
132.250	0.00	0.27	0.405	O					0.55
132.333	0.00	0.27	0.403	O					0.55
132.417	0.00	0.27	0.401	O					0.54
132.500	0.00	0.27	0.399	O					0.54
132.583	0.00	0.27	0.397	O					0.54
132.667	0.00	0.27	0.395	O					0.53
132.750	0.00	0.27	0.393	O					0.53
132.833	0.00	0.26	0.392	O					0.53
132.917	0.00	0.26	0.390	O					0.53
133.000	0.00	0.26	0.388	O					0.53
133.083	0.00	0.26	0.386	O					0.52
133.167	0.00	0.26	0.384	O					0.52
133.250	0.00	0.26	0.383	O					0.52
133.333	0.00	0.26	0.381	O					0.52
133.417	0.00	0.26	0.379	O					0.51
133.500	0.00	0.26	0.377	O					0.51
133.583	0.00	0.25	0.376	O					0.51
133.667	0.00	0.25	0.374	O					0.51
133.750	0.00	0.25	0.372	O					0.50
133.833	0.00	0.25	0.370	O					0.50
133.917	0.00	0.25	0.369	O					0.50
134.000	0.00	0.25	0.367	O					0.50
134.083	0.00	0.25	0.365	O					0.49
134.167	0.00	0.25	0.364	O					0.49
134.250	0.00	0.24	0.362	O					0.49
134.333	0.00	0.24	0.360	O					0.49
134.417	0.00	0.24	0.358	O					0.49
134.500	0.00	0.24	0.357	O					0.48
134.583	0.00	0.24	0.355	O					0.48
134.667	0.00	0.24	0.353	O					0.48
134.750	0.00	0.24	0.352	O					0.48
134.833	0.00	0.24	0.350	O					0.47
134.917	0.00	0.24	0.349	O					0.47
135.000	0.00	0.23	0.347	O					0.47
135.083	0.00	0.23	0.345	O					0.47
135.167	0.00	0.23	0.344	O					0.47
135.250	0.00	0.23	0.342	O					0.46
135.333	0.00	0.23	0.341	O					0.46
135.417	0.00	0.23	0.339	O					0.46
135.500	0.00	0.23	0.337	O					0.46
135.583	0.00	0.23	0.336	O					0.45
135.667	0.00	0.23	0.334	O					0.45
135.750	0.00	0.23	0.333	O					0.45

135.833	0.00	0.22	0.331	O				0.45
135.917	0.00	0.22	0.330	O				0.45
136.000	0.00	0.22	0.328	O				0.44
136.083	0.00	0.22	0.327	O				0.44
136.167	0.00	0.22	0.325	O				0.44
136.250	0.00	0.22	0.324	O				0.44
136.333	0.00	0.22	0.322	O				0.44
136.417	0.00	0.22	0.321	O				0.43
136.500	0.00	0.22	0.319	O				0.43
136.583	0.00	0.21	0.318	O				0.43
136.667	0.00	0.21	0.316	O				0.43
136.750	0.00	0.21	0.315	O				0.43
136.833	0.00	0.21	0.313	O				0.42
136.917	0.00	0.21	0.312	O				0.42
137.000	0.00	0.21	0.310	O				0.42
137.083	0.00	0.21	0.309	O				0.42
137.167	0.00	0.21	0.307	O				0.42
137.250	0.00	0.21	0.306	O				0.41
137.333	0.00	0.21	0.305	O				0.41
137.417	0.00	0.21	0.303	O				0.41
137.500	0.00	0.20	0.302	O				0.41
137.583	0.00	0.20	0.300	O				0.41
137.667	0.00	0.20	0.299	O				0.40
137.750	0.00	0.20	0.298	O				0.40
137.833	0.00	0.20	0.296	O				0.40
137.917	0.00	0.20	0.295	O				0.40
138.000	0.00	0.20	0.293	O				0.40
138.083	0.00	0.20	0.292	O				0.40
138.167	0.00	0.20	0.291	O				0.39
138.250	0.00	0.20	0.289	O				0.39
138.333	0.00	0.19	0.288	O				0.39
138.417	0.00	0.19	0.287	O				0.39
138.500	0.00	0.19	0.285	O				0.39
138.583	0.00	0.19	0.284	O				0.38
138.667	0.00	0.19	0.283	O				0.38
138.750	0.00	0.19	0.281	O				0.38
138.833	0.00	0.19	0.280	O				0.38
138.917	0.00	0.19	0.279	O				0.38
139.000	0.00	0.19	0.277	O				0.38
139.083	0.00	0.19	0.276	O				0.37
139.167	0.00	0.19	0.275	O				0.37
139.250	0.00	0.19	0.274	O				0.37
139.333	0.00	0.18	0.272	O				0.37
139.417	0.00	0.18	0.271	O				0.37
139.500	0.00	0.18	0.270	O				0.37
139.583	0.00	0.18	0.269	O				0.36
139.667	0.00	0.18	0.267	O				0.36
139.750	0.00	0.18	0.266	O				0.36
139.833	0.00	0.18	0.265	O				0.36
139.917	0.00	0.18	0.264	O				0.36
140.000	0.00	0.18	0.262	O				0.36
140.083	0.00	0.18	0.261	O				0.35
140.167	0.00	0.18	0.260	O				0.35
140.250	0.00	0.18	0.259	O				0.35
140.333	0.00	0.17	0.258	O				0.35
140.417	0.00	0.17	0.256	O				0.35
140.500	0.00	0.17	0.255	O				0.35
140.583	0.00	0.17	0.254	O				0.34
140.667	0.00	0.17	0.253	O				0.34
140.750	0.00	0.17	0.252	O				0.34
140.833	0.00	0.17	0.250	O				0.34
140.917	0.00	0.17	0.249	O				0.34
141.000	0.00	0.17	0.248	O				0.34
141.083	0.00	0.17	0.247	O				0.33
141.167	0.00	0.17	0.246	O				0.33
141.250	0.00	0.17	0.245	O				0.33
141.333	0.00	0.16	0.243	O				0.33
141.417	0.00	0.16	0.242	O				0.33
141.500	0.00	0.16	0.241	O				0.33
141.583	0.00	0.16	0.240	O				0.32
141.667	0.00	0.16	0.239	O				0.32

141.750	0.00	0.16	0.238	O				0.32
141.833	0.00	0.16	0.237	O				0.32
141.917	0.00	0.16	0.236	O				0.32
142.000	0.00	0.16	0.235	O				0.32
142.083	0.00	0.16	0.233	O				0.32
142.167	0.00	0.16	0.232	O				0.31
142.250	0.00	0.16	0.231	O				0.31
142.333	0.00	0.16	0.230	O				0.31
142.417	0.00	0.16	0.229	O				0.31
142.500	0.00	0.15	0.228	O				0.31
142.583	0.00	0.15	0.227	O				0.31
142.667	0.00	0.15	0.226	O				0.31
142.750	0.00	0.15	0.225	O				0.30
142.833	0.00	0.15	0.224	O				0.30
142.917	0.00	0.15	0.223	O				0.30
143.000	0.00	0.15	0.222	O				0.30
143.083	0.00	0.15	0.221	O				0.30
143.167	0.00	0.15	0.220	O				0.30
143.250	0.00	0.15	0.219	O				0.30
143.333	0.00	0.15	0.218	O				0.29
143.417	0.00	0.15	0.217	O				0.29
143.500	0.00	0.15	0.216	O				0.29
143.583	0.00	0.15	0.215	O				0.29
143.667	0.00	0.14	0.214	O				0.29
143.750	0.00	0.14	0.213	O				0.29
143.833	0.00	0.14	0.212	O				0.29
143.917	0.00	0.14	0.211	O				0.29
144.000	0.00	0.14	0.210	O				0.28
144.083	0.00	0.14	0.209	O				0.28
144.167	0.00	0.14	0.208	O				0.28
144.250	0.00	0.14	0.207	O				0.28
144.333	0.00	0.14	0.206	O				0.28
144.417	0.00	0.14	0.205	O				0.28
144.500	0.00	0.14	0.204	O				0.28
144.583	0.00	0.14	0.203	O				0.27
144.667	0.00	0.14	0.202	O				0.27
144.750	0.00	0.14	0.201	O				0.27
144.833	0.00	0.14	0.200	O				0.27
144.917	0.00	0.13	0.199	O				0.27
145.000	0.00	0.13	0.198	O				0.27
145.083	0.00	0.13	0.197	O				0.27
145.167	0.00	0.13	0.197	O				0.27
145.250	0.00	0.13	0.196	O				0.26
145.333	0.00	0.13	0.195	O				0.26
145.417	0.00	0.13	0.194	O				0.26
145.500	0.00	0.13	0.193	O				0.26
145.583	0.00	0.13	0.192	O				0.26
145.667	0.00	0.13	0.191	O				0.26
145.750	0.00	0.13	0.190	O				0.26
145.833	0.00	0.13	0.189	O				0.26
145.917	0.00	0.13	0.188	O				0.26
146.000	0.00	0.13	0.188	O				0.25
146.083	0.00	0.13	0.187	O				0.25
146.167	0.00	0.13	0.186	O				0.25
146.250	0.00	0.13	0.185	O				0.25
146.333	0.00	0.12	0.184	O				0.25
146.417	0.00	0.12	0.183	O				0.25
146.500	0.00	0.12	0.182	O				0.25
146.583	0.00	0.12	0.182	O				0.25
146.667	0.00	0.12	0.181	O				0.24
146.750	0.00	0.12	0.180	O				0.24
146.833	0.00	0.12	0.179	O				0.24
146.917	0.00	0.12	0.178	O				0.24
147.000	0.00	0.12	0.177	O				0.24
147.083	0.00	0.12	0.177	O				0.24
147.167	0.00	0.12	0.176	O				0.24
147.250	0.00	0.12	0.175	O				0.24
147.333	0.00	0.12	0.174	O				0.24
147.417	0.00	0.12	0.173	O				0.23
147.500	0.00	0.12	0.172	O				0.23
147.583	0.00	0.12	0.172	O				0.23

147.667	0.00	0.12	0.171	O	|	|	|	0.23
147.750	0.00	0.12	0.170	O	|	|	|	0.23
147.833	0.00	0.11	0.169	O	|	|	|	0.23
147.917	0.00	0.11	0.169	O	|	|	|	0.23
148.000	0.00	0.11	0.168	O	|	|	|	0.23
148.083	0.00	0.11	0.167	O	|	|	|	0.23
148.167	0.00	0.11	0.166	O	|	|	|	0.22
148.250	0.00	0.11	0.165	O	|	|	|	0.22
148.333	0.00	0.11	0.165	O	|	|	|	0.22
148.417	0.00	0.11	0.164	O	|	|	|	0.22
148.500	0.00	0.11	0.163	O	|	|	|	0.22
148.583	0.00	0.11	0.162	O	|	|	|	0.22
148.667	0.00	0.11	0.162	O	|	|	|	0.22
148.750	0.00	0.11	0.161	O	|	|	|	0.22
148.833	0.00	0.11	0.160	O	|	|	|	0.22
148.917	0.00	0.11	0.159	O	|	|	|	0.22
149.000	0.00	0.11	0.159	O	|	|	|	0.21
149.083	0.00	0.11	0.158	O	|	|	|	0.21
149.167	0.00	0.11	0.157	O	|	|	|	0.21
149.250	0.00	0.11	0.156	O	|	|	|	0.21
149.333	0.00	0.11	0.156	O	|	|	|	0.21
149.417	0.00	0.10	0.155	O	|	|	|	0.21
149.500	0.00	0.10	0.154	O	|	|	|	0.21
149.583	0.00	0.10	0.154	O	|	|	|	0.21
149.667	0.00	0.10	0.153	O	|	|	|	0.21
149.750	0.00	0.10	0.152	O	|	|	|	0.21
149.833	0.00	0.10	0.151	O	|	|	|	0.20
149.917	0.00	0.10	0.151	O	|	|	|	0.20
150.000	0.00	0.10	0.150	O	|	|	|	0.20
150.083	0.00	0.10	0.149	O	|	|	|	0.20
150.167	0.00	0.10	0.149	O	|	|	|	0.20
150.250	0.00	0.10	0.148	O	|	|	|	0.20
150.333	0.00	0.10	0.147	O	|	|	|	0.20
150.417	0.00	0.10	0.147	O	|	|	|	0.20
150.500	0.00	0.10	0.146	O	|	|	|	0.20
150.583	0.00	0.10	0.145	O	|	|	|	0.20
150.667	0.00	0.10	0.144	O	|	|	|	0.20
150.750	0.00	0.10	0.144	O	|	|	|	0.19
150.833	0.00	0.10	0.143	O	|	|	|	0.19
150.917	0.00	0.10	0.142	O	|	|	|	0.19
151.000	0.00	0.10	0.142	O	|	|	|	0.19
151.083	0.00	0.10	0.141	O	|	|	|	0.19
151.167	0.00	0.10	0.141	O	|	|	|	0.19
151.250	0.00	0.09	0.140	O	|	|	|	0.19
151.333	0.00	0.09	0.139	O	|	|	|	0.19
151.417	0.00	0.09	0.139	O	|	|	|	0.19
151.500	0.00	0.09	0.138	O	|	|	|	0.19
151.583	0.00	0.09	0.137	O	|	|	|	0.19
151.667	0.00	0.09	0.137	O	|	|	|	0.18
151.750	0.00	0.09	0.136	O	|	|	|	0.18
151.833	0.00	0.09	0.135	O	|	|	|	0.18
151.917	0.00	0.09	0.135	O	|	|	|	0.18
152.000	0.00	0.09	0.134	O	|	|	|	0.18
152.083	0.00	0.09	0.133	O	|	|	|	0.18
152.167	0.00	0.09	0.133	O	|	|	|	0.18
152.250	0.00	0.09	0.132	O	|	|	|	0.18
152.333	0.00	0.09	0.132	O	|	|	|	0.18
152.417	0.00	0.09	0.131	O	|	|	|	0.18
152.500	0.00	0.09	0.130	O	|	|	|	0.18
152.583	0.00	0.09	0.130	O	|	|	|	0.18
152.667	0.00	0.09	0.129	O	|	|	|	0.17
152.750	0.00	0.09	0.129	O	|	|	|	0.17
152.833	0.00	0.09	0.128	O	|	|	|	0.17
152.917	0.00	0.09	0.127	O	|	|	|	0.17
153.000	0.00	0.09	0.127	O	|	|	|	0.17
153.083	0.00	0.09	0.126	O	|	|	|	0.17
153.167	0.00	0.09	0.126	O	|	|	|	0.17
153.250	0.00	0.08	0.125	O	|	|	|	0.17
153.333	0.00	0.08	0.124	O	|	|	|	0.17
153.417	0.00	0.08	0.124	O	|	|	|	0.17
153.500	0.00	0.08	0.123	O	|	|	|	0.17

153.583	0.00	0.08	0.123	O	|	|	|	|	0.17
153.667	0.00	0.08	0.122	O	|	|	|	|	0.17
153.750	0.00	0.08	0.122	O	|	|	|	|	0.16
153.833	0.00	0.08	0.121	O	|	|	|	|	0.16
153.917	0.00	0.08	0.120	O	|	|	|	|	0.16
154.000	0.00	0.08	0.120	O	|	|	|	|	0.16
154.083	0.00	0.08	0.119	O	|	|	|	|	0.16
154.167	0.00	0.08	0.119	O	|	|	|	|	0.16
154.250	0.00	0.08	0.118	O	|	|	|	|	0.16
154.333	0.00	0.08	0.118	O	|	|	|	|	0.16
154.417	0.00	0.08	0.117	O	|	|	|	|	0.16
154.500	0.00	0.08	0.117	O	|	|	|	|	0.16
154.583	0.00	0.08	0.116	O	|	|	|	|	0.16
154.667	0.00	0.08	0.116	O	|	|	|	|	0.16
154.750	0.00	0.08	0.115	O	|	|	|	|	0.16
154.833	0.00	0.08	0.114	O	|	|	|	|	0.15
154.917	0.00	0.08	0.114	O	|	|	|	|	0.15
155.000	0.00	0.08	0.113	O	|	|	|	|	0.15
155.083	0.00	0.08	0.113	O	|	|	|	|	0.15
155.167	0.00	0.08	0.112	O	|	|	|	|	0.15
155.250	0.00	0.08	0.112	O	|	|	|	|	0.15
155.333	0.00	0.08	0.111	O	|	|	|	|	0.15
155.417	0.00	0.07	0.111	O	|	|	|	|	0.15
155.500	0.00	0.07	0.110	O	|	|	|	|	0.15
155.583	0.00	0.07	0.110	O	|	|	|	|	0.15
155.667	0.00	0.07	0.109	O	|	|	|	|	0.15
155.750	0.00	0.07	0.109	O	|	|	|	|	0.15
155.833	0.00	0.07	0.108	O	|	|	|	|	0.15
155.917	0.00	0.07	0.108	O	|	|	|	|	0.15
156.000	0.00	0.07	0.107	O	|	|	|	|	0.15
156.083	0.00	0.07	0.107	O	|	|	|	|	0.14
156.167	0.00	0.07	0.106	O	|	|	|	|	0.14
156.250	0.00	0.07	0.106	O	|	|	|	|	0.14
156.333	0.00	0.07	0.105	O	|	|	|	|	0.14
156.417	0.00	0.07	0.105	O	|	|	|	|	0.14
156.500	0.00	0.07	0.104	O	|	|	|	|	0.14
156.583	0.00	0.07	0.104	O	|	|	|	|	0.14
156.667	0.00	0.07	0.103	O	|	|	|	|	0.14
156.750	0.00	0.07	0.103	O	|	|	|	|	0.14
156.833	0.00	0.07	0.102	O	|	|	|	|	0.14
156.917	0.00	0.07	0.102	O	|	|	|	|	0.14
157.000	0.00	0.07	0.101	O	|	|	|	|	0.14
157.083	0.00	0.07	0.101	O	|	|	|	|	0.14
157.167	0.00	0.07	0.100	O	|	|	|	|	0.14
157.250	0.00	0.07	0.100	O	|	|	|	|	0.14
157.333	0.00	0.07	0.100	O	|	|	|	|	0.13
157.417	0.00	0.07	0.099	O	|	|	|	|	0.13
157.500	0.00	0.07	0.099	O	|	|	|	|	0.13
157.583	0.00	0.07	0.098	O	|	|	|	|	0.13
157.667	0.00	0.07	0.098	O	|	|	|	|	0.13
157.750	0.00	0.07	0.097	O	|	|	|	|	0.13
157.833	0.00	0.07	0.097	O	|	|	|	|	0.13
157.917	0.00	0.07	0.096	O	|	|	|	|	0.13
158.000	0.00	0.06	0.096	O	|	|	|	|	0.13
158.083	0.00	0.06	0.095	O	|	|	|	|	0.13
158.167	0.00	0.06	0.095	O	|	|	|	|	0.13
158.250	0.00	0.06	0.095	O	|	|	|	|	0.13
158.333	0.00	0.06	0.094	O	|	|	|	|	0.13
158.417	0.00	0.06	0.094	O	|	|	|	|	0.13
158.500	0.00	0.06	0.093	O	|	|	|	|	0.13
158.583	0.00	0.06	0.093	O	|	|	|	|	0.13
158.667	0.00	0.06	0.092	O	|	|	|	|	0.13
158.750	0.00	0.06	0.092	O	|	|	|	|	0.12
158.833	0.00	0.06	0.092	O	|	|	|	|	0.12
158.917	0.00	0.06	0.091	O	|	|	|	|	0.12
159.000	0.00	0.06	0.091	O	|	|	|	|	0.12
159.083	0.00	0.06	0.090	O	|	|	|	|	0.12
159.167	0.00	0.06	0.090	O	|	|	|	|	0.12
159.250	0.00	0.06	0.089	O	|	|	|	|	0.12
159.333	0.00	0.06	0.089	O	|	|	|	|	0.12
159.417	0.00	0.06	0.089	O	|	|	|	|	0.12

159.500	0.00	0.06	0.088	O					0.12
159.583	0.00	0.06	0.088	O					0.12
159.667	0.00	0.06	0.087	O					0.12
159.750	0.00	0.06	0.087	O					0.12
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159.917	0.00	0.06	0.086	O					0.12
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162.250	0.00	0.05	0.076	O					0.10
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162.417	0.00	0.05	0.075	O					0.10
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162.667	0.00	0.05	0.074	O					0.10
162.750	0.00	0.05	0.074	O					0.10
162.833	0.00	0.05	0.073	O					0.10
162.917	0.00	0.05	0.073	O					0.10
163.000	0.00	0.05	0.072	O					0.10
163.083	0.00	0.05	0.072	O					0.10
163.167	0.00	0.05	0.072	O					0.10
163.250	0.00	0.05	0.071	O					0.10
163.333	0.00	0.05	0.071	O					0.10
163.417	0.00	0.05	0.071	O					0.10
163.500	0.00	0.05	0.071	O					0.10
163.583	0.00	0.05	0.070	O					0.09
163.667	0.00	0.05	0.070	O					0.09
163.750	0.00	0.05	0.070	O					0.09
163.833	0.00	0.05	0.069	O					0.09
163.917	0.00	0.05	0.069	O					0.09
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164.083	0.00	0.05	0.068	O					0.09
164.167	0.00	0.05	0.068	O					0.09
164.250	0.00	0.05	0.068	O					0.09
164.333	0.00	0.05	0.067	O					0.09
164.417	0.00	0.05	0.067	O					0.09
164.500	0.00	0.05	0.067	O					0.09
164.583	0.00	0.04	0.066	O					0.09
164.667	0.00	0.04	0.066	O					0.09
164.750	0.00	0.04	0.066	O					0.09
164.833	0.00	0.04	0.065	O					0.09
164.917	0.00	0.04	0.065	O					0.09
165.000	0.00	0.04	0.065	O					0.09
165.083	0.00	0.04	0.065	O					0.09
165.167	0.00	0.04	0.064	O					0.09
165.250	0.00	0.04	0.064	O					0.09
165.333	0.00	0.04	0.064	O					0.09

165.417	0.00	0.04	0.063	O	|	|	|	|	0.09
165.500	0.00	0.04	0.063	O	|	|	|	|	0.09
165.583	0.00	0.04	0.063	O	|	|	|	|	0.08
165.667	0.00	0.04	0.062	O	|	|	|	|	0.08
165.750	0.00	0.04	0.062	O	|	|	|	|	0.08
165.833	0.00	0.04	0.062	O	|	|	|	|	0.08
165.917	0.00	0.04	0.062	O	|	|	|	|	0.08
166.000	0.00	0.04	0.061	O	|	|	|	|	0.08
166.083	0.00	0.04	0.061	O	|	|	|	|	0.08
166.167	0.00	0.04	0.061	O	|	|	|	|	0.08
166.250	0.00	0.04	0.060	O	|	|	|	|	0.08
166.333	0.00	0.04	0.060	O	|	|	|	|	0.08
166.417	0.00	0.04	0.060	O	|	|	|	|	0.08
166.500	0.00	0.04	0.060	O	|	|	|	|	0.08
166.583	0.00	0.04	0.059	O	|	|	|	|	0.08
166.667	0.00	0.04	0.059	O	|	|	|	|	0.08

Remaining water in basin = 0.06 (Ac.Ft)

**********HYDROGRAPH DATA**********

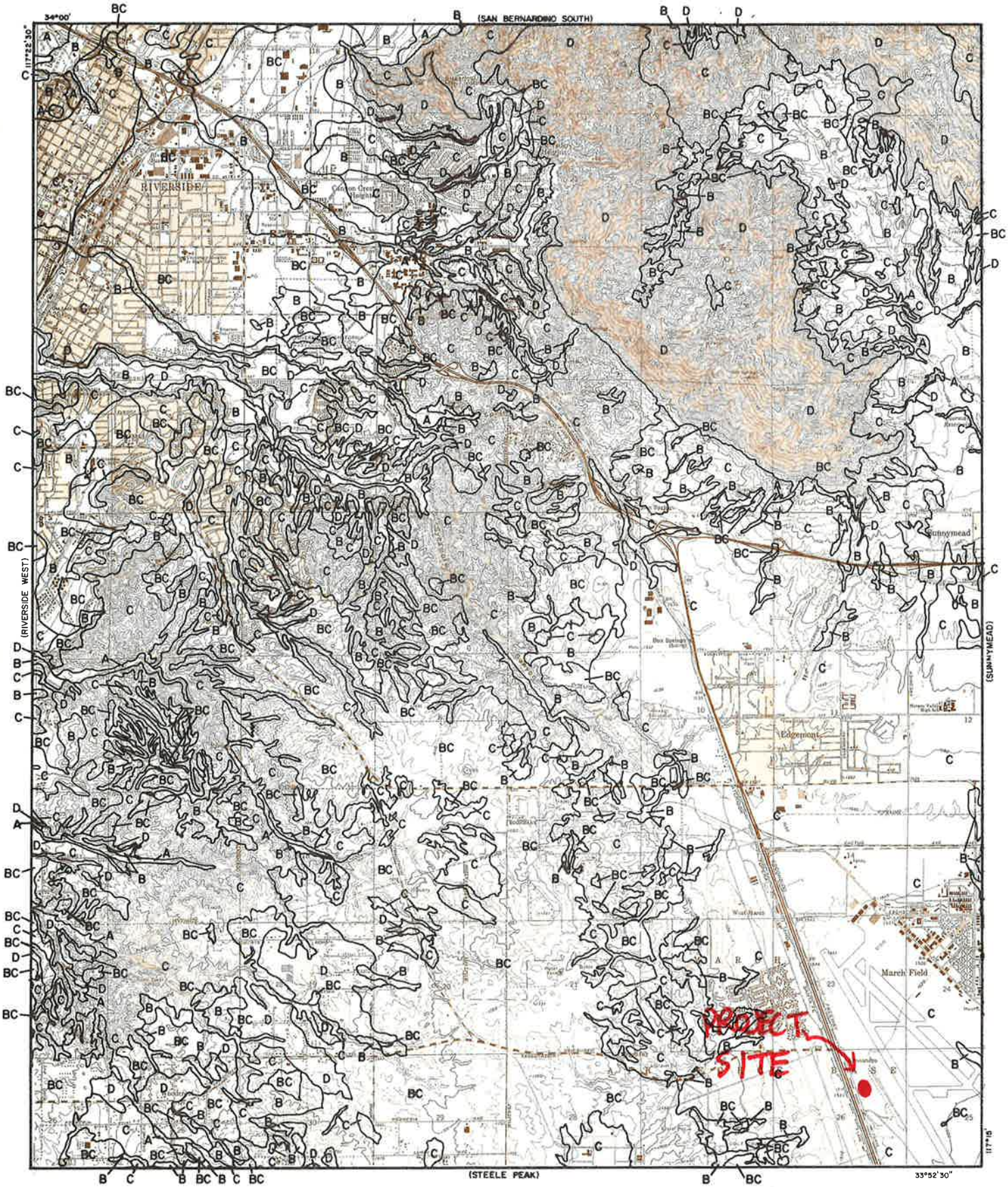
Number of intervals = 2001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 47.637 (CFS)
Total volume = 33.804 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

Appendix E
Soil Group Map and Isohyetal Map



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

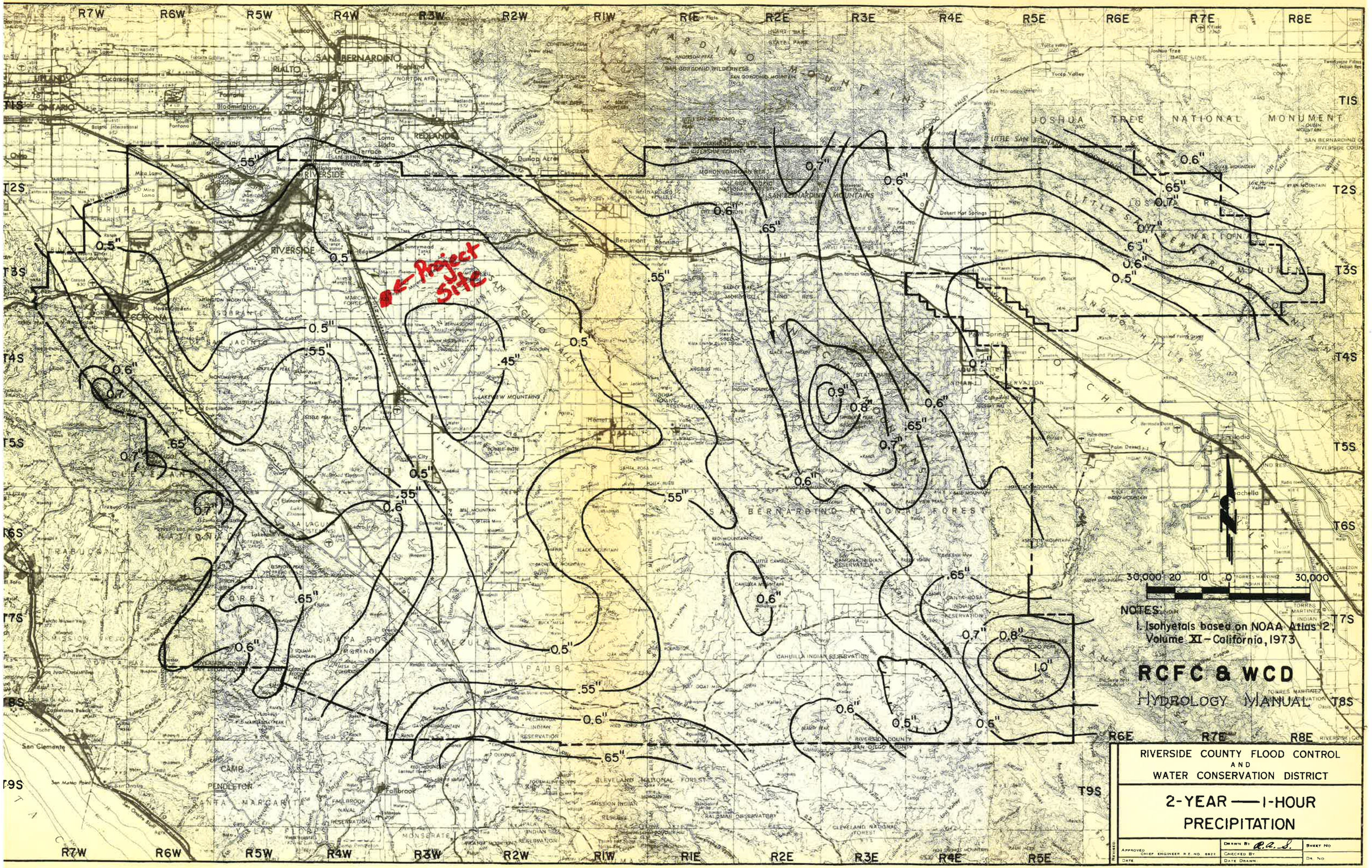
RCFC & WCD

HYDROLOGY MANUAL

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR RIVERSIDE-EAST

PLATE C-1.16


Project Site
.55"
0.5"
0.6"
0.7"
.65"
0.8"
0.9"
1.0"
.45"
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
30,000 20 10 0 30,000
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 1-HOUR PRECIPITATION
Drawn By: R.A.S.
Checked By:
Date Drawn:
Sheet No
Da No
Approved: Chief Engineer R.E. No. 6822
Date
Revised
PLATE D-4.3

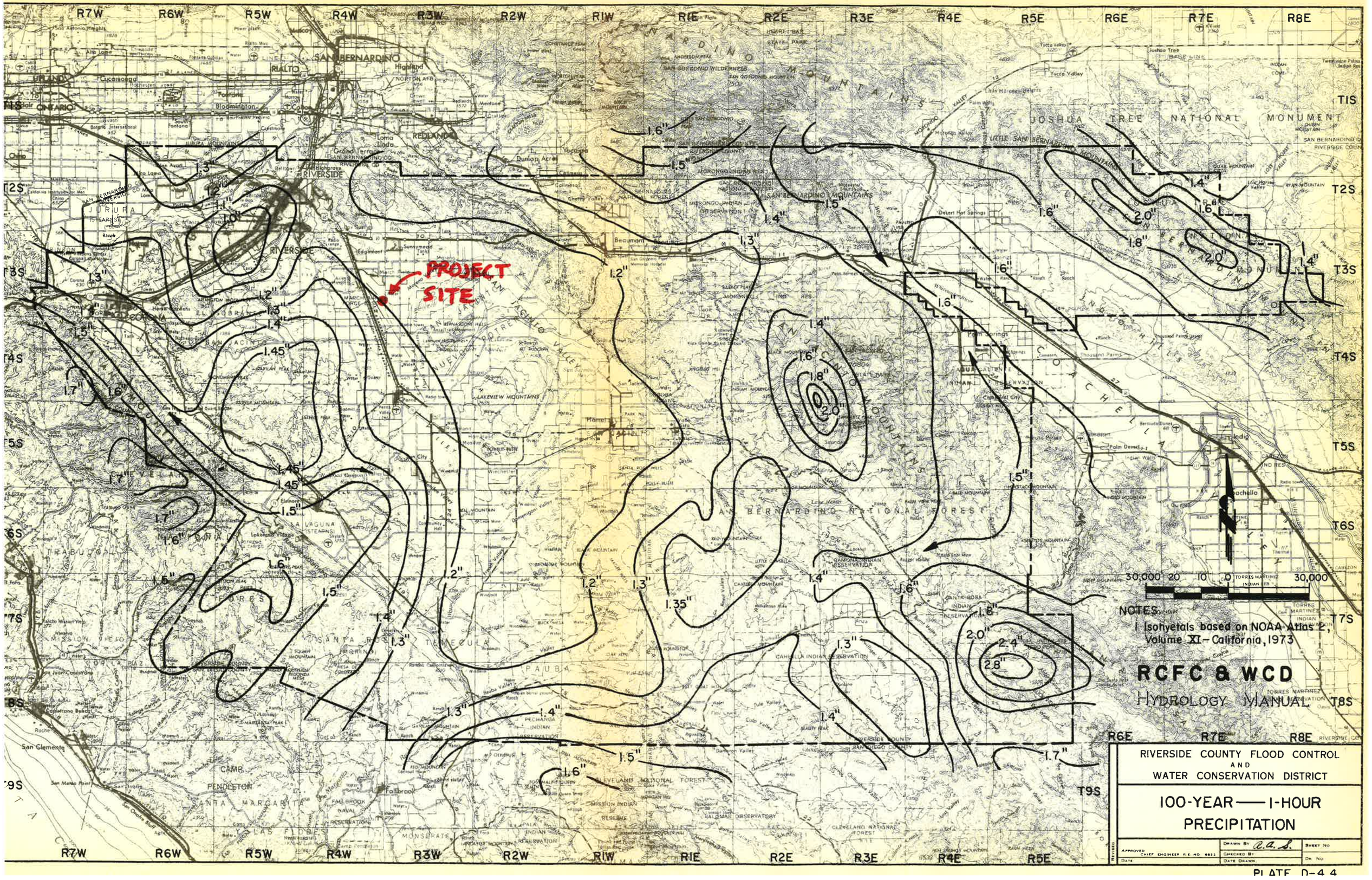
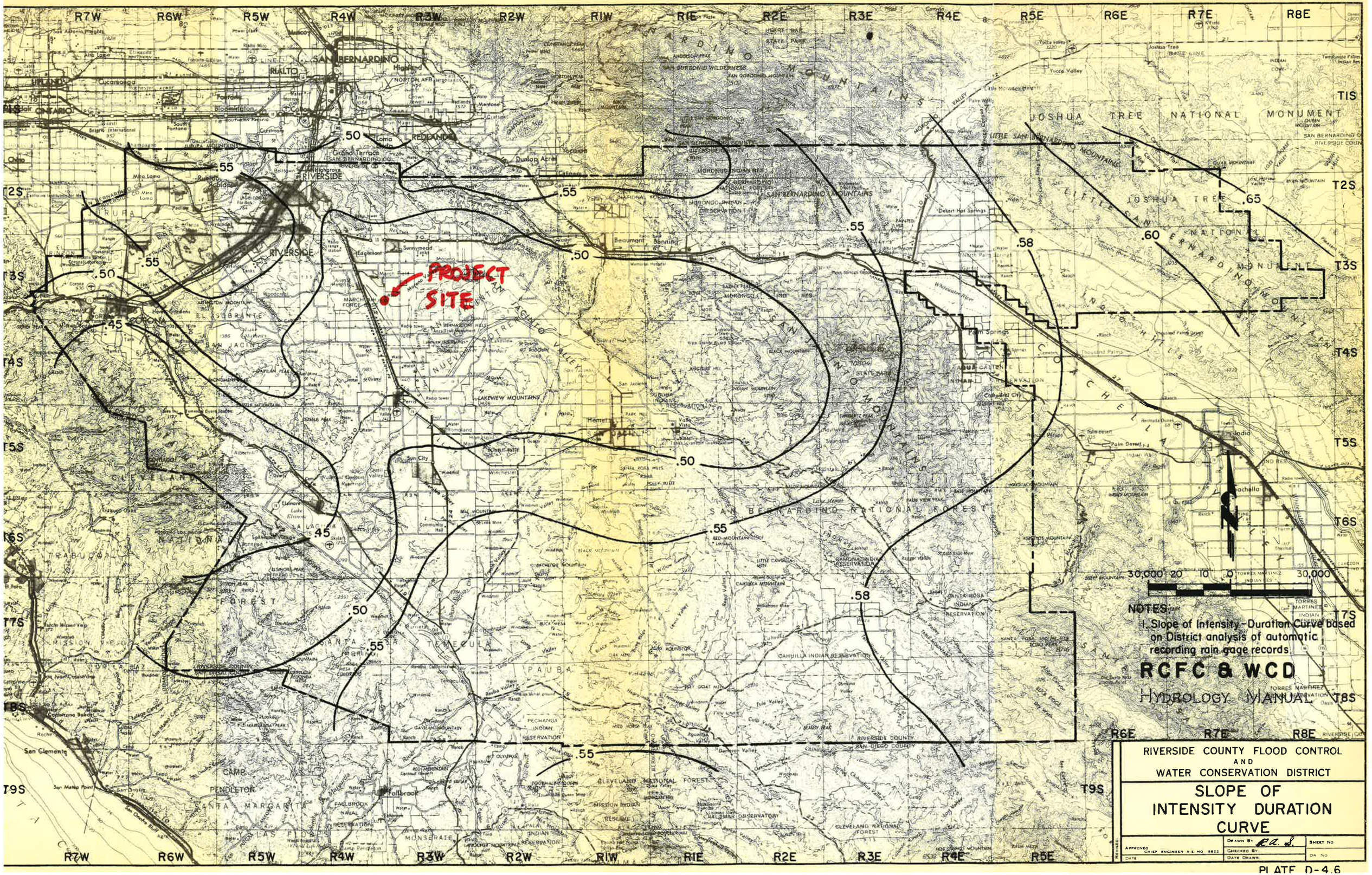

PROJECT SITE
1.0"
1.1"
1.2"
1.3"
1.4"
1.45"
1.5"
1.6"
1.7"
1.8"
2.0"
2.4"
2.8"
1.35"
R7W
R6W
R5W
R4W
R3W
R2W
R1W
R1E
R2E
R3E
R4E
R5E
R6E
R7E
R8E
T2S
T3S
T4S
T5S
T6S
T7S
T8S
T9S
SAN BERNARDINO MOUNTAINS
SAN JACINTO MOUNTAINS
SAN BERNARDINO NATIONAL FOREST
JOSHUA TREE NATIONAL MONUMENT
SAN JACINTO VALLEY
SAN GORGONIO WILDERNESS
RIVERSIDE
SAN BERNARDINO
RIALTO
REDLANDS
Beaumont
Banning
Hemet
Perris
Palm Springs
Indio
Coachella
Temecula
Fallbrook
San Clemente
Lake Elsinore
Lake Perris
Lake Hemet
Lake Cahuilla
Salton Sea
30,000 20 10 0 30,000
NOTES
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 1-HOUR PRECIPITATION
DRAWN BY: A.A.S.
CHECKED BY:
DATE DRAWN:
SHEET NO
DR. NO
APPROVED: CHIEF ENGINEER R.E. NO. 6822
DATE
REVISED

PLATE D-4.4



NOTES:

1. Slope of Intensity-Duration Curve based on District analysis of automatic recording rain gage records.

RCFC & WCD

HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SLOPE OF INTENSITY DURATION CURVE

APPROVED CHIEF ENGINEER R.E. NO. 4822	DRAWN BY: R.A.S.	SHEET NO
DATE	CHECKED BY:	DR. NO
	DATE DRAWN:	

REVISED

PLATE D-4.6

I-9 Preliminary Onsite Water Quality Management Plan (Single Building Option)

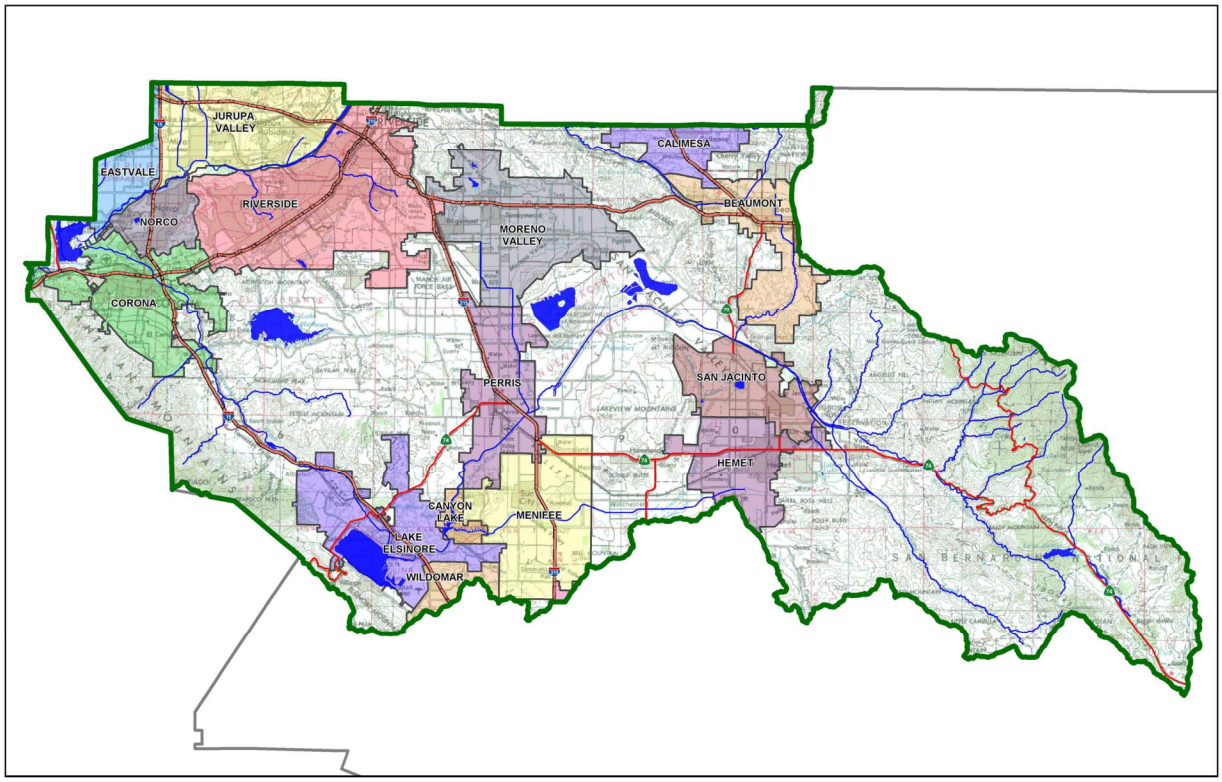
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Veterans Industrial Park 215

Development No: GPA 16-01, SP 16-02

Design Review/Case No: PP 16-06, TPM 16-06



☒ **Preliminary**
☐ **Final**

Original Date Prepared: October 17, 2016

Revision Date(s): January 8, 2020

Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**

Contact Information:

Prepared for:
Riverside Inland Development, LLC, a
California limited liability company
c/o Hillwood, A Perot Company
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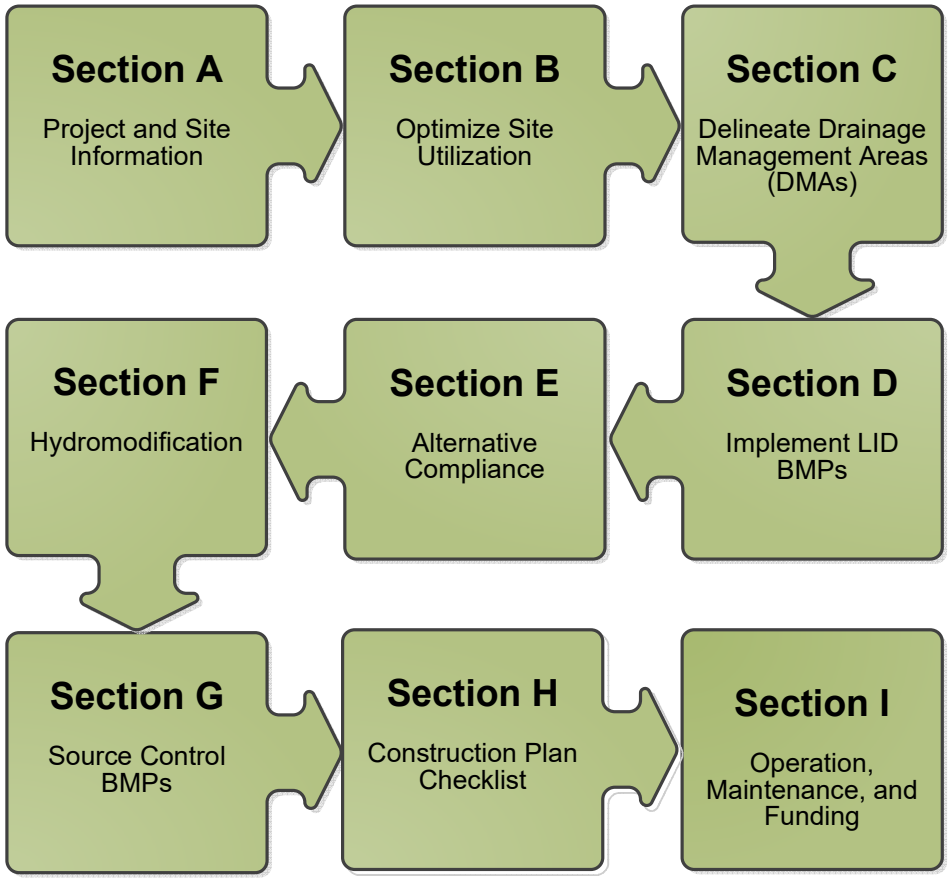
Ontario, CA 91764

Prepared by:
Huitt-Zollars
Contact: Johnny Murad, P.E.
3990 Concours, Suite 330
Ontario, CA 91764
909-941-7799, x11411

A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Riverside Inland Development, LLC, a California limited liability company, c/o Hillwood, A Perot Company by Huitt-Zollars for the Veterans Industrial Park 215 project.

This WQMP is intended to comply with the requirements of March Joint Powers Authority for APN 294-150-009, 294-170-005, 294-180-038, 294-140-13 and 295-300-008 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under March Joint Power Authority General Plan – Water Resources Section 1.8.

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	Date
Johnny Murad	Vice President / Project Manager
Preparer's Printed Name	Preparer's Title/Position

Preparer's Licensure:

Professional Engineer Certificate No. 67512, Exp. 6/30/2017

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Industrial Warehouse Development
Planning Area:	5,519,967 SF (126.72 ac. net)
Community Name:	Veterans Industrial Park 215
Development Name:	Veterans Industrial Park 215
PROJECT LOCATION	
Latitude & Longitude (DMS): Lat: 33°52'30", Long: -117°15'44"	
Project Watershed and Sub-Watershed: Santa Ana Watershed & San Jacinto Watershed	
APN(s): 294-170-005, 294-180-038, 294-150-005, 294-140-013, and 295-300-008	
Map Book and Page No.: Thomas Bros. Map, Page 747	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Industrial Warehouse
Proposed or Potential SIC Code(s)	4225
Area of Impervious Project Footprint (SF)	4,282,933
Total Area of proposed Impervious Surfaces within the Project Limits (SF)/or Replacement	4,282,933
Does the project consist of offsite road improvements?	☒ Y ☐ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the project limits (SF)	0 SF
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	Not in a Cellgroup (See RCA MSHCP Map in Appendix 1)
Are there any natural hydrologic features on the project site?	☒ Y ☐ N
Is a Geotechnical Report attached?	☒ Y ☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	N/A
What is the Water Quality Design Storm Depth for the project?	0.61"

The project consists of one industrial warehouse building being developed by Riverside Inland Development, LLC, a California limited liability company, c/o Hillwood, A Perot Company. The project site is owned by March Joint Powers Authority and is located along the east side of the Interstate 215 Freeway, adjacent to the March Air Reserve Base and south of the March Field Air Museum in the County of Riverside, CA. The gross area of the site is approximately 142.46 acres. The net area is 126.72 acres which excludes the Van Buren right of way along the west and south sides of the project and an undisturbed area at the southeast corner of the site. Based on the Geotechnical Engineers' recommendations the site soils are impermeable so infiltration BMP's are not being considered for this project.

The development will all drain to a single basin. Storm water from the south will be conveyed to the bio-retention basin through Line A. Storm water from the north will be conveyed to the bio-retention basin through storm drain Lines B and C; see Appendix 1 for Post-Construction BMP Site Plan.

The site landscaping areas will not be irrigated with recycled water, and "harvest and use" is not feasible for this development.

Catch basin filters will be installed at all on-site catch basins as a pre-treatment control BMP's prior to discharging runoff to the primary treatment bio-retention basin.

The bio-retention basin has been designed to collect and treat the WQMP storm water volume in addition to mitigating the post construction runoff to levels equivalent to the pre-developed condition.

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listU ed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Jacinto River Reach 3, HU#802.11	NONE	AGR, GWR, REC1, REC2, WARM, WILD	Not designated as RARE
Canyon Lake, HU#802.11, 802.12	List on 2010 USEPA 303(d) and in TMDL required list. Nutrients, Pathogens	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not designated as RARE
San Jacinto River Reach 1, HU#802.32,802.31	NONE	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not designated as RARE
Lake Elsinore HU#802.31	List on 303(d) list and being addressed by USEPA approved TMDL Nutrients, Organic Enrichment/Low Dissolved Oxygen, PCB's, Sedimentation/Siltation, Unknown Toxicity	MUN, REC1, REC2, WARM, WILD	Not designated as RARE

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☒ Y	☐ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* County of Riverside Building & Grading Permits	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, **constraints** might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. **Opportunities** might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Site Constraint:

Based on the site specific infiltration tests and report prepared by Southern Calif. Geotechnical (see Appendix 3), the site soils are impermeable and the soils engineer does not recommend that infiltration be used on this site. The site is being developed as a large scale industrial warehouse building with paved truck docks and parking areas.

Solution:

The site drainage design has incorporated one bio-retention basin located on the southeast corner of the project site. All site drainage will be conveyed to the bio-retention basin where the runoff will pass through a filter media into a layer of gravel and through a perforated pipe network beneath the basin footprint. Ultimately the runoff will gravity drain to the proposed off-site regional storm drain box culvert along Van Buren.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

Yes, the existing drainage pattern is a sheet flow condition that drains from northwest to southeast. The development will mimic the existing drainage pattern by implementing a grading design that directs site runoff toward the southeast corner of the subject site where it will re-enter the existing open earthen channel.

Did you identify and protect existing vegetation? If so, how? If not, why?
No, the site does not have any significant vegetation to be protected. A new landscape plan will be prepared to implement a drought tolerant landscape scheme for the project area.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?
No, a soils engineer was consulted and after review of the subject site soil characteristics the soils engineer issued a letter/report to the developer indicating that the site soils generally consist of medium dense to very dense silty sands and clayey sands and stiff to hard silty clays and sandy clays. In general, these soils possess high densities and are weakly to moderately cemented. These soils are considered relatively impermeable with respect to storm water infiltration. Since the subject site has no significant infiltration capacity, infiltration facilities should not be considered for the subject site.

Did you identify and minimize impervious area? If so, how? If not, why?
Yes, the site plan has allocated large landscape buffer areas in excess of the local jurisdictional requirements. The planned landscaped areas are anticipated to have some runoff absorption properties, however, they have also been designed to drain to the storm drain system and bio-retention basin.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?
No, there are no natural impervious areas.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1]	Area (Sq. Ft.)	DMA Type
DMA A	Mixed Surface Types	6,155,654	D

[1]*Reference Table 2-1 in the WQMP Guidance Document to populate this column*

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet)	Post-project surface type	Runoff factor	Product			
	[A]		[B]	[C] = [A] x [B]	DMA name /ID	[D]	[C]/[D]
None							

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA A	Bio-retention Basin

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site. If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?	X	
If Yes, list affected DMAs: The soils engineer has determined that the project site soils have no infiltration capacity and that infiltration BMP's should not be used on this site.	DMA A	
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs: The entire site would have significant cut and fill conditions to make the proposed development possible.		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here: The soils engineer has determined that the project site soils have no infiltration capacity and that infiltration BMP's should not be used on this site.		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☐ Reclaimed water will be used for the non-potable water demands for the project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If neither of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: 1,301,586 SF

Type of Landscaping (Conservation Design or Active Turf): Conservation Design

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: 4,218,732 SF

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: 0.84 AC/AC

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: 3,597,664 SF

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
3,543,735 SF	1,301,586 SF

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: 150

Project Type: Industrial

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: 4,218,732 SF = 96.8 AC

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-1 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: 175 TU/AC

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: 16,940

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	Projected number of toilet users (Step 1)
16,940	150

Other Non-Potable Use Feasibility (N/A)

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-3 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-3: N/A

Step 4: Multiply the unit value obtained from Step 4 by the total of impervious areas from Step 3 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**
N/A	*N/A*

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment, unless a site-specific analysis has been completed that demonstrates technical infeasibility as noted in D.3 below.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☒ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA A	☐	☐	☒	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

Based on the information provided in Section D, bioretention LID BMP will be utilized for the entire site. See Appendix 1 Post-Construction BMP Site Map for the bioretention basin detail.

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Enter BMP Name / Identifier Here*		
	[A]		[B]	[C]	[A] x [C]			
DMA A	*6,155,654*	*Mixed*	*0.78*	*0.58*	*3,547,710*	*Design Storm Depth (in)*	*Design Capture Volume,* V_{BMP} *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	$A_T = \Sigma[A]$ 6,155,654				$\Sigma = [D]$ 3,547,710	[E] 0.61	$[F] = \frac{[D]x[E]}{12}$ 180,342	[G] ***735,378***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Table D.4 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Enter BMP Name / Identifier Here*		
	[A]		[B]	[C]	[A] x [C]			
						Design Storm Depth (in)	*Design Capture Volume,* V_{BMP} *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	$A_T = \Sigma[A]$				$\Sigma = [D]$	[E]	$[F] = \frac{[D]x[E]}{12}$	[G]

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Table D.5 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Enter BMP Name / Identifier Here*		
	[A]		[B]	[C]	[A] x [C]			
						Design Storm Depth (in)	*Design Capture Volume,* $\mathbf{V_{BMP}}$ *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	$A_T = \Sigma[A]$				$\Sigma = [D]$	[E]	$[F] = \frac{[D]x[E]}{12}$	[G]

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

E.1 Identify Pollutants of Concern (N/A)

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☒ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☐ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☐	☒	☐	☐	☒	☐	☐

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits (N/A)

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	
Total Credit Percentage[1]	

[1]*Cannot Exceed 50%*
[2]*Obtain corresponding data from Table 3-8 in the WQMP Guidance Document*

E.3 Sizing Criteria (N/A)

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
						Design Storm Depth (in)	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12
[H] is from the Total Credit Percentage as Calculated from Table E.2 above
[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
Catch Basin Filters (Pre-treatment)	Trash, Sediment and oil/grease.	TSS – 93%

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.
[2] Cross Reference Table E.1 above to populate this column.
[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Catch basin filters (Bio-Clean or approved equal) will be provided in all on-site catch basins as a pre-treatment control BMP prior to allowing runoff to be conveyed to the primary treatment BMP.

The catch basin filters will help remove large debris, trash, sediment and oil/grease from the runoff before outleting into the downstream storm drain systems. Refer to Post-Construction BMP Site Map in Appendix 1 for the specific locations where these catch basin filters will be implemented.

Specific project site pollutants that will be treated by these Bio-Clean Filter Systems are as follows: Heavy Metals, Sediments, Trash & Debris, and Oil & Grease.

An important note that must be observed is that these Bio-Clean filter systems will not act as a primary treatment control BMPs but as pre-treatment or secondary treatment control BMPs. To ensure maximum performance, these catch basin filters must be maintained as required per the manufacturer's guidelines.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	INSERT VALUE	INSERT VALUE	INSERT VALUE
Volume (Cubic Feet)	INSERT VALUE	INSERT VALUE	INSERT VALUE

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.
b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.
c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

We have designed the bio-retention basin to detain the differential runoff between the pre-development and post-development condition for the 1, 2, 5, 10, 25, and 100 year storms.

A pre-development and post-development unit hydrograph has been prepared for the 2-year storm event for the bio-retention basin and the results indicate that the post-development runoff rates are less than the pre-development runoff rates.

See Appendix 7 for the supporting hydrology analysis, which include:

Summary of Basin Routing Calculations for each storm event

Pre-development and Post–development 2-year storm event unit hydrograph analysis

Post-development 2-year storm event basin routing analysis

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural /Non-Structural Source Control BMPs	Operational Source Control BMPs
On-Site Storm Drain Inlet	Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.	• Maintain and periodically repaint or replace inlet markings. • Provide stormwater pollution prevention information to new site owners, lessees, or operators. • See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com • Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."

Loading Docks	The project site will have truck docks which shown on the Post-Construction BMP Site Plan. The truck docks shall be inspected on a weekly basis to help ensure that any trash and debris are collected prior to being washed into the underground storm drain system. All storm water runoff from the loading dock areas will be discharged into bio-retention basin prior to conveyance to the public storm drain system. Documentation of such inspection/maintenance shall be kept by the owner in perpetuity.	• Move loaded and unloaded items indoors as soon as possible. See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Fire Sprinkler Test Water	Underground fire protection service and fire sprinklers test will be provided per the uniform fire code and the requirements of the County of Riverside	• Provide a means to drain fire sprinkler test water to the sanitary sewer.
Plazas, sidewalks, and parking lots.	Documentation of such sweeping shall be kept by the owner inperpetuity. Frequency of sweeping shall be adjusted as needed to maintain a clean site.	• Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

Section H: Construction Plan Checklist

"This section will be completed and addressed at the time of the final WQMP submittal"

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

"This section will be completed and addressed at the time of the final WQMP submittal"

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism:

BMP	Responsible Party(s)	Inspection/Maintenance Activities Required	Minimum Frequency of Activities
On-Site Storm Drain Filter	Owner	See Appendix 10 -The Owner will contract a contractor to inspect and maintain all catch basin filters located throughout the site. -The contracted party must have the proper training and knowledge to perform maintenance procedures on all catch basin filters. -The contracted party will inspect all the catch basin filters every three months, at the beginning of the wet season, and after periods of heavy runoff. -The contracted party will inspect for sediment, trash and debris build up and that the systems are properly functioning. Sediments, trash, and debris build up within the catch basin filter systems would be hand or vacuumed cleaned every three months or if during inspection ¼ of the catch basin filter system is full. Hand cleaning will require that the filter be removed from the catch basins. The waste material will then be dumped into a DOT approved container for disposal. Vacuum cleaning requires the filter system to be cleaned in place with the use of an industrial vacuum truck/trailer. The waste material will then be dumped into a DOT approved container for disposal. -Confined Space procedures must be followed at all times. -When all the waste materials have been removed, the catch basin filters must be inspected for continued serviceability. -Minor damage or defects found shall be corrected on the spot and a notation made on the maintenance record. The filter media shall be inspected for defects and continued serviceability and replaced as necessary if needed during any inspection. -The filter media though shall be replaced once a year as a regular maintenance service. All spent media filters must be placed in the DOT approved container, along with the collected waste materials. -Since the collected materials most likely contain petroleum hydrocarbons, heavy metals and other harmful pollutants, the materials must be treated as an EPA Class 2 Hazardous Waste and therefore proper disposal will be imposed by the City of Moreno Valley or the County of Riverside. Therefore the Owner will contract a contractor with OSHA 1910.120 training in handling hazardous waste material. The contracted party will also be qualified as a licensed hazardous waste transporter to dispose of the all the collected waste materials in a lawful and timely manner and following all City of Moreno Valley or County of Riverside requirements. The waste material will be transported and disposed at an approved Hazardous Waste Facility.	Quarterly
Landscape and Irrigation	Owner	See CASQA BMP Fact Sheet SD-10 in Appendix 10 -Site landscaping design shall be implemented in accordance with the requirements of the site specific WQMP and local agency	Weekly

		requirements. -Site landscaping maintenance shall begin immediately after it has been planted. -Maintenance of landscaping shall occur on a weekly basis and adjusted accordingly based on current conditions and seasonal needs. -Inspection of irrigation system shall be provided on a bi-weekly basis to ensure proper function of the irrigation system, no significant overspray is occurring. -Malfunctioning systems shall be repaired or replaced immediately. -Inspect plant health on a monthly basis. Repair or replace unhealthy plants as needed. -Inspect side slopes of basin and sloped areas on a bi-weekly basis and repair as needed. Re-plant and apply erosion protection to those areas to help prevent erosion in the future. -Landscape clippings shall be swept and picked up immediately to prevent it from entering the storm drain system or adjacent sedimentation basin and filtration basin. Dispose of landscape clippings in a legal manner	
MS4 Stenciling and Signage	Owner	See CASQA BMP Fact Sheet SD-13 in Appendix 10 -MS4 Stenciling and signage shall be placed during construction and inspection and maintenance shall begin upon completion of construction. -Inspect catch basin stenciling on a bi-monthly basis. Replace any damaged, missing or faded stencils in a timely manner.	Bi-monthly
Common area litter control, loading docks and trash storage areas	Owner	See CASQA BMP Fact Sheet SD-32 in Appendix 10 -Inspection and Maintenance of common areas, loading docks and trash storage areas shall begin upon completion of construction. -Visual inspection of trash storage areas shall take place on a weekly basis and adjusted on an as needed basis. -Inspect areas for trash and debris. Remove any found trash and debris immediately. Dispose of trash and debris in a legal manner. -Inspect areas for any spills. Pick up/clean up found spills immediately. Dispose of spill material in a legal manner.	Daily
Parking lot sweeping		See CASQA BMP Fact Sheet SE-7 in Appendix 10 -Parking lot sweeping shall being after the completion of construction and take place on a monthly basis. Dispose of picked up material in a legal manner.	Monthly
Drainage facility (including roof drains) inspection and maintenance		-Inspection and maintenance of site drainage facilities and roof drains shall begin immediately upon completion of construction. -Catch basins and roof drain inlet shall be clear of any debris -prior to any storm event to ensure proper function of the roof drains. Collected debris shall be disposed of in a legal manner. Catch basin filters shall be inspected on a monthly basis. Catch basin filters that have exceeded 50% of the storage capacity shall be cleaned immediately. -Catch basin filters shall be maintained per the manufacturer's specifications. -Damaged catch basin filters shall be replaced with an approved equal prior to the next storm event or as soon as practicable.	Monthly & after rain event

Bioretention Basin (Sand Filters)		See Appendix 10 -Once the sedimentation and sand filter basin have gone on-line, inspections should occur after every major storm for the first year to ensure that proper stabilization and function is achieved. Continuous inspection and maintenance shall be provided once every six months. Special attention should be paid to how long water remains standing in the basin after a storm; standing water within the basin more than 48 hours after a storm indicates that the filtration rates are insufficient and maintenance of the filter basin bottom is needed. If standing water remains after 48 hours, the standing water shall be removed in accordance with the local agency guidelines and maintenance of the filter basin bottom shall be scheduled immediately. Factors that are typically responsible for clogging the filter basin bottom include upstream sediment erosion and excessive compaction of the basin bottom. These should be repaired immediately to help achieve the desired filtration rates. -Observe and document evidence of collected sediments, trash, debris and oils/greases. -Sediments, trash, debris and oils/greases shall be removed and disposed of in a legal manner. -Observe and document evidence of erosion of side slopes or flowlines. -Schedule repair of eroded side slopes or flowlines immediately. -Protection measures against further erosion shall be placed until the eroded areas are repaired. Protection measures should be at a minimum placement of gravel bags and fiber rolls to prevent further erosion of the affected areas until the areas have been repaired and vegetation has been established.	Every 6 months

Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☐ Y ☒ N

Owner Information:
March Joint Powers Authority

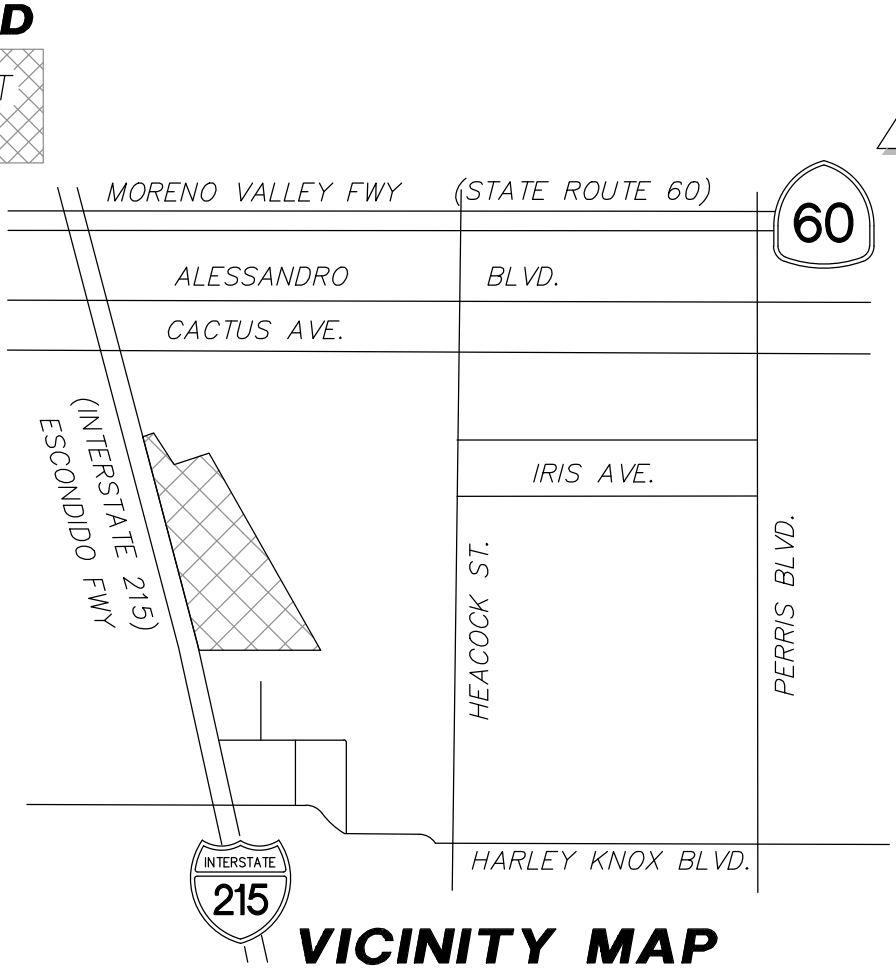
Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map

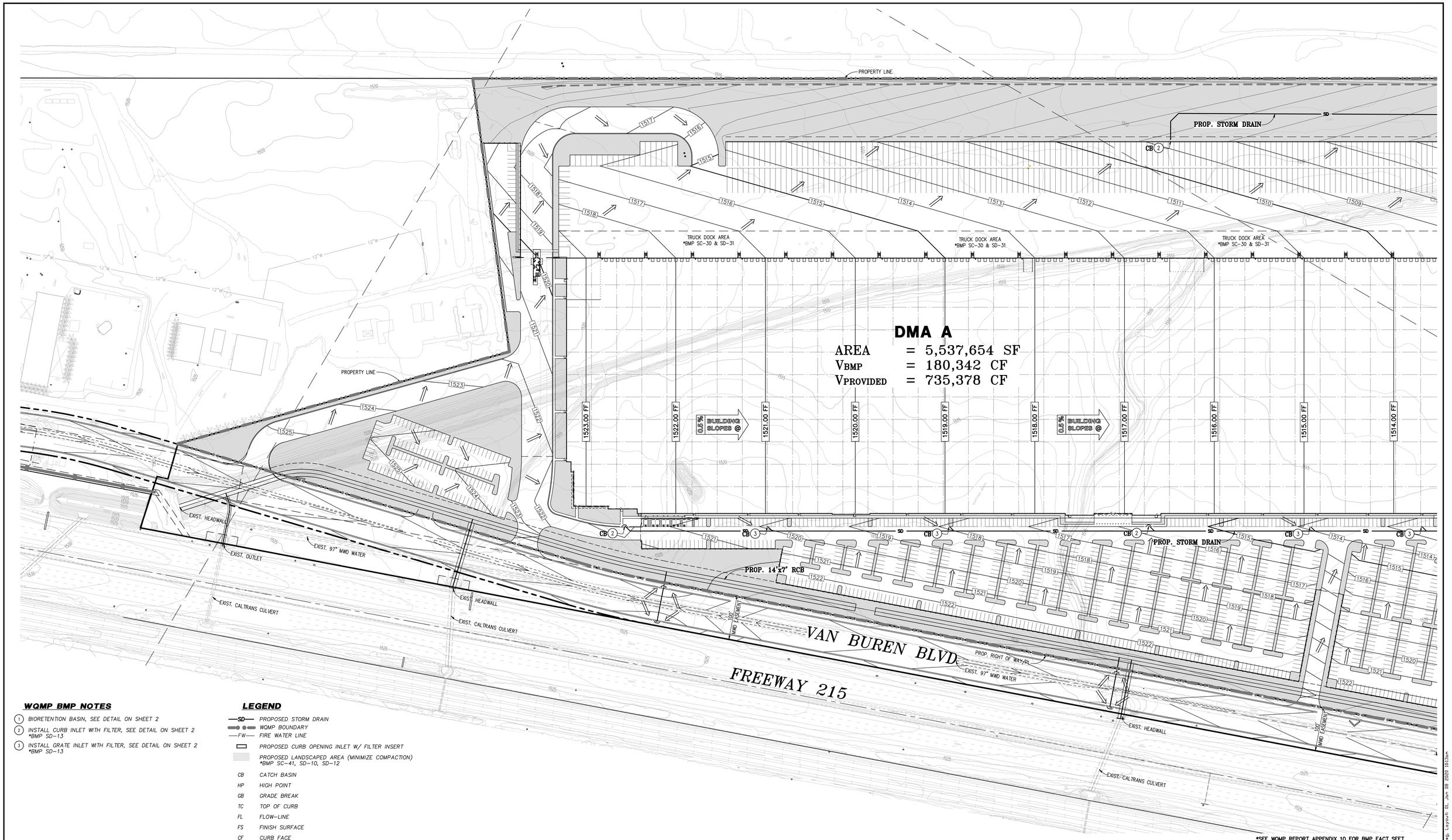
LEGEND

PROJECT LIMITS



VICINITY MAP

NOT TO SCALE



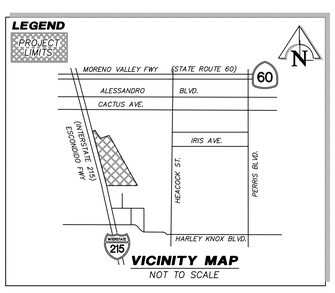
*SEE WQMP REPORT APPENDIX 10 FOR BMP FACT SEET

WQMP BMP NOTES

1. BIORETENTION BASIN, SEE DETAIL ON SHEET 2
2. INSTALL CURB INLET WITH FILTER, SEE DETAIL ON SHEET 2 *BMP SD-13
3. INSTALL GRATE INLET WITH FILTER, SEE DETAIL ON SHEET 2 *BMP SD-13

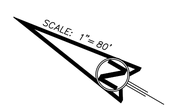
LEGEND

- SD — PROPOSED STORM DRAIN
- WQMP BOUNDARY
- FW — FIRE WATER LINE
- PROPOSED CURB OPENING INLET W/ FILTER INSERT
- PROPOSED LANDSCAPED AREA (MINIMIZE COMPACTION) *BMP SC-41, SD-10, SD-12
- CB CATCH BASIN
- HP HIGH POINT
- GB GRADE BREAK
- TC TOP OF CURB
- FL FLOW-LINE
- FS FINISH SURFACE
- CF CURB FACE
- INV INVERT
- FLOW DIRECTION



A PROPOSED PUBLIC STORM DRAIN SYSTEM (REINFORCED CONCRETE BOX) WILL BE INSTALLED ALONG THE WESTERLY AND SOUTHERLY PROPERTY LINES TO INTERCEPT AND CONVEY THE OFF-SITE STORM WATER TO THE EXISTING OPEN EARTHEN CHANNEL LOCATED NEAR THE SOUTHEAST CORNER OF THE SITE.

THE BIO-RETENTION BASIN HAS BEEN SIZED TO TREAT THE OFF-SITE STORM WATER ALTHOUGH THE OFF-SITE STORM WATER WILL NOT ENTER THE BASIN.



PROJECT BMP CONFORMANCE ANALYSIS

NAME	AREA (SF)	i	C	V_{BMP} (CF)	BMP	d_P (FT)	d_S (FT)	W_T (FT)	d_E (FT)	$A_{PROVIDE}$ (SF)	$V_{PROVIDE}$ (CF)
DMA A	6,155,654	0.78	0.58	**180,342**	BIORETENTION BASIN	0.50'	2.0	~1,580	1.50	**161,872**	**735,378**

REV	DESCRIPTION	DATE

REGISTERED PROFESSIONAL ENGINEER JOHNNY MURAD NO. 67512 EXPIRATION 6-30-2021 CIVIL STATE OF CALIFORNIA

POST CONSTRUCTION BMP SITE PLAN
FOR
VETERANS INDUSTRIAL PARK 215
PROJECT APOLLO
GPA 16-01, SP 16-02, PP 16-06, TPM 16-06

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 * ONTARIO, CALIFORNIA 91764 * (909) 941-7799

APPROVED BY JOHNNY MURAD — R.C.E. 67512 — EXPIRES 6-30-21 — DATE

DESIGNED BY JM
DRAWN BY H-Z STAFF
CHECKED BY JM
FIELD BOOK

SHEET 1 OF 2 SHEETS
JOB NO. R311930.01

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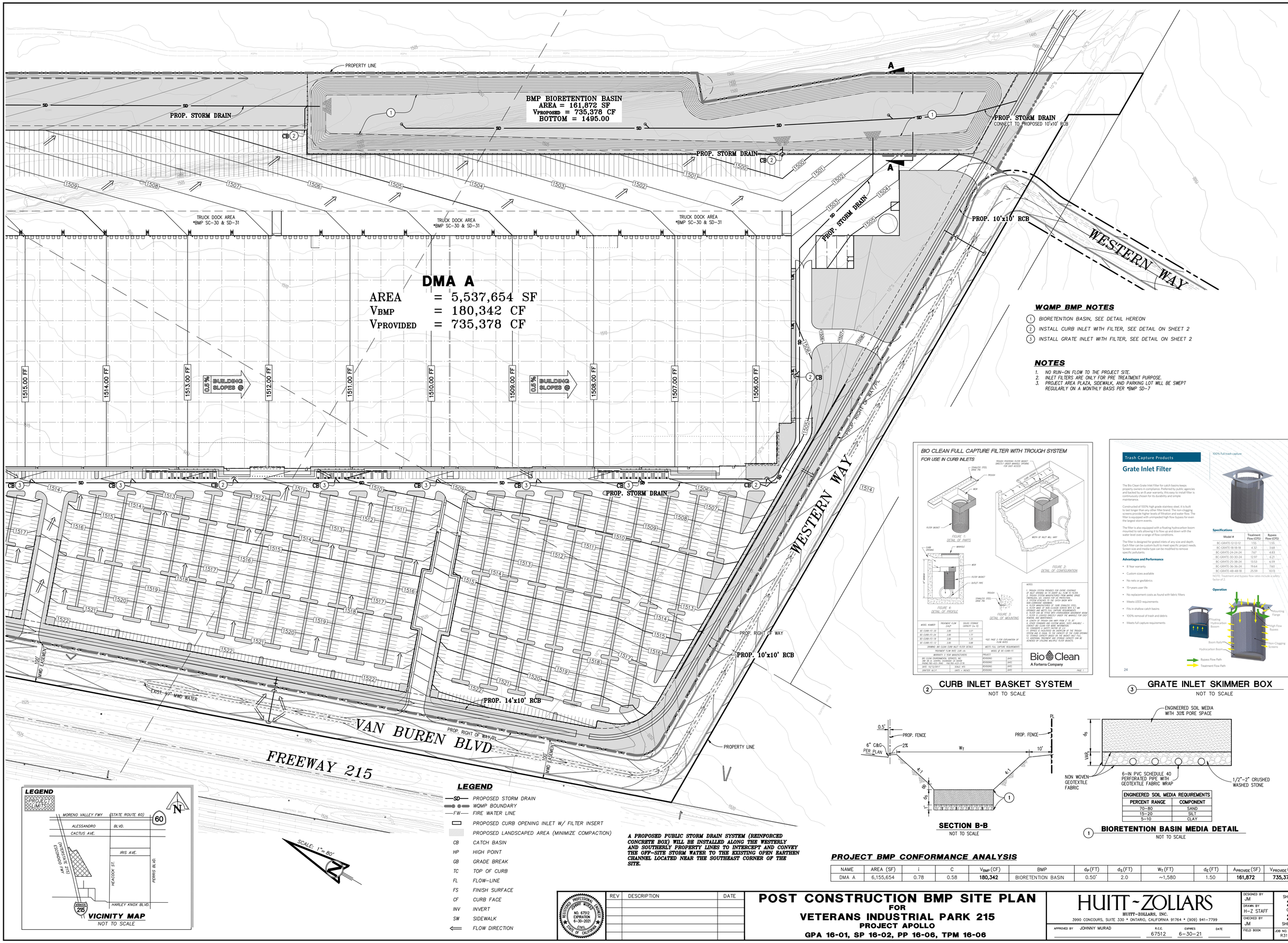

WQMP BMP NOTES

1. BIORETENTION BASIN, SEE DETAIL HEREON
2. INSTALL CURB INLET WITH FILTER, SEE DETAIL ON SHEET 2
3. INSTALL GRATE INLET WITH FILTER, SEE DETAIL ON SHEET 2

NOTES

1. NO RUN-ON FLOW TO THE PROJECT SITE.
2. INLET FILTERS ARE ONLY FOR PRE TREATMENT PURPOSE.
3. PROJECT AREA PLAZA, SIDEWALK, AND PARKING LOT WILL BE SWEPT REGULARLY ON A MONTHLY BASIS PER *BMP SD-7

CURB INLET BASKET SYSTEM (2)

NOT TO SCALE

GRATE INLET SKIMMER BOX (3)

NOT TO SCALE

SECTION B-B

NOT TO SCALE

ENGINEERED SOIL MEDIA REQUIREMENTS	
PERCENT RANGE	COMPONENT
70–80	SAND
15–20	SILT
5–10	CLAY

BIORETENTION BASIN MEDIA DETAIL (1)

NOT TO SCALE

LEGEND

PROJECT LIMITS

VICINITY MAP

NOT TO SCALE

LEGEND

SD	PROPOSED STORM DRAIN
WQMP BOUNDARY	WQMP BOUNDARY
FW	FIRE WATER LINE
	PROPOSED CURB OPENING INLET W/ FILTER INSERT
	PROPOSED LANDSCAPED AREA (MINIMIZE COMPACTION)
CB	CATCH BASIN
HP	HIGH POINT
GB	GRADE BREAK
TC	TOP OF CURB
FL	FLOW-LINE
FS	FINISH SURFACE
CF	CURB FACE
INV	INVERT
SW	SIDEWALK
	FLOW DIRECTION

A PROPOSED PUBLIC STORM DRAIN SYSTEM (REINFORCED CONCRETE BOX) WILL BE INSTALLED ALONG THE WESTERLY AND SOUTHERLY PROPERTY LINES TO INTERCEPT AND CONVEY THE OFF-SITE STORM WATER TO THE EXISTING OPEN EARTHEN CHANNEL LOCATED NEAR THE SOUTHEAST CORNER OF THE SITE.

PROJECT BMP CONFORMANCE ANALYSIS

NAME	AREA (SF)	I	C	V_{BMP} (CF)	BMP	d_P (FT)	d_S (FT)	W_T (FT)	d_E (FT)	$A_{PROVIDE}$ (SF)	$V_{PROVIDE}$ (CF)
DMA A	6,155,654	0.78	0.58	**180,342**	BIORETENTION BASIN	0.50'	2.0	~1,580	1.50	**161,872**	**735,378**

REV	DESCRIPTION	DATE

REGISTERED PROFESSIONAL ENGINEER JOHNNY MURAD NO. 67512 EXPIRATION 6-30-2021 CIVIL STATE OF CALIFORNIA

POST CONSTRUCTION BMP SITE PLAN
FOR
VETERANS INDUSTRIAL PARK 215
PROJECT APOLLO
GPA 16-01, SP 16-02, PP 16-06, TPM 16-06

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

APPROVED BY JOHNNY MURAD R.C.E. 67512 EXPIRES 6-30-21 DATE

DESIGNED BY JM
DRAWN BY H-Z STAFF
CHECKED BY JM
FIELD BOOK

SHEET 2 OF 2 SHEETS
JOB NO. R311930.01

Plotted: 08 Jan 2020 10:13am
Layout: 2 - Plan
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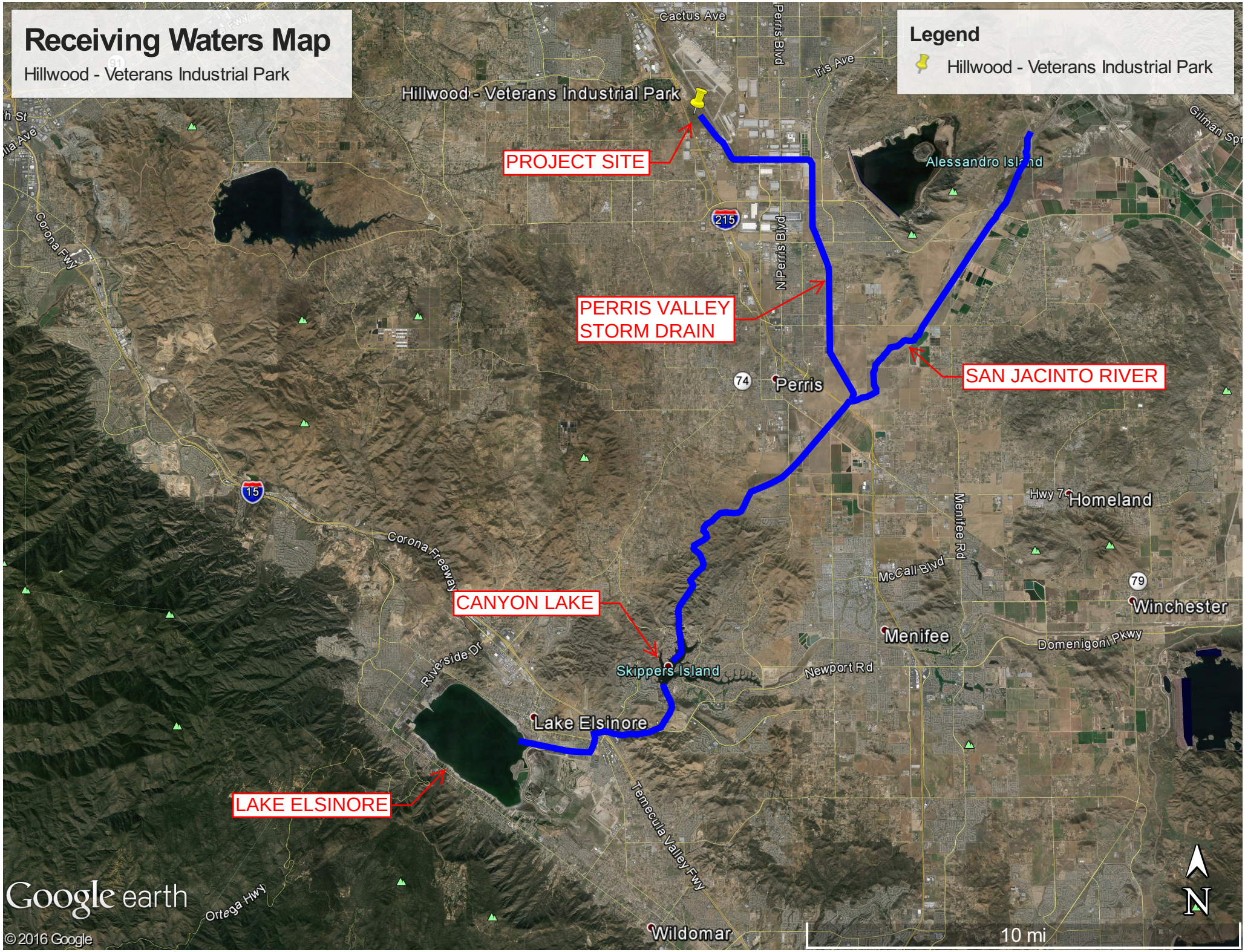
Receiving Waters Map
Hillwood - Veterans Industrial Park
Legend
Hillwood - Veterans Industrial Park
Hillwood - Veterans Industrial Park
PROJECT SITE
PERRIS VALLEY
STORM DRAIN
SAN JACINTO RIVER
CANYON LAKE
LAKE ELSINORE
Cactus Ave
Perris Blvd
Iris Ave
Alessandro Island
Gilman Spr
215
N Perris Blvd
Corona Fwy
74
Perris
15
Corona Freeway
Hwy 74
Homeland
Menifee Rd
McCall Blvd
79
Winchester
Menifee
Domenigoni Pkwy
Riverside Dr
Skippers Island
Newport Rd
Lake Elsinore
Temecula Valley Fwy
Ortega Hwy
Wildomar
Google earth
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RCA MSHCP Information App

with Web AppBuilder for ArcGIS

Appendix 2: Construction Plans

Attached Conceptual Grading and Drainage Plans

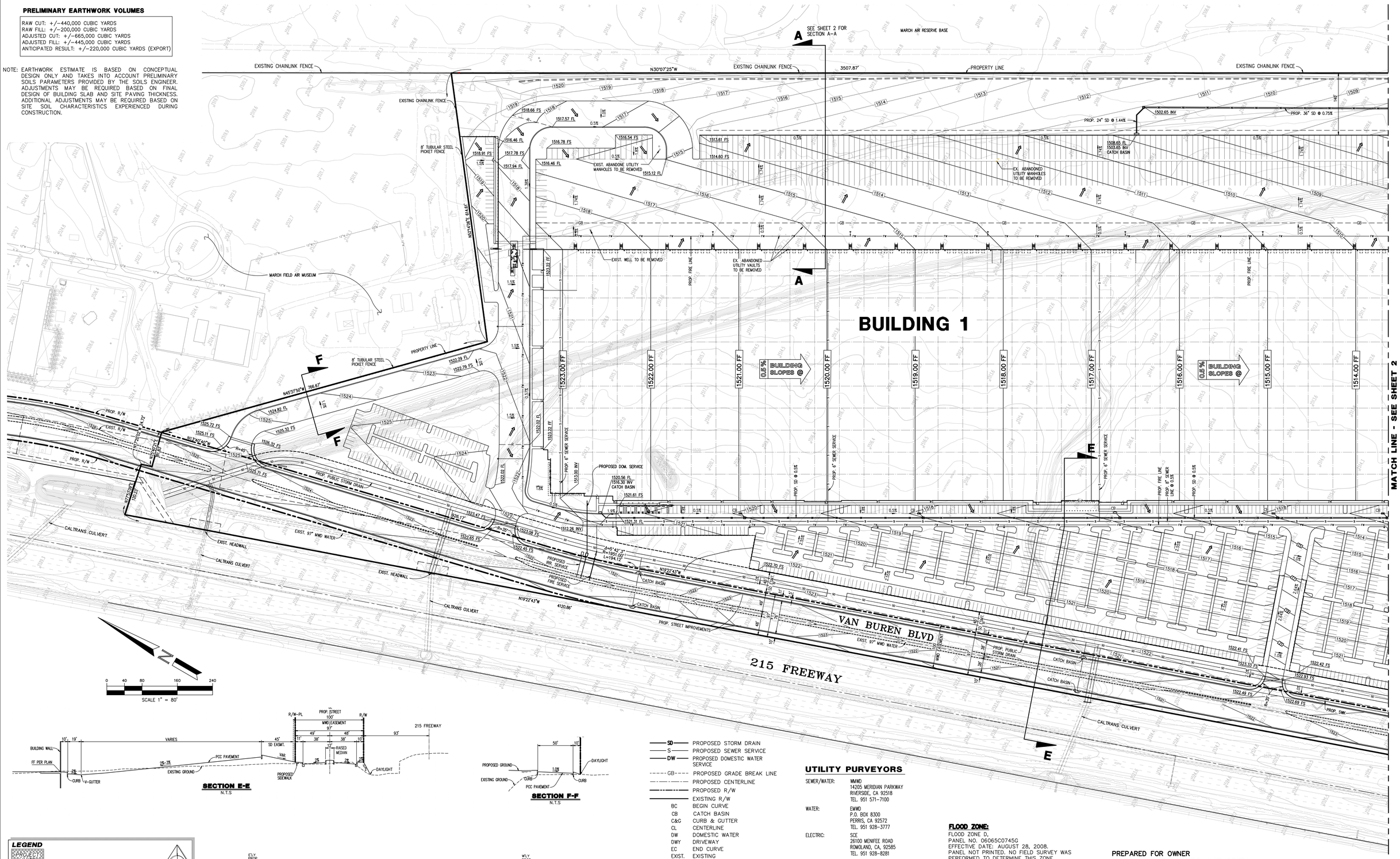
This section will be completed and addressed at the time of the final WQMP submittal

Grading and Drainage Plans

PRELIMINARY EARTHWORK VOLUMES

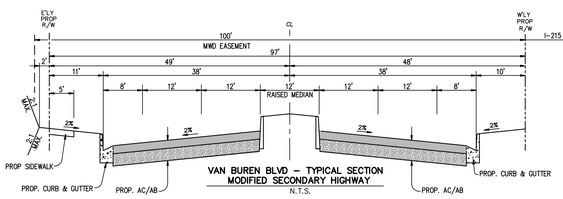
RAW CUT: +/–440,000 CUBIC YARDS
RAW FILL: +/–200,000 CUBIC YARDS
ADJUSTED CUT: +/–665,000 CUBIC YARDS
ADJUSTED FILL: +/–445,000 CUBIC YARDS
ANTICIPATED RESULT: +/–220,000 CUBIC YARDS (EXPORT)

NOTE: EARTHWORK ESTIMATE IS BASED ON CONCEPTUAL DESIGN ONLY AND TAKES INTO ACCOUNT PRELIMINARY SOILS PARAMETERS PROVIDED BY THE SOILS ENGINEER. ADJUSTMENTS MAY BE REQUIRED BASED ON FINAL DESIGN OF BUILDING SLAB AND SITE PAVING THICKNESS. ADDITIONAL ADJUSTMENTS MAY BE REQUIRED BASED ON SITE SOIL CHARACTERISTICS EXPERIENCED DURING CONSTRUCTION.

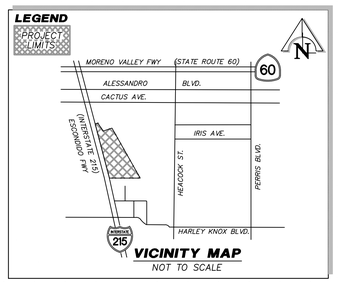


SECTION E–E
N.T.S

SECTION F–F
N.T.S



VAN BUREN BLVD – TYPICAL SECTION
MODIFIED SECONDARY HIGHWAY
N.T.S.



VICINITY MAP
NOT TO SCALE

SD	PROPOSED STORM DRAIN
S	PROPOSED SEWER SERVICE
DW	PROPOSED DOMESTIC WATER SERVICE
GB	PROPOSED GRADE BREAK LINE
	PROPOSED CENTERLINE
	PROPOSED R/W
	EXISTING R/W
BC	BEGIN CURVE
CB	CATCH BASIN
C&G	CURB & GUTTER
CL	CENTERLINE
DW	DOMESTIC WATER
DWY	DRIVEWAY
EC	END CURVE
EXIST.	EXISTING
FF	PROPOSED FINISH FLOOR ELEVATION
FS	FINISHED SURFACE
FL	FLOWLINE
GB	GRADE BREAK
PL	PROPERTY LINE
PROP.	PROPOSED
RW	RECYCLED WATER
R/W	RIGHT–OF–WAY
SD	STORM DRAIN
SW	SIDEWALK
P.I.P.	PROTECT IN PLACE

UTILITY PURVEYORS

SEWER/WATER:	MWMD 14205 MERIDIAN PARKWAY RIVERSIDE, CA 92518 TEL. 951 571–7100
WATER:	EMWD P.O. BOX 8300 PERRIS, CA 92572 TEL. 951 928–3777
ELECTRIC:	SCE 26100 MENIFEE ROAD ROMOLAND, CA, 92585 TEL. 951 928–8281
NATURAL GAS:	SCG 25200 TRUMBLE ROAD ROMOLAND, CA 92380
TELEPHONE:	FRONTIER 150 S. JUANITA STREET HEMET, CA 92543 TEL. 951 658–7305
TV CABLE:	SPECTRUM 1500 S. AUTO CENTER DRIVE ONTARIO, CA 91761 TEL. 909 390–4460

FLOOD ZONE:
FLOOD ZONE D,
PANEL NO. 06065C0745G
EFFECTIVE DATE: AUGUST 28, 2008.
PANEL NOT PRINTED. NO FIELD SURVEY WAS PERFORMED TO DETERMINE THIS ZONE.

AREA
GROSS AREA = ±142.25 ACRES

TOPO
SOURCE: DMI (DIGITAL MAPPING, INC.), DATE: 10–20–15
DATE OF FIELD SURVEY: NOVEMBER, 2015.

BENCHMARK
ELEVATIONS SHOWN HEREON ARE DERIVED FROM THE NATIONAL GEODETIC SURVEY VERTICAL CONTROL NETWORK. BENCHMARK NUMBER PID DX2725 DESIGNATION Z1143, ELEVATION 1532.70' (NAVD29).

PREPARED FOR OWNER
MARCH JOINT POWERS AUTHORITY
14205 MERIDIAN PARKWAY, SUITE 140
RIVERSIDE, CA 92518
PH: 951–656–7000

PREPARED FOR DEVELOPER
RIVERSIDE INLAND DEVELOPMENT, LLC
901 VIA PIEMONTE
ONTARIO, CA 91764
PH: 909–382–0033

PREPARED IN THE OFFICE OF
HUITT–ZOLLARS, INC.
3990 CONCOURS, SUITE 330
ONTARIO, CALIFORNIA 91764
PHONE: (909) 941–7799

CONCEPTUAL GRADING & UTILITY PLAN
FOR
VETERANS INDUSTRIAL PARK 215
PROJECT APOLLO
GPA 16-01, SP 16-02, PP 16-06, TPM 16-06

HUITT–ZOLLARS
HUITT–ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941–7799

APPROVED BY	JOHNNY MURAD	R.C.E. 67512	EXPIRES 6–30–21
DATE	1/7/20		

DESIGNED BY	JM/DW
DRAWN BY	H–Z STAFF
CHECKED BY	JM/DW
FIELD BOOK	

SHEET 1 OF 2 SHEETS
JOB NO. R3119330.01

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MATCH LINE - SEE SHEET 1

MARCH AIR RESERVE BASE

BUILDING 1

BUILDING SLOPES @ 0.5%

BUILDING SLOPES @ 0.5%

1513.00 FF | 1512.00 FF | 1511.00 FF | 1510.00 FF | 1509.00 FF | 1508.00 FF | 1507.00 FF | 1506.00 FF

PROP. 24" SD @ 3.87%

PROP. SD @ 0.2%

PROP. SD @ 0.5%

PROP. 48" SD @ 0.4%

BIORETENTION/ DETENTION BASIN #1
TOP MEDIA= 1495.00

1495.00 INV

1495.50 TG
1490.50 INV

1503.70 FL
1497.70 INV
CATCH BASIN

1499.92 FL
1495.15 INV
CATCH BASIN

1498.90 INV
CATCH BASIN

1504.66 FL
1497.66 INV
CATCH BASIN

1495.74 TOP 6" SDW
1497.99 BOT 48" SD

1500.16 INV

1506.33 FS

1494.62 INV

1487.45 INV PROP. SD
1486.40 INV MAIN

1507.19 FS

1501.37 FS

1501.67 FS

1506.57 FF

1505.57 FF

1505.65 FS

1522.42 FS

1525.15 FS

1523.44 FS

1524.75 FS

1524.49 FS

1524.32 FS

1522.04 FS

PROP. 60" SD @ 0.2%

PROP. 10'WX10'H RCB

PROP. 14'WX10'H RCB

PROP. RETAINING WALL

PROP. STREET IMPROVEMENTS

PROP. FIRE LINE

PROP. 6" SEWER SERVICE

PROP. FIRE SERVICE

PROPOSED DOM. SERVICE

PROPOSED IRR SERVICE

PROPOSED SEWER SUMP AND PUMP SYSTEM

PROP. SEWER FORCE MAIN

EXIST. 10" SEWER FORCE MAIN TO BE RELOCATED

EXIST. 10" SEWER FORCE MAIN TO BE RELOCATED

PROP. 6" SEWER LINE @ 0.5%

PROP. RIGHT OF WAY/PL

EXIST. RIGHT OF WAY/PL

EXISTING EARTHEN CHANNEL

EXISTING CHAINLINK FENCE

PROPERTY LINE

OFF-SITE GRADING

PROP. 84"HC HW/OT. 2:1 SLOPE

PROP. 10'WIDTH RCB

PUMP HOUSE

WATER TANK

MAINTENANCE BUILDING

EXIST. 97" MWD WATER

EXIST. 6" MWD WATER

EXIST. MWD MH ADJUST TO GRADE (TYP.)

CATCH BASIN

WESTERN WAY

VAN BUREN BLVD

215 FREEWAY

N30°07'25"W 3507.87'

N30°06'29"W 670.22'

N49°46'59"E 73.50'

N39°57'49"W 421.43'

N30°09'25"W 124.78'

N89°53'52"E 1955.75'

N89°53'52"E 1178.98'

N89°53'52"E 43.98'

N19°22'43"W 4120.86'

L=81.47'
R=66.00'
Δ=70°43'25"

L=146.66'
R=100.00'
Δ=83°59'53"

L=16.66'
R=100.00'
Δ=9°32'53"

R=35'

R=15'

R=115.00'

Δ=71°16'24"

E 2981.25'

0 40 80 160 240
SCALE 1" = 80'

WESTERN WAY – TYPICAL SECTION
SECONDARY HIGHWAY
N.T.S.

R/W | CL | R/W
2' | 15' | 47' | 32' | 14' | 12' PAINTED MEDIAN | 12' | 32' | 14' | 47' | 15' | 2'
94'
VAR. | 2% | 2% | 2% | 2% | VAR.
PROP. CURB & GUTTER | PROP. AC/AB | PROP. AC/AB | PROP. CURB & GUTTER

SECTION B-B
N.T.S

10' | 190' | PL
EXISTING GROUND | 2% | 2% | DAYLIGHT
PCC PAVEMENT | CURB & GUTTER | BIORETENTION/DETENTION BASIN BOTTOM=1496.00 FG | 4:1 MAX | 1

SECTION A-A
N.T.S

BUILDING WALL | 65' | 195' | 10' | 140' | PL | ±1000' | CL RUNWA
FF PER PLAN | 0.5% | 2% | 2% | VAR. | 12' | 4:1 MAX | DAYLIGHT | MARCH AIR RESERVE BASE
PCC PAVEMENT | EXISTING GROUND | CURB & GUTTER

SECTION D-D
N.T.S

R/W | CL PROP. STREET | R/W-PL | R/W
VARIES | 9' | 23' | 25' | 49' | 48' | 10'
11' | 38' | 38' | 12' RAISED MEDIAN
PROP. RETAINING WALL 6' MAX | 2% | 2% | 2% | 2% | 2% | 2% | 2%
PCC PAVEMENT | CURB | SWALE | PROPOSED SIDEWALK | EXISTING GROUND

1 BIORETENTION BASIN MEDIA DETAIL
NOT TO SCALE

ENGINEERED SOIL MEDIA
2' BASIN 1
3' BASIN 2
VAR. 1'-2'
NON WOVEN GEOTEXTILE FABRIC
6-IN PVC SCHEDULE 40 PERFORATED PIPE WITH GEOTEXTILE FABRIC WRAP
1/2"-2" CRUSHED WASHED STONE

CONCEPTUAL GRADING & UTILITY PLAN
FOR
VETERANS INDUSTRIAL PARK 215
PROJECT APOLLO
GPA 16-01, SP 16-02, PP 16-06, TPM 16-06

HUITT-ZOLLARS
HUITT-ZOLLARS, INC.
3990 CONCOURS, SUITE 330 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

APPROVED BY JOHNNY MURAD | R.C.E. 67512 | EXPIRES 6-30-21 | DATE 1/7/20

DESIGNED BY JM/DW
DRAWN BY H-Z STAFF
CHECKED BY JM/DW
FIELD BOOK

SHEET 2 OF 2 SHEETS
JOB NO. R311930.01

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Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

February 23, 2016

Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Attention: Mr. Kathy Hoffer

Project No.: **15G204-3**

Subject: **Storm Water Infiltration**
Proposed D2 Air Cargo Compatible Development
SE Terminus of Van Buren Boulevard
Between I-215 and MARB
Moreno Valley, California

Reference: Geotechnical Investigation, D2 Air Cargo Compatible Development, SE Terminus of Van Buren Boulevard, Between I-215 and MARB, Moreno Valley, California, prepared for Hillwood by Southern California Geotechnical, Inc. (SCG), SCG Project No. 15G204-1, dated December 16, 2015.

Gentlemen:

In accordance your request, we have prepared this letter in order to comment on the infiltration characteristics of the on-site soils. The near surface soils generally consist of medium dense to very dense silty sands and clayey sands and stiff to hard silty clays and sandy clays. In general, these soils possess high densities and are weakly to moderately cemented. These soils are considered relatively impermeable with respect to storm water infiltration.

Based on the relatively high densities, cementation, and the silt and clay content of the near surface soils, no significant storm water infiltration should be expected within the near surface soils at the subject site.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. NIELSEN
No. 77915
CIVIL
STATE OF CALIFORNIA

Distribution: (1) Addressee
(1) Huitt-Zollars, Attention: Mr. Johnny Murad

GEOTECHNICAL INVESTIGATION
PROPOSED D2 AIR CARGO COMPATIBLE DEVELOPMENT

SE Terminus of Van Buren Boulevard,
Between I-215 and MARB
Moreno Valley, California
For Hillwood

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

December 16, 2015

Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Attention: Mr. Ned Sciortino

Project No.: **15G204-1**

Subject: **Geotechnical Investigation**
Proposed D2 Air Cargo Compatible Development
SE Terminus of Van Buren Boulevard
Between I-215 and MARB
Moreno Valley, California

Gentlemen:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. NIELSEN
No. 77915
CIVIL
STATE OF CALIFORNIA

John A. Seminara, CEG 2125
Principal Geologist

PROFESSIONAL GEOLOGIST
JOHN A. SEMINARA
No. 2125
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Distribution: (2) Addressee

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APPENDICES

A Plate 1: Site Location Map
Plate 2: Boring Location Plan
B Boring Logs
C Laboratory Test Results
D Grading Guide Specifications
E Seismic Design Parameters
F Liquefaction Evaluation Spreadsheets

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Site Preparation

- Initial site preparation should include stripping of the surficial vegetation including existing moderate to dense native grass and weed growth, trees and any organic soils. These materials should be properly disposed of off-site.
- Concrete slabs and foundations from a previously demolished structure are present in the northeast portion of the site. Manholes are present throughout the central portion of the site, indicating that utilities are present in the central portion of the site. Initial site preparation should also include demolition of any remnants of former development which will not be reused with the proposed development including pavements, floor slabs, foundations, utilities, septic systems, and any other improvements that will not remain in place with the new development. Concrete and asphalt debris may be re-used within the compacted fills, provided they are pulverized and the maximum particle size is less than 2 inches.
- The near surface soils encountered at most of the borings consist of high strength older alluvium. However, some of the borings encountered moderate strength younger alluvial soils within the upper 1½ to 5½± feet.
- Although the soils generally possess moderate to high strengths, the near surface soils vary somewhat in composition and density and also possess moisture contents lower than the optimum moisture content. Therefore, remedial grading is considered warranted within the new building and retaining wall areas in order to remove a portion of the near-surface soils and replace them as compacted structural fill.
- The existing soils within the building area should be overexcavated to a depth of at least 2 feet below existing grade and to a depth of at least 2 feet below proposed pad grade. The soils within the proposed foundation influence zones should be overexcavated to a depth of at least 2 feet below proposed foundation bearing grades. The overexcavation should also extend to a sufficient depth to remove any soils disturbed during demolition and any artificial fill soils, if encountered.
- After the recommended overexcavation has been completed, the resulting subgrade soils should be evaluated by the geotechnical engineer to identify any additional soils that should be overexcavated. The resulting subgrade should then be scarified to a depth of 12 inches and thoroughly moisture conditioned to 2 to 4 percent above optimum moisture content. The resulting subgrade should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.
- The new parking area subgrade soils are recommended to be scarified to a depth of 12± inches, moisture conditioned to 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.

- 3,000 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings due to the low expansion potential of the on-site soils. Additional reinforcement may be necessary for structural considerations.

Building Floor Slabs

- Conventional Slab-on-Grade, 6 inches thick.
- Modulus of Subgrade Reaction: k = 125 psi/in
- Minimum slab reinforcement: No. 3 bars at 18 inches on center in both directions due to the presence of low expansive soils. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed loading.

Pavements

ASPHALT PAVEMENTS (R = 30)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	6	8	10	11	13
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6½	8	9
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 15P395R, dated October 12, 2015. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. Based on the location of the subject site, this investigation also included a site specific liquefaction evaluation. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located at the southeast terminus of Van Buren Boulevard in Moreno Valley, California. The site is bounded to the north by the March Air Field Museum, to the east by the March Air Reserve Base (MARB) flight line, to the south by vacant land, and to the west by the Escondido Freeway (Interstate 215). The general location of the site is illustrated on the Site Location Map, included as Plate 1 in Appendix A of this report.

The site consists of four (4) irregular shaped parcels, which total 155± acres in size. The site is presently vacant and undeveloped, except for several small footings and slabs, from a previously demolished structure in the northeastern area of the site. Ground surface cover throughout the majority of the site consists of moderate to heavy native grass and weed growth with areas of exposed soil. A soil stockpile, approximately 100± feet long, 32± feet wide, and 10± feet high, is present in the northwest area of the site. Occasional trees of various sizes were observed throughout the site.

A drainage channel trends from the northwest corner of the site to the southeast corner of the site. The channel has a trapezoidal shaped cross-section and appears to be of artificial construction. This channel is approximately 15± feet wide and 7± feet deep. Limited portions of the channel, near the northern and southern property lines, are lined with concrete and limited portions of the channel are lined with small boulders. Two drainage courses are present in the northern portion of the site. These drainage courses are present at the western property line and terminate at the aforementioned channel. The depths of both of the drainage courses range between 2 and 4± feet.

Topographic information for the subject site was obtained from a topographic plan provided by the client. Based on this plan, the existing site grades range from a maximum elevation of 1524.0± feet mean sea level (msl) in the northwest corner of the site to a minimum elevation of 1500.0± feet msl in the southeast corner of the subject site. There is approximately 24 feet of elevation differential across the site. Site topography on the west side of the channel generally slopes downward to the southeast at a gradient of approximately 1 percent. On the east side of the channel, site topography generally slopes downward to the south at a gradient between 0.5 and 1 percent.

3.2 Proposed Development

A master site plan, prepared by RGA, was provided to our office. Based on this plan, the site will be developed with three (3) distribution/logistics buildings. These buildings will be constructed to be convertible to accommodate air cargo facilities. The buildings, identified as Buildings A through C, will possess footprint areas of 985,998± ft^2, 557,653± ft^2, 846,019± ft^2, respectively.

The buildings will be surrounded by asphaltic concrete and/or Portland cement concrete pavements with limited landscape planter areas.

Detailed structural information has not been provided. It is assumed that the new buildings will be single-story structures of tilt-up concrete construction, typically supported on a conventional shallow foundation system with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 3 to 5 kips per linear foot, respectively.

No significant amounts of below grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the assumed topography, cuts and fills of 6 to 10± feet are expected to be necessary to achieve the proposed site grades. Deeper fills are expected to be necessary in the area of the existing drainage channel which is present within the footprint of Buildings A and B and in the proposed pavement areas on the east side of Buildings B and C.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of twenty-three (23) borings advanced to depths of 5 to 50± feet below existing site grades. Eight (8) of the borings were drilled to depths of 50± feet as part of the liquefaction evaluation. Eleven (11) additional borings were drilled within the building footprint areas to depths of 15 to 20± feet. Four (4) borings were drilled to depths of 5± feet within the proposed surrounding pavement areas. All of the borings were logged during drilling by a member of our staff.

The borings were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and relatively undisturbed soil samples were taken during drilling. Relatively undisturbed samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. Samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Younger Alluvium

The majority of the borings encountered older native alluvium at the ground surface. However, seven of the twenty-three borings encountered younger alluvial soils at the ground surface, extending to depths of 1½ to 5½± feet. These younger alluvial soils generally consist of medium dense silty fine sands with varying quantities of medium to coarse sands and occasional medium dense clayey fine sands.

Older Alluvium

Older alluvium was encountered at all of the borings, either at the ground surface, or beneath the younger alluvium, except at Boring No. B-22, which was terminated in younger alluvium at a depth of 5± feet. The near surface older alluvium generally consists of medium dense to very

dense clayey sands and silty sands and very stiff to hard fine sandy clays with varying amounts of medium to coarse sand, silt, and fine gravel. Occasional strata of well graded, dense to very dense sands were encountered at a depth greater than 20± feet. Older alluvial soils extend to at least the maximum depth explored of 50± feet at the boring locations.

Groundwater

Free water was encountered during drilling at eight of the borings at the subject site. Boring Nos. B-1, B-4, B-8, B-9, B-13, B-14, B-17 and B-19 encountered free water at depths ranging from 22± feet to 36± feet. Based on the water level measurements and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at depths of 22 to 36± feet below the existing site grades at the time of subsurface exploration.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level for the site. The primary reference used to determine the groundwater depths in this area is a monitoring well located approximately 1.6 miles north of the subject site. In this well, the groundwater level is 17± feet (September 2015) below the ground surface.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration program were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Soluble Sulfates

Representative samples of the near-surface soils were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The result of the soluble sulfate testing is presented below, and is discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	ACI 318 Classification
B-2 @ 0 to 5 feet	0.002	Negligible
B-3 @ 0 to 5 feet	0.002	Negligible
B-19 @ 0 to 5 feet	0.001	Negligible

Consolidation

Selected soil samples have been tested to determine their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at

an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-12 in Appendix C of this report.

Maximum Dry Density and Optimum Moisture Content

Representative bulk samples were tested to determine their maximum dry density and optimum moisture content. The results were obtained using the Modified Proctor procedure, per ASTM D-1557. These test results are enclosed in presented on Plates C-13 through C-16 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water, and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	**Expansion Index**	**Expansion Potential**
B-3 @ 0 to 5 feet	22	Low
B-4 @ 0 to 5 feet	15	Very Low
B-9 @ 0 to 5 feet	38	Low
B-13 @ 0 to 5 feet	33	Low
B-14 @ 0 to 5 feet	21	Low

California Bearing Ratio (CBR)

One representative bulk sample was submitted to a subcontracted laboratory and tested to determine its CBR values at three different densities. The resulting CBR values are plotted on a chart of CBR versus Dry density. The samples were tested in accordance with ASTM D-1883, Standard Test Method for CBR of Laboratory Compacted Soils. The results of the CBR testing are presented below. The CBR laboratory data sheets are included in Appendix C.

Boring No. B-20 @ 0-5 feet	
Material	**CBR-Value**
Subgrade Compacted to 84% Relative Compaction	1
Subgrade Compacted to 92% Relative Compaction	7
Subgrade Compacted to 98% Relative Compaction	21

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations. The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

Based on standards in place at the time of this report, the proposed development must be designed in accordance with the requirements of the 2013 edition of the California Building Code (CBC). The CBC provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2013 CBC Seismic Design Parameters have been generated using U.S. Seismic Design Maps, a web-based software application developed by the United States Geological Survey. This software application, available at the USGS web site, calculates seismic design parameters in accordance with the 2013 CBC, utilizing a database of deterministic site accelerations at 0.01 degree intervals. The table below is a compilation of the data provided by the USGS application. A copy of the output generated from this program is included in Appendix E of this report. A

copy of the Design Response Spectrum, as generated by the USGS application is also included in Appendix E. Based on this output, the following parameters may be utilized for the subject site:

2013 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	1.500
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.600
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	1.500
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	0.900
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.000
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.600

Ground Motion Parameters

The liquefaction evaluation was performed using a site acceleration consistent with maximum considered earthquake ground motions, as required by the 2013 CBC. The peak ground acceleration (PGA) was determined in accordance with Section 11.8.3 of ASCE 7-10. The parameter PGA_M is the maximum considered earthquake geometric mean (MCE_G) PGA, multiplied by the appropriate site coefficient from Table 11.8-1 of ASCE 7-10. The web-based software application U.S. Seismic Design Maps (described in the previous section) was used to determine PGA_M, which is 0.50g. A portion of the program output is included as Plate 2 of this report. An associated earthquake magnitude was obtained from the 2008 USGS Interactive Deaggregation application available on the USGS website. The deaggregated modal magnitude is 7.58, based on the peak ground acceleration and NEHRP soil classification D.

Liquefaction

The Riverside County Land Information System indicates that the subject site is located within a zone of moderate high liquefaction susceptibility. Based on this mapping, the scope of this geotechnical investigation included a site-specific liquefaction evaluation.

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Non-sensitive clayey (cohesive) soils which possess a plasticity index of at least 18 (Bray and Sancio, 2006) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The liquefaction analysis was conducted in accordance with the requirements of Special Publication 117A (CDMG, 2008), and currently accepted practice (SCEC, 1997). The liquefaction potential of the subject site was evaluated using the empirical method developed by Boulanger and Idriss (Boulanger and Idriss, 2008). This method predicts the earthquake-induced liquefaction potential of the site based on a given design earthquake magnitude and peak ground acceleration at the subject site. This procedure essentially compares the cyclic resistance ratio (CRR) [the cyclic stress ratio required to induce liquefaction for a cohesionless soil stratum at a given depth] with the earthquake-induced cyclic stress ratio (CSR) at that depth from a specified design earthquake (defined by a peak ground surface acceleration and an associated earthquake moment magnitude). CRR is determined as a function of the corrected SPT N-value $(N_1)_{60\text{-}cs}$, adjusted for fines content. The factor of safety against liquefaction is defined as CRR/CSR. Based on Special Publication 117A, a factor of safety of at least 1.3 is required in order to demonstrate that a given soil stratum is non-liquefiable. Additionally, in accordance with Special Publication 117A, clayey soils which do not meet the criteria for liquefiable soils defined by Bray and Sancio (2006), loose soils with a plasticity index (PI) less than 12 and moisture content greater than 85% of the liquid limit, are considered to be insusceptible to liquefaction. Non-sensitive soils with a PI greater than 18 are also considered to be non-liquefiable.

As part of the liquefaction evaluation, Boring Nos. B-1, B-4, B-8, B-9, B-13, B-14, B-17 and B-19 were extended to depths of 50± feet. The liquefaction analysis procedure is tabulated on the spreadsheet forms included in Appendix F of this report, using the data obtained from these borings. The liquefaction potential of the site was analyzed utilizing a PGA_M of 0.5g for a magnitude 7.58 seismic event.

The historic high groundwater depth is assumed to be approximately 17 feet based on readily available monitoring well data from the internet. It should be noted that the closest well was located approximately 1.6 miles north of the site.

If liquefiable soils are identified, the potential settlements that could occur as a result of liquefaction are determined using the equation for volumetric strain due to post-cyclic reconsolidation (Yoshimine et. al, 2006). This procedure uses an empirical relationship between the induced cyclic shear strain and the corrected N-value to determine the expected volumetric strain of saturated sands subjected to earthquake shaking. This analysis is also documented on the spreadsheets included in Appendix F.

Conclusions and Recommendations

The results of the liquefaction analysis did not identify potentially liquefiable soils at the site. Soils which are located above the historic groundwater table, or possess factors of safety in excess of 1.3 are considered non-liquefiable. Some silty clay and sandy clay strata are also considered non-liquefiable due to their cohesive characteristics and the results of the Atterberg limits testing with respect to the criteria of Bray and Sancio (2006). Based on the results of this analysis, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

Most of the borings encountered high strength older alluvium at or near the ground surface. Some of the borings encountered moderate strength, lower density younger alluvium within the upper 1½ to 5½± feet below the ground surface. The results of consolidation/collapse testing indicate that the near surface younger and older alluvial soils possess favorable consolidation characteristics. Although the majority of the soils possess relatively high strengths, the soils present in the building pad areas possess variable compositions and densities and have moisture contents below the optimum moisture content. Based on these considerations, some remedial grading is considered to be warranted within the proposed building areas in order to provide uniform support characteristics by removing and replacing a portion of the near-surface older and younger alluvium and replacing these soils as compacted structural fill.

Additional overexcavation may be necessary within the existing drainage course and channel areas due to the presence of low-density sediments which may be present in the channel and/or drainage courses. The extent and presence of such materials is presently unknown, because these areas were not accessible to the drill rig during subsurface exploration.

Settlement

The recommended remedial grading will remove the upper portion of the older and younger alluvial soils, and replace these materials as compacted structural fill. The native soils that will remain in place below the depth of recommended overexcavation possess favorable consolidation/collapse characteristics. Therefore, following completion of the recommended grading, post-construction settlements are expected to be within tolerable limits.

Expansion

The near surface soils at this site generally consist of silty and clayey sands. Laboratory testing indicates that these materials possess very low to low expansion potentials (EIs between 15 and 38). The foundation and floor slab design recommendations contained within this report are made in consideration of the expansion index test results. It is recommended that additional expansion index testing be conducted at the completion of rough grading to verify the expansion potential of the as-graded building pad.

Soluble Sulfates

The results of the soluble sulfate testing indicate that the selected samples of the on-site soils contain negligible concentrations of soluble sulfates, in accordance with American Concrete Institute (ACI) guidelines. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building area.

Shrinkage/Subsidence

Based on the results of the laboratory testing, removal and recompaction of the younger alluvial soils is estimated to result in an average shrinkage of 8 to 12 percent. Shrinkage on the order of 4 to 8 percent is expected during the removal and recompaction of the near surface older alluvium. Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1± feet. This estimate may be used for grading in areas that are underlain by native alluvial soils.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Grading and Foundation Plan Review

No grading and foundation plans were available at the time of this report. It is therefore recommended that we be provided with copies of the preliminary plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site preparation should include stripping of any topsoil, vegetation and organic debris on the site. Based on conditions observed at the time of the subsurface exploration, this will include localized areas of shrubs, grasses and trees. These materials should be disposed of off-site. The actual extent of stripping should be determined in the field by a representative of the geotechnical engineer, based on the organic content and the stability of the encountered materials.

Remnants of previous development, including concrete slabs and footings were observed in the northeastern portion of the property. Additionally, a few manholes are present in the central portion of the site, indicating the presence of buried utility lines. Initial site preparation should include demolition of any remnants of former development, including any floor slabs, foundations, utilities, septic systems, and any other improvements that will not remain in place with the new development. Concrete and asphalt debris may be re-used within the compacted fills, provided they are pulverized and the maximum particle size is less than 2 inches.

Treatment of Existing Soils: Building Pads

Remedial grading should be performed within the proposed building areas in order to provide uniform support characteristics for the proposed building foundations and floor slabs. Any soils disturbed during site stripping and demolition of the remnants of previous development should be removed and replaced as structural fill. It is recommended that the existing soils within the proposed building areas be overexcavated to depths of at least 2 feet below proposed building pad subgrade elevation and to a depth of at least 2 feet below existing grade, whichever is greater.

Additional overexcavation should be performed within the influence zones of the new foundations, to provide for a new layer of compacted structural fill extending to a depth of 2 feet below proposed bearing grade.

The overexcavation areas should extend at least 5 feet beyond the building perimeter and foundations, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the building areas should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrades, as well as to support the foundation loads of the new structures. This evaluation should include proofrolling and probing to identify any soft, loose or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if undocumented fill materials or loose, porous, or low density native soils are encountered at the base of the overexcavation. As discussed in the previous section of this report, deeper overexcavation may be necessary to remove low-density sediments in the existing channel and drainage courses, which are present with the proposed Building A footprint area. As discussed above, the actual presence and depth of such sediments are unknown.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches, moisture treated to 2 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining and site walls should be overexcavated to a depth of 2 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. Any undocumented fill soils within any of these foundation areas should be removed in their entirety. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning, and recompacting the upper 12 inches of exposed subgrade soils, as discussed for the building areas. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Parking and Drive Areas

Based on economic considerations, overexcavation of the existing soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength, or unstable, soils are identified by the geotechnical engineer during grading. Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations.

The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. Any such materials should be removed to a level of firm and unyielding soil. The exposed subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to at least 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength surficial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking and drive areas. The grading recommendations presented above do not completely mitigate the extent of variable density and low expansive soils within proposed parking and drive areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking area should be graded in a manner similar to that described for the building area.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above the optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the 2013 CBC and the grading code of the City of Moreno Valley.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. It is recommended that materials in excess of 3 inches in size not be used for utility trench backfill. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by City of Moreno Valley. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of silty sands and clayey sands. Some of these materials may be subject to minor caving within shallow excavations. Where caving does occur, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, the inclination of temporary slopes should not exceed 1.5h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Moisture Sensitive Subgrade Soils

Most of the near surface soils possess appreciable silt and clay content and may become unstable if exposed to significant moisture infiltration or disturbance by construction traffic. In addition, based on their granular content, some of the on-site soils will also be susceptible to erosion. The site should, therefore, be graded to prevent ponding of surface water and to prevent water from running into excavations.

Expansive Soils

The near surface on-site soils have been determined to possess a low expansion potential. Therefore, care should be given to proper moisture conditioning of all building pad subgrade soils to a moisture content of 2 to 4 percent above the Modified Proctor optimum during site grading. All imported fill soils should have very low expansive (EI < 20) characteristics. In addition to adequately moisture conditioning the subgrade soils and fill soils during grading, special care must be taken to maintain moisture content of these soils at 2 to 4 percent above the Modified Proctor optimum. This will require the contractor to frequently moisture condition these soils throughout the grading process, unless grading occurs during a period of relatively wet weather.

Groundwater

The static groundwater table at this site was present at depths between 22 and 36± feet below the existing site grades. Therefore, groundwater is not expected to impact grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pads will be underlain by structural fill soils used to replace variable strength, variable composition, dry of optimum, near surface alluvium. These new structural fill soils are expected to extend to depths of at least 2 feet below proposed foundation bearing grade, underlain by 1± foot of additional soil that has been scarified, moisture conditioned, and recompacted. Based on this subsurface profile, the proposed structure may be supported on conventional shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 3,000 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom) due to the presence of low expansive soils. Additional reinforcement may be necessary for structural considerations.
- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 24 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.
- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to

at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to at least 2 to 4 percent of the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. **Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.**

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 3000 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floors of the new structures may be constructed as conventional slabs-on-grade supported on newly placed structural fill, extending to a depth of at least 2 feet below the proposed building pad grade. Based on geotechnical considerations, the floor slab may be designed as follows:

- Minimum slab thickness: 6 inches.

- Minimum slab reinforcement: No. 3 bars at 18 inches on center in both directions due to the presence of low expansive soils. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed loading.

- Modulus of Subgrade Reaction: k = 125 psi/in.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area of the proposed slab where such moisture sensitive floor coverings are expected. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.
- Moisture condition the floor slab subgrade soils to 2 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.
- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slabs should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Although not indicated on the site plan, some small retaining walls (less than 3 to 4 feet in height) may be required to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The near surface soils generally consist of clayey sands and silty sands with occasional clays. Based on their classifications, these soils are expected to possess a friction angle of at least 30 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the

heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		Soil Type
		On-Site Clayey Sands and Silty Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		130 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	42 lbs/ft^3
	Active Condition (2h:1v backfill)	67 lbs/ft^3
	At-Rest Condition (level backfill)	63 lbs/ft^3

Regardless of the backfill type, the walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2013 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed compacted structural fill, extending to a depth of at least 2 feet below the proposed bearing grade. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 8-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

The following pavement designs are provided for truck and automobile traffic. However, we understand that the new pavements on the east sides of the proposed building may also be subjected to traffic from aircraft. Based on conversations with the client and the project civil engineer, information regarding the volume of airplane traffic and types of airplanes is presently not available. Therefore, the following pavement designs do not include airplane traffic. SCG will provide an addendum pavement design report after additional information regarding airplane traffic has been provided.

Pavement Subgrades

It is anticipated that the new pavements will be supported on a layer of existing soils which have been scarified, thoroughly moisture conditioned and recompacted. The near surface soils generally consist of silty and clayey sands and possess an R-value of 30, based on a correlation with the results of the CBR testing. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering controlled conditions. It is recommended that R-value and/or CBR testing be performed after completion of rough grading. Depending upon the results of this testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20 year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=30)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	6	8	10	11	13
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6½	8	9
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness. The actual joint spacing and reinforcing of the Portland cement concrete pavements should be determined by the structural engineer.

7.0 GENERAL COMMENTS

This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

8.0 REFERENCES

Blake, Thomas F., *FRISKSP, A Computer Program for the Probabilistic Estimation of Peak Acceleration and Uniform Hazard Spectra Using 3-D Faults as Earthquake Sources*, Version 4.00, 2000.

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Tokimatsu, K. and Yoshimi, Y., "*Empirical Correlations of Soil Liquefaction Based on SPT N-value and Fines Content,"* Seismological Research Letters, Eastern Section Seismological Society Of America, Volume 63, Number 1, p. 73.

Youd, T. L. and Idriss, I. M. (Editors), "Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils," Salt Lake City, UT, January 5-6 1996, NCEER Technical Report NCEER-97-0022, Buffalo, NY.

APPENDIX A

SOURCE: RIVERSIDE COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP

D2 AIR CARGO COMPATIBLE DEVELOPMENT

MORENO VALLEY, CALIFORNIA

SCALE: 1" = 2400'	
DRAWN: MRM CHKD: JAS	
SCG PROJECT 15G204-1	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

NORTH

SoCalGeo

GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

NOTE: SITE MAP PROVIDED BY RGA ARCHITECTS

BORING LOCATION PLAN

D2 AIR CARGO COMPATIBLE DEVELOPMENT

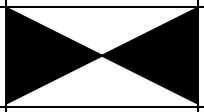
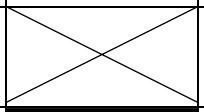
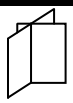
MORENO VALLEY, CALIFORNIA

SCALE: 1" = 400'	
DRAWN: MRM CHKD: JAS	
SCG PROJECT 15G204-1	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

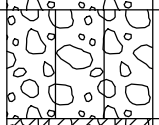
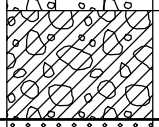
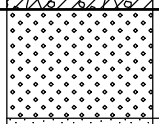
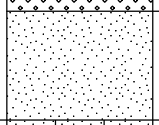
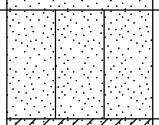
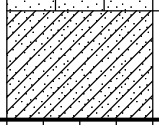
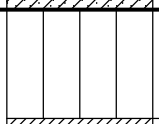
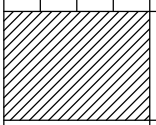
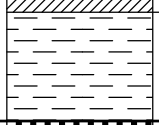
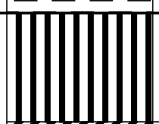
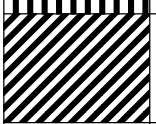
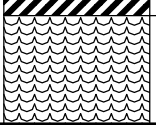
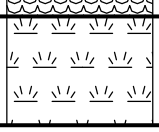
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: 23 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		23			YOUNGER ALLUVIUM: Light Brown Silty fine Sand, trace medium to coarse Sand, trace Clay, medium dense-damp		3					
		29			OLDER ALLUVIUM: Gray Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, medium dense-damp to moist		7					
5		30	4.5+		Brown fine to medium Sandy Clay, hard-damp to moist		6 9					
		35			Red Brown Clayey fine to coarse Sand, trace fine Gravel, trace to little Silt, dense-damp to moist		6					
10												
		21			Brown Clayey fine Sand, trace to little Silt, trace medium Sand, trace Iron oxide staining, medium dense-moist		13					
15												
		17			Gray Brown Clayey fine to coarse Sand, little Silt, medium dense-moist		13			18		
20												
		33			Groundwater encountered at 23 feet during drilling		13					
25					Brown Silty fine Sand, trace to little Clay, trace Iron oxide staining, dense-wet		16			33		
		26			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, dense-wet		16					
30												
		35					15					

TBL 15G204 GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-1a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: 23 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
40		38			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, dense-wet		17					
45		41					14					
50		56					14					
					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-1b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/28/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 13 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		32			YOUNGER ALLUVIUM: Light Brown Silty fine Sand, trace Clay, trace medium Sand, trace fine root fibers, slightly porous, medium dense-damp	101	3					
		52	4.0		OLDER ALLUVIUM: Brown fine Sandy Clay, trace Silt, trace medium to coarse Sand, slightly porous, hard-damp	116	6					
5		59			Brown Clayey fine to medium Sand, trace Silt, trace coarse Sand, dense-damp	121	5					
		85/10			Brown Silty fine Sand, trace medium to coarse Sand, trace to little Clay, dense to very dense-moist	127	9					
10		53	4.5+		Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace Silt, trace calcareous veining, dense to hard-moist	114	11					
		15			Brown fine Sandy Silt, trace Clay, medium dense-very moist		18					
15												
		19			Light Gray Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp		6					
20					Boring Terminated at 20'							

TBL 15G204 GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/28/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 12 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		52			OLDER ALLUVIUM: Light Brown Silty fine Sand, trace medium to coarse Sand, trace Clay, very dense-damp		5					EI = 22 @ 0 to 5'
		54			Gray Brown Clayey fine to medium Sand, very dense-damp		5					
5		39			Light Brown Clayey fine Sand, litle Silt, trace medium Sand, trace calcareous veining, dense-moist		8					
		40	4.5		Gray Brown fine Sandy Clay, trace Silt, trace medium to coarse Sand, trace Iron oxide staining, dense to hard-moist		10					
10												
		20	2.0		@13½ to 15 feet, Brown, trace medium Sand, moist to very moist		15					
15					Boring Terminated at 15'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/28/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 23 feet
CAVE DEPTH: 37 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		44	4.5+		OLDER ALLUVIUM: Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace to little Silt, slightly porous, dense-damp		5					EI = 15 @ 0 to 5'
		64			Light Red Brown Clayey fine Sand, trace medium to coarse Sand, little Silt, trace Iron oxide staining, very dense-moist		9					
5		26	4.5+		Brown fine to medium Sandy Clay, trace coarse Sand, little Silt, trace calcareous veining, very stiff-moist		11					
		21					9					
10												
		18	3.5		Brown Clayey fine Sand to fine Sandy Clay, trace to little Silt, trace medium Sand, trace Iron oxide staining, medium dense to very stiff-moist to very moist		14					
15												
		26			Light Gray Brown Silty fine to coarse Sand, trace Clay, trace calcareous veining, medium dense-moist		10			25		
20												
		19			Light Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, medium dense to very dense-wet Groundwater encountered at 23 feet during drilling		16			14		
25												
		34					15					
30												
		52					14					

TBL 15G204 GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-4a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: 23 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 37 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Light Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, medium dense to very dense-wet							
					Red Brown to Gray Brown Clayey fine to coarse Sand, trace fine Gravel, trace Silt, dense to very dense-wet							
40		67					16					
45		47					15					
50		52					16					
					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-4b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		35			OLDER ALLUVIUM: Brown to Dark Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, trace fine root fibers, slightly porous, dense-damp	99	3					
		45				118	7					
5		50/6"			Light Brown Silty fine Sand, trace medium Sand, trace Clay, dense-damp to moist		5					Disturbed Sample
		50				109	9					
		15			Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, medium dense-damp	112	4					
10												
					Gray Brown fine Sandy Silt, trace to little Clay, trace Iron oxide staining, medium dense-very moist							
		19					16					
15												
					Gray Brown Clayey fine Sand, little Silt, trace medium Sand, trace Iron oxide staining, medium dense-very moist							
		18					16					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 15G204 | DRILLING DATE: 10/28/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 18 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		62			OLDER ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, trace Clay, very dense-damp		6					
		33			Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, little Silt, dense-damp to moist		7					
5		22	4.5		@ 6 to 10 feet, trace Iron oxide staining, trace calcareous veining, medium dense		11					
		24					11					
10					Brown fine to medium Sandy Clay, trace Silt, dense-damp to moist							
		31	4.5				8					
15					Gray Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, medium dense-damp							
		23					6					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-7

JOB NO.: 15G204 | DRILLING DATE: 10/29/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, trace Clay, dense-damp							
		48				109	5					
					Dark Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, slightly porous, dense-damp to moist							
		50/4"					7					Disturbed Sample
5		50/6"				102	7					
					Brown Clayey fine Sand to fine Sandy Clay, little Silt, trace medium Sand, medium dense to very stiff-moist to very moist							
		28	4.5+			119	13					
		20	4.5+			114	11					
10												
		25	3.0				26					
15					Boring Terminated at 15'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-7

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-8

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 22 feet
CAVE DEPTH: 36 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						COMMENTS
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	
		21			ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, trace Clay, medium dense-very moist		13					
		57	2.0		OLDER ALLUVIUM: Brown fine to medium Sandy Clay, trace coarse Sand, trace Silt, hard-moist		8					
5		38	4.5+				10					
					Light Brown Silty fine Sand, trace medium Sand, trace Clay, dense-very moist		18					
		20			Brown Clayey fine Sand, trace medium Sand, trace Silt, medium dense-damp to moist		8					
10												
					Red Brown Clayey fine to medium Sand, trace Silt, medium dense-very moist							
		22					13					
15												
					Brown Clayey fine Sand, trace medium to coarse Sand, trace Silt, trace calcareous veining, medium dense-very moist to wet							
		16					16			38		
20												
					Gray Brown fine to coarse Sand, little Clay, trace fine Gravel, medium dense-wet Groundwater encountered at 22 feet during drilling							
		22					15			13		
25												
		73					17					
					Gray Brown Clayey fine to coarse Sand, trace Silt, well cemented, very dense-wet		14					
30												
					Orange Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, moderately cemented, dense-wet							
		41					14					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-8a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-8

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 22 feet
CAVE DEPTH: 36 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Orange Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, moderately cemented, dense-wet							
					Light Gray Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, medium dense to dense-wet							
		42					15					
40												
		29					15			19		
45												
		41					15					
50					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-8b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-9

JOB NO.: 15G204 | DRILLING DATE: 10/29/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 40 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Gray Brown Clayey fine to medium Sand, trace coarse Sand, trace fine Gravel, trace Silt, dense-damp							
		45	4.5+				6					EI = 38 @ 0 to 5'
		64			Light Brown Clayey fine Sand, little Silt, trace medium to coarse Sand, very dense-moist		9					
5		27	4.0		Brown fine to medium Sandy Clay, trace coarse Sand, trace Silt, medium dense to very stiff-moist		11					
		24	3.0				13					
10												
		33	4.5+		Red Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace to little Silt, trace calcareous veining, dense to hard-moist		11					
15												
		24			Light Gray Silty fine to medium Sand, trace coarse Sand, trace to little Clay, medium dense-damp to moist		7			17		
20												
		24			Light Gray Clayey fine to coarse Sand, trace Silt, medium dense to dense-damp to moist		6			13		
25												
		33			@ 28½ to 30 feet, trace fine Gravel		11					
30												
		47			Gray Brown fine to coarse Sand, little Clay, trace fine Gravel, dense-moist to very moist		14					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-9a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-9

JOB NO.: 15G204 | DRILLING DATE: 10/29/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 40 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Gray Brown fine to coarse Sand, little Clay, trace fine Gravel, dense-moist to very moist							
					Groundwater encountered at 36 feet during drilling							
					Red Brown Clayey fine Sand, trace Silt, trace fine Gravel, dense to very dense-wet							
		37					21					
40												
		47					16					
45												
		50					16					
50					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-9b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-10

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 16 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		36	4.5		OLDER ALLUVIUM: Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace Silt, dense to hard-damp to moist		7					
		48			Light Brown Silty fine Sand, little Clay, trace medium to corase Sand, dense-damp to moist		7					
5		41	4.5+		Brown fine Sandy Clay, trace medium to coarse Sand, trace Silt, hard-moist		12					
		34	3.75				11					
10					Gray Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, medium dense-damp							
		24					5					
15					Gray Brown Clayey fine Sand, trace medium Sand, trace Silt, medium dense-damp		5					
					Brown fine Sandy Clay, trace medium Sand, trace Silt, trace Iron oxide staining, very stiff-moist to very moist							
		22	4.5+				13					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-10

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-11

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 11 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		33			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, dense-damp		6					
		20	4.5+		Red Brown fine to medium Sandy Clay, trace coarse Sand, trace Silt, medium dense to very stiff-moist		11					
5												
		35	3.5		Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace coarse Sand, dense to hard-moist		8					
		41	4.5+				7					
10												
					Brown fine Sandy Clay, little Silt, trace medium to coarse Sand, very stiff-moist							
		29	2.0				10					
15					Boring Terminated at 15'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-11

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-12

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/29/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 17 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		15			YOUNGER ALLUVIUM: Brown Silty fine to medium Sand, trace Clay, slightly porous, medium dense-damp	101	3					
		17			Brown Clayey fine to medium Sand, trace coarse Sand, trace fine Gravel, trace Silt, medium dense to dense-damp	107	3					
5		47				110	8					
		31	4.5		OLDER ALLUVIUM: Light Brown Clayey fine Sand, trace medium Sand, trace Silt, trace Iron oxide staining, dense-moist	114	8					
		41	4.5+		Red Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace Silt, medium dense to very stiff-moist to very moist	117	14					
10												
		19	4.5				12					
15												
		25			Gray Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, medium dense-damp		6					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-12

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-13

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace Silt, dense-damp							
		46					5					EI = 33 @ 0 to 5'
					Light Brown Silty fine Sand, trace medium Sand, trace to little Clay, very dense-damp							
		50/6"					6					
5					Brown Clayey fine Sand, trace medium to coarse Sand, little Silt, trace calcareous veining, medium dense to dense-moist							
		32					8					
		22					12					
10					Brown Clayey fine to medium Sand, trace coarse Sand, medium dense-damp to moist							
		16					7					
15					Gray Brown fine to coarse Sand, little Clay, trace Silt, trace fine Gravel, medium dense-damp							
		18					5			18		
20					Gray Brown to Red Brown Clayey fine to coarse Sand, trace medium Sand, trace Silt, medium dense-moist to very moist							
		22					17			37		
25												
		19					13			27		
30					Red Brown Clayey fine to coarse Sand, little Silt, dense to very dense-very moist to wet							
		42					12					

TBL 15G204.GPJ SOCAL3EO.GDT 12/17/15

TEST BORING LOG

PLATE B-13a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-13

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Red Brown Clayey fine to coarse Sand, little Silt, dense to very dense-very moist to wet Groundwater encountered at 36 feet during drilling							
40		50					14					
45		43					14					
50		79/11"					14					
					Boring Terminated at 50'							

TBL 15G204 GPJ SOCALGEO GDT 12/17/15

TEST BORING LOG **PLATE B-13b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-14

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace to little coarse Sand, trace Silt, trace fine Gravel, medium dense-damp							
		26					4					EI = 21 @ 0 to 5'
		32	4.5		@ 3½ to 35 feet, Clayey fine to medium Sand to fine to medium Sandy Clay, dense-hard		6					
5												
		69			Red Brown Clayey fine Sand, little medium to coarse Sand, trace Silt, very dense-damp to moist		6					
		68					12					
10												
					Light Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
		15					4					
15												
					Light Gray Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, trace calcareous veining, dense to very dense-moist							
		80					10					
20												
		37					8			20		
25												
					Light Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, dense to very dense-moist to wet							
		59					11					
30												
		42					13					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-14a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-14

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: 36 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
40		47			Light Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, dense to very dense-moist to wet Groundwater encountered at 36 feet during drilling		15					
45		60					15					
50		68					16					
					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-14b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-15

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 18 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		20			ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, trace fine root fibers, very porous, medium dense-damp	101	3					
		48			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace to little Silt, trace fine root fibers, slightly porous, dense-damp	110	4					
5		47				112	4					
		49	2.5		Orange Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace Silt, trace Iron oxide staining, dense to hard-damp to moist	116	6					
10		55	3.5			102	12					
		26	4.0		Brown to Gray Brown fine Sandy Clay, trace Silt, trace medium to coarse Sand, trace calcareous nodules, very stiff-very moist		19					
15												
		24	4.0				16					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-15

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-16

JOB NO.: 15G204 | DRILLING DATE: 10/30/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		42			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, trace calcareous veining, dense-damp		4					
		18	4.5+		@ 3½ to 8 feet, Clayey fine to medium Sand to fine to medium Sandy Clay, medium dense to very stiff-damp to moist		5					
5		29	4.5				10					
		22	4.5		Red Brown fine to medium Sandy Clay, trace coarse Sand, trace Silt, very stiff-moist		11					
10					Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, medium dense-moist							
		25					10					
15					Boring Terminated at 15'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-16

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-17

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 31 feet
CAVE DEPTH: 39 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		26			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, slightly porous, trace fine Gravel, medium dense-damp		5					
		23					6					
5		32	4.5+		Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, slightly porous, trace Iron oxide staining, dense to hard-moist		12					
		32	4.0		Red Brown Clayey fine to medium Sand to fine to medium Sandy Clay, trace coarse Sand, trace Silt, trace fine Gravel, trace Iron oxide staining, medium dense to dense to hard-moist		10					
10												
		18	4.5				11					
15												
		84			Light Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace calcareous veining, very dense-moist		9					
20												
		31			Light Gray Brown to Red Brown Clayey fine to coarse Sand, trace fine Gravel, dense-very moist		14					
25												
		37					19					
30					Groundwater encountered at 31 feet during drilling							
		47					16					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-17a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-17

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 31 feet
CAVE DEPTH: 39 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
40		53			Light Gray Brown to Red Brown Clayey fine to coarse Sand, trace fine Gravel, dense-very moist		15					
45		37			Brown Silty fine Sand, trace Clay, trace medium to coarse Sand, dense-wet		19					
		47					23					
50					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-17b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-18

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 16 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					YOUNGER ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, trace Clay, trace fine root fibers, slightly porous, medium dense-damp							
		25				105	3					
					OLDER ALLUVIUM: Brown Clayey fine to medium Sand, little coarse Sand, trace Silt, medium dense to dense-damp							
		40				129	5					
5		63				105	4					
					Light Brown Clayey fine Sand, little Silt, trace medium Sand, medium dense-damp							
		32				97	4					
					Red Brown fine to coarse Sand, trace Clay, trace to little Silt, trace fine Gravel, medium dense-damp							
		32	4.5		Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand, trace Silt, slightly porous, trace Iron oxide staining, medium dense to dense to very stiff to hard-damp to moist	107	6					
10												
		32	4.0				14					
15												
					Light Gray Brown fine Sandy Silt, trace Clay, trace medium Sand, trace calcareous veining, dense-moist							
		40					11					
20					Boring Terminated at 20'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-18

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-19

JOB NO.: 15G204 | DRILLING DATE: 11/3/15 | WATER DEPTH: 33 feet
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 39 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					OLDER ALLUVIUM: Brown Clayey fine Sand, trace medium to coarse Sand, trace Silt, trace fine root fibers, medium dense to very dense-damp to moist							
		25					7					
		53					5					
5												
		63/11"			@ 6 to 7½ feet, Red Brown		7					
		22			Brown Clayey fine Sand to fine Sandy Clay, trace Silt, trace medium Sand, medium dense to very stiff-very moist		13					
10												
					Brown Clayey fine to medium Sand, trace Silt, trace calcareous veining, well cemented, very dense-moist							
		54					11					
15												
					Brown fine to coarse Sand, little Clay, little Silt, dense-moist							
		39					12					
20												
					Gray Brown Clayey fine to coarse Sand, trace Silt, trace fine Gravel, well cemented, very dense-damp to moist							
		52					9					
25												
					Brown to Red Brown Clayey fine to coarse Sand, trace fine Gravel, trace Silt, dense-moist to wet							
		47					9					
30												
					Groundwater encountered at 33 feet during drilling							
		45					14					

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG **PLATE B-19a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-19

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 11/3/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: 33 feet
CAVE DEPTH: 39 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
40		39			Brown to Red Brown Clayey fine to coarse Sand, trace fine Gravel, trace Silt, dense-moist to wet		15					
45		51			Red Brown Silty fine to coarse Sand, trace to little Clay, trace fine Gravel, very dense-wet		13					
50		65					15					
					Boring Terminated at 50'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-19b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-20

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 11/3/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 3 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	32			OLDER ALLUVIUM: Brown Clayey fine Sand, trace medium to coarse Sand, trace fine root fibers, slightly porous, dense-damp		5					
	X	30					6					
5					Boring Terminated at 5'							

TBL 15G204.GPJ SOCAL 3EO.GDT 12/17/15

TEST BORING LOG

PLATE B-20

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-21

JOB NO.: 15G204
PROJECT: D2 Air Cargo Compatible Dev.
LOCATION: Moreno Valley, California

DRILLING DATE: 11/3/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Matt Manni

WATER DEPTH: Dry
CAVE DEPTH: 3 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	27			OLDER ALLUVIUM: Brown Clayey fine Sand, trace medium Sand, trace fine root fibers, medium dense-damp		3					
	X	55			Light Gray Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, very dense-damp		5					
5					Boring Terminated at 5'							

TBL 15G204.GPJ SOCALGEO.GDT 12/17/15

TEST BORING LOG

PLATE B-21

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-22

JOB NO.: 15G204 | DRILLING DATE: 11/3/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 3 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	12			YOUNGER ALLUVIUM: Light Brown Silty fine Sand, trace medium to coarse Sand, trace Clay, medium dense-damp		3					
	X	11					4					
5					Boring Terminated at 5'							

TBL 15G204.GPJ SOCAL3EO.GDT 12/17/15

TEST BORING LOG **PLATE B-22**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-23

JOB NO.: 15G204 | DRILLING DATE: 11/3/15 | WATER DEPTH: Dry
PROJECT: D2 Air Cargo Compatible Dev. | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 3 feet
LOCATION: Moreno Valley, California | LOGGED BY: Matt Manni | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	27			OLDER ALLUVIUM: Light Brown Clayey fine Sand, trace medium to coarse Sand, little Silt, medium dense-damp		4					
	X	37			Gray Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt, dense-damp		6					
5					Boring Terminated at 5'							

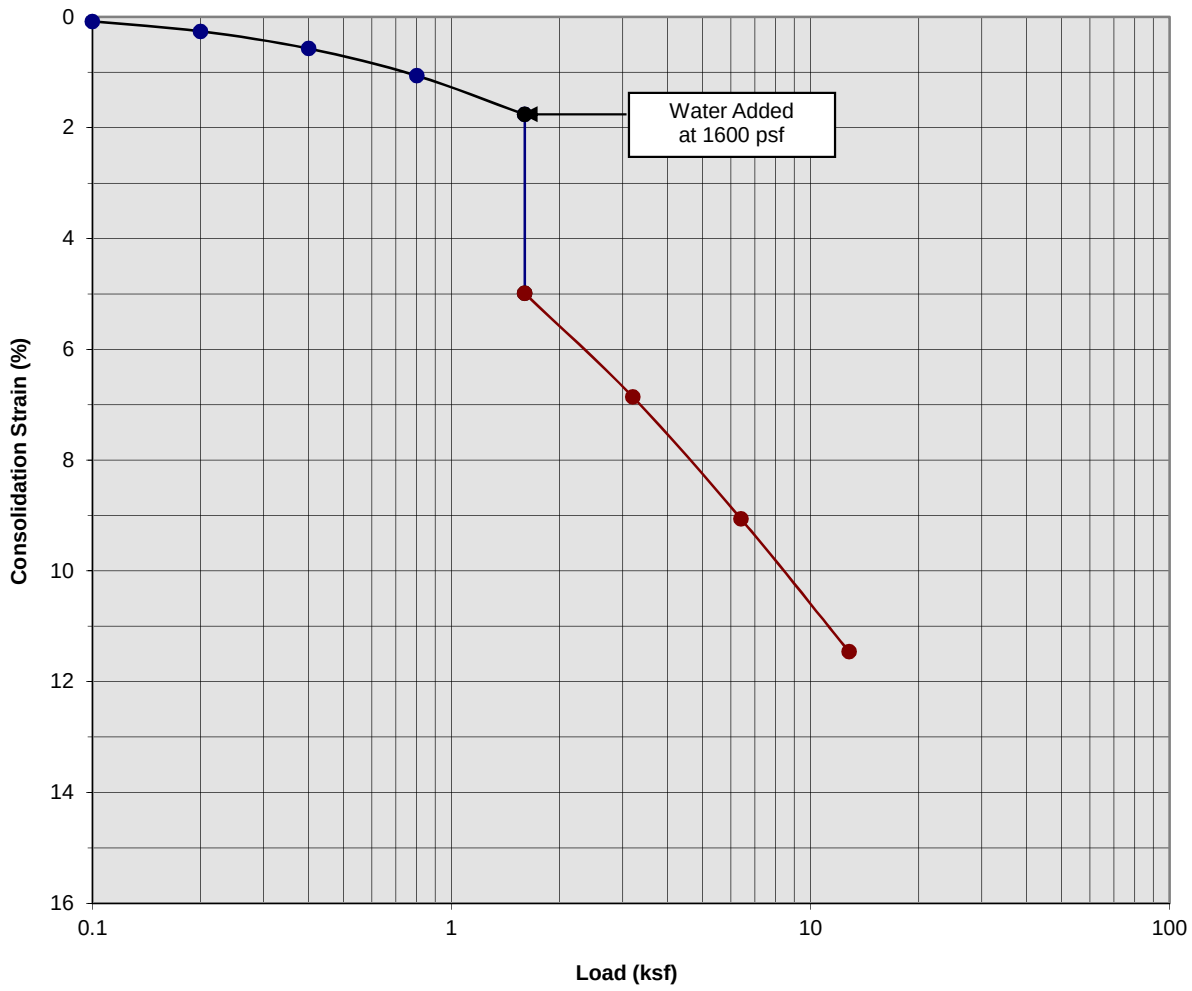
TBL 15G204.GPJ SOCAL3EO.GDT 12/17/15

TEST BORING LOG

PLATE B-23

APPENDIX C

Consolidation/Collapse Test Results



Classification: Brown Clayey fine to medium Sand, trace coarse Sand

Boring Number:	B-12	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	3 to 4	Initial Dry Density (pcf)	107.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.23

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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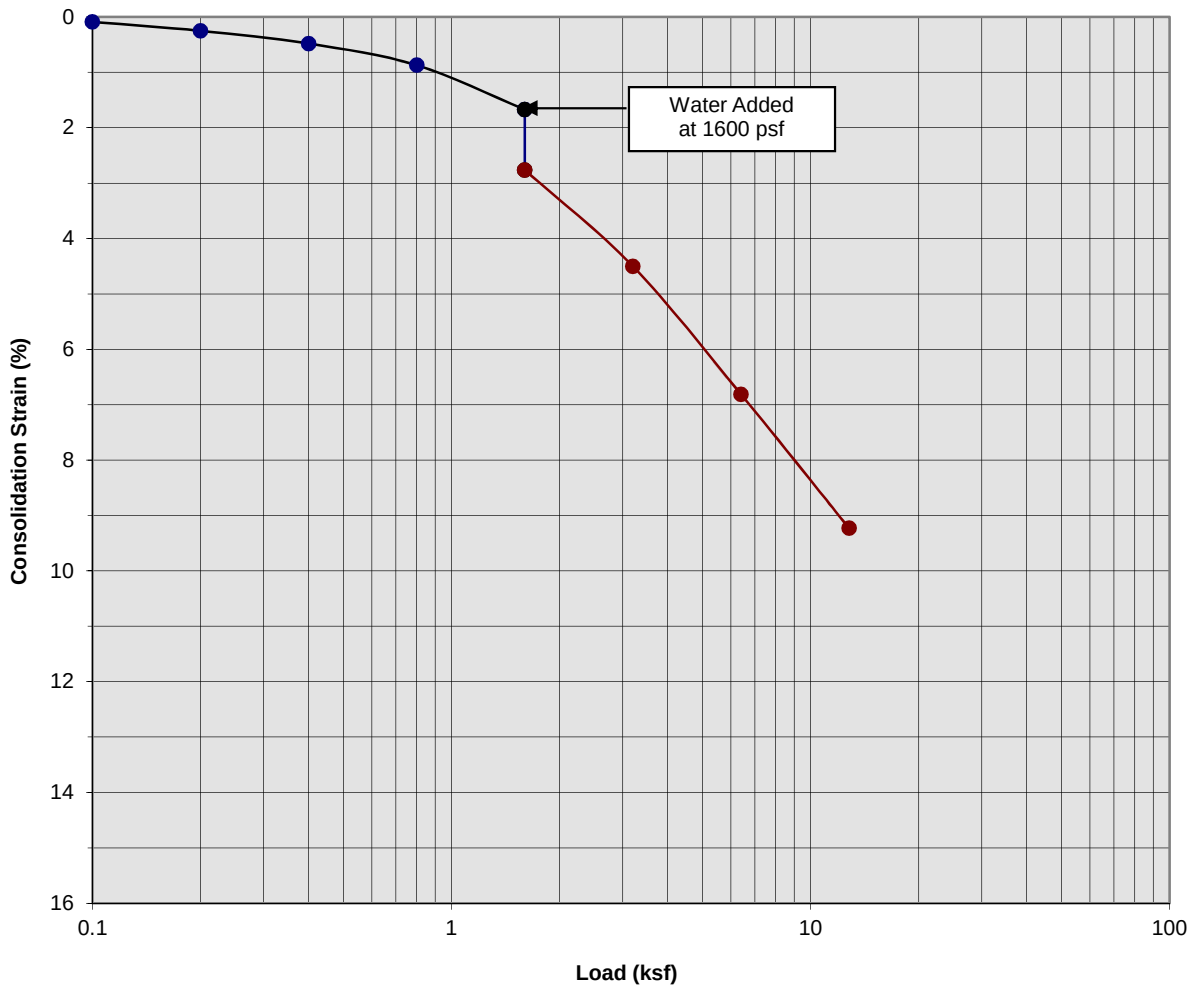
Consolidation/Collapse Test Results



Classification: Light Brown Clayey fine Sand, trace medium Sand, trace Silt

Boring Number:	B-12	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	5 to 6	Initial Dry Density (pcf)	109.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.09

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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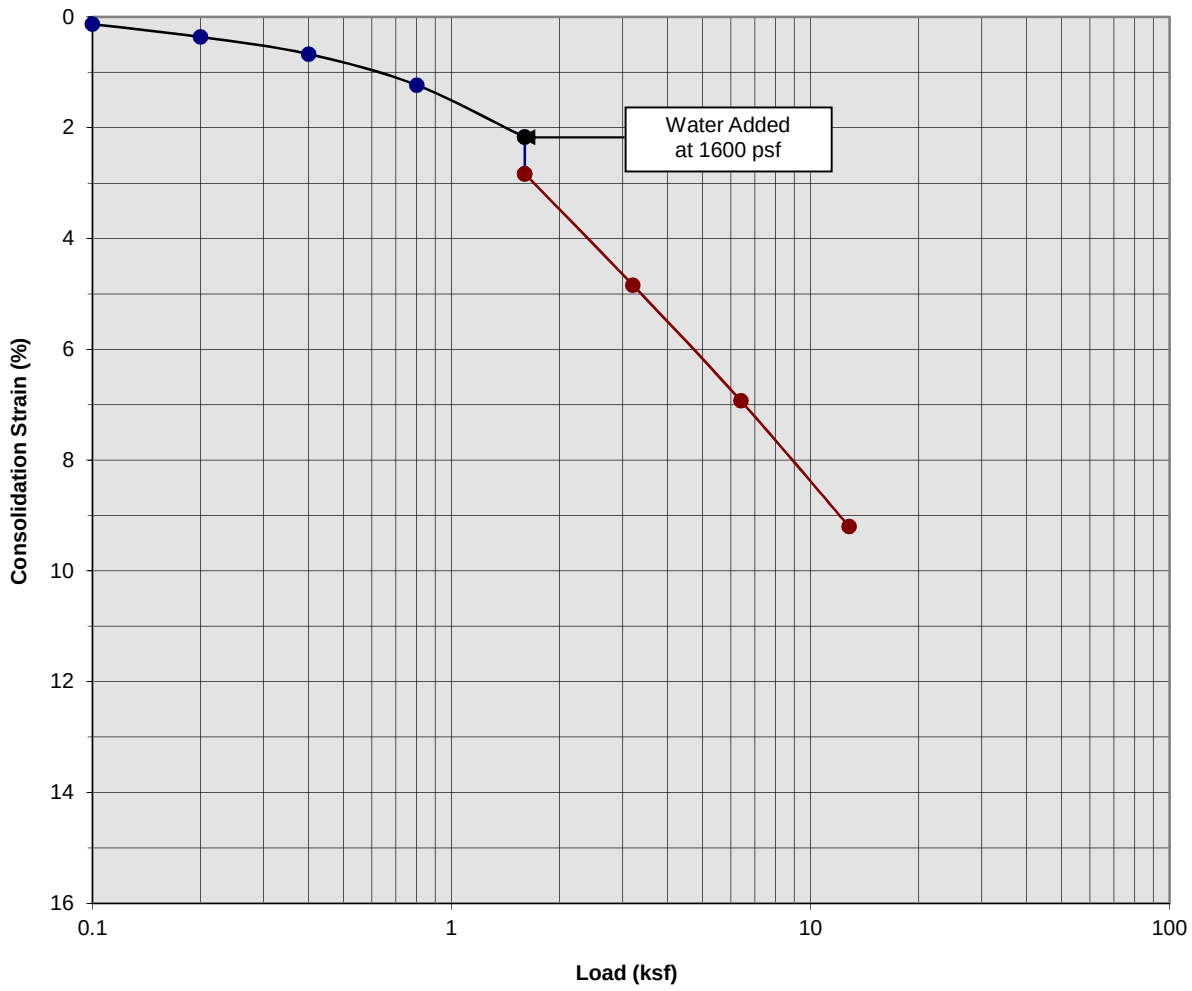
Consolidation/Collapse Test Results



Classification: Red Brown Clayey fine to medium Sand, trace coarse Sand, trace Silt

Boring Number:	B-12	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	7 to 8	Initial Dry Density (pcf)	113.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.66

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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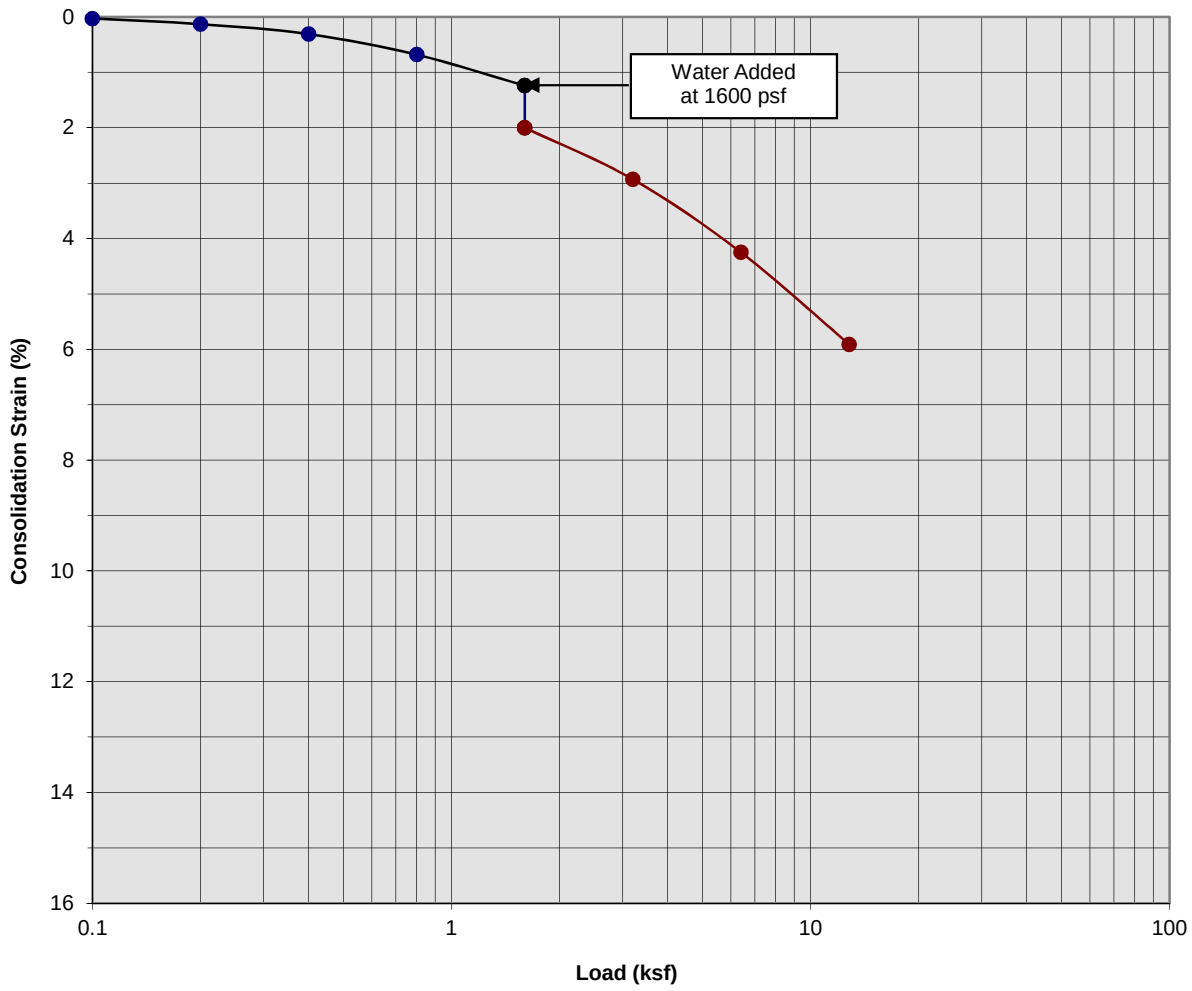
Consolidation/Collapse Test Results



Classification: Brown Clayey fine Sand, trace medium Sand, trace to little Silt

Boring Number:	B-12	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	117.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.76

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 4

SoCalGeo
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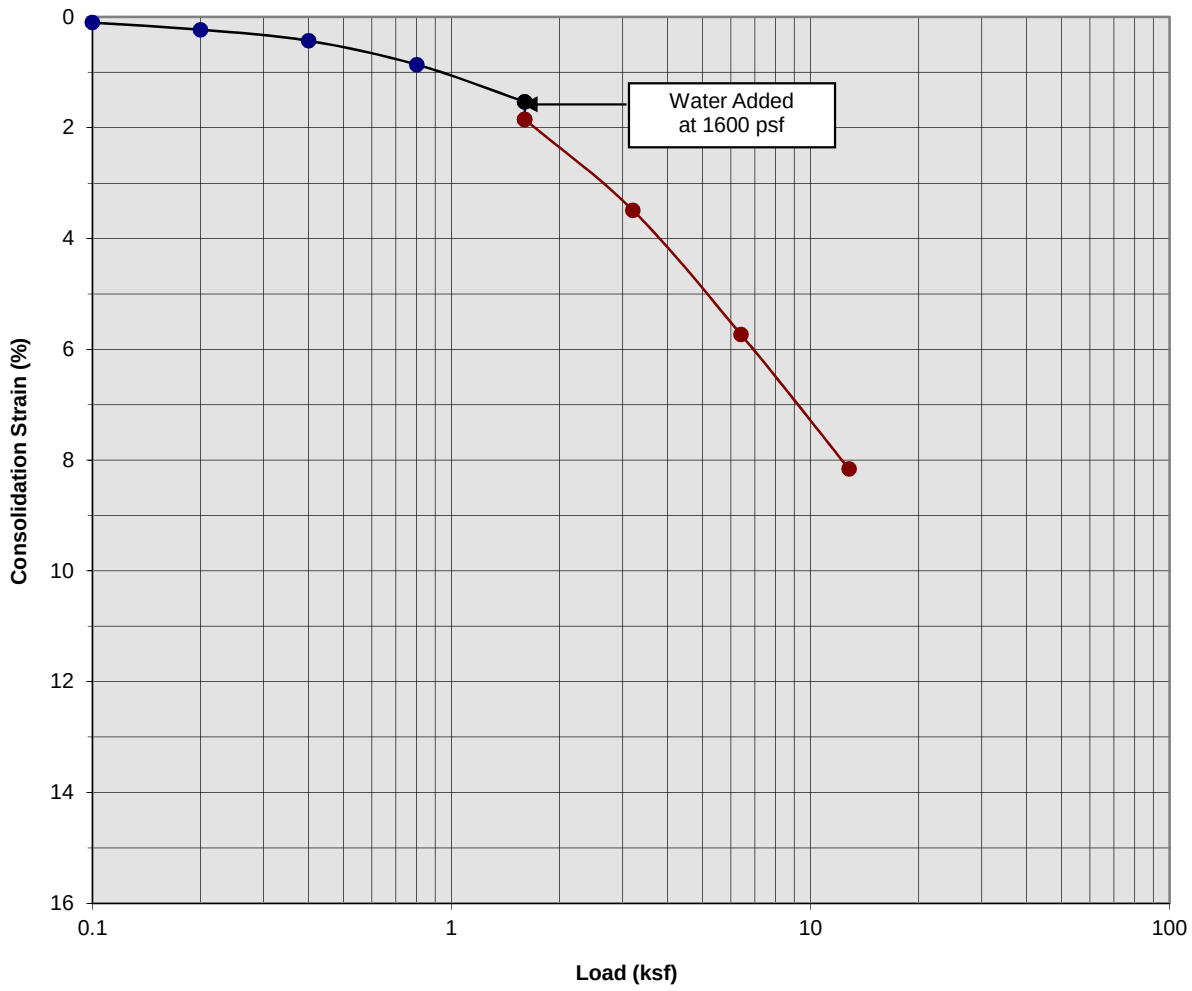
Consolidation/Collapse Test Results



Classification: Brown Clayey fine to medium Sand, trace coarse Sand, trace to little Silt

Boring Number:	B-15	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	110.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.32

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 5

SoCalGeo
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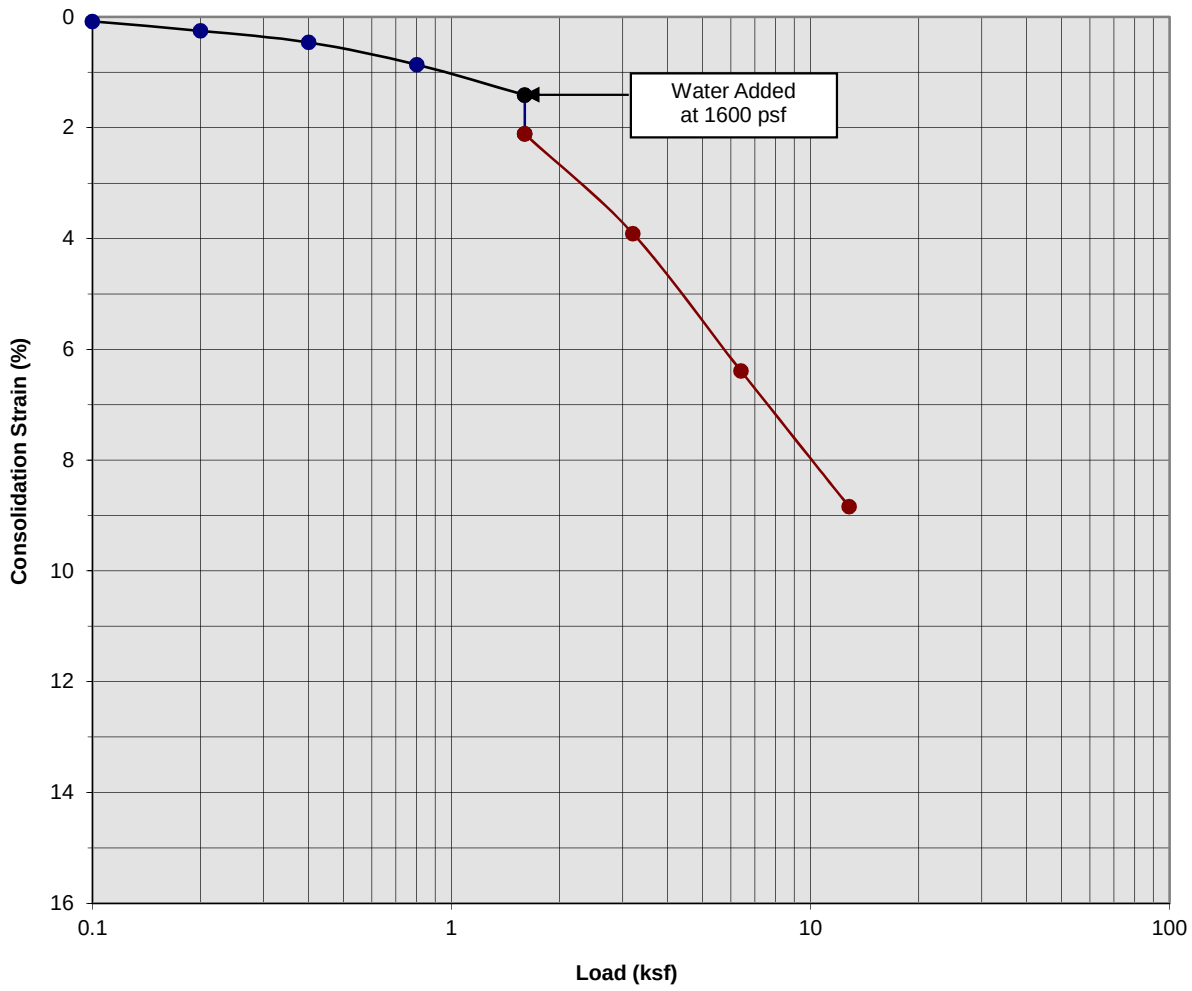
Consolidation/Collapse Test Results



Classification: Brown Clayey fine to medium Sand, trace coarse Sand, trace to little Silt

Boring Number:	B-15	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	5 to 6	Initial Dry Density (pcf)	112.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.70

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 6

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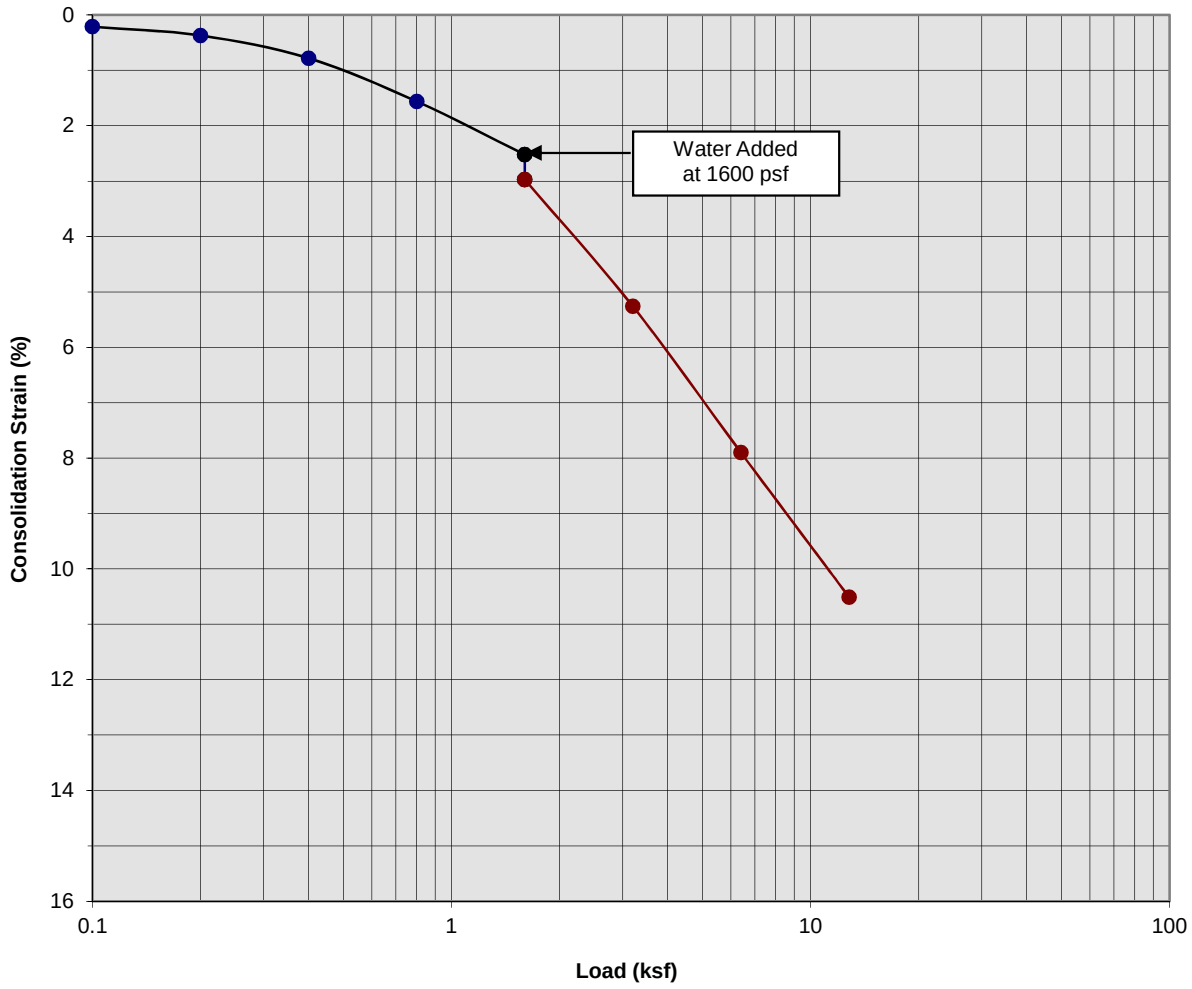
Consolidation/Collapse Test Results



Classification: Orange Brown Clayey fine Sand, trace medium to coarse Sand, trace Silt

Boring Number:	B-15	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	7 to 8	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	129.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.45

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 7

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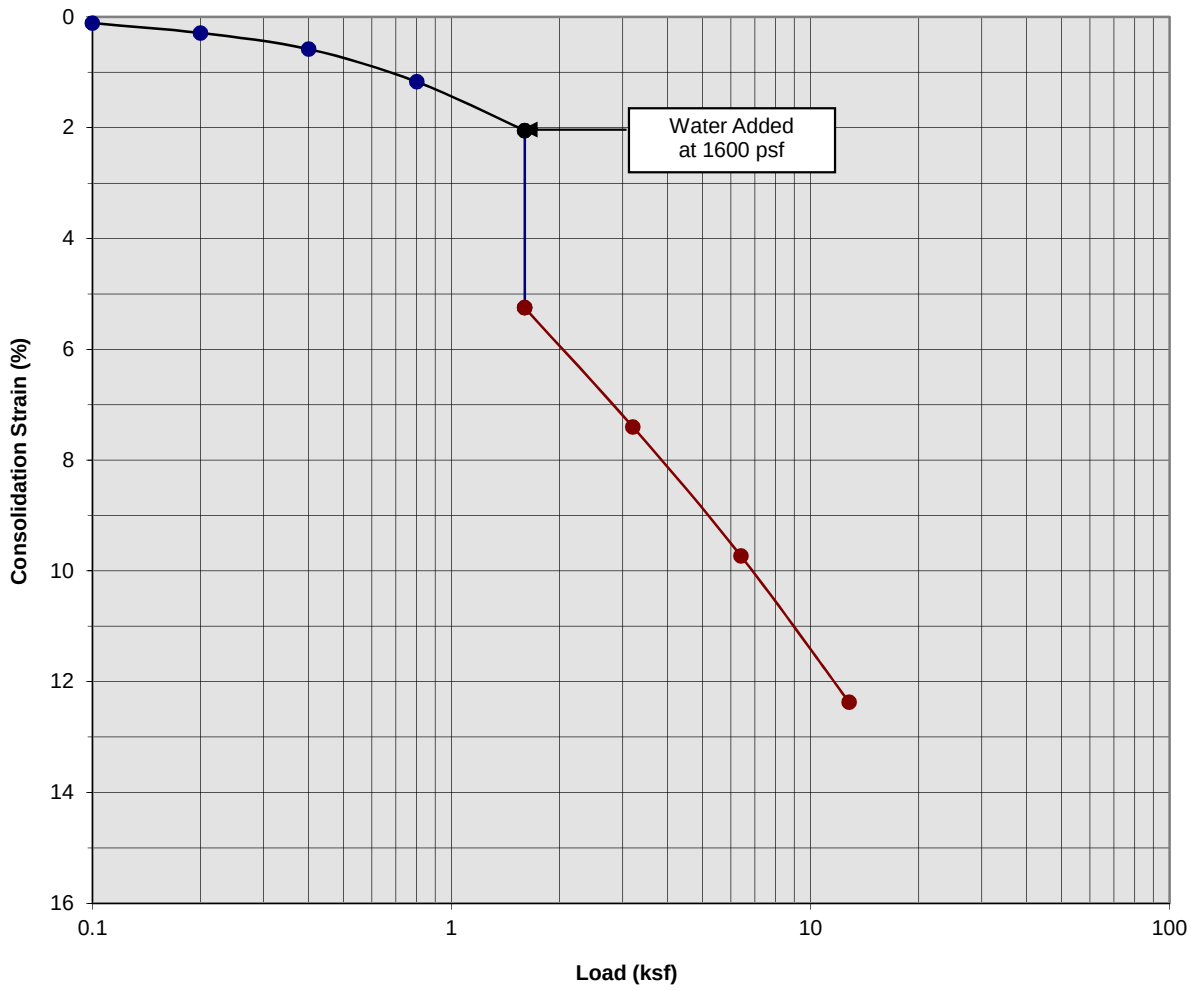
Consolidation/Collapse Test Results



Classification: Orange Brown Clayey fine Sand, trace medium to coarse Sand, trace Silt

Boring Number:	B-15	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	9 to 10	Initial Dry Density (pcf)	102.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	116.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.20

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 8

SoCalGeo
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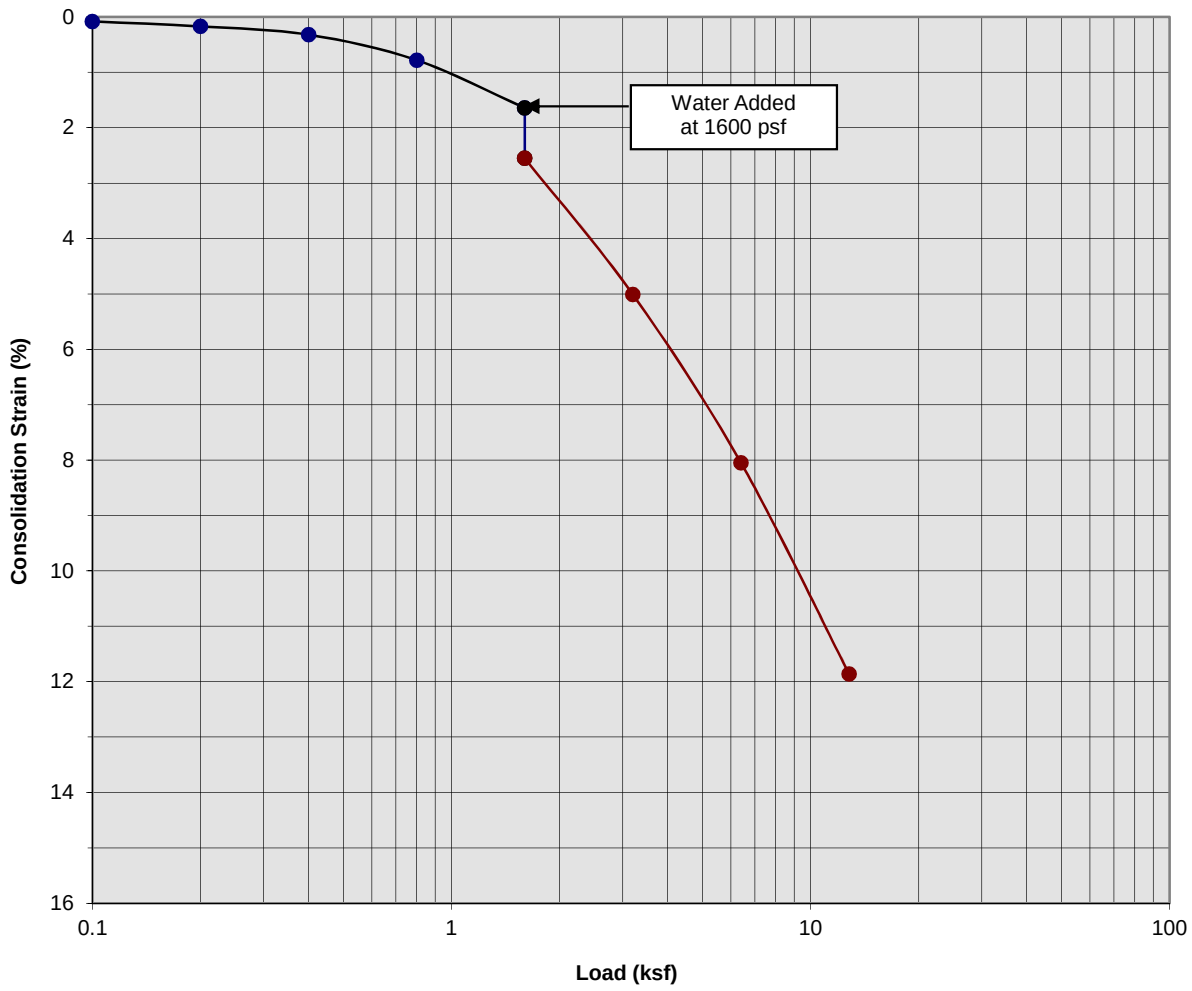
Consolidation/Collapse Test Results



Classification: Light Brown Silty fine Sand, trace medium Sand, trace Clay

Boring Number:	B-18	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	1 to 2	Initial Dry Density (pcf)	105.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.91

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204

PLATE C- 9

SoCalGeo
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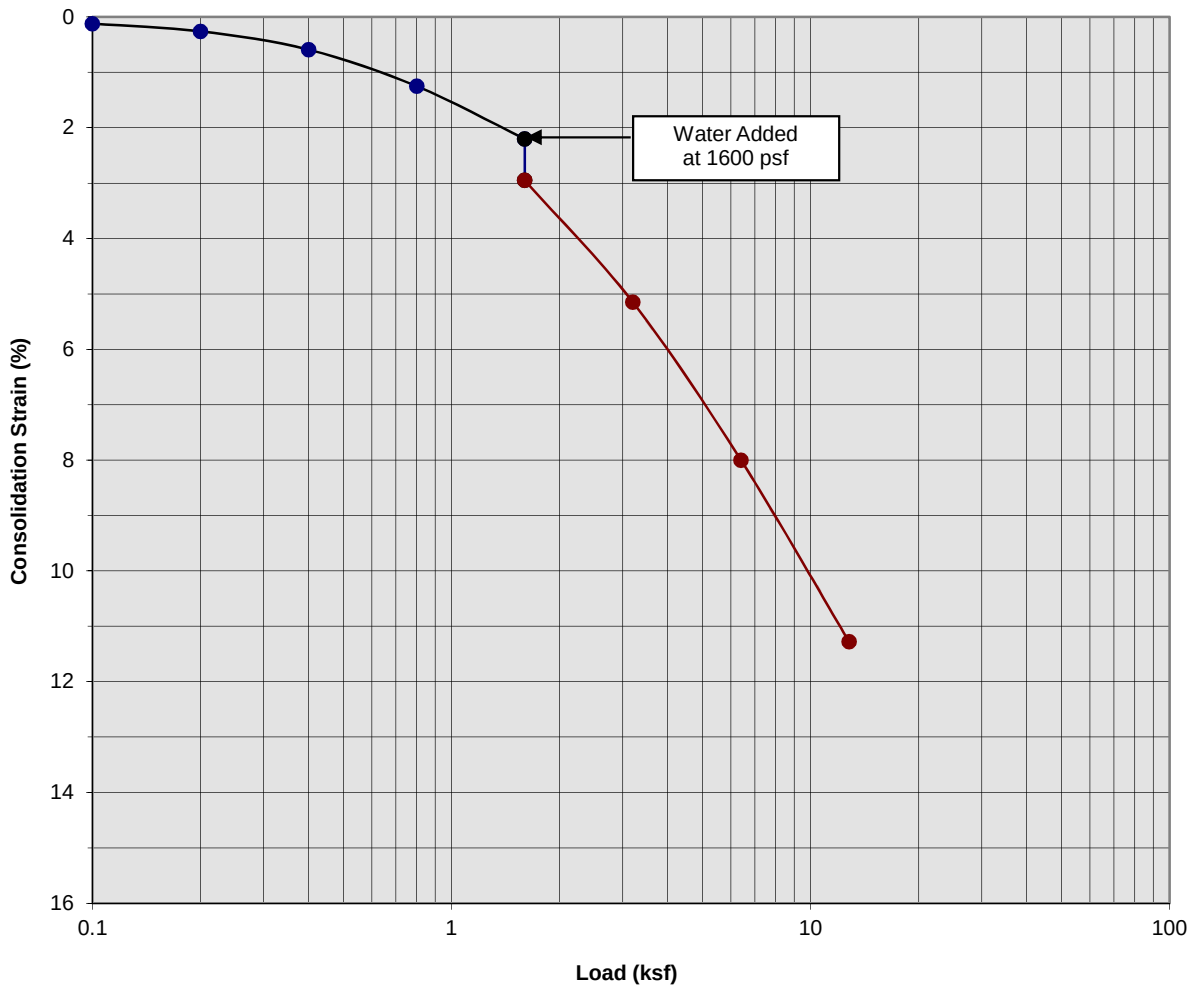
Consolidation/Collapse Test Results



Classification: Brown Clayey fine to medium Sand, little coarse Sand, trace Silt

Boring Number:	B-18	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	5 to 6	Initial Dry Density (pcf)	104.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.75

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 10

SoCalGeo
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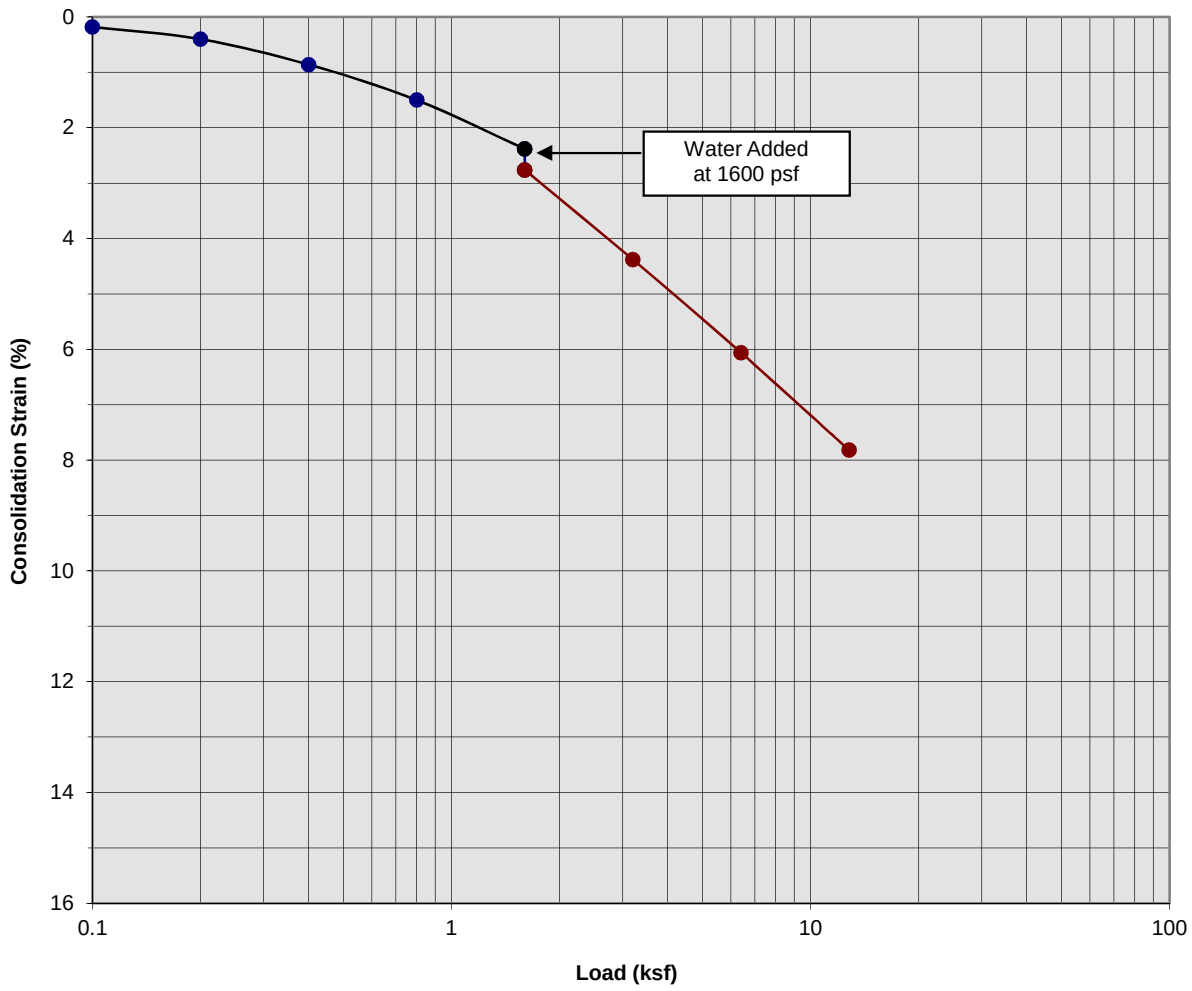
Consolidation/Collapse Test Results



Classification: Red Brown fine to coarse Sand, trace Clay, trace to little Silt, trace fine Gravel

Boring Number:	B-18	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	97.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	105.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.38

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 11

SoCalGeo
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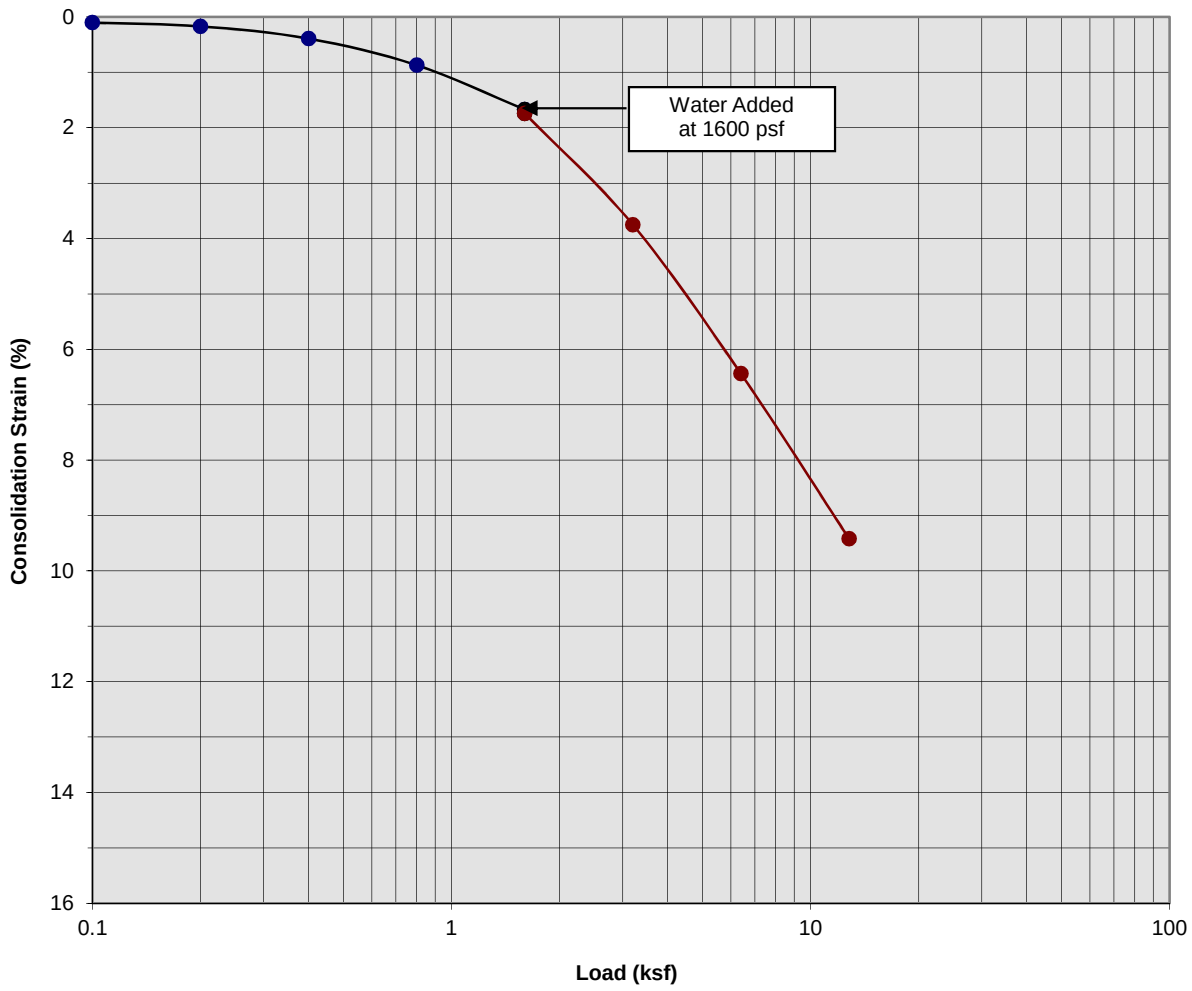
Consolidation/Collapse Test Results



Classification: Brown Clayey fine Sand to fine Sandy Clay, trace medium to coarse Sand

Boring Number:	B-18	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	9 to 10	Initial Dry Density (pcf)	105.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	116.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.07

D2 Air Cargo Compatible Development
Moreno Valley, California
Project No. 15G204
PLATE C- 12

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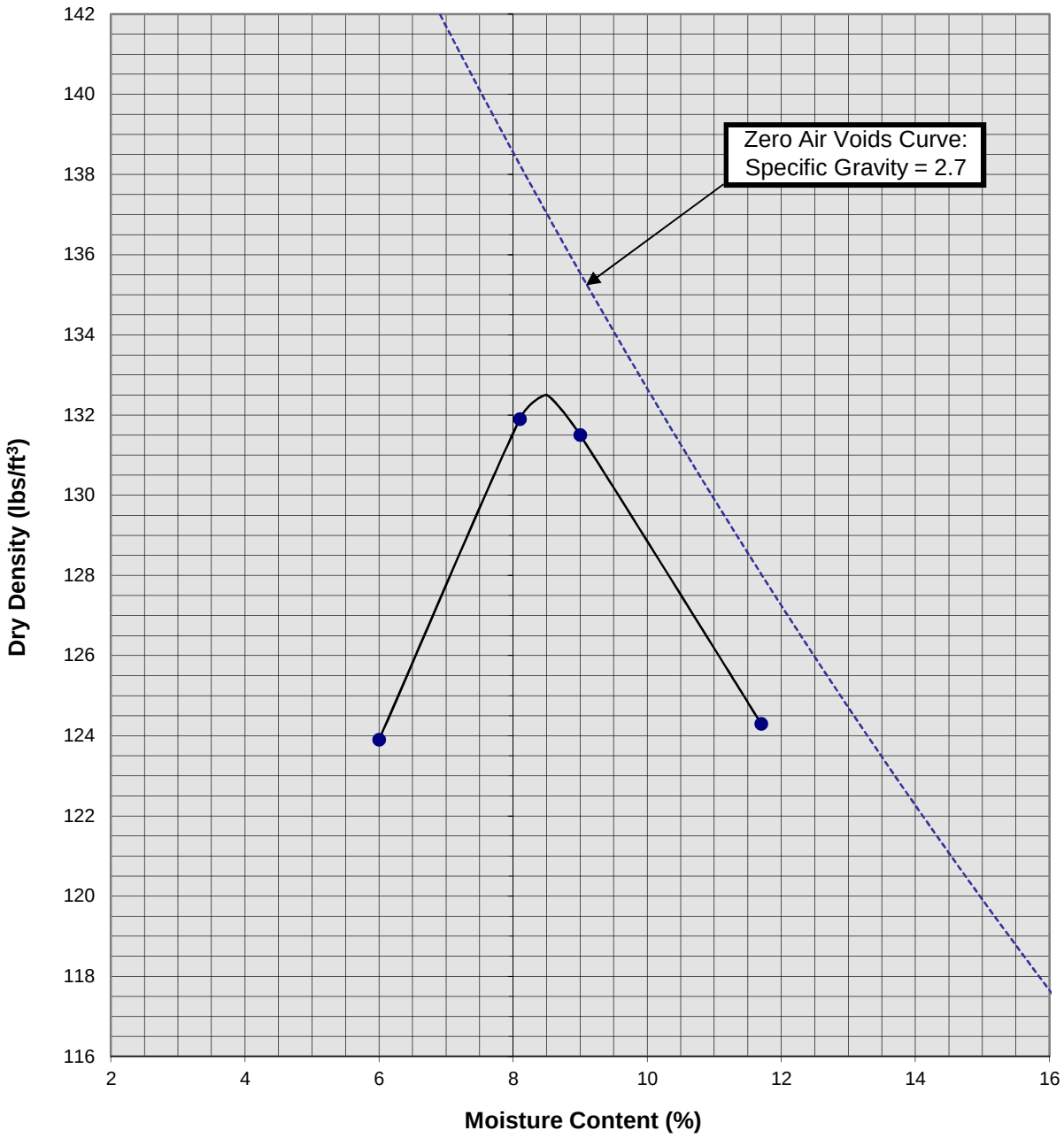
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-4 @ 0 to 5'
Optimum Moisture (%)	8.5
Maximum Dry Density (pcf)	132.5
Soil Classification	Light Red Brown Clayey fine Sand

D2 Air Cargo Compatible Dev.
Moreno Valley, California
Project No. 15G204

PLATE C-13

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SOUTHERN CALIFORNIA GEOTECHNICAL
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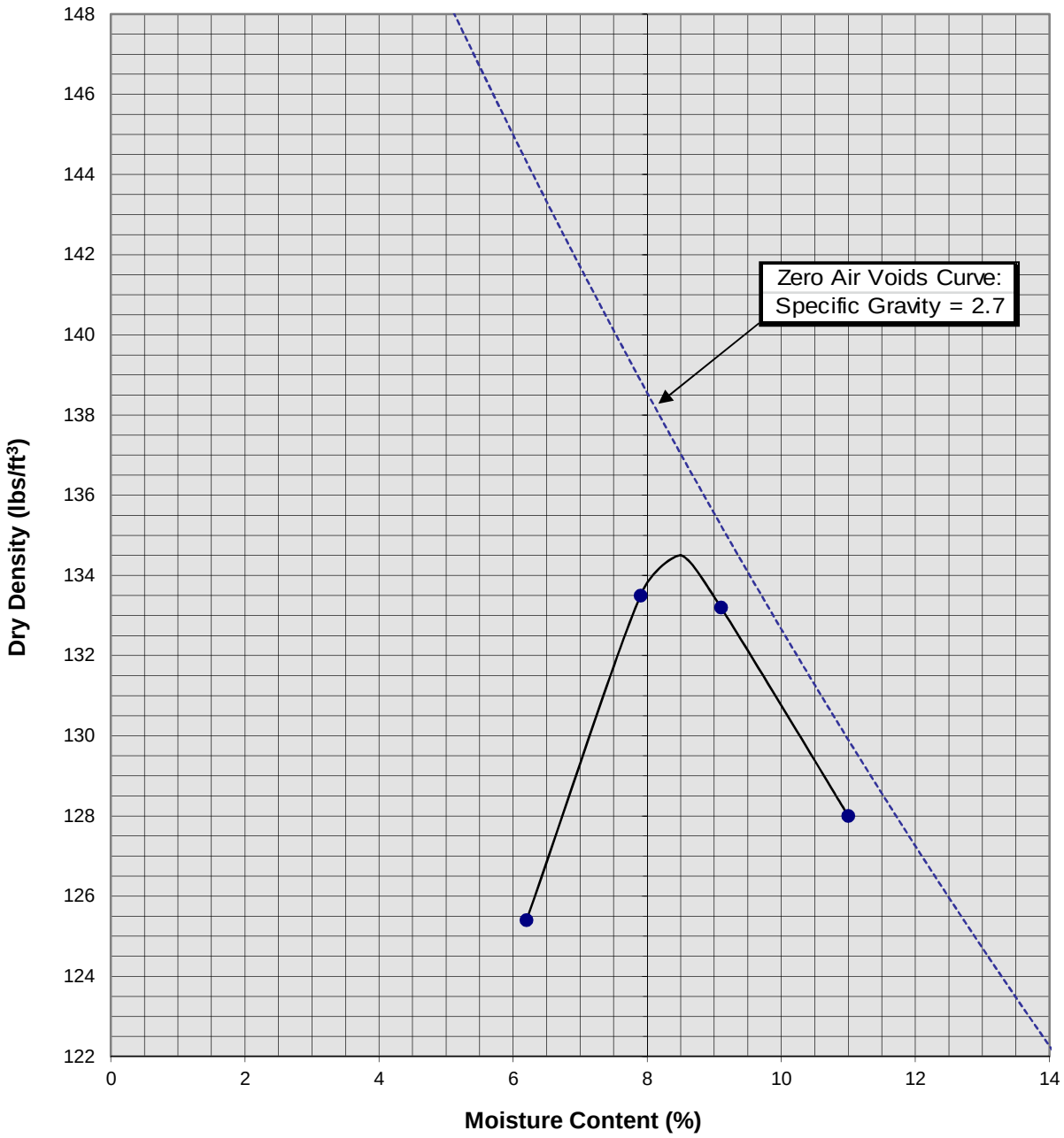
Moisture/Density Relationship
ASTM D-1557



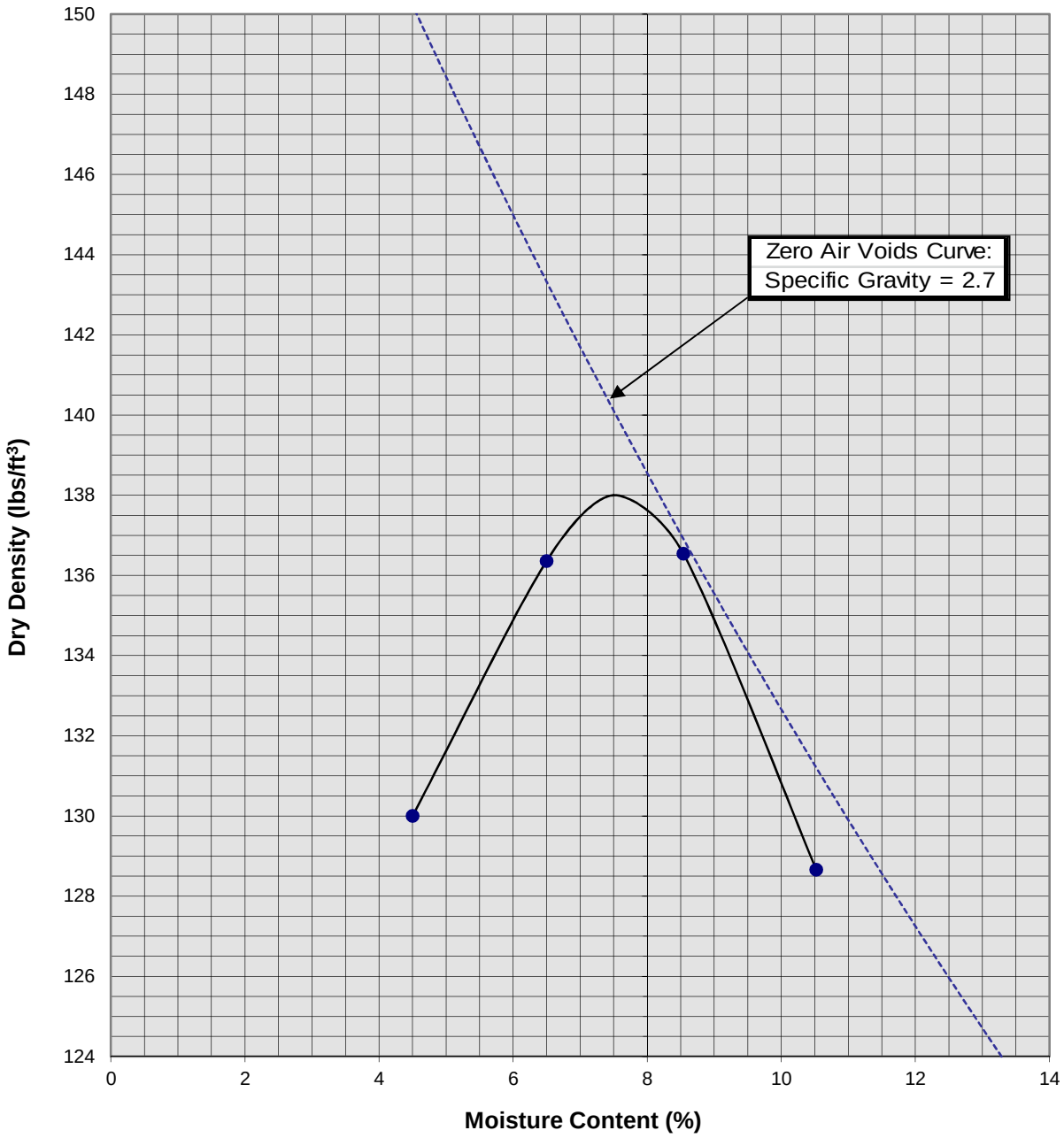
Soil ID Number	B-13 @ 0 to 5'
Optimum Moisture (%)	8.5
Maximum Dry Density (pcf)	134.5
Soil Classification	Red Brown Clayey fine to medium Sand

D2 Air Cargo Compatible Dev.
Moreno Valley, California
Project No. 15G204

PLATE C-14

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



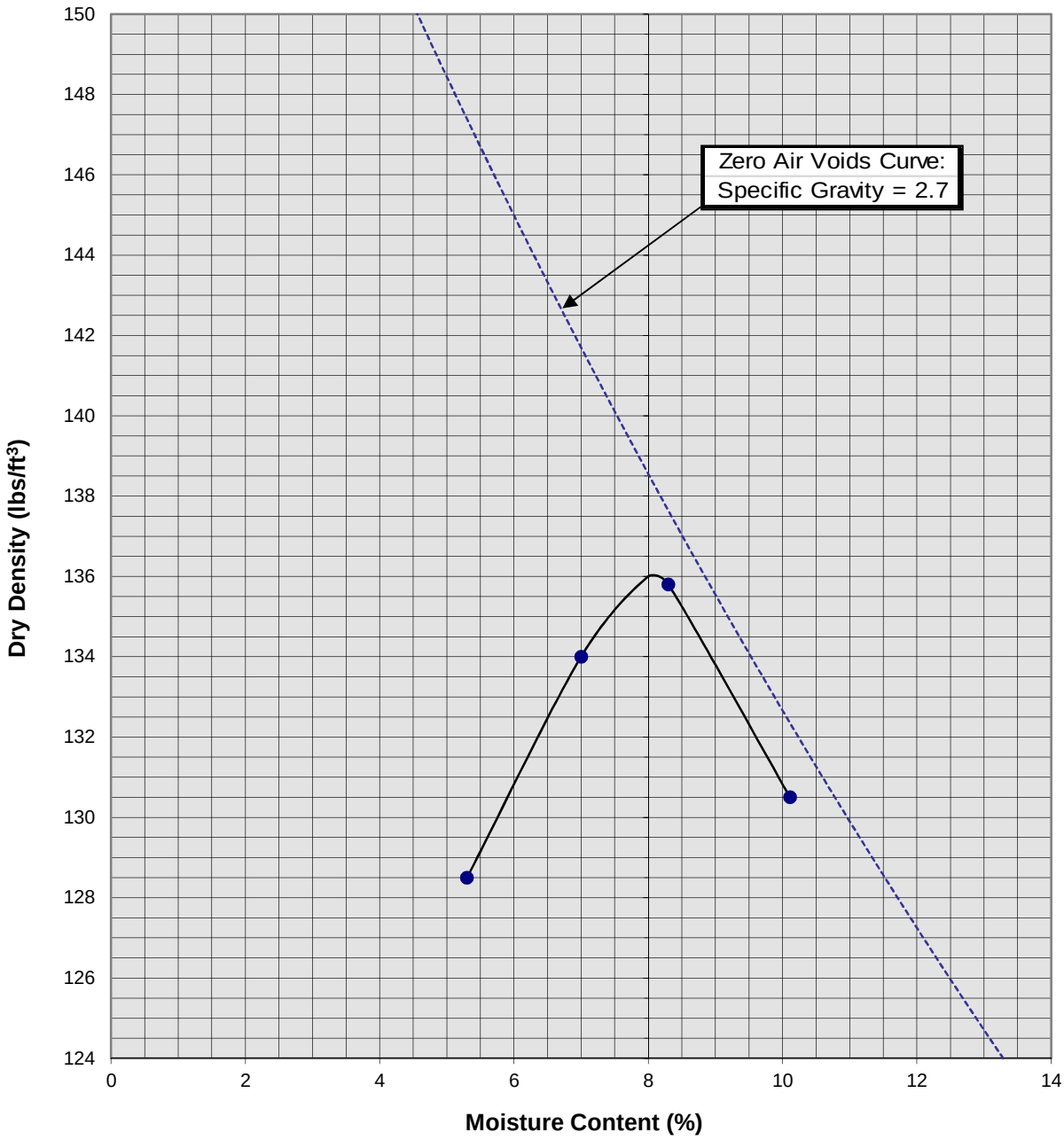
Soil ID Number	B-14 @ 0 to 5'
Optimum Moisture (%)	7.5
Maximum Dry Density (pcf)	138
Soil Classification	Dark Brown Clayey fine to medium Sand, trace Silt & fine Gravel

D2 Air Cargo Compatible Dev.
Moreno Valley, California
Project No. 15G204

PLATE C-15

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-20 @ 0 to 5'
Optimum Moisture (%)	8
Maximum Dry Density (pcf)	135.5
Soil Classification	Brown Silty fine Sand

D2 Air Cargo Compatible Dev.
Moreno Valley, California
Project No. 15G204

PLATE C-16

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

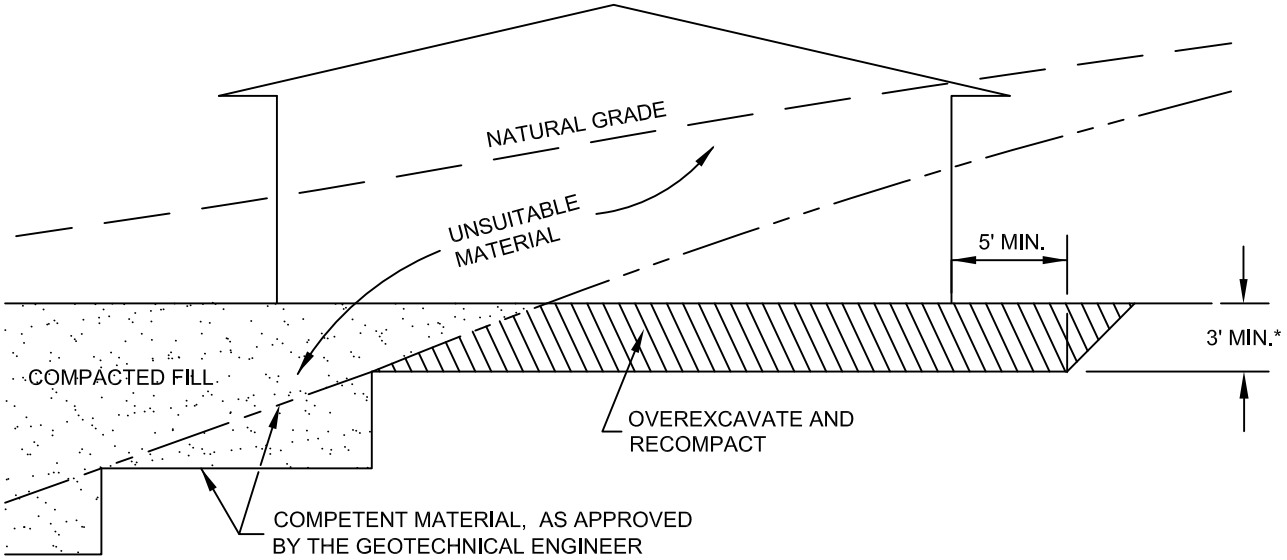
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

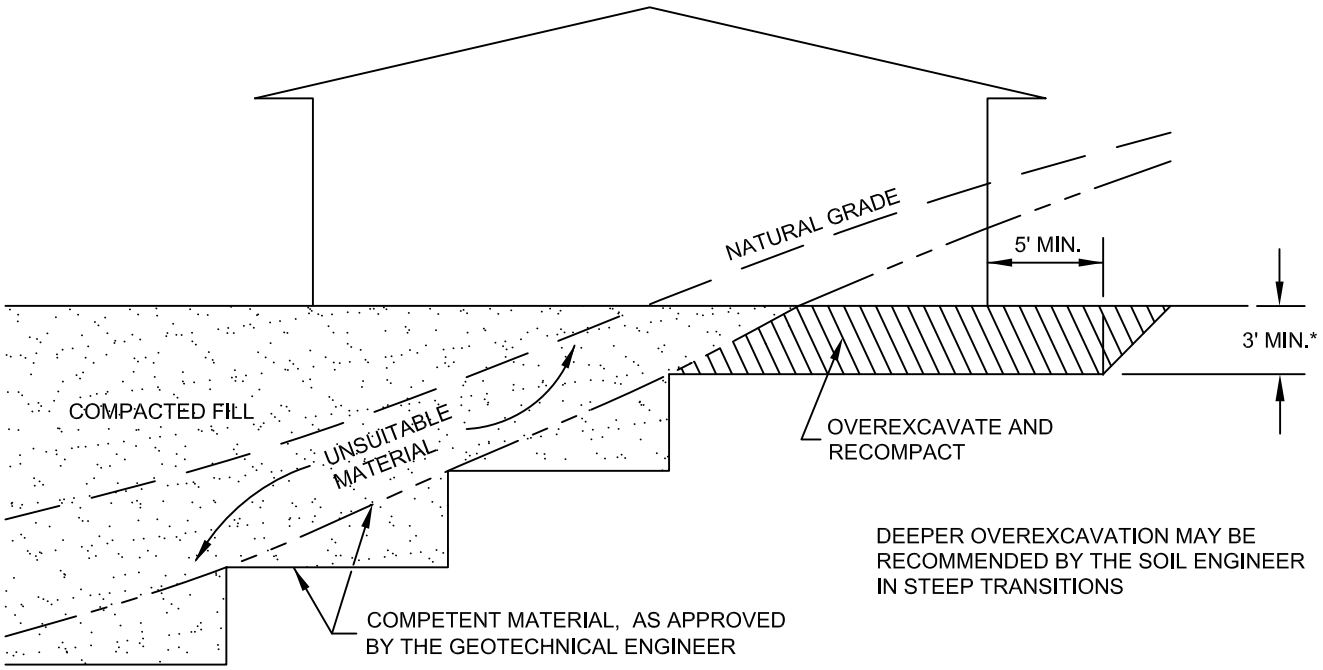
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

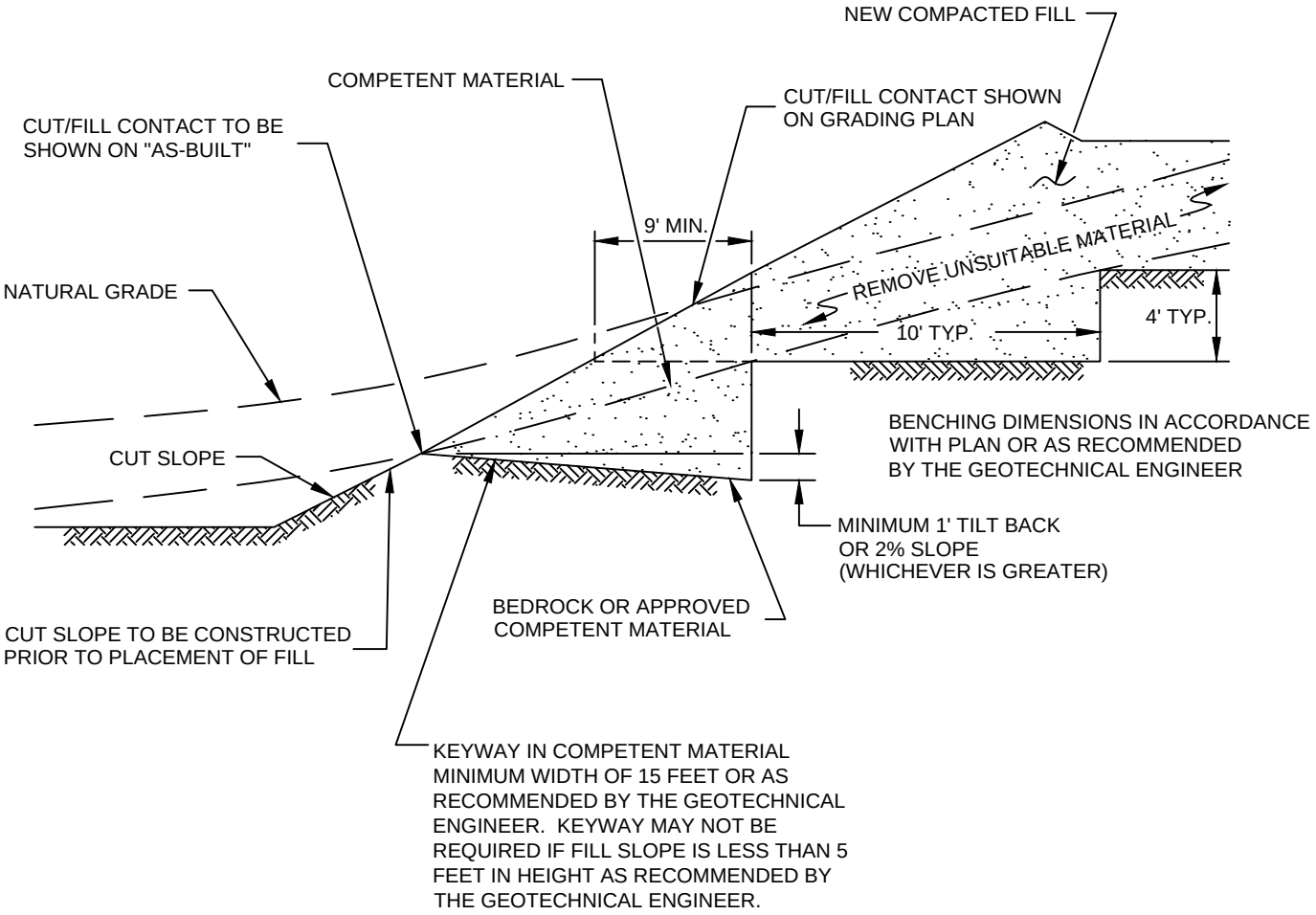
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

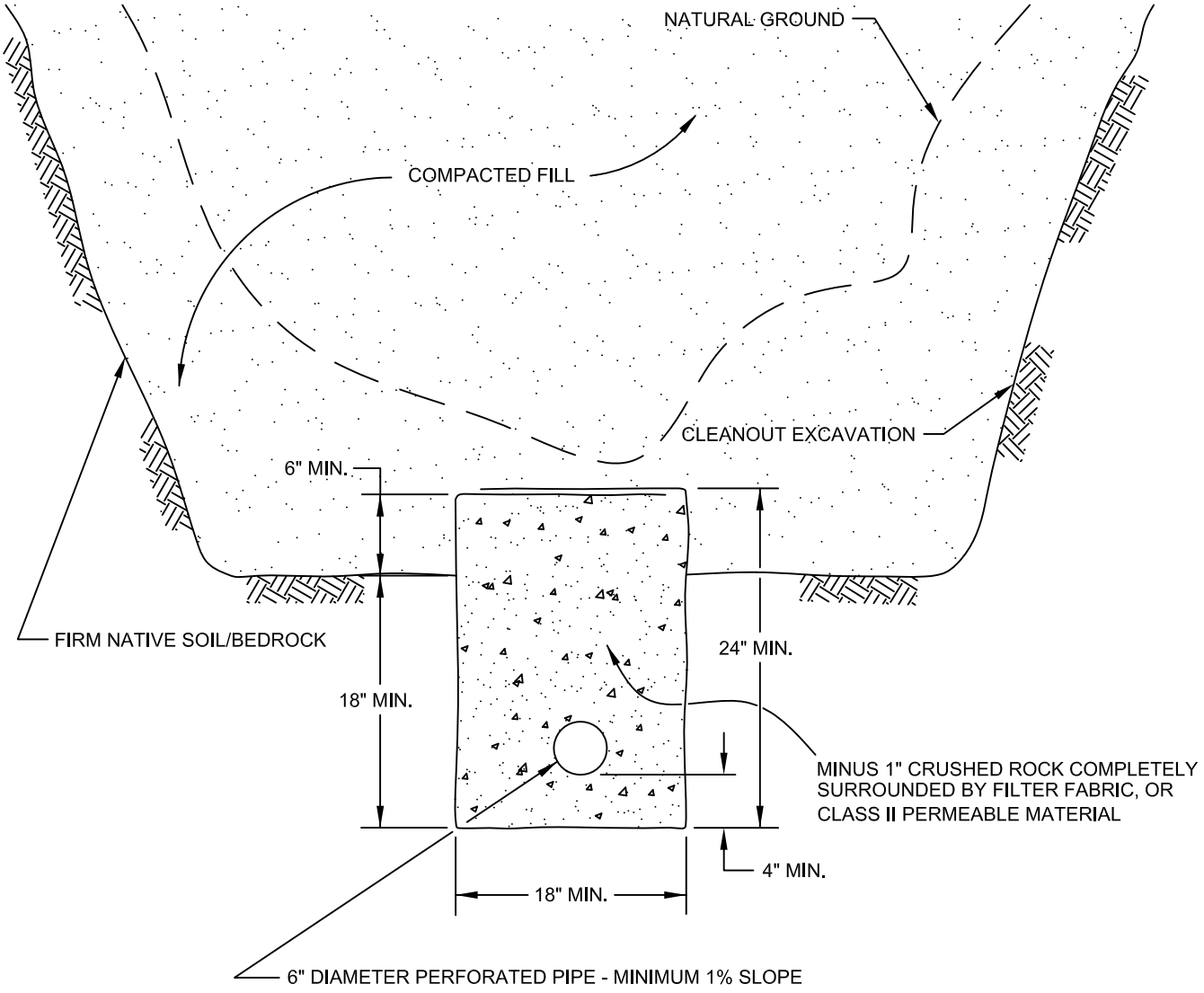
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

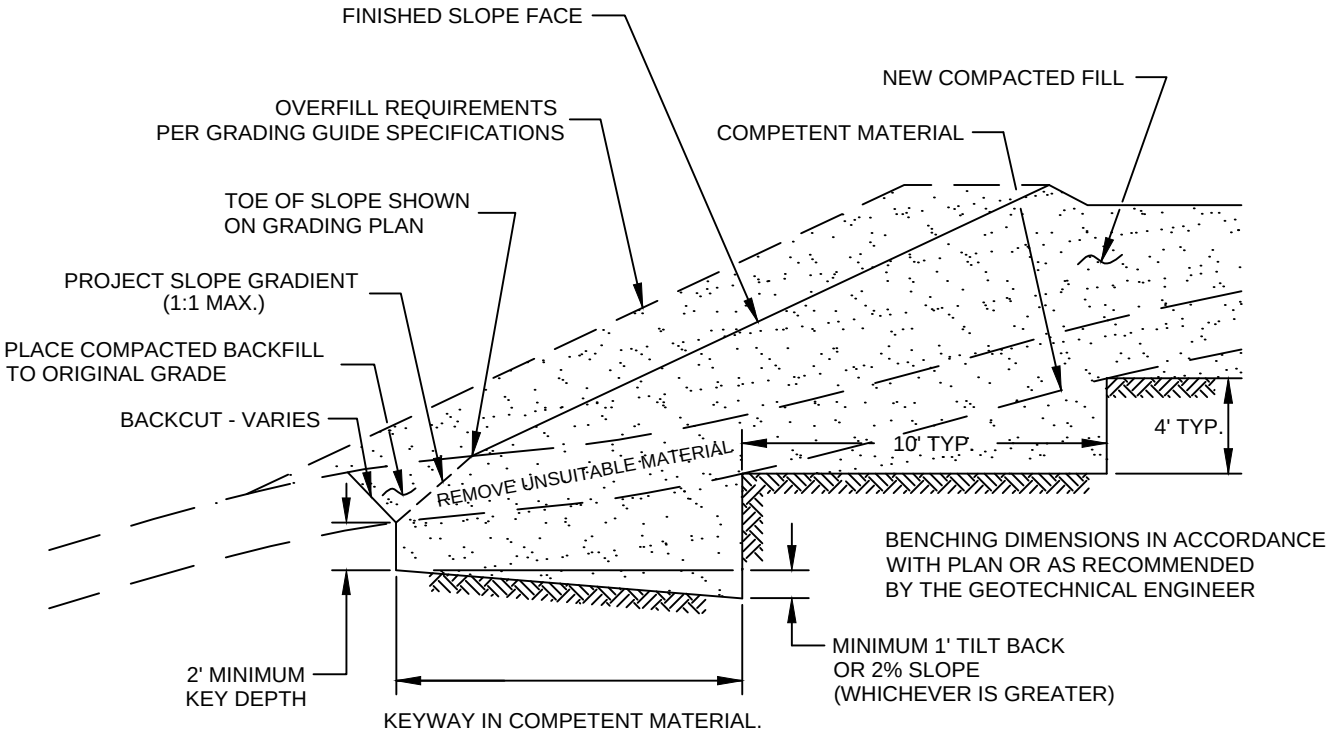
SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE
DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED WHEN NATURAL SLOPES ARE EQUAL TO OR STEEPER THAN 5:1 OR WHEN RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

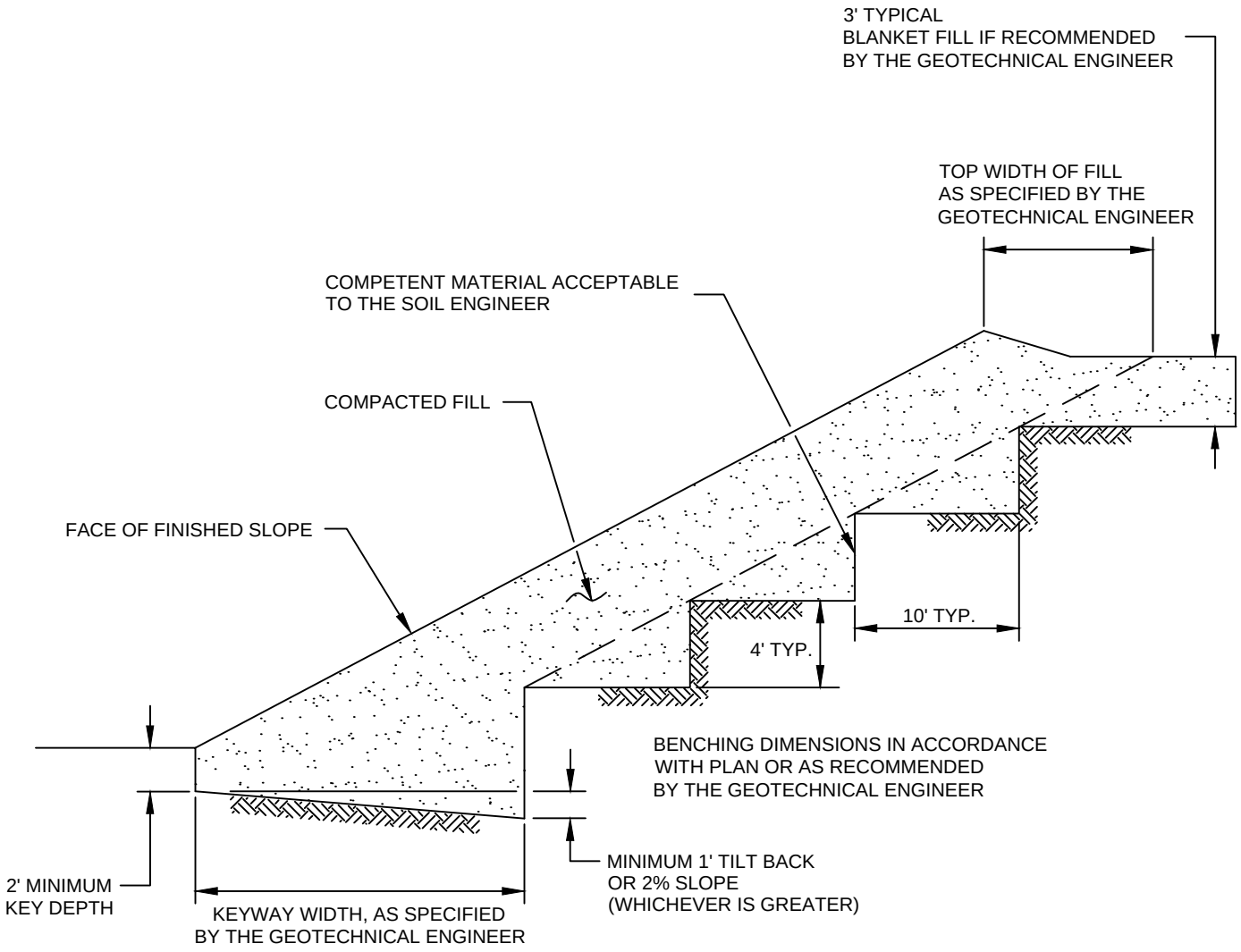
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

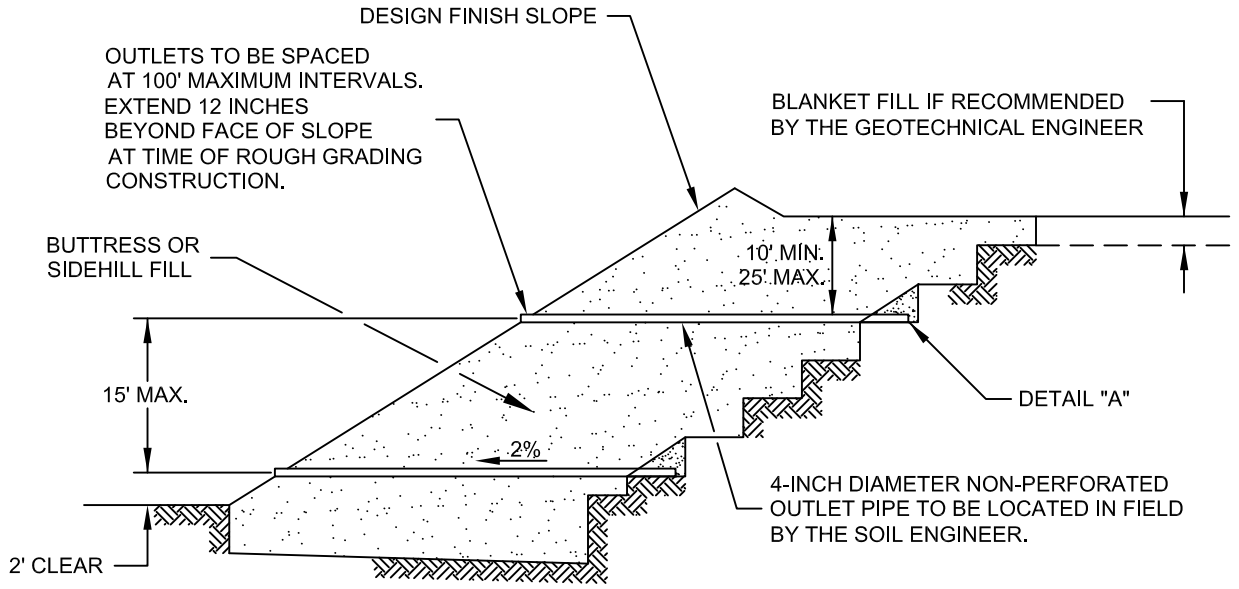
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



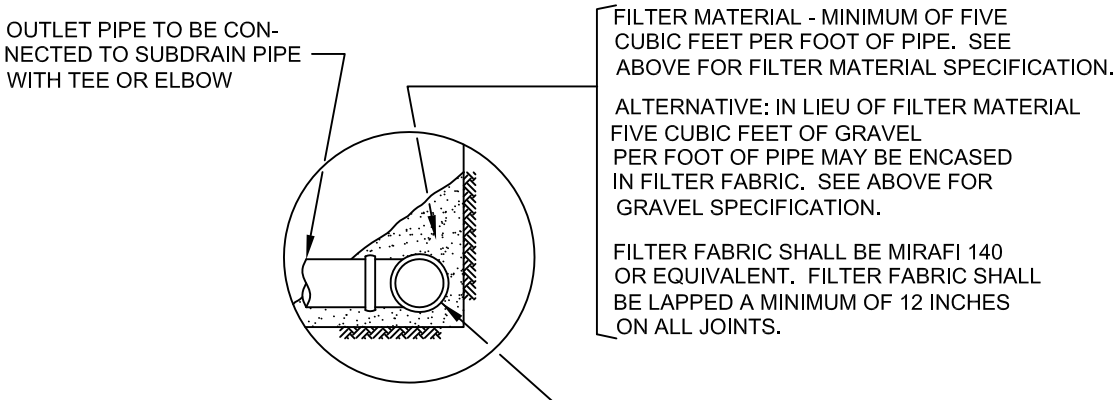
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

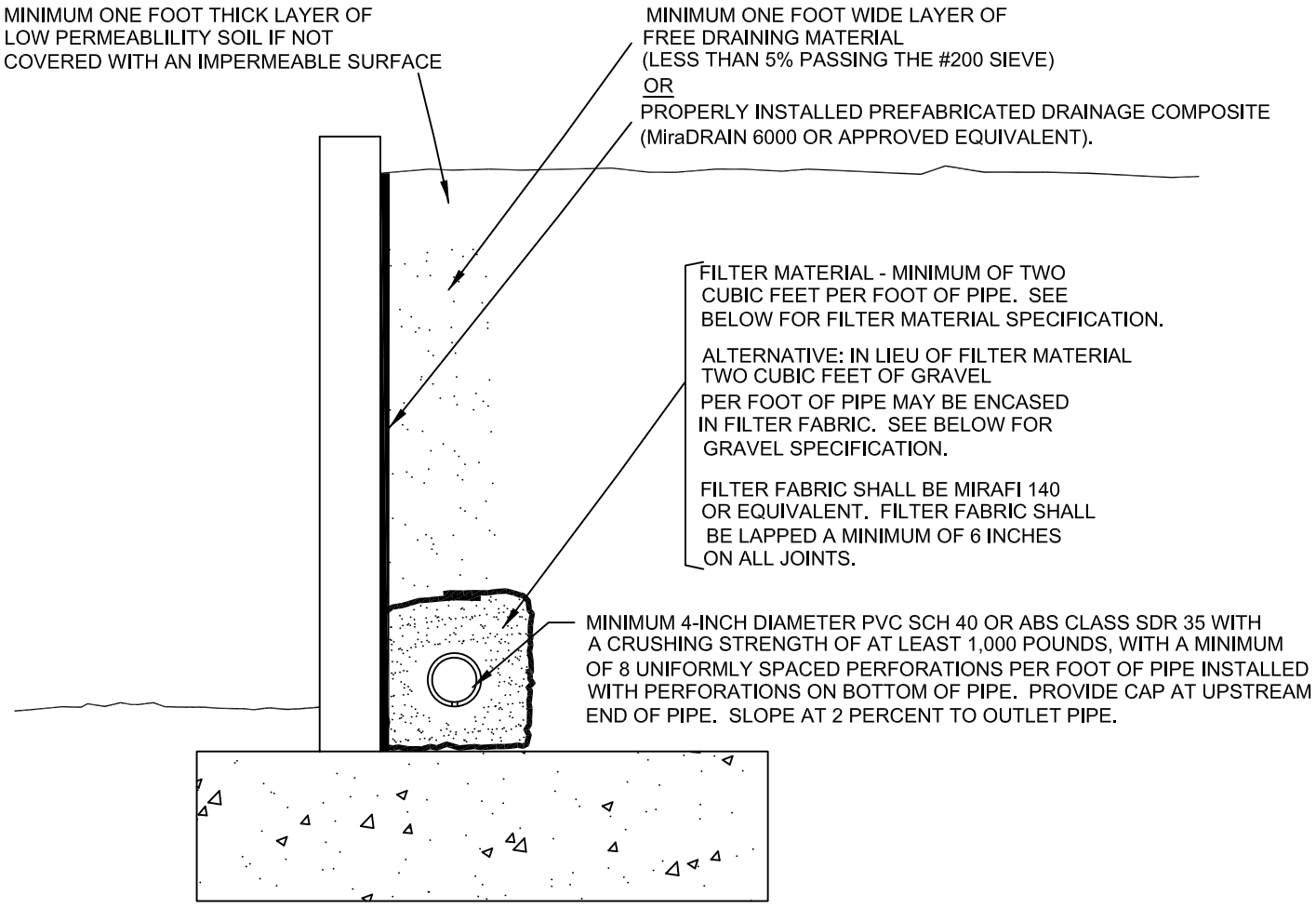
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

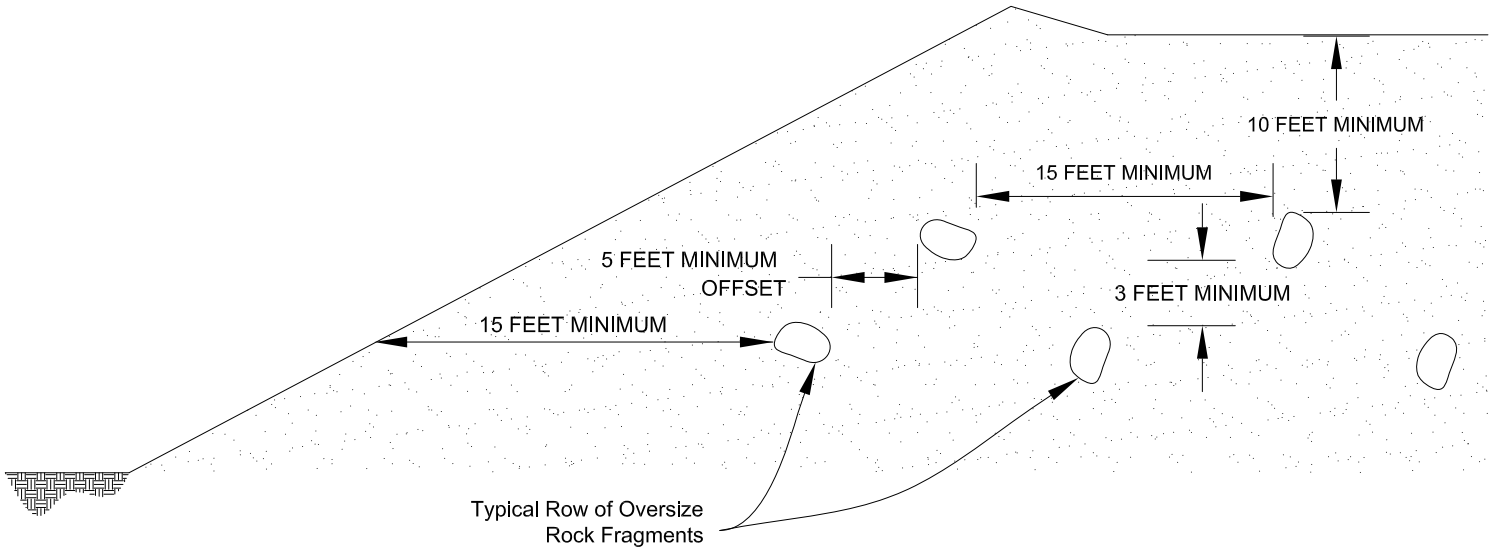
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

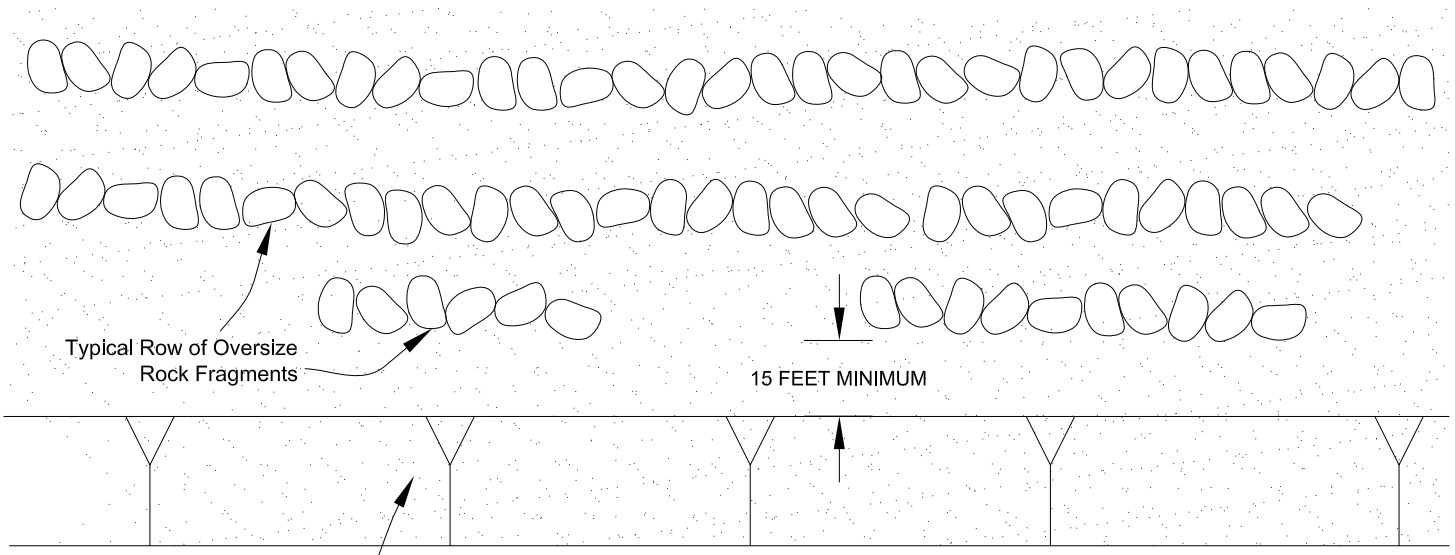
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

USGS Design Maps Summary Report

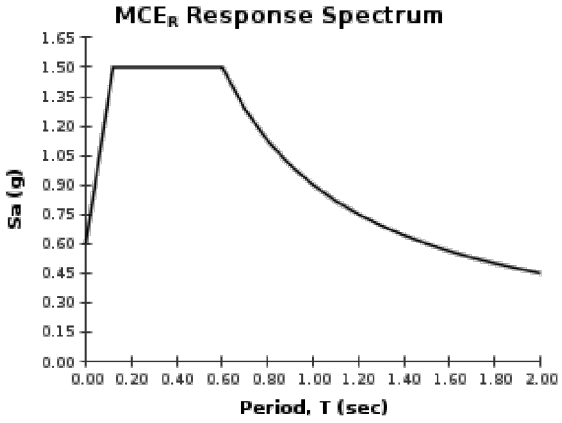
User–Specified Input

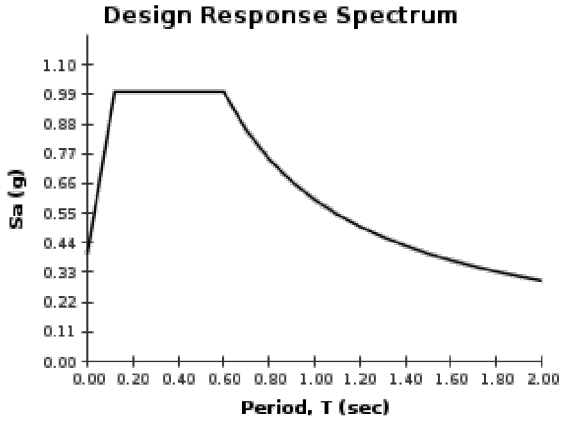
Report Title	D2 Air Cargo Compatible Development Wed November 18, 2015 23:19:47 UTC
Building Code Reference Document	ASCE 7-10 Standard (which utilizes USGS hazard data available in 2008)
Site Coordinates	33.87653°N, 117.26065°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

USGS–Provided Output

S_S =	1.500 g	S_{MS} =	1.500 g	S_{DS} =	1.000 g
S_1 =	0.600 g	S_{M1} =	0.900 g	S_{D1} =	0.600 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

SEISMIC DESIGN PARAMETERS
D2 AIR CARGO COMPATIBLE DEVELOPMENT
MORENO VALLEY, CALIFORNIA

DRAWN: MRM
CHKD: JAS
SCG PROJECT 15G204-1
PLATE E-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL

Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From Figure 22-7 [4] PGA = 0.500

Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.500 = 0.5$ g

Table 11.8–1: Site Coefficient F_{PGA}

Site Class	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of PGA

For Site Class = D and PGA = 0.500 g, F_{PGA} = 1.000

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

From Figure 22-17 [5] C_{RS} = 1.071

From Figure 22-18 [6] C_{R1} = 1.038

SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

MCE PEAK GROUND ACCELERATION
D2 AIR CARGO COMPATIBLE DEVELOPMENT
MORENO VALLEY, CALIFORNIA

DRAWN: MRM
CHKD: JAS
SCG PROJECT 15G204-1
PLATE E-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX F

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	23 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-1		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	9	120		1.3	1.05	1.15	1.43	0.75	15.1	15.1	1020	1020	1020	0.99	0.99	1.08	0.16	0.17	N/A	N/A	Above Water Table
19.5	17	22	19.5	17	120	18	1.3	1.05	1.27	0.96	0.95	27.0	31.1	2340	2184	2340	0.95	0.97	0.99	0.56	0.54	0.33	1.64	Non-Liquefiable
24.5	22	24.5	23.3	33	120		1.3	1.05	1.3	0.94	0.95	52.3	52.3	2790	2400	2774	0.94	0.97	0.96	2.00	1.86	0.35	5.24	Non-Liquefiable
24.5	24.5	27	25.8	33	120	33	1.3	1.05	1.3	0.94	0.95	52.1	57.6	3090	2544	2918	0.93	0.97	0.94	2.00	1.83	0.37	4.98	Non-Liquefiable
29.5	27	32	29.5	26	120		1.3	1.05	1.3	0.89	0.95	38.9	38.9	3540	2760	3134	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	35	120		1.3	1.05	1.3	0.90	1	56.2	56.2	4140	3048	3422	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	38	120		1.3	1.05	1.3	0.90	1	60.8	60.8	4740	3336	3710	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	41	120		1.3	1.05	1.3	0.90	1	65.6	65.6	5340	3624	3998	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	56	120		1.3	1.05	1.3	0.98	1	97.7	97.7	5820	3854	4229	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-1

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	15.1	0.0	15.1	N/A	0.27	0.75	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	27.0	4.1	31.1	1.64	0.04	-0.16	0.01	5.00		0.000		0.00	Non-Liquefiable
24.5	22	24.5	23.3	52.3	0.0	52.3	5.24	0.00	-1.78	0.00	2.50		0.000		0.00	Non-Liquefiable
24.5	24.5	27	25.8	52.1	5.5	57.6	4.98	0.00	-2.22	0.00	2.50		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	38.9	0.0	38.9	4.67	0.01	-0.72	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	56.2	0.0	56.2	4.36	0.00	-2.10	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	60.8	0.0	60.8	4.14	0.00	-2.49	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	65.6	0.0	65.6	3.98	0.00	-2.91	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	97.7	0.0	97.7	3.88	0.00	-5.85	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	23 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-4		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	9	120		1.3	1.05	1.15	1.43	0.75	15.1	15.1	1020	1020	1020	0.99	0.99	1.08	0.16	0.17	N/A	N/A	Above Water Table
19.5	17	22	19.5	26	120	25	1.3	1.05	1.3	0.97	0.95	42.7	47.8	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	19	120	14	1.3	1.05	1.29	0.90	0.95	28.5	31.4	2940	2472	2846	0.93	0.97	0.96	0.59	0.55	0.36	1.53	Non-Liquefiable
29.5	27	32	29.5	34	120		1.3	1.05	1.3	0.91	0.95	52.4	52.4	3540	2760	3134	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	52	120		1.3	1.05	1.3	0.97	1	89.8	89.8	4140	3048	3422	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	67	120		1.3	1.05	1.3	1.04	1	123.7	123.7	4740	3336	3710	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	47	120		1.3	1.05	1.3	0.93	1	78.0	78.0	5340	3624	3998	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	52	120		1.3	1.05	1.3	0.96	1	88.4	88.4	5820	3854	4229	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-4

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	15.1	0.0	15.1	N/A	0.27	0.75	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	42.7	5.1	47.8	5.77	0.00	-1.41	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	28.5	2.9	31.4	1.53	0.04	-0.18	0.01	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	52.4	0.0	52.4	4.67	0.00	-1.79	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	89.8	0.0	89.8	4.36	0.00	-5.10	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	123.7	0.0	123.7	4.14	0.00	-8.37	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	78.0	0.0	78.0	3.98	0.00	-4.01	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	88.4	0.0	88.4	3.88	0.00	-4.97	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	22 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-8		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	22	120		1.3	1.05	1.3	1.26	0.75	36.9	36.9	1020	1020	1020	0.99	0.97	1.1	1.71	1.82	N/A	N/A	Above Water Table
19.5	17	22	19.5	16	120	38	1.3	1.05	1.25	0.96	0.95	25.0	30.6	2340	2184	2340	0.95	0.97	0.99	0.52	0.50	0.33	1.52	Non-Liquefiable
24.5	22	27	24.5	22	120	13	1.3	1.05	1.3	0.92	0.95	34.0	36.5	2940	2472	2784	0.93	0.97	0.95	1.54	1.42	0.36	3.93	Non-Liquefiable
29.5	27	32	29.5	73	120		1.3	1.05	1.3	1.03	0.95	126.8	126.8	3540	2760	3072	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	41	120		1.3	1.05	1.3	0.93	1	67.8	67.8	4140	3048	3360	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	42	120		1.3	1.05	1.3	0.92	1	68.8	68.8	4740	3336	3648	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	29	120	19	1.3	1.05	1.3	0.86	1	44.1	48.4	5340	3624	3936	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	41	120		1.3	1.05	1.3	0.89	1	65.1	65.1	5820	3854	4166	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-8

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	36.9	0.0	36.9	N/A	0.02	-0.57	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	25.0	5.6	30.6	1.52	0.04	-0.13	0.01	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	34.0	2.5	36.5	3.93	0.02	-0.54	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	126.8	0.0	126.8	4.67	0.00	-8.69	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	67.8	0.0	67.8	4.36	0.00	-3.10	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	68.8	0.0	68.8	4.14	0.00	-3.19	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	44.1	4.3	48.4	3.98	0.00	-1.46	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	65.1	0.0	65.1	3.88	0.00	-2.86	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	36 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-9		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	33	120		1.3	1.05	1.3	1.18	0.75	52.0	52.0	1020	1020	1020	0.99	0.97	1.1	2.00	2.00	N/A	N/A	Above Water Table
19.5	17	22	19.5	24	120	17	1.3	1.05	1.3	0.97	0.95	39.3	43.2	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	24	120	23	1.3	1.05	1.3	0.91	0.95	36.8	41.7	2940	2472	2940	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	33	120		1.3	1.05	1.3	0.88	0.95	49.0	49.0	3540	2760	3540	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	47	120		1.3	1.05	1.3	0.93	1	77.6	77.6	4140	3048	4140	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	37	120		1.3	1.05	1.3	0.85	1	56.0	56.0	4740	3336	4522	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	47	120		1.3	1.05	1.3	0.91	1	75.9	75.9	5340	3624	4810	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	50	120		1.3	1.05	1.3	0.93	1	82.2	82.2	5820	3854	5040	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-9

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	52.0	0.0	52.0	N/A	0.00	-1.75	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	39.3	3.9	43.2	5.77	0.00	-1.05	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	36.8	4.9	41.7	5.10	0.01	-0.93	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	49.0	0.0	49.0	4.67	0.00	-1.51	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	77.6	0.0	77.6	4.36	0.00	-3.98	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	56.0	0.0	56.0	4.14	0.00	-2.09	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	75.9	0.0	75.9	3.98	0.00	-3.82	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	82.2	0.0	82.2	3.88	0.00	-4.40	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500	(g)
Project Location	Moreno Valley	Design Magnitude	7.58	
Project Number	15G204	Historic High Depth to Groundwater	17	(ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	23	(ft)
		Borehole Diameter	6	(in)
Boring No.	B-13			

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	22	120		1.3	1.05	1.3	1.26	0.75	36.9	36.9	1020	1020	1020	0.99	0.97	1.1	1.71	1.82	N/A	N/A	Above Water Table
19.5	17	22	19.5	18	120	18	1.3	1.05	1.291	0.97	0.95	29.1	33.2	2340	2184	2340	0.95	0.97	0.99	0.79	0.76	0.33	2.28	Non-Liquefiable
24.5	22	27	24.5	22	120	37	1.3	1.05	1.3	0.91	0.95	33.9	39.5	2940	2472	2846	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	19	120	27	1.3	1.05	1.274	0.87	0.95	27.4	32.6	3540	2760	3134	0.92	0.97	0.94	0.71	0.65	0.38	1.69	Non-Liquefiable
34.5	32	37	34.5	42	120		1.3	1.05	1.3	0.93	1	69.6	69.6	4140	3048	3422	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	50	120		1.3	1.05	1.3	0.96	1	85.0	85.0	4740	3336	3710	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	43	120		1.3	1.05	1.3	0.91	1	69.7	69.7	5340	3624	3998	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	79	120		1.3	1.05	1.3	1.14	1	159.4	159.4	5820	3854	4229	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-13

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	36.9	0.0	36.9	N/A	0.02	-0.57	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	29.1	4.1	33.2	2.28	0.03	-0.31	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	33.9	5.5	39.5	5.10	0.01	-0.76	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	27.4	5.2	32.6	1.69	0.03	-0.27	0.01	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	69.6	0.0	69.6	4.36	0.00	-3.26	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	85.0	0.0	85.0	4.14	0.00	-4.66	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	69.7	0.0	69.7	3.98	0.00	-3.27	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	159.4	0.0	159.4	3.88	0.00	-11.98	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	23 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-14		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	15	120		1.3	1.05	1.26	1.33	0.75	25.7	25.7	1020	1020	1020	0.99	0.98	1.1	0.31	0.33	N/A	N/A	Above Water Table
19.5	17	22	19.5	80	120		1.3	1.05	1.3	1.01	0.95	136.4	136.4	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	37	120	20	1.3	1.05	1.3	0.95	0.95	59.3	63.8	2940	2472	2846	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	59	120		1.3	1.05	1.3	0.99	0.95	98.6	98.6	3540	2760	3134	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	42	120		1.3	1.05	1.3	0.93	1	69.6	69.6	4140	3048	3422	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	47	120		1.3	1.05	1.3	0.94	1	78.7	78.7	4740	3336	3710	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	60	120		1.3	1.05	1.3	1.01	1	107.2	107.2	5340	3624	3998	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	68	120		1.3	1.05	1.3	1.06	1	128.0	128.0	5820	3854	4229	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-14

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	25.7	0.0	25.7	N/A	0.08	0.19	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	136.4	0.0	136.4	5.77	0.00	-9.64	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	59.3	4.5	63.8	5.10	0.00	-2.75	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	98.6	0.0	98.6	4.67	0.00	-5.94	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	69.6	0.0	69.6	4.36	0.00	-3.26	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	78.7	0.0	78.7	4.14	0.00	-4.08	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	107.2	0.0	107.2	3.98	0.00	-6.76	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	128.0	0.0	128.0	3.88	0.00	-8.80	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	31 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-17		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	18	120		1.3	1.05	1.3	1.30	0.75	31.1	31.1	1020	1020	1020	0.99	0.97	1.1	0.56	0.60	N/A	N/A	Above Water Table
19.5	17	22	19.5	84	120		1.3	1.05	1.3	1.01	0.95	143.6	143.6	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	31	120		1.3	1.05	1.3	0.92	0.95	48.1	48.1	2940	2472	2940	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	37	120		1.3	1.05	1.3	0.90	0.95	56.0	56.0	3540	2760	3540	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	47	120		1.3	1.05	1.3	0.94	1	78.2	78.2	4140	3048	3922	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	53	120		1.3	1.05	1.3	0.96	1	90.7	90.7	4740	3336	4210	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	37	120		1.3	1.05	1.3	0.85	1	56.1	56.1	5340	3624	4498	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	47	120		1.3	1.05	1.3	0.91	1	76.1	76.1	5820	3854	4728	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-17

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	31.1	0.0	31.1	N/A	0.04	-0.16	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	143.6	0.0	143.6	5.77	0.00	####	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	48.1	0.0	48.1	5.10	0.00	-1.44	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	56.0	0.0	56.0	4.67	0.00	-2.09	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	78.2	0.0	78.2	4.36	0.00	-4.03	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	90.7	0.0	90.7	4.14	0.00	-5.19	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	56.1	0.0	56.1	3.98	0.00	-2.09	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	76.1	0.0	76.1	3.88	0.00	-3.84	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	D2 Air Cargo Compatible Cev	MCE_G Design Acceleration	0.500 (g)
Project Location	Moreno Valley	Design Magnitude	7.58
Project Number	15G204	Historic High Depth to Groundwater	17 (ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	33 (ft)
		Borehole Diameter	6 (in)
Boring No.	B-19		

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.58)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
7	0	17	8.5	54	120		1.3	1.05	1.3	1.08	0.75	77.7	77.7	1020	1020	1020	0.99	0.97	1.1	2.00	2.00	N/A	N/A	Above Water Table
19.5	17	22	19.5	39	120		1.3	1.05	1.3	0.98	0.95	64.7	64.7	2340	2184	2340	0.95	0.97	0.99	2.00	1.91	0.33	5.77	Non-Liquefiable
24.5	22	27	24.5	52	120		1.3	1.05	1.3	0.98	0.95	85.6	85.6	2940	2472	2940	0.93	0.97	0.95	2.00	1.84	0.36	5.10	Non-Liquefiable
29.5	27	32	29.5	47	120		1.3	1.05	1.3	0.94	0.95	74.4	74.4	3540	2760	3540	0.92	0.97	0.92	2.00	1.78	0.38	4.67	Non-Liquefiable
34.5	32	37	34.5	45	120		1.3	1.05	1.3	0.92	1	73.6	73.6	4140	3048	4046	0.90	0.97	0.89	2.00	1.72	0.40	4.36	Non-Liquefiable
39.5	37	42	39.5	39	120		1.3	1.05	1.3	0.87	1	60.5	60.5	4740	3336	4334	0.87	0.97	0.86	2.00	1.67	0.40	4.14	Non-Liquefiable
44.5	42	47	44.5	51	120		1.3	1.05	1.3	0.94	1	85.4	85.4	5340	3624	4622	0.85	0.97	0.84	2.00	1.63	0.41	3.98	Non-Liquefiable
49.5	47	50	48.5	65	120		1.3	1.05	1.3	1.05	1	121.5	121.5	5820	3854	4853	0.83	0.97	0.82	2.00	1.59	0.41	3.88	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	D2 Air Cargo Compatible Cev
Project Location	Moreno Valley
Project Number	15G204
Engineer	DWN

Boring No. B-19

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
7	0	17	8.5	77.7	0.0	77.7	N/A	0.00	-3.99	0.00	17.00		0.000		0.00	Above Water Table
19.5	17	22	19.5	64.7	0.0	64.7	5.77	0.00	-2.82	0.00	5.00		0.000		0.00	Non-Liquefiable
24.5	22	27	24.5	85.6	0.0	85.6	5.10	0.00	-4.71	0.00	5.00		0.000		0.00	Non-Liquefiable
29.5	27	32	29.5	74.4	0.0	74.4	4.67	0.00	-3.69	0.00	5.00		0.000		0.00	Non-Liquefiable
34.5	32	37	34.5	73.6	0.0	73.6	4.36	0.00	-3.62	0.00	5.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	60.5	0.0	60.5	4.14	0.00	-2.47	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	85.4	0.0	85.4	3.98	0.00	-4.69	0.00	5.00		0.000		0.00	Non-Liquefiable
49.5	47	50	48.5	121.5	0.0	121.5	3.88	0.00	-8.16	0.00	3.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Voumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

Appendix 4: Historical Site Conditions (N/A)

Phase I Environmental Site Assessment or Other Information on Past Site Use

Appendix 5: LID Infeasibility (N/A)

LID Technical Infeasibility Analysis

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

3.5 Bioretention Facility

Type of BMP	LID – Bioretention
Treatment Mechanisms	Infiltration, Evapotranspiration, Evaporation, Biofiltration
Maximum Drainage Area	This BMP is intended to be integrated into a project's landscaped area in a distributed manner. Typically, contributing drainage areas to Bioretention Facilities range from less than 1 acre to a maximum of around 10 acres.
Other Names	Rain Garden, Bioretention Cell, Bioretention Basin, Biofiltration Basin, Landscaped Filter Basin, Porous Landscape Detention

Description

Bioretention Facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff. This keeps the Best Management Practice (BMP) from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a Bioretention Facility is unlined, which also provides an opportunity for infiltration to the extent the underlying onsite soil can accommodate. When the infiltration rate of the underlying soil is exceeded, fully biotreated flows are discharged via underdrains. Bioretention Facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly biotreated) discharge to the storm drain system.

Siting Considerations

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, Bioretention Facilities can be used in smaller landscaped spaces on the site, such as:

- ✓ Parking islands
- ✓ Medians
- ✓ Site entrances

Landscaped areas on the site (such as may otherwise be required through minimum landscaping ordinances), can often be designed as Bioretention Facilities. This can be accomplished by:

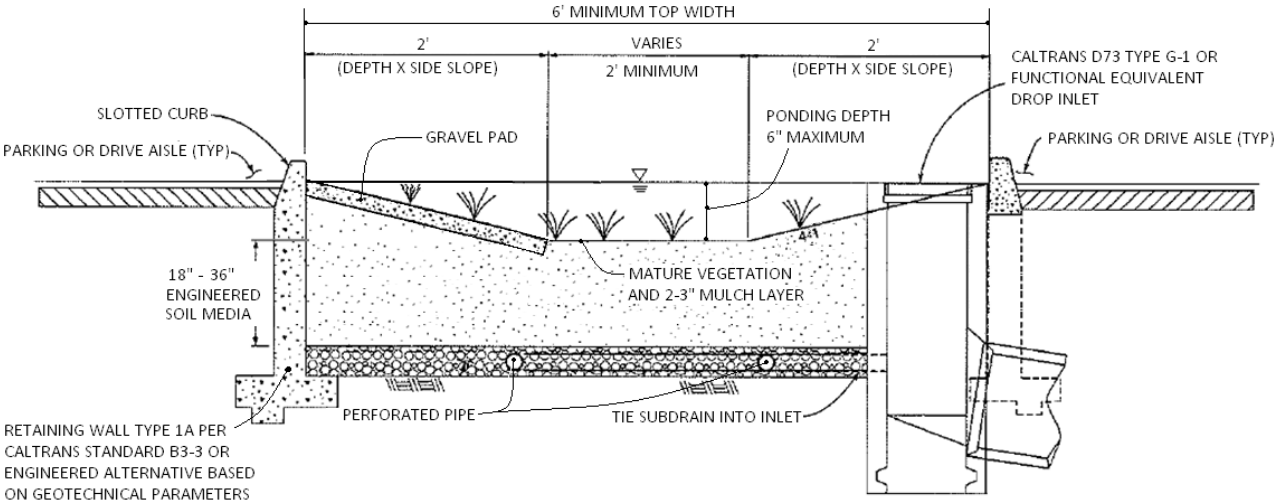
- *Depressing* landscaped areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces *into* the Bioretention Facility, rather than away from the landscaping
- Sizing and designing the depressed landscaped area as a Bioretention Facility as described in this Fact Sheet

Bioretention Facilities should however not be used downstream of areas where large amounts of sediment can clog the system. Placing a Bioretention Facility at the toe of a steep slope should also be avoided due to the potential for clogging the engineered soil media with erosion from the slope, as well as the potential for damaging the vegetation.

Design and Sizing Criteria

The recommended cross section necessary for a Bioretention Facility includes:

- Vegetated area
- 18' minimum depth of engineered soil media
- 12' minimum gravel layer depth with 6' perforated pipes (added flow control features such as orifice plates may be required to mitigate for HCOC conditions)



While the 18-inch minimum engineered soil media depth can be used in some cases, it is recommended to use 24 inches or a preferred 36 inches to provide an adequate root zone for the chosen plant palate. Such a design also provides for improved removal effectiveness for nutrients. The recommended ponding depth inside of a Bioretention Facility is 6 inches; measured from the flat bottom surface to the top of the water surface as shown in Figure 1.

Because this BMP is filled with an engineered soil media, pore space in the soil and gravel layer is assumed to provide storage volume. However, several considerations must be noted:

- Surcharge storage above the soil surface (6 inches) is important to assure that design flows do not bypass the BMP when runoff exceeds the soil's absorption rate.
- In cases where the Bioretention Facility contains engineered soil media deeper than 36 inches, the pore space within the engineered soil media can only be counted to the 36-inch depth.
- A maximum of 30 percent pore space can be used for the soil media whereas a maximum of 40 percent pore space can be use for the gravel layer.

Figure 1: Standard Layout for a Bioretention Facility

Engineered Soil Media Requirements

The engineered soil media shall be comprised of 85 percent mineral component and 15 percent organic component, by volume, drum mixed prior to placement. The mineral component shall be a Class A sandy loam topsoil that meets the range specified in Table 1 below. The organic component shall be nitrogen stabilized compost[1], such that nitrogen does not leach from the media.

Table 1: Mineral Component Range Requirements

Percent Range	Component
70-80	Sand
15-20	Silt
5-10	Clay

The trip ticket, or certificate of compliance, shall be made available to the inspector to prove the engineered mix meets this specification.

Vegetation Requirements

Vegetative cover is important to minimize erosion and ensure that treatment occurs in the Bioretention Facility. The area should be designed for at least 70 percent mature coverage throughout the Bioretention Facility. To prevent the BMP from being used as walkways, Bioretention Facilities shall be planted with a combination of small trees, densely planted shrubs, and natural grasses. Grasses shall be native or ornamental; preferably ones that do not need to be mowed. The application of fertilizers and pesticides should be minimal. To maintain oxygen levels for the vegetation and promote biodegradation, it is important that vegetation not be completely submerged for any extended period of time. Therefore, a maximum of 6 inches of ponded water shall be used in the design to ensure that plants within the Bioretention Facility remain healthy.

A 2 to 3-inch layer of standard shredded aged hardwood mulch shall be placed as the top layer inside the Bioretention Facility. The 6-inch ponding depth shown in Figure 1 above shall be measured from the top surface of the 2 to 3-inch mulch layer.

Curb Cuts

To allow water to flow into the Bioretention Facility, 1-foot-wide (minimum) curb cuts should be placed approximately every 10 feet around the perimeter of the Bioretention Facility. Figure 2 shows a curb cut in a Bioretention Facility. Curb cut flow lines must be at or above the V_{BMP} water surface level.

[1] For more information on compost, visit the US Composting Council website at: http://compostingcouncil.org/

Figure 2: Curb Cut located in a Bioretention Facility

To reduce erosion, a gravel pad shall be placed at each inlet point to the Bioretention Facility. The gravel should be 1- to 1.5-inch diameter in size. The gravel should overlap the curb cut opening a minimum of 6 inches. The gravel pad inside the Bioretention Facility should be flush with the finished surface at the curb cut and extend to the bottom of the slope.

In addition, place an apron of stone or concrete, a foot square or larger, inside each inlet to prevent vegetation from growing up and blocking the inlet. See Figure 3.

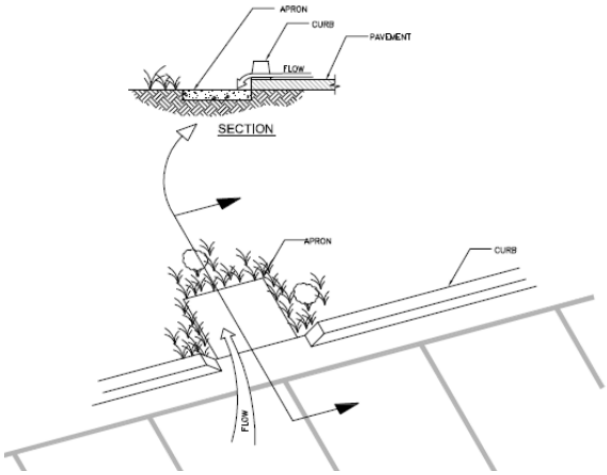


Figure 3: Apron located in a Bioretention Facility

Terracing the Landscaped Filter Basin

It is recommended that Bioretention Facilities be level. In the event the facility site slopes and lacks proper design, water would fill the lowest point of the BMP and then discharge from the basin without being treated. To ensure that the water will be held within the Bioretention Facility on sloped sites, the BMP must be terraced with nonporous check dams to provide the required storage and treatment capacity.

The terraced version of this BMP shall be used on non-flat sites with no more than a 3 percent slope. The surcharge depth cannot exceed 0.5 feet, and side slopes shall not exceed 4:1. Table 2 below shows the spacing of the check dams, and slopes shall be rounded up (i.e., 2.5 percent slope shall use 10' spacing for check dams).

Table 2: Check Dam Spacing

6" Check Dam Spacing	
Slope	**Spacing**
1%	*25'*
2%	*15'*
3%	*10'*

Roof Runoff

Roof downspouts may be directed towards Bioretention Facilities. However, the downspouts must discharge onto a concrete splash block to protect the Bioretention Facility from erosion.

Retaining Walls

It is recommended that Retaining Wall Type 1A, per Caltrans Standard B3-3 or equivalent, be constructed around the entire perimeter of the Bioretention Facility. This practice will protect the sides of the Bioretention Facility from collapsing during construction and maintenance or from high service loads adjacent to the BMP. Where such service loads would not exist adjacent to the BMP, an engineered alternative may be used if signed by a licensed civil engineer.

Side Slope Requirements

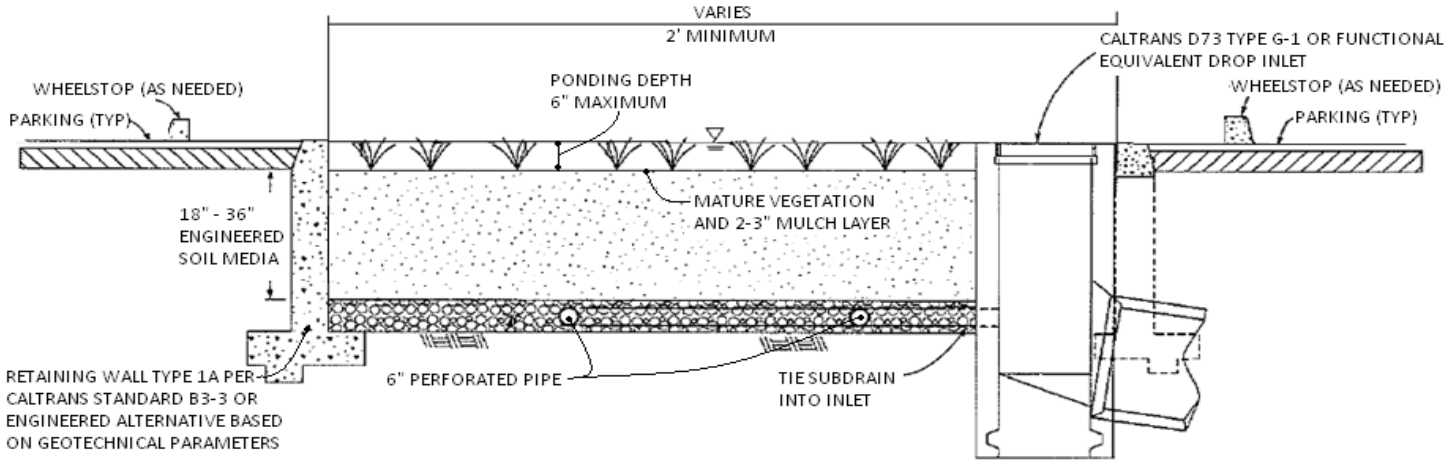
Bioretention Facilities Requiring Side Slopes

The design should assure that the Bioretention Facility does not present a tripping hazard. Bioretention Facilities proposed near pedestrian areas, such as areas parallel to parking spaces or along a walkway, must have a gentle slope to the bottom of the facility. Side slopes inside of a Bioretention Facility shall be 4:1. A typical cross section for the Bioretention Facility is shown in Figure 1.

Bioretention Facilities Not Requiring Side Slopes

Where cars park perpendicular to the Bioretention Facility, side slopes are not required. A 6-inch maximum drop may be used, and the Bioretention Facility must be planted with trees and shrubs to prevent pedestrian access. In this case, a curb is not placed around the Bioretention Facility,

but wheel stops shall be used to prevent vehicles from entering the Bioretention Facility, as shown in Figure 4.



Planter Boxes

Bioretention Facilities can also be placed above ground as planter boxes. Planter boxes must have a minimum width of 2 feet, a maximum surcharge depth of 6 inches, and no side slopes are necessary. Planter boxes must be constructed so as to ensure that the top surface of the engineered soil media will remain level. This option may be constructed of concrete, brick, stone or other stable materials that will not warp or bend. Chemically treated wood or galvanized steel, which has the ability to contaminate stormwater, should not be used. Planter boxes must be lined with an impermeable liner on all sides, including the bottom. Due to the impermeable liner, the inside bottom of the planter box shall be designed and constructed with a cross fall, directing treated flows within the subdrain layer toward the point where subdrain exits the planter box, and subdrains shall be oriented with drain holes oriented down. These provisions will help avoid excessive stagnant water within the gravel underdrain layer. Similar to the in-ground Bioretention Facility versions, this BMP benefits from healthy plants and biological activity in the root zone. Planter boxes should be planted with appropriately selected vegetation.

Figure 5: Planter Box
Source: LA Team Effort

Overflow

An overflow route is needed in the Bioretention Facility design to bypass stored runoff from storm events larger than V_{BMP} or in the event of facility or subdrain clogging. Overflow systems must connect to an acceptable discharge point, such as a downstream conveyance system as shown in Figure 1 and Figure 4. The inlet to the overflow structure shall be elevated inside the Bioretention Facility to be flush with the ponding surface for the design capture volume (V_{BMP}) as shown in Figure 4. This will allow the design capture volume to be fully treated by the Bioretention Facility, and for larger events to safely be conveyed to downstream systems. The overflow inlet shall **not** be located in the entrance of a Bioretention Facility, as shown in Figure 6.

Underdrain Gravel and Pipes

An underdrain gravel layer and pipes shall be provided in accordance with Appendix B – Underdrains.

Figure 6: Incorrect Placement of an Overflow Inlet.

Inspection and Maintenance Schedule

The Bioretention Facility area shall be inspected for erosion, dead vegetation, soggy soils, or standing water. The use of fertilizers and pesticides on the plants inside the Bioretention Facility should be minimized.

Schedule	Activity
Ongoing	• Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance activities. • Remove trash and debris • Replace damaged grass and/or plants • Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	• Inspect areas for ponding
Annually	• Inspect/clean inlets and outlets

Bioretention Facility Design Procedure

1) Enter the area tributary, A_T, to the Bioretention Facility.

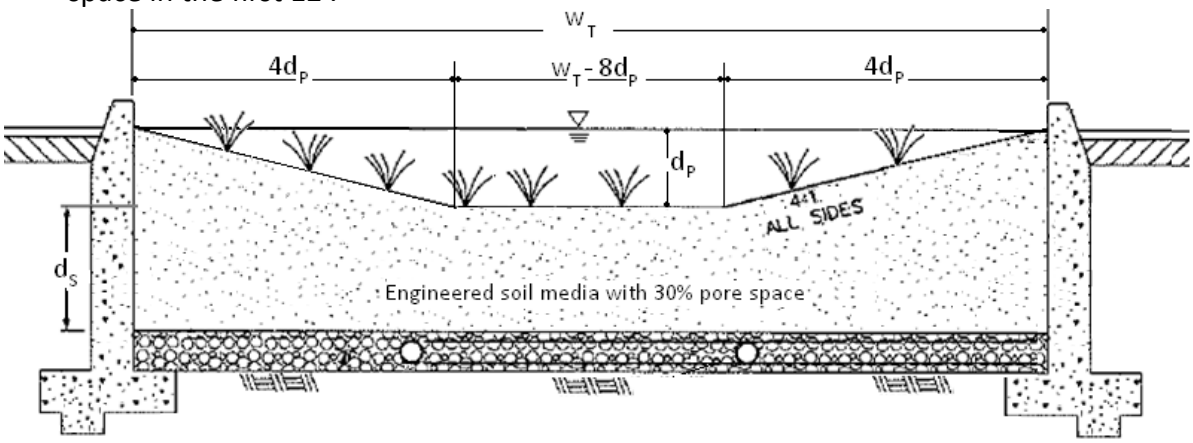
2) Enter the Design Volume, $V_{BMP,}$ determined from Section 2.1 of this Handbook.

3) Select the type of design used. There are two types of Bioretention Facility designs: the standard design used for most project sites that include side slopes, and the modified design used when the BMP is located perpendicular to the parking spaces or with planter boxes that do not use side slopes.

4) Enter the depth of the engineered soil media, d_S. The minimum depth for the engineered soil media can be 18' in limited cases, but it is recommended to use 24' or a preferred 36' to provide an adequate root zone for the chosen plant palette. Engineered soil media deeper than 36' will only get credit for the pore space in the first 36'.

5) Enter the top width of the Bioretention Facility.

6) Calculate the total effective depth, d_E, within the Bioretention Facility. The maximum allowable pore space of the soil media is 30% while the maximum allowable pore space for the gravel layer is 40%. Gravel layer deeper than 12' will only get credit for the pore space in the first 12'.



a. For the design with side slopes the following equation shall be used to determine the total effective depth. Where, d_P is the depth of ponding within the basin.

$$d_E(\text{ft}) = \frac{0.3 \times \left[\left(w_T(\text{ft}) \times d_S(\text{ft})\right) + 4\left(d_P(\text{ft})\right)^2\right] + 0.4 \times 1(\text{ft}) + d_P(\text{ft})\left[4d_P(\text{ft}) + \left(w_T(\text{ft}) - 8d_P(\text{ft})\right)\right]}{w_T(\text{ft})}$$

This above equation can be simplified if the maximum ponding depth of 0.5' is used. The equation below is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = (0.3 \times d_S(\text{ft}) + 0.4 \text{ x } 1(\text{ft})) - \left(\frac{0.7\ (\text{ft}^2)}{w_T(\text{ft})}\right) + 0.5(\text{ft})$$

b. For the design without side slopes the following equation shall be used to determine the total effective depth:

$$d_E(\text{ft}) = d_P(\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

The equation below, using the maximum ponding depth of 0.5', is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = 0.5\ (\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

7) Calculate the minimum surface area, A_M, required for the Bioretention Facility. This does not include the curb surrounding the Bioretention Facility or side slopes.

$$A_M(\text{ft}^2) = \frac{V_{BMP}(\text{ft}^3)}{d_E\ (\text{ft})}$$

8) Enter the proposed surface area. This area shall not be less than the minimum required surface area.

9) Verify that side slopes are no steeper than 4:1 in the standard design, and are not required in the modified design.

10) Provide the diameter, minimum 6 inches, of the perforated underdrain used in the Bioretention Facility. See Appendix B for specific information regarding perforated pipes.

11) Provide the slope of the site around the Bioretention Facility, if used. The maximum slope is 3 percent for a standard design.

12) Provide the check dam spacing, if the site around the Bioretention Facility is sloped.

13) Describe the vegetation used within the Bioretention Facility.

R 07 W | R 06 W | R 05 W | R 04 W | R 03 W | R 02 W | R 01 W | R 01 E | R 02 E | R 03 E | R 04 E | R 05 E

T 01 S
T 02 S
T 03 S
T 04 S
T 05 S
T 06 S
T 07 S
T 08 S

06	05	04	03	02	01
07	08	09	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

0.85 MiraLoma
0.61 RiversideNorth
0.54 RiversideSouth
0.88 PradoDam
0.50 LakeMathews
0.51 Woodcrest
0.68 PigeonPass
0.66 MorenoEast
0.68 PerrisReservoir
0.85 Beaumont
0.70 SanJacintoNWS
0.87 VistaGrandeGS
1.18 Idyllwild
0.90 HurkeyCreek
0.65 Anza
0.64 AguangaValley
0.58 SunCity
0.68 Winchester
0.70 ElsinoreNWS
1.11 ElCarisoStation
0.77 WildomarLaCresta
0.77 SantaRosaPlateau
0.52 SkinnerLake
1.00 TemeculaNWS

Project Site

Santa Ana River Watershed
Santa Margarita Watershed

JURUPA VALLEY | EASTVALE | NORCO | CORONA | RIVERSIDE | MORENO VALLEY | CALIMESA | BEAUMONT | SAN JACINTO | PERRIS | HEMET | CANYON LAKE | LAKE ELSINORE | MENIFEE | WILDOMAR | MURRIETA | TEMECULA

N

Rain Gage Locations

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Isohyetal Map for the 85th Percentile 24 hour Storm Event

July 2011

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Huitt-Zollars, Inc	Date	12/26/2019
Designed by	Dakota Stokley	Case No	
Company Project Number/Name	Hillwood - Apollo DMA A (Whole site one basin)		

BMP Identification

BMP NAME / ID: Biotreatment Basin

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.61 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA A	*6,155,654*	*Mixed Surface Types*	*0.78*	*0.58*	*3547710.3*			
	6155654		*Total*		3547710.3	0.61	*180341.9*	*735,378*

Notes:

Bioretention Facility - Design Procedure	BMP ID: Basin#1	Legend:	Required Entries / Calculated Cells

Company Name:	Huitt-Zollars, Inc	Date:	*12/26/19
Designed by:	Dakota Stokley	County/City Case No.:	

Design Volume

Enter the area tributary to this feature	A_T=	141.31	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	180,342	ft^3

Type of Bioretention Facility Design

- ○ Side slopes required (parallel to parking spaces or adjacent to walkways)
- ◉ No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer	d_S =	2.0	ft
Top Width of Bioretention Facility, excluding curb	w_T =	100.0	ft
Total Effective Depth, d_E			
$d_E = [(0.3) \times d_S + (0.4) \times 1] + 0.5$	d_E =	1.50	ft
Minimum Surface Area, A_m			
$A_M\,(ft^2) = \frac{V_{BMP}\,(ft^3)}{d_E\,(ft)}$	A_M =	120,228	ft^2
Proposed Surface Area	A=	161,872	ft^2
Minimum Required Length of Bioretention Facility, L	L =	1202.3	ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =	4	:1
Diameter of Underdrain		6	inches
Longitudinal Slope of Site (3% maximum)		0	%
6" Check Dam Spacing		0	feet
Describe Vegetation:		Natural Grasses	

Notes:

Appendix 4: Historical Site Conditions (N/A)

Phase I Environmental Site Assessment or Other Information on Past Site Use

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

AREA A - BASIN 1 (126.12 ac.)

UNIT HYDROGRAPH - 24 HOUR STORM SUMMARY

	1-YEAR	2-YEAR	5-YEAR	10-YEAR	25-YEAR	100-YEAR
PROPOSED RUNOFF	10.62	15.26	24.88	36.41	46.03	64.37
EXISTING RUNOFF	1.99	2.71	3.63	24.38	33.89	59.64
REQUIRED MITIGATION:	**8.63**	**12.55**	**21.25**	**12.03**	**12.14**	**4.73**
DISCHARGE FROM BASIN AFTER ROUTING*	1.37	1.65	2.81	16.43	28.78	47.64
ALLOWABLE TOTAL DISCHARGE	**1.99**	**2.71**	**3.63**	**24.38**	**33.89**	**59.64**
IS ALLOWABLE GREATER THAN ROUTING?	YES	YES	YES	YES	YES	YES

ALL VALUES ARE CUBIC FEET PER SECOND (CFS)

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930UHEX2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
2 YEAR STORM EVENT UNIT HYDROGRAPH
1930UHEX2
DS

Drainage Area = 126.12(Ac.) = 0.197 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 126.12(Ac.) = 0.197 Sq. Mi.
Length along longest watercourse = 4770.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.903 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 15.30(Ft.)
Slope along watercourse = 16.9358 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.154 Hr.
Lag time = 9.24 Min.
25% of lag time = 2.31 Min.
40% of lag time = 3.69 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	1.60	201.79

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
126.12	4.00	504.48

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
126.120	86.00	0.000

Total Area Entered = 126.12(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
86.0	71.6	0.343	0.000	0.343	1.000	0.343
					Sum (F) =	0.343

Area averaged mean soil loss (F) (In/Hr) = 0.343
Minimum soil loss rate ((In/Hr)) = 0.172
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	54.132	6.940	8.822
2	0.167	108.263	29.553	37.563
3	0.250	162.395	28.209	35.855
4	0.333	216.527	11.633	14.786
5	0.417	270.658	6.464	8.216
6	0.500	324.790	4.467	5.677
7	0.583	378.922	3.222	4.096
8	0.667	433.053	2.355	2.993
9	0.750	487.185	1.756	2.232
10	0.833	541.317	1.503	1.911
11	0.917	595.448	1.127	1.432
12	1.000	649.580	0.886	1.127
13	1.083	703.712	0.652	0.829
14	1.167	757.843	0.541	0.688
15	1.250	811.975	0.692	0.880
			Sum = 100.000	Sum= 127.105

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.013	0.608	0.012	0.00
2	0.17	0.07	0.013	0.606	0.012	0.00
3	0.25	0.07	0.013	0.604	0.012	0.00
4	0.33	0.10	0.019	0.601	0.017	0.00
5	0.42	0.10	0.019	0.599	0.017	0.00
6	0.50	0.10	0.019	0.597	0.017	0.00
7	0.58	0.10	0.019	0.594	0.017	0.00
8	0.67	0.10	0.019	0.592	0.017	0.00
9	0.75	0.10	0.019	0.590	0.017	0.00
10	0.83	0.13	0.026	0.587	0.023	0.00
11	0.92	0.13	0.026	0.585	0.023	0.00
12	1.00	0.13	0.026	0.583	0.023	0.00
13	1.08	0.10	0.019	0.580	0.017	0.00
14	1.17	0.10	0.019	0.578	0.017	0.00
15	1.25	0.10	0.019	0.576	0.017	0.00
16	1.33	0.10	0.019	0.573	0.017	0.00
17	1.42	0.10	0.019	0.571	0.017	0.00
18	1.50	0.10	0.019	0.569	0.017	0.00
19	1.58	0.10	0.019	0.567	0.017	0.00
20	1.67	0.10	0.019	0.564	0.017	0.00
21	1.75	0.10	0.019	0.562	0.017	0.00
22	1.83	0.13	0.026	0.560	0.023	0.00
23	1.92	0.13	0.026	0.558	0.023	0.00
24	2.00	0.13	0.026	0.555	0.023	0.00
25	2.08	0.13	0.026	0.553	0.023	0.00
26	2.17	0.13	0.026	0.551	0.023	0.00
27	2.25	0.13	0.026	0.549	0.023	0.00
28	2.33	0.13	0.026	0.546	0.023	0.00
29	2.42	0.13	0.026	0.544	0.023	0.00
30	2.50	0.13	0.026	0.542	0.023	0.00

31	2.58	0.17	0.032	0.540	0.029	0.00
32	2.67	0.17	0.032	0.537	0.029	0.00
33	2.75	0.17	0.032	0.535	0.029	0.00
34	2.83	0.17	0.032	0.533	0.029	0.00
35	2.92	0.17	0.032	0.531	0.029	0.00
36	3.00	0.17	0.032	0.529	0.029	0.00
37	3.08	0.17	0.032	0.526	0.029	0.00
38	3.17	0.17	0.032	0.524	0.029	0.00
39	3.25	0.17	0.032	0.522	0.029	0.00
40	3.33	0.17	0.032	0.520	0.029	0.00
41	3.42	0.17	0.032	0.518	0.029	0.00
42	3.50	0.17	0.032	0.516	0.029	0.00
43	3.58	0.17	0.032	0.513	0.029	0.00
44	3.67	0.17	0.032	0.511	0.029	0.00
45	3.75	0.17	0.032	0.509	0.029	0.00
46	3.83	0.20	0.038	0.507	0.035	0.00
47	3.92	0.20	0.038	0.505	0.035	0.00
48	4.00	0.20	0.038	0.503	0.035	0.00
49	4.08	0.20	0.038	0.501	0.035	0.00
50	4.17	0.20	0.038	0.498	0.035	0.00
51	4.25	0.20	0.038	0.496	0.035	0.00
52	4.33	0.23	0.045	0.494	0.040	0.00
53	4.42	0.23	0.045	0.492	0.040	0.00
54	4.50	0.23	0.045	0.490	0.040	0.00
55	4.58	0.23	0.045	0.488	0.040	0.00
56	4.67	0.23	0.045	0.486	0.040	0.00
57	4.75	0.23	0.045	0.484	0.040	0.00
58	4.83	0.27	0.051	0.482	0.046	0.01
59	4.92	0.27	0.051	0.480	0.046	0.01
60	5.00	0.27	0.051	0.477	0.046	0.01
61	5.08	0.20	0.038	0.475	0.035	0.00
62	5.17	0.20	0.038	0.473	0.035	0.00
63	5.25	0.20	0.038	0.471	0.035	0.00
64	5.33	0.23	0.045	0.469	0.040	0.00
65	5.42	0.23	0.045	0.467	0.040	0.00
66	5.50	0.23	0.045	0.465	0.040	0.00
67	5.58	0.27	0.051	0.463	0.046	0.01
68	5.67	0.27	0.051	0.461	0.046	0.01
69	5.75	0.27	0.051	0.459	0.046	0.01
70	5.83	0.27	0.051	0.457	0.046	0.01
71	5.92	0.27	0.051	0.455	0.046	0.01
72	6.00	0.27	0.051	0.453	0.046	0.01
73	6.08	0.30	0.058	0.451	0.052	0.01
74	6.17	0.30	0.058	0.449	0.052	0.01
75	6.25	0.30	0.058	0.447	0.052	0.01
76	6.33	0.30	0.058	0.445	0.052	0.01
77	6.42	0.30	0.058	0.443	0.052	0.01
78	6.50	0.30	0.058	0.441	0.052	0.01
79	6.58	0.33	0.064	0.439	0.058	0.01
80	6.67	0.33	0.064	0.437	0.058	0.01
81	6.75	0.33	0.064	0.435	0.058	0.01
82	6.83	0.33	0.064	0.433	0.058	0.01
83	6.92	0.33	0.064	0.431	0.058	0.01
84	7.00	0.33	0.064	0.429	0.058	0.01
85	7.08	0.33	0.064	0.427	0.058	0.01
86	7.17	0.33	0.064	0.425	0.058	0.01
87	7.25	0.33	0.064	0.423	0.058	0.01
88	7.33	0.37	0.070	0.421	0.063	0.01
89	7.42	0.37	0.070	0.419	0.063	0.01
90	7.50	0.37	0.070	0.417	0.063	0.01
91	7.58	0.40	0.077	0.416	0.069	0.01
92	7.67	0.40	0.077	0.414	0.069	0.01
93	7.75	0.40	0.077	0.412	0.069	0.01
94	7.83	0.43	0.083	0.410	0.075	0.01
95	7.92	0.43	0.083	0.408	0.075	0.01
96	8.00	0.43	0.083	0.406	0.075	0.01
97	8.08	0.50	0.096	0.404	0.086	0.01
98	8.17	0.50	0.096	0.402	0.086	0.01
99	8.25	0.50	0.096	0.400	0.086	0.01
100	8.33	0.50	0.096	0.399	0.086	0.01
101	8.42	0.50	0.096	0.397	0.086	0.01

102	8.50	0.50	0.096	0.395	0.086	0.01
103	8.58	0.53	0.102	0.393	0.092	0.01
104	8.67	0.53	0.102	0.391	0.092	0.01
105	8.75	0.53	0.102	0.389	0.092	0.01
106	8.83	0.57	0.109	0.387	0.098	0.01
107	8.92	0.57	0.109	0.386	0.098	0.01
108	9.00	0.57	0.109	0.384	0.098	0.01
109	9.08	0.63	0.122	0.382	0.109	0.01
110	9.17	0.63	0.122	0.380	0.109	0.01
111	9.25	0.63	0.122	0.378	0.109	0.01
112	9.33	0.67	0.128	0.377	0.115	0.01
113	9.42	0.67	0.128	0.375	0.115	0.01
114	9.50	0.67	0.128	0.373	0.115	0.01
115	9.58	0.70	0.134	0.371	0.121	0.01
116	9.67	0.70	0.134	0.369	0.121	0.01
117	9.75	0.70	0.134	0.368	0.121	0.01
118	9.83	0.73	0.141	0.366	0.127	0.01
119	9.92	0.73	0.141	0.364	0.127	0.01
120	10.00	0.73	0.141	0.362	0.127	0.01
121	10.08	0.50	0.096	0.361	0.086	0.01
122	10.17	0.50	0.096	0.359	0.086	0.01
123	10.25	0.50	0.096	0.357	0.086	0.01
124	10.33	0.50	0.096	0.355	0.086	0.01
125	10.42	0.50	0.096	0.354	0.086	0.01
126	10.50	0.50	0.096	0.352	0.086	0.01
127	10.58	0.67	0.128	0.350	0.115	0.01
128	10.67	0.67	0.128	0.348	0.115	0.01
129	10.75	0.67	0.128	0.347	0.115	0.01
130	10.83	0.67	0.128	0.345	0.115	0.01
131	10.92	0.67	0.128	0.343	0.115	0.01
132	11.00	0.67	0.128	0.342	0.115	0.01
133	11.08	0.63	0.122	0.340	0.109	0.01
134	11.17	0.63	0.122	0.338	0.109	0.01
135	11.25	0.63	0.122	0.337	0.109	0.01
136	11.33	0.63	0.122	0.335	0.109	0.01
137	11.42	0.63	0.122	0.333	0.109	0.01
138	11.50	0.63	0.122	0.332	0.109	0.01
139	11.58	0.57	0.109	0.330	0.098	0.01
140	11.67	0.57	0.109	0.328	0.098	0.01
141	11.75	0.57	0.109	0.327	0.098	0.01
142	11.83	0.60	0.115	0.325	0.104	0.01
143	11.92	0.60	0.115	0.324	0.104	0.01
144	12.00	0.60	0.115	0.322	0.104	0.01
145	12.08	0.83	0.160	0.320	0.144	0.02
146	12.17	0.83	0.160	0.319	0.144	0.02
147	12.25	0.83	0.160	0.317	0.144	0.02
148	12.33	0.87	0.166	0.316	0.150	0.02
149	12.42	0.87	0.166	0.314	0.150	0.02
150	12.50	0.87	0.166	0.312	0.150	0.02
151	12.58	0.93	0.179	0.311	0.161	0.02
152	12.67	0.93	0.179	0.309	0.161	0.02
153	12.75	0.93	0.179	0.308	0.161	0.02
154	12.83	0.97	0.186	0.306	0.167	0.02
155	12.92	0.97	0.186	0.305	0.167	0.02
156	13.00	0.97	0.186	0.303	0.167	0.02
157	13.08	1.13	0.218	0.301	0.196	0.02
158	13.17	1.13	0.218	0.300	0.196	0.02
159	13.25	1.13	0.218	0.298	0.196	0.02
160	13.33	1.13	0.218	0.297	0.196	0.02
161	13.42	1.13	0.218	0.295	0.196	0.02
162	13.50	1.13	0.218	0.294	0.196	0.02
163	13.58	0.77	0.147	0.292	0.132	0.01
164	13.67	0.77	0.147	0.291	0.132	0.01
165	13.75	0.77	0.147	0.289	0.132	0.01
166	13.83	0.77	0.147	0.288	0.132	0.01
167	13.92	0.77	0.147	0.286	0.132	0.01
168	14.00	0.77	0.147	0.285	0.132	0.01
169	14.08	0.90	0.173	0.284	0.155	0.02
170	14.17	0.90	0.173	0.282	0.155	0.02
171	14.25	0.90	0.173	0.281	0.155	0.02
172	14.33	0.87	0.166	0.279	0.150	0.02

173	14.42	0.87	0.166	0.278	0.150	0.02
174	14.50	0.87	0.166	0.276	0.150	0.02
175	14.58	0.87	0.166	0.275	0.150	0.02
176	14.67	0.87	0.166	0.274	0.150	0.02
177	14.75	0.87	0.166	0.272	0.150	0.02
178	14.83	0.83	0.160	0.271	0.144	0.02
179	14.92	0.83	0.160	0.269	0.144	0.02
180	15.00	0.83	0.160	0.268	0.144	0.02
181	15.08	0.80	0.154	0.267	0.138	0.02
182	15.17	0.80	0.154	0.265	0.138	0.02
183	15.25	0.80	0.154	0.264	0.138	0.02
184	15.33	0.77	0.147	0.263	0.132	0.01
185	15.42	0.77	0.147	0.261	0.132	0.01
186	15.50	0.77	0.147	0.260	0.132	0.01
187	15.58	0.63	0.122	0.259	0.109	0.01
188	15.67	0.63	0.122	0.257	0.109	0.01
189	15.75	0.63	0.122	0.256	0.109	0.01
190	15.83	0.63	0.122	0.255	0.109	0.01
191	15.92	0.63	0.122	0.253	0.109	0.01
192	16.00	0.63	0.122	0.252	0.109	0.01
193	16.08	0.13	0.026	0.251	0.023	0.00
194	16.17	0.13	0.026	0.249	0.023	0.00
195	16.25	0.13	0.026	0.248	0.023	0.00
196	16.33	0.13	0.026	0.247	0.023	0.00
197	16.42	0.13	0.026	0.246	0.023	0.00
198	16.50	0.13	0.026	0.244	0.023	0.00
199	16.58	0.10	0.019	0.243	0.017	0.00
200	16.67	0.10	0.019	0.242	0.017	0.00
201	16.75	0.10	0.019	0.241	0.017	0.00
202	16.83	0.10	0.019	0.239	0.017	0.00
203	16.92	0.10	0.019	0.238	0.017	0.00
204	17.00	0.10	0.019	0.237	0.017	0.00
205	17.08	0.17	0.032	0.236	0.029	0.00
206	17.17	0.17	0.032	0.235	0.029	0.00
207	17.25	0.17	0.032	0.233	0.029	0.00
208	17.33	0.17	0.032	0.232	0.029	0.00
209	17.42	0.17	0.032	0.231	0.029	0.00
210	17.50	0.17	0.032	0.230	0.029	0.00
211	17.58	0.17	0.032	0.229	0.029	0.00
212	17.67	0.17	0.032	0.228	0.029	0.00
213	17.75	0.17	0.032	0.227	0.029	0.00
214	17.83	0.13	0.026	0.225	0.023	0.00
215	17.92	0.13	0.026	0.224	0.023	0.00
216	18.00	0.13	0.026	0.223	0.023	0.00
217	18.08	0.13	0.026	0.222	0.023	0.00
218	18.17	0.13	0.026	0.221	0.023	0.00
219	18.25	0.13	0.026	0.220	0.023	0.00
220	18.33	0.13	0.026	0.219	0.023	0.00
221	18.42	0.13	0.026	0.218	0.023	0.00
222	18.50	0.13	0.026	0.217	0.023	0.00
223	18.58	0.10	0.019	0.216	0.017	0.00
224	18.67	0.10	0.019	0.215	0.017	0.00
225	18.75	0.10	0.019	0.214	0.017	0.00
226	18.83	0.07	0.013	0.213	0.012	0.00
227	18.92	0.07	0.013	0.212	0.012	0.00
228	19.00	0.07	0.013	0.211	0.012	0.00
229	19.08	0.10	0.019	0.210	0.017	0.00
230	19.17	0.10	0.019	0.209	0.017	0.00
231	19.25	0.10	0.019	0.208	0.017	0.00
232	19.33	0.13	0.026	0.207	0.023	0.00
233	19.42	0.13	0.026	0.206	0.023	0.00
234	19.50	0.13	0.026	0.205	0.023	0.00
235	19.58	0.10	0.019	0.204	0.017	0.00
236	19.67	0.10	0.019	0.203	0.017	0.00
237	19.75	0.10	0.019	0.202	0.017	0.00
238	19.83	0.07	0.013	0.201	0.012	0.00
239	19.92	0.07	0.013	0.200	0.012	0.00
240	20.00	0.07	0.013	0.199	0.012	0.00
241	20.08	0.10	0.019	0.198	0.017	0.00
242	20.17	0.10	0.019	0.197	0.017	0.00
243	20.25	0.10	0.019	0.197	0.017	0.00

244	20.33	0.10	0.019	0.196	0.017	0.00
245	20.42	0.10	0.019	0.195	0.017	0.00
246	20.50	0.10	0.019	0.194	0.017	0.00
247	20.58	0.10	0.019	0.193	0.017	0.00
248	20.67	0.10	0.019	0.192	0.017	0.00
249	20.75	0.10	0.019	0.192	0.017	0.00
250	20.83	0.07	0.013	0.191	0.012	0.00
251	20.92	0.07	0.013	0.190	0.012	0.00
252	21.00	0.07	0.013	0.189	0.012	0.00
253	21.08	0.10	0.019	0.189	0.017	0.00
254	21.17	0.10	0.019	0.188	0.017	0.00
255	21.25	0.10	0.019	0.187	0.017	0.00
256	21.33	0.07	0.013	0.186	0.012	0.00
257	21.42	0.07	0.013	0.186	0.012	0.00
258	21.50	0.07	0.013	0.185	0.012	0.00
259	21.58	0.10	0.019	0.184	0.017	0.00
260	21.67	0.10	0.019	0.184	0.017	0.00
261	21.75	0.10	0.019	0.183	0.017	0.00
262	21.83	0.07	0.013	0.182	0.012	0.00
263	21.92	0.07	0.013	0.182	0.012	0.00
264	22.00	0.07	0.013	0.181	0.012	0.00
265	22.08	0.10	0.019	0.181	0.017	0.00
266	22.17	0.10	0.019	0.180	0.017	0.00
267	22.25	0.10	0.019	0.179	0.017	0.00
268	22.33	0.07	0.013	0.179	0.012	0.00
269	22.42	0.07	0.013	0.178	0.012	0.00
270	22.50	0.07	0.013	0.178	0.012	0.00
271	22.58	0.07	0.013	0.177	0.012	0.00
272	22.67	0.07	0.013	0.177	0.012	0.00
273	22.75	0.07	0.013	0.176	0.012	0.00
274	22.83	0.07	0.013	0.176	0.012	0.00
275	22.92	0.07	0.013	0.175	0.012	0.00
276	23.00	0.07	0.013	0.175	0.012	0.00
277	23.08	0.07	0.013	0.175	0.012	0.00
278	23.17	0.07	0.013	0.174	0.012	0.00
279	23.25	0.07	0.013	0.174	0.012	0.00
280	23.33	0.07	0.013	0.173	0.012	0.00
281	23.42	0.07	0.013	0.173	0.012	0.00
282	23.50	0.07	0.013	0.173	0.012	0.00
283	23.58	0.07	0.013	0.173	0.012	0.00
284	23.67	0.07	0.013	0.172	0.012	0.00
285	23.75	0.07	0.013	0.172	0.012	0.00
286	23.83	0.07	0.013	0.172	0.012	0.00
287	23.92	0.07	0.013	0.172	0.012	0.00
288	24.00	0.07	0.013	0.172	0.012	0.00
Sum =		100.0			Sum =	1.9

Flood volume = Effective rainfall 0.16(In)
times area 126.1(Ac.)/[(In)/(Ft.)] = 1.7(Ac.Ft)
Total soil loss = 1.44(In)
Total soil loss = 15.131(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 73232.5 Cubic Feet
Total soil loss = 659092.1 Cubic Feet

Peak flow rate of this hydrograph = 2.707(CFS)

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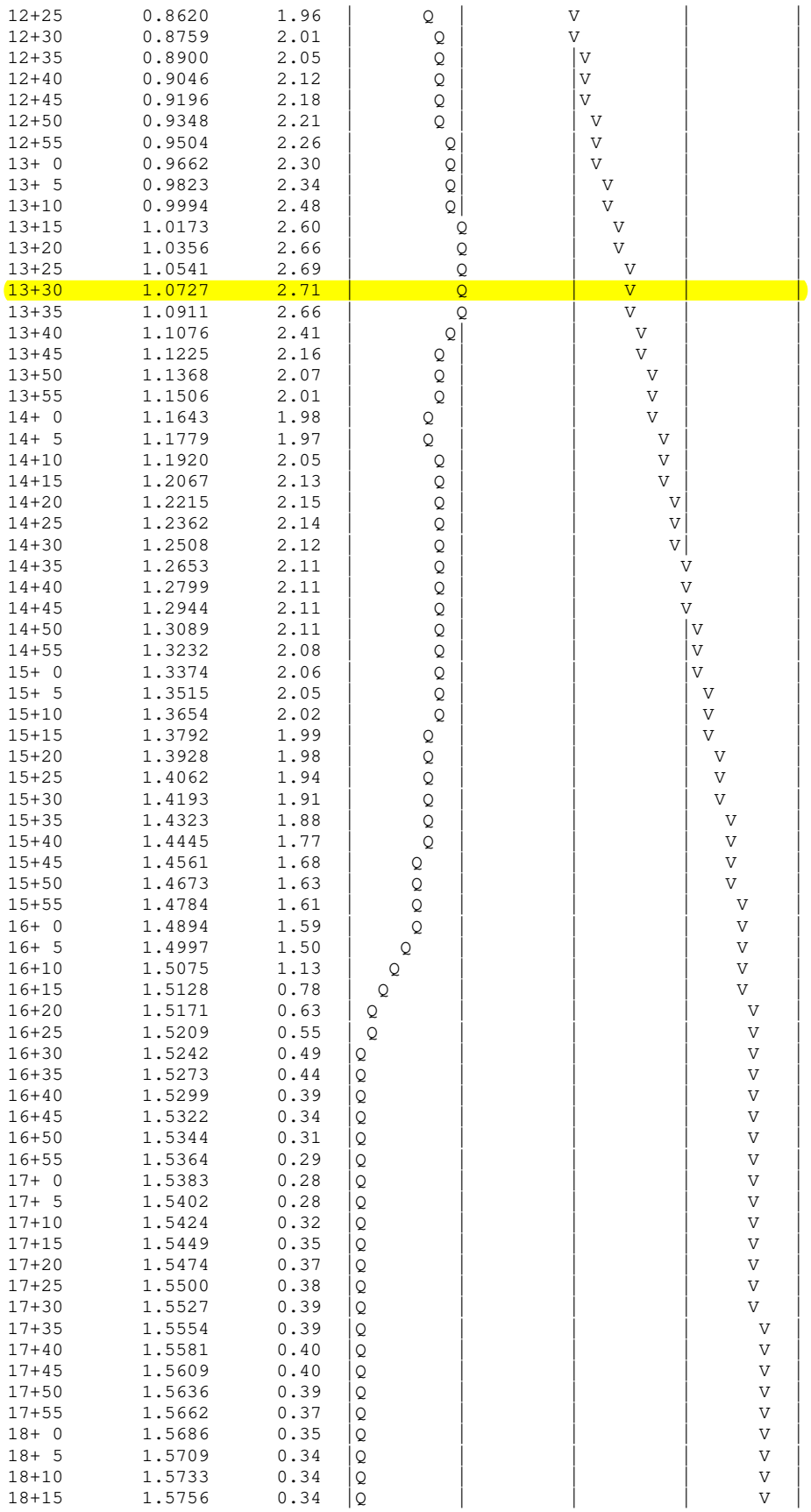
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0005	0.06	Q	|	|	|	|
0+15	0.0012	0.11	Q	|	|	|	|
0+20	0.0021	0.13	Q	|	|	|	|
0+25	0.0032	0.16	Q	|	|	|	|
0+30	0.0046	0.19	Q	|	|	|	|

0+35	0.0060	0.21	Q				
0+40	0.0075	0.22	Q				
0+45	0.0091	0.22	Q				
0+50	0.0107	0.24	Q				
0+55	0.0125	0.26	VQ				
1+ 0	0.0145	0.29	VQ				
1+ 5	0.0165	0.30	VQ				
1+10	0.0185	0.28	VQ				
1+15	0.0203	0.26	VQ				
1+20	0.0220	0.25	VQ				
1+25	0.0237	0.25	VQ				
1+30	0.0255	0.25	VQ				
1+35	0.0272	0.25	Q				
1+40	0.0289	0.25	Q				
1+45	0.0306	0.25	Q				
1+50	0.0323	0.25	VQ				
1+55	0.0342	0.28	VQ				
2+ 0	0.0363	0.30	VQ				
2+ 5	0.0384	0.31	VQ				
2+10	0.0405	0.31	VQ				
2+15	0.0427	0.32	|Q				
2+20	0.0449	0.32	|Q				
2+25	0.0471	0.32	|Q				
2+30	0.0493	0.32	|Q				
2+35	0.0516	0.33	|Q				
2+40	0.0540	0.35	|Q				
2+45	0.0566	0.38	|Q				
2+50	0.0593	0.39	|Q				
2+55	0.0620	0.39	|Q				
3+ 0	0.0647	0.40	|Q				
3+ 5	0.0674	0.40	|Q				
3+10	0.0702	0.40	|Q				
3+15	0.0730	0.40	|Q				
3+20	0.0757	0.40	|Q				
3+25	0.0785	0.40	|Q				
3+30	0.0813	0.41	|Q				
3+35	0.0841	0.41	|QV				
3+40	0.0869	0.41	|QV				
3+45	0.0897	0.41	|QV				
3+50	0.0926	0.41	|QV				
3+55	0.0956	0.44	|QV				
4+ 0	0.0987	0.46	|QV				
4+ 5	0.1020	0.47	|QV				
4+10	0.1052	0.47	|QV				
4+15	0.1085	0.48	|QV				
4+20	0.1119	0.49	|QV				
4+25	0.1154	0.51	| Q				
4+30	0.1191	0.54	| Q				
4+35	0.1229	0.55	| Q				
4+40	0.1267	0.55	| QV				
4+45	0.1305	0.56	| QV				
4+50	0.1344	0.57	| QV				
4+55	0.1385	0.59	| QV				
5+ 0	0.1427	0.62	| QV				
5+ 5	0.1470	0.62	| QV				
5+10	0.1510	0.58	| QV				
5+15	0.1546	0.53	| QV				
5+20	0.1582	0.52	| QV				
5+25	0.1620	0.54	| QV				
5+30	0.1658	0.56	| QV				
5+35	0.1697	0.57	| Q V				
5+40	0.1738	0.59	| Q V				
5+45	0.1781	0.62	| Q V				
5+50	0.1824	0.63	| Q V				
5+55	0.1868	0.64	| Q V				
6+ 0	0.1912	0.64	| Q V				
6+ 5	0.1956	0.65	| Q V				
6+10	0.2003	0.67	| Q V				
6+15	0.2051	0.70	| Q V				
6+20	0.2100	0.71	| Q V				
6+25	0.2149	0.72	| Q V				

6+30	0.2199	0.72	Q V				
6+35	0.2249	0.73	Q V				
6+40	0.2301	0.76	Q V				
6+45	0.2355	0.78	Q V				
6+50	0.2409	0.79	Q V				
6+55	0.2464	0.80	Q V				
7+ 0	0.2519	0.80	Q V				
7+ 5	0.2575	0.80	Q V				
7+10	0.2630	0.81	Q V				
7+15	0.2686	0.81	Q V				
7+20	0.2742	0.82	Q V				
7+25	0.2800	0.84	Q V				
7+30	0.2860	0.86	Q V				
7+35	0.2920	0.88	Q V				
7+40	0.2983	0.91	Q V				
7+45	0.3048	0.94	Q V				
7+50	0.3113	0.96	Q V				
7+55	0.3181	0.99	Q V				
8+ 0	0.3251	1.01	Q V				
8+ 5	0.3323	1.04	Q V				
8+10	0.3398	1.10	Q V				
8+15	0.3477	1.15	Q V				
8+20	0.3558	1.17	Q V				
8+25	0.3639	1.18	Q V				
8+30	0.3721	1.19	Q V				
8+35	0.3805	1.21	Q V				
8+40	0.3890	1.24	Q V				
8+45	0.3977	1.26	Q V				
8+50	0.4065	1.28	Q V				
8+55	0.4155	1.31	Q V				
9+ 0	0.4248	1.34	Q V				
9+ 5	0.4342	1.37	Q V				
9+10	0.4440	1.42	Q V				
9+15	0.4541	1.47	Q V				
9+20	0.4645	1.50	Q V				
9+25	0.4751	1.54	Q V				
9+30	0.4859	1.57	Q V				
9+35	0.4969	1.59	Q V				
9+40	0.5081	1.63	Q V				
9+45	0.5195	1.66	Q V				
9+50	0.5311	1.68	Q V				
9+55	0.5429	1.71	Q V				
10+ 0	0.5549	1.74	Q V				
10+ 5	0.5667	1.72	Q V				
10+10	0.5775	1.56	Q V				
10+15	0.5871	1.41	Q V				
10+20	0.5964	1.34	Q V				
10+25	0.6054	1.31	Q V				
10+30	0.6143	1.29	Q V				
10+35	0.6232	1.30	Q V				
10+40	0.6329	1.41	Q V				
10+45	0.6433	1.51	Q V				
10+50	0.6540	1.55	Q V				
10+55	0.6648	1.57	Q V				
11+ 0	0.6758	1.59	Q V				
11+ 5	0.6867	1.59	Q V				
11+10	0.6976	1.57	Q V				
11+15	0.7082	1.55	Q V				
11+20	0.7189	1.55	Q V				
11+25	0.7296	1.55	Q V				
11+30	0.7403	1.55	Q V				
11+35	0.7508	1.54	Q V				
11+40	0.7611	1.49	Q V				
11+45	0.7711	1.45	Q V				
11+50	0.7809	1.43	Q V				
11+55	0.7908	1.44	Q V				
12+ 0	0.8009	1.46	Q V				
12+ 5	0.8112	1.50	Q V				
12+10	0.8227	1.67	Q V				
12+15	0.8353	1.83	Q V				
12+20	0.8485	1.90	Q V				



18+20	1.5779	0.33	|Q	|	|	|	V |
18+25	1.5802	0.33	|Q	|	|	|	V |
18+30	1.5824	0.33	|Q	|	|	|	V |
18+35	1.5847	0.32	|Q	|	|	|	V |
18+40	1.5867	0.30	|Q	|	|	|	V |
18+45	1.5886	0.27	|Q	|	|	|	V |
18+50	1.5904	0.26	|Q	|	|	|	V |
18+55	1.5920	0.23	Q	|	|	|	V |
19+ 0	1.5933	0.20	Q	|	|	|	V |
19+ 5	1.5947	0.20	Q	|	|	|	V |
19+10	1.5962	0.21	Q	|	|	|	V |
19+15	1.5977	0.23	Q	|	|	|	V |
19+20	1.5994	0.24	Q	|	|	|	V |
19+25	1.6012	0.27	|Q	|	|	|	V |
19+30	1.6033	0.29	|Q	|	|	|	V |
19+35	1.6053	0.30	|Q	|	|	|	V |
19+40	1.6072	0.28	|Q	|	|	|	V |
19+45	1.6090	0.26	|Q	|	|	|	V |
19+50	1.6107	0.25	Q	|	|	|	V |
19+55	1.6122	0.22	Q	|	|	|	V |
20+ 0	1.6136	0.20	Q	|	|	|	V |
20+ 5	1.6149	0.19	Q	|	|	|	V |
20+10	1.6163	0.21	Q	|	|	|	V |
20+15	1.6179	0.23	Q	|	|	|	V |
20+20	1.6195	0.23	Q	|	|	|	V |
20+25	1.6212	0.24	Q	|	|	|	V |
20+30	1.6228	0.24	Q	|	|	|	V |
20+35	1.6245	0.24	Q	|	|	|	V |
20+40	1.6261	0.24	Q	|	|	|	V |
20+45	1.6278	0.24	Q	|	|	|	V |
20+50	1.6294	0.24	Q	|	|	|	V |
20+55	1.6309	0.21	Q	|	|	|	V |
21+ 0	1.6322	0.19	Q	|	|	|	V |
21+ 5	1.6335	0.19	Q	|	|	|	V |
21+10	1.6349	0.21	Q	|	|	|	V |
21+15	1.6365	0.23	Q	|	|	|	V |
21+20	1.6380	0.23	Q	|	|	|	V |
21+25	1.6394	0.21	Q	|	|	|	V|
21+30	1.6407	0.19	Q	|	|	|	V|
21+35	1.6420	0.18	Q	|	|	|	V|
21+40	1.6434	0.20	Q	|	|	|	V|
21+45	1.6449	0.22	Q	|	|	|	V|
21+50	1.6465	0.22	Q	|	|	|	V|
21+55	1.6479	0.20	Q	|	|	|	V|
22+ 0	1.6491	0.18	Q	|	|	|	V|
22+ 5	1.6504	0.18	Q	|	|	|	V|
22+10	1.6518	0.20	Q	|	|	|	V|
22+15	1.6533	0.22	Q	|	|	|	V|
22+20	1.6549	0.22	Q	|	|	|	V|
22+25	1.6563	0.20	Q	|	|	|	V|
22+30	1.6575	0.18	Q	|	|	|	V|
22+35	1.6588	0.18	Q	|	|	|	V|
22+40	1.6600	0.17	Q	|	|	|	V|
22+45	1.6611	0.17	Q	|	|	|	V|
22+50	1.6623	0.17	Q	|	|	|	V|
22+55	1.6634	0.17	Q	|	|	|	V|
23+ 0	1.6646	0.17	Q	|	|	|	V|
23+ 5	1.6657	0.16	Q	|	|	|	V|
23+10	1.6668	0.16	Q	|	|	|	V|
23+15	1.6680	0.16	Q	|	|	|	V|
23+20	1.6691	0.16	Q	|	|	|	V|
23+25	1.6702	0.16	Q	|	|	|	V|
23+30	1.6713	0.16	Q	|	|	|	V|
23+35	1.6725	0.16	Q	|	|	|	V|
23+40	1.6736	0.16	Q	|	|	|	V|
23+45	1.6747	0.16	Q	|	|	|	V|
23+50	1.6758	0.16	Q	|	|	|	V|
23+55	1.6769	0.16	Q	|	|	|	V|
24+ 0	1.6781	0.16	Q	|	|	|	V|
24+ 5	1.6791	0.15	Q	|	|	|	V|
24+10	1.6798	0.10	Q	|	|	|	V|

24+15	1.6802	0.06	Q				V
24+20	1.6805	0.04	Q				V
24+25	1.6807	0.03	Q				V
24+30	1.6808	0.02	Q				V
24+35	1.6809	0.02	Q				V
24+40	1.6810	0.01	Q				V
24+45	1.6811	0.01	Q				V
24+50	1.6811	0.01	Q				V
24+55	1.6811	0.00	Q				V
25+ 0	1.6812	0.00	Q				V
25+ 5	1.6812	0.00	Q				V
25+10	1.6812	0.00	Q				V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 01/06/20 File: 1930PUH2242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6145

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

HILLWOOD - APOLLO PROJECT
2 YEAR STORM EVENT PROPOSED UH
1930PUH2
DS

Drainage Area = 127.12(Ac.) = 0.199 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 127.12(Ac.) = 0.199 Sq. Mi.
Length along longest watercourse = 5048.00(Ft.)
Length along longest watercourse measured to centroid = 2572.00(Ft.)
Length along longest watercourse = 0.956 Mi.
Length along longest watercourse measured to centroid = 0.487 Mi.
Difference in elevation = 29.90(Ft.)
Slope along watercourse = 31.2742 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.140 Hr.
Lag time = 8.40 Min.
25% of lag time = 2.10 Min.
40% of lag time = 3.36 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	1.60	203.39

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
127.12	4.00	508.48

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.600(In)
Area Averaged 100-Year Rainfall = 4.000(In)

Point rain (area averaged) = 1.600(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
127.120	69.00	0.900

Total Area Entered = 127.12(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
69.0	49.8	0.574	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	59.527	8.108	10.388
2	0.167	119.054	33.632	43.087
3	0.250	178.581	26.735	34.252
4	0.333	238.109	10.389	13.309
5	0.417	297.636	6.125	7.847
6	0.500	357.163	4.147	5.313
7	0.583	416.690	2.960	3.792
8	0.667	476.217	2.078	2.663
9	0.750	535.744	1.719	2.202
10	0.833	595.271	1.279	1.638
11	0.917	654.799	0.977	1.251
12	1.000	714.326	0.697	0.893
13	1.083	773.853	0.595	0.763
14	1.167	833.380	0.559	0.716
			Sum = 100.000 Sum=	128.113

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.013	0.193	0.002	0.01
2	0.17	0.07	0.013	0.193	0.002	0.01
3	0.25	0.07	0.013	0.192	0.002	0.01
4	0.33	0.10	0.019	0.191	0.003	0.02
5	0.42	0.10	0.019	0.190	0.003	0.02
6	0.50	0.10	0.019	0.190	0.003	0.02
7	0.58	0.10	0.019	0.189	0.003	0.02
8	0.67	0.10	0.019	0.188	0.003	0.02
9	0.75	0.10	0.019	0.187	0.003	0.02
10	0.83	0.13	0.026	0.187	0.005	0.02
11	0.92	0.13	0.026	0.186	0.005	0.02
12	1.00	0.13	0.026	0.185	0.005	0.02
13	1.08	0.10	0.019	0.184	0.003	0.02
14	1.17	0.10	0.019	0.184	0.003	0.02
15	1.25	0.10	0.019	0.183	0.003	0.02
16	1.33	0.10	0.019	0.182	0.003	0.02
17	1.42	0.10	0.019	0.182	0.003	0.02
18	1.50	0.10	0.019	0.181	0.003	0.02
19	1.58	0.10	0.019	0.180	0.003	0.02
20	1.67	0.10	0.019	0.179	0.003	0.02
21	1.75	0.10	0.019	0.179	0.003	0.02
22	1.83	0.13	0.026	0.178	0.005	0.02
23	1.92	0.13	0.026	0.177	0.005	0.02
24	2.00	0.13	0.026	0.176	0.005	0.02
25	2.08	0.13	0.026	0.176	0.005	0.02
26	2.17	0.13	0.026	0.175	0.005	0.02
27	2.25	0.13	0.026	0.174	0.005	0.02
28	2.33	0.13	0.026	0.174	0.005	0.02
29	2.42	0.13	0.026	0.173	0.005	0.02
30	2.50	0.13	0.026	0.172	0.005	0.02
31	2.58	0.17	0.032	0.172	0.006	0.03

32	2.67	0.17	0.032	0.171	0.006	0.03
33	2.75	0.17	0.032	0.170	0.006	0.03
34	2.83	0.17	0.032	0.169	0.006	0.03
35	2.92	0.17	0.032	0.169	0.006	0.03
36	3.00	0.17	0.032	0.168	0.006	0.03
37	3.08	0.17	0.032	0.167	0.006	0.03
38	3.17	0.17	0.032	0.167	0.006	0.03
39	3.25	0.17	0.032	0.166	0.006	0.03
40	3.33	0.17	0.032	0.165	0.006	0.03
41	3.42	0.17	0.032	0.165	0.006	0.03
42	3.50	0.17	0.032	0.164	0.006	0.03
43	3.58	0.17	0.032	0.163	0.006	0.03
44	3.67	0.17	0.032	0.162	0.006	0.03
45	3.75	0.17	0.032	0.162	0.006	0.03
46	3.83	0.20	0.038	0.161	0.007	0.03
47	3.92	0.20	0.038	0.160	0.007	0.03
48	4.00	0.20	0.038	0.160	0.007	0.03
49	4.08	0.20	0.038	0.159	0.007	0.03
50	4.17	0.20	0.038	0.158	0.007	0.03
51	4.25	0.20	0.038	0.158	0.007	0.03
52	4.33	0.23	0.045	0.157	0.008	0.04
53	4.42	0.23	0.045	0.156	0.008	0.04
54	4.50	0.23	0.045	0.156	0.008	0.04
55	4.58	0.23	0.045	0.155	0.008	0.04
56	4.67	0.23	0.045	0.154	0.008	0.04
57	4.75	0.23	0.045	0.154	0.008	0.04
58	4.83	0.27	0.051	0.153	0.009	0.04
59	4.92	0.27	0.051	0.152	0.009	0.04
60	5.00	0.27	0.051	0.152	0.009	0.04
61	5.08	0.20	0.038	0.151	0.007	0.03
62	5.17	0.20	0.038	0.150	0.007	0.03
63	5.25	0.20	0.038	0.150	0.007	0.03
64	5.33	0.23	0.045	0.149	0.008	0.04
65	5.42	0.23	0.045	0.148	0.008	0.04
66	5.50	0.23	0.045	0.148	0.008	0.04
67	5.58	0.27	0.051	0.147	0.009	0.04
68	5.67	0.27	0.051	0.147	0.009	0.04
69	5.75	0.27	0.051	0.146	0.009	0.04
70	5.83	0.27	0.051	0.145	0.009	0.04
71	5.92	0.27	0.051	0.145	0.009	0.04
72	6.00	0.27	0.051	0.144	0.009	0.04
73	6.08	0.30	0.058	0.143	0.010	0.05
74	6.17	0.30	0.058	0.143	0.010	0.05
75	6.25	0.30	0.058	0.142	0.010	0.05
76	6.33	0.30	0.058	0.141	0.010	0.05
77	6.42	0.30	0.058	0.141	0.010	0.05
78	6.50	0.30	0.058	0.140	0.010	0.05
79	6.58	0.33	0.064	0.140	0.012	0.05
80	6.67	0.33	0.064	0.139	0.012	0.05
81	6.75	0.33	0.064	0.138	0.012	0.05
82	6.83	0.33	0.064	0.138	0.012	0.05
83	6.92	0.33	0.064	0.137	0.012	0.05
84	7.00	0.33	0.064	0.136	0.012	0.05
85	7.08	0.33	0.064	0.136	0.012	0.05
86	7.17	0.33	0.064	0.135	0.012	0.05
87	7.25	0.33	0.064	0.135	0.012	0.05
88	7.33	0.37	0.070	0.134	0.013	0.06
89	7.42	0.37	0.070	0.133	0.013	0.06
90	7.50	0.37	0.070	0.133	0.013	0.06
91	7.58	0.40	0.077	0.132	0.014	0.06
92	7.67	0.40	0.077	0.131	0.014	0.06
93	7.75	0.40	0.077	0.131	0.014	0.06
94	7.83	0.43	0.083	0.130	0.015	0.07
95	7.92	0.43	0.083	0.130	0.015	0.07
96	8.00	0.43	0.083	0.129	0.015	0.07
97	8.08	0.50	0.096	0.128	0.017	0.08
98	8.17	0.50	0.096	0.128	0.017	0.08
99	8.25	0.50	0.096	0.127	0.017	0.08
100	8.33	0.50	0.096	0.127	0.017	0.08
101	8.42	0.50	0.096	0.126	0.017	0.08
102	8.50	0.50	0.096	0.125	0.017	0.08

103	8.58	0.53	0.102	0.125	0.018	0.08
104	8.67	0.53	0.102	0.124	0.018	0.08
105	8.75	0.53	0.102	0.124	0.018	0.08
106	8.83	0.57	0.109	0.123	0.020	0.09
107	8.92	0.57	0.109	0.123	0.020	0.09
108	9.00	0.57	0.109	0.122	0.020	0.09
109	9.08	0.63	0.122	0.121	---	0.00
110	9.17	0.63	0.122	0.121	---	0.00
111	9.25	0.63	0.122	0.120	---	0.00
112	9.33	0.67	0.128	0.120	---	0.01
113	9.42	0.67	0.128	0.119	---	0.01
114	9.50	0.67	0.128	0.119	---	0.01
115	9.58	0.70	0.134	0.118	---	0.02
116	9.67	0.70	0.134	0.117	---	0.02
117	9.75	0.70	0.134	0.117	---	0.02
118	9.83	0.73	0.141	0.116	---	0.02
119	9.92	0.73	0.141	0.116	---	0.03
120	10.00	0.73	0.141	0.115	---	0.03
121	10.08	0.50	0.096	0.115	0.017	0.08
122	10.17	0.50	0.096	0.114	0.017	0.08
123	10.25	0.50	0.096	0.113	0.017	0.08
124	10.33	0.50	0.096	0.113	0.017	0.08
125	10.42	0.50	0.096	0.112	0.017	0.08
126	10.50	0.50	0.096	0.112	0.017	0.08
127	10.58	0.67	0.128	0.111	---	0.02
128	10.67	0.67	0.128	0.111	---	0.02
129	10.75	0.67	0.128	0.110	---	0.02
130	10.83	0.67	0.128	0.110	---	0.02
131	10.92	0.67	0.128	0.109	---	0.02
132	11.00	0.67	0.128	0.109	---	0.02
133	11.08	0.63	0.122	0.108	---	0.01
134	11.17	0.63	0.122	0.108	---	0.01
135	11.25	0.63	0.122	0.107	---	0.01
136	11.33	0.63	0.122	0.106	---	0.02
137	11.42	0.63	0.122	0.106	---	0.02
138	11.50	0.63	0.122	0.105	---	0.02
139	11.58	0.57	0.109	0.105	---	0.00
140	11.67	0.57	0.109	0.104	---	0.00
141	11.75	0.57	0.109	0.104	---	0.00
142	11.83	0.60	0.115	0.103	---	0.01
143	11.92	0.60	0.115	0.103	---	0.01
144	12.00	0.60	0.115	0.102	---	0.01
145	12.08	0.83	0.160	0.102	---	0.06
146	12.17	0.83	0.160	0.101	---	0.06
147	12.25	0.83	0.160	0.101	---	0.06
148	12.33	0.87	0.166	0.100	---	0.07
149	12.42	0.87	0.166	0.100	---	0.07
150	12.50	0.87	0.166	0.099	---	0.07
151	12.58	0.93	0.179	0.099	---	0.08
152	12.67	0.93	0.179	0.098	---	0.08
153	12.75	0.93	0.179	0.098	---	0.08
154	12.83	0.97	0.186	0.097	---	0.09
155	12.92	0.97	0.186	0.097	---	0.09
156	13.00	0.97	0.186	0.096	---	0.09
157	13.08	1.13	0.218	0.096	---	0.12
158	13.17	1.13	0.218	0.095	---	0.12
159	13.25	1.13	0.218	0.095	---	0.12
160	13.33	1.13	0.218	0.094	---	0.12
161	13.42	1.13	0.218	0.094	---	0.12
162	13.50	1.13	0.218	0.093	---	0.12
163	13.58	0.77	0.147	0.093	---	0.05
164	13.67	0.77	0.147	0.092	---	0.05
165	13.75	0.77	0.147	0.092	---	0.06
166	13.83	0.77	0.147	0.092	---	0.06
167	13.92	0.77	0.147	0.091	---	0.06
168	14.00	0.77	0.147	0.091	---	0.06
169	14.08	0.90	0.173	0.090	---	0.08
170	14.17	0.90	0.173	0.090	---	0.08
171	14.25	0.90	0.173	0.089	---	0.08
172	14.33	0.87	0.166	0.089	---	0.08
173	14.42	0.87	0.166	0.088	---	0.08

174	14.50	0.87	0.166	0.088	---	0.08
175	14.58	0.87	0.166	0.087	---	0.08
176	14.67	0.87	0.166	0.087	---	0.08
177	14.75	0.87	0.166	0.086	---	0.08
178	14.83	0.83	0.160	0.086	---	0.07
179	14.92	0.83	0.160	0.086	---	0.07
180	15.00	0.83	0.160	0.085	---	0.07
181	15.08	0.80	0.154	0.085	---	0.07
182	15.17	0.80	0.154	0.084	---	0.07
183	15.25	0.80	0.154	0.084	---	0.07
184	15.33	0.77	0.147	0.083	---	0.06
185	15.42	0.77	0.147	0.083	---	0.06
186	15.50	0.77	0.147	0.083	---	0.06
187	15.58	0.63	0.122	0.082	---	0.04
188	15.67	0.63	0.122	0.082	---	0.04
189	15.75	0.63	0.122	0.081	---	0.04
190	15.83	0.63	0.122	0.081	---	0.04
191	15.92	0.63	0.122	0.080	---	0.04
192	16.00	0.63	0.122	0.080	---	0.04
193	16.08	0.13	0.026	0.080	0.005	0.02
194	16.17	0.13	0.026	0.079	0.005	0.02
195	16.25	0.13	0.026	0.079	0.005	0.02
196	16.33	0.13	0.026	0.078	0.005	0.02
197	16.42	0.13	0.026	0.078	0.005	0.02
198	16.50	0.13	0.026	0.078	0.005	0.02
199	16.58	0.10	0.019	0.077	0.003	0.02
200	16.67	0.10	0.019	0.077	0.003	0.02
201	16.75	0.10	0.019	0.076	0.003	0.02
202	16.83	0.10	0.019	0.076	0.003	0.02
203	16.92	0.10	0.019	0.076	0.003	0.02
204	17.00	0.10	0.019	0.075	0.003	0.02
205	17.08	0.17	0.032	0.075	0.006	0.03
206	17.17	0.17	0.032	0.075	0.006	0.03
207	17.25	0.17	0.032	0.074	0.006	0.03
208	17.33	0.17	0.032	0.074	0.006	0.03
209	17.42	0.17	0.032	0.073	0.006	0.03
210	17.50	0.17	0.032	0.073	0.006	0.03
211	17.58	0.17	0.032	0.073	0.006	0.03
212	17.67	0.17	0.032	0.072	0.006	0.03
213	17.75	0.17	0.032	0.072	0.006	0.03
214	17.83	0.13	0.026	0.072	0.005	0.02
215	17.92	0.13	0.026	0.071	0.005	0.02
216	18.00	0.13	0.026	0.071	0.005	0.02
217	18.08	0.13	0.026	0.071	0.005	0.02
218	18.17	0.13	0.026	0.070	0.005	0.02
219	18.25	0.13	0.026	0.070	0.005	0.02
220	18.33	0.13	0.026	0.070	0.005	0.02
221	18.42	0.13	0.026	0.069	0.005	0.02
222	18.50	0.13	0.026	0.069	0.005	0.02
223	18.58	0.10	0.019	0.069	0.003	0.02
224	18.67	0.10	0.019	0.068	0.003	0.02
225	18.75	0.10	0.019	0.068	0.003	0.02
226	18.83	0.07	0.013	0.068	0.002	0.01
227	18.92	0.07	0.013	0.067	0.002	0.01
228	19.00	0.07	0.013	0.067	0.002	0.01
229	19.08	0.10	0.019	0.067	0.003	0.02
230	19.17	0.10	0.019	0.066	0.003	0.02
231	19.25	0.10	0.019	0.066	0.003	0.02
232	19.33	0.13	0.026	0.066	0.005	0.02
233	19.42	0.13	0.026	0.065	0.005	0.02
234	19.50	0.13	0.026	0.065	0.005	0.02
235	19.58	0.10	0.019	0.065	0.003	0.02
236	19.67	0.10	0.019	0.064	0.003	0.02
237	19.75	0.10	0.019	0.064	0.003	0.02
238	19.83	0.07	0.013	0.064	0.002	0.01
239	19.92	0.07	0.013	0.064	0.002	0.01
240	20.00	0.07	0.013	0.063	0.002	0.01
241	20.08	0.10	0.019	0.063	0.003	0.02
242	20.17	0.10	0.019	0.063	0.003	0.02
243	20.25	0.10	0.019	0.062	0.003	0.02
244	20.33	0.10	0.019	0.062	0.003	0.02

245	20.42	0.10	0.019	0.062	0.003	0.02
246	20.50	0.10	0.019	0.062	0.003	0.02
247	20.58	0.10	0.019	0.061	0.003	0.02
248	20.67	0.10	0.019	0.061	0.003	0.02
249	20.75	0.10	0.019	0.061	0.003	0.02
250	20.83	0.07	0.013	0.061	0.002	0.01
251	20.92	0.07	0.013	0.060	0.002	0.01
252	21.00	0.07	0.013	0.060	0.002	0.01
253	21.08	0.10	0.019	0.060	0.003	0.02
254	21.17	0.10	0.019	0.060	0.003	0.02
255	21.25	0.10	0.019	0.059	0.003	0.02
256	21.33	0.07	0.013	0.059	0.002	0.01
257	21.42	0.07	0.013	0.059	0.002	0.01
258	21.50	0.07	0.013	0.059	0.002	0.01
259	21.58	0.10	0.019	0.059	0.003	0.02
260	21.67	0.10	0.019	0.058	0.003	0.02
261	21.75	0.10	0.019	0.058	0.003	0.02
262	21.83	0.07	0.013	0.058	0.002	0.01
263	21.92	0.07	0.013	0.058	0.002	0.01
264	22.00	0.07	0.013	0.058	0.002	0.01
265	22.08	0.10	0.019	0.057	0.003	0.02
266	22.17	0.10	0.019	0.057	0.003	0.02
267	22.25	0.10	0.019	0.057	0.003	0.02
268	22.33	0.07	0.013	0.057	0.002	0.01
269	22.42	0.07	0.013	0.057	0.002	0.01
270	22.50	0.07	0.013	0.057	0.002	0.01
271	22.58	0.07	0.013	0.056	0.002	0.01
272	22.67	0.07	0.013	0.056	0.002	0.01
273	22.75	0.07	0.013	0.056	0.002	0.01
274	22.83	0.07	0.013	0.056	0.002	0.01
275	22.92	0.07	0.013	0.056	0.002	0.01
276	23.00	0.07	0.013	0.056	0.002	0.01
277	23.08	0.07	0.013	0.055	0.002	0.01
278	23.17	0.07	0.013	0.055	0.002	0.01
279	23.25	0.07	0.013	0.055	0.002	0.01
280	23.33	0.07	0.013	0.055	0.002	0.01
281	23.42	0.07	0.013	0.055	0.002	0.01
282	23.50	0.07	0.013	0.055	0.002	0.01
283	23.58	0.07	0.013	0.055	0.002	0.01
284	23.67	0.07	0.013	0.055	0.002	0.01
285	23.75	0.07	0.013	0.055	0.002	0.01
286	23.83	0.07	0.013	0.055	0.002	0.01
287	23.92	0.07	0.013	0.055	0.002	0.01
288	24.00	0.07	0.013	0.055	0.002	0.01
Sum =		100.0			Sum =	10.1

Flood volume = Effective rainfall 0.85(In)
times area 127.1(Ac.)/[(In)/(Ft.)] = 9.0(Ac.Ft)
Total soil loss = 0.75(In)
Total soil loss = 7.988(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 390162.9 Cubic Feet
Total soil loss = 347966.8 Cubic Feet

Peak flow rate of this hydrograph = 15.258(CFS)

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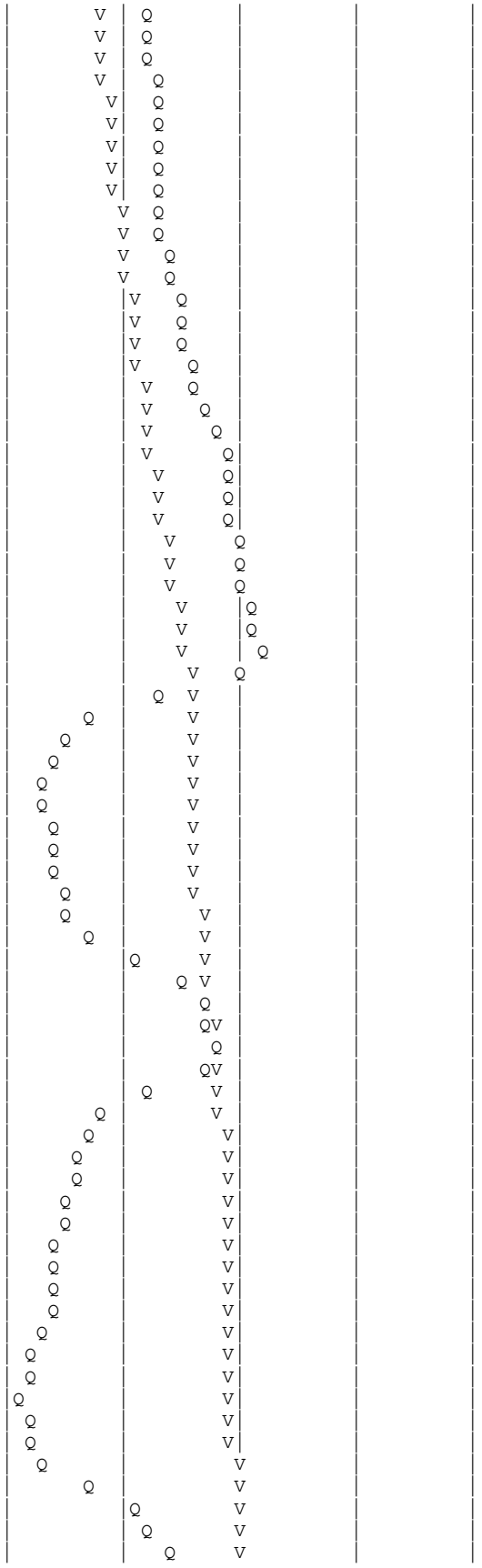
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0008	0.11	Q	|	|	|	|
0+10	0.0046	0.56	VQ	|	|	|	|
0+15	0.0110	0.92	VQ	|	|	|	|
0+20	0.0186	1.12	V Q	|	|	|	|
0+25	0.0284	1.42	V Q	|	|	|	|
0+30	0.0399	1.66	V Q	|	|	|	|
0+35	0.0521	1.77	V Q	|	|	|	|

0+40	0.0647	1.84	V Q	|	|	|	|
0+45	0.0777	1.89	V Q	|	|	|	|
0+50	0.0914	1.98	V Q	|	|	|	|
0+55	0.1068	2.23	V Q	|	|	|	|
1+ 0	0.1235	2.43	V Q	|	|	|	|
1+ 5	0.1405	2.47	V Q	|	|	|	|
1+10	0.1563	2.30	V Q	|	|	|	|
1+15	0.1711	2.15	V Q	|	|	|	|
1+20	0.1856	2.10	V Q	|	|	|	|
1+25	0.1999	2.08	V Q	|	|	|	|
1+30	0.2141	2.06	V Q	|	|	|	|
1+35	0.2283	2.05	|V Q	|	|	|	|
1+40	0.2424	2.04	|V Q	|	|	|	|
1+45	0.2564	2.04	|V Q	|	|	|	|
1+50	0.2708	2.09	|V Q	|	|	|	|
1+55	0.2867	2.31	|V Q	|	|	|	|
2+ 0	0.3038	2.49	|V Q	|	|	|	|
2+ 5	0.3214	2.55	|V Q	|	|	|	|
2+10	0.3392	2.59	|V Q	|	|	|	|
2+15	0.3572	2.62	|V Q	|	|	|	|
2+20	0.3754	2.64	|V Q	|	|	|	|
2+25	0.3936	2.65	|V Q	|	|	|	|
2+30	0.4120	2.66	|V Q	|	|	|	|
2+35	0.4307	2.73	|V Q	|	|	|	|
2+40	0.4511	2.96	| V Q	|	|	|	|
2+45	0.4728	3.14	| V Q	|	|	|	|
2+50	0.4949	3.22	| V Q	|	|	|	|
2+55	0.5174	3.26	| V Q	|	|	|	|
3+ 0	0.5400	3.29	| V Q	|	|	|	|
3+ 5	0.5628	3.31	| V Q	|	|	|	|
3+10	0.5857	3.32	| V Q	|	|	|	|
3+15	0.6087	3.33	| V Q	|	|	|	|
3+20	0.6317	3.34	| V Q	|	|	|	|
3+25	0.6548	3.35	| V Q	|	|	|	|
3+30	0.6779	3.35	| V Q	|	|	|	|
3+35	0.7010	3.36	| V Q	|	|	|	|
3+40	0.7242	3.36	| V Q	|	|	|	|
3+45	0.7473	3.36	| V Q	|	|	|	|
3+50	0.7709	3.42	| V Q	|	|	|	|
3+55	0.7960	3.64	| V Q	|	|	|	|
4+ 0	0.8223	3.82	| V Q	|	|	|	|
4+ 5	0.8491	3.89	| V Q	|	|	|	|
4+10	0.8762	3.93	| V Q	|	|	|	|
4+15	0.9035	3.96	| V Q	|	|	|	|
4+20	0.9313	4.04	| V Q	|	|	|	|
4+25	0.9607	4.28	| V Q	|	|	|	|
4+30	0.9915	4.47	| V Q	|	|	|	|
4+35	1.0228	4.55	| V Q|	|	|	|	|
4+40	1.0545	4.59	| V Q|	|	|	|	|
4+45	1.0863	4.63	| V Q|	|	|	|	|
4+50	1.1187	4.71	| V Q|	|	|	|	|
4+55	1.1528	4.95	| V Q|	|	|	|	|
5+ 0	1.1882	5.14	| V Q	|	|	|	|
5+ 5	1.2234	5.11	| V Q	|	|	|	|
5+10	1.2558	4.71	| V Q|	|	|	|	|
5+15	1.2860	4.38	| V Q	|	|	|	|
5+20	1.3157	4.32	| V Q	|	|	|	|
5+25	1.3466	4.48	| V Q	|	|	|	|
5+30	1.3783	4.61	| V Q|	|	|	|	|
5+35	1.4107	4.71	| V Q|	|	|	|	|
5+40	1.4449	4.95	| V Q|	|	|	|	|
5+45	1.4803	5.14	| V Q	|	|	|	|
5+50	1.5162	5.22	| V Q	|	|	|	|
5+55	1.5525	5.26	| V Q	|	|	|	|
6+ 0	1.5889	5.29	| V Q	|	|	|	|
6+ 5	1.6259	5.37	| V Q	|	|	|	|
6+10	1.6646	5.61	| V |Q	|	|	|	|
6+15	1.7045	5.81	| V |Q	|	|	|	|
6+20	1.7451	5.89	| V |Q	|	|	|	|
6+25	1.7860	5.94	| V |Q	|	|	|	|
6+30	1.8271	5.97	| V |Q	|	|	|	|

6+35	1.8688	6.05	
6+40	1.9121	6.29	
6+45	1.9568	6.49	
6+50	2.0020	6.56	
6+55	2.0476	6.61	
7+ 0	2.0933	6.64	
7+ 5	2.1392	6.67	
7+10	2.1853	6.69	
7+15	2.2314	6.70	
7+20	2.2780	6.76	
7+25	2.3261	6.99	
7+30	2.3756	7.18	
7+35	2.4259	7.31	
7+40	2.4781	7.58	
7+45	2.5317	7.79	
7+50	2.5863	7.93	
7+55	2.6429	8.21	
8+ 0	2.7009	8.43	
8+ 5	2.7604	8.64	
8+10	2.8234	9.15	
8+15	2.8892	9.56	
8+20	2.9562	9.73	
8+25	3.0240	9.83	
8+30	3.0922	9.91	
8+35	3.1611	10.01	
8+40	3.2319	10.28	
8+45	3.3041	10.49	
8+50	3.3774	10.63	
8+55	3.4525	10.92	
9+ 0	3.5292	11.13	
9+ 5	3.6002	10.30	
9+10	3.6452	6.54	
9+15	3.6697	3.55	
9+20	3.6870	2.51	
9+25	3.7019	2.17	
9+30	3.7157	1.99	
9+35	3.7287	1.89	
9+40	3.7428	2.05	
9+45	3.7578	2.18	
9+50	3.7736	2.29	
9+55	3.7914	2.59	
10+ 0	3.8111	2.85	
10+ 5	3.8353	3.52	
10+10	3.8757	5.86	
10+15	3.9291	7.76	
10+20	3.9878	8.52	
10+25	4.0497	8.98	
10+30	4.1136	9.29	
10+35	4.1747	8.87	
10+40	4.2184	6.36	
10+45	4.2486	4.38	
10+50	4.2741	3.70	
10+55	4.2971	3.34	
11+ 0	4.3186	3.12	
11+ 5	4.3387	2.92	
11+10	4.3564	2.58	
11+15	4.3722	2.29	
11+20	4.3871	2.17	
11+25	4.4016	2.10	
11+30	4.4159	2.08	
11+35	4.4293	1.94	
11+40	4.4389	1.40	
11+45	4.4459	1.01	
11+50	4.4525	0.96	
11+55	4.4608	1.20	
12+ 0	4.4705	1.41	
12+ 5	4.4841	1.97	
12+10	4.5115	3.98	
12+15	4.5500	5.59	
12+20	4.5935	6.32	
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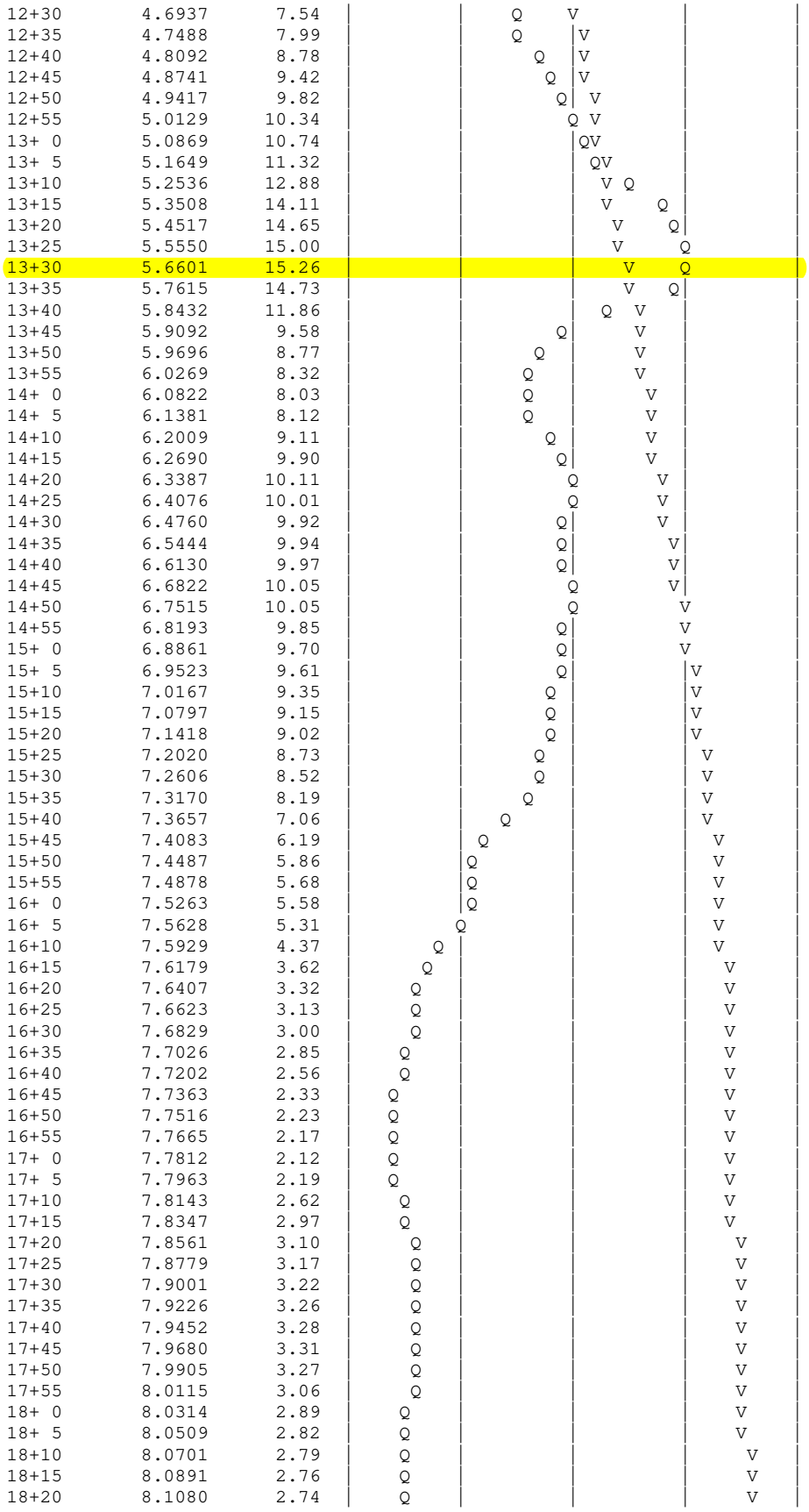
12+30	4.6937	7.54	
12+35	4.7488	7.99	
12+40	4.8092	8.78	
12+45	4.8741	9.42	
12+50	4.9417	9.82	
12+55	5.0129	10.34	
13+ 0	5.0869	10.74	
13+ 5	5.1649	11.32	
13+10	5.2536	12.88	
13+15	5.3508	14.11	
13+20	5.4517	14.65	
13+25	5.5550	15.00	
13+30	5.6601	15.26	
13+35	5.7615	14.73	
13+40	5.8432	11.86	
13+45	5.9092	9.58	
13+50	5.9696	8.77	
13+55	6.0269	8.32	
14+ 0	6.0822	8.03	
14+ 5	6.1381	8.12	
14+10	6.2009	9.11	
14+15	6.2690	9.90	
14+20	6.3387	10.11	
14+25	6.4076	10.01	
14+30	6.4760	9.92	
14+35	6.5444	9.94	
14+40	6.6130	9.97	
14+45	6.6822	10.05	
14+50	6.7515	10.05	
14+55	6.8193	9.85	
15+ 0	6.8861	9.70	
15+ 5	6.9523	9.61	
15+10	7.0167	9.35	
15+15	7.0797	9.15	
15+20	7.1418	9.02	
15+25	7.2020	8.73	
15+30	7.2606	8.52	
15+35	7.3170	8.19	
15+40	7.3657	7.06	
15+45	7.4083	6.19	
15+50	7.4487	5.86	
15+55	7.4878	5.68	
16+ 0	7.5263	5.58	
16+ 5	7.5628	5.31	
16+10	7.5929	4.37	
16+15	7.6179	3.62	
16+20	7.6407	3.32	
16+25	7.6623	3.13	
16+30	7.6829	3.00	
16+35	7.7026	2.85	
16+40	7.7202	2.56	
16+45	7.7363	2.33	
16+50	7.7516	2.23	
16+55	7.7665	2.17	
17+ 0	7.7812	2.12	
17+ 5	7.7963	2.19	
17+10	7.8143	2.62	
17+15	7.8347	2.97	
17+20	7.8561	3.10	
17+25	7.8779	3.17	
17+30	7.9001	3.22	
17+35	7.9226	3.26	
17+40	7.9452	3.28	
17+45	7.9680	3.31	
17+50	7.9905	3.27	
17+55	8.0115	3.06	
18+ 0	8.0314	2.89	
18+ 5	8.0509	2.82	
18+10	8.0701	2.79	
18+15	8.0891	2.76	
18+20	8.1080	2.74	

18+25	8.1268	2.73		Q			V
18+30	8.1455	2.72		Q			V
18+35	8.1638	2.65		Q			V
18+40	8.1805	2.42		Q			V
18+45	8.1959	2.24		Q			V
18+50	8.2104	2.11		Q			V
18+55	8.2231	1.84		Q			V
19+ 0	8.2343	1.63		Q			V
19+ 5	8.2453	1.59		Q			V
19+10	8.2575	1.77		Q			V
19+15	8.2706	1.91		Q			V
19+20	8.2844	2.00		Q			V
19+25	8.2999	2.25		Q			V
19+30	8.3167	2.44		Q			V
19+35	8.3336	2.46		Q			V
19+40	8.3493	2.28		Q			V
19+45	8.3641	2.14		Q			V
19+50	8.3781	2.04		Q			V
19+55	8.3904	1.79		Q			V
20+ 0	8.4014	1.59		Q			V
20+ 5	8.4122	1.57		Q			V
20+10	8.4243	1.75		Q			V
20+15	8.4373	1.90		Q			V
20+20	8.4507	1.94		Q			V
20+25	8.4643	1.97		Q			V
20+30	8.4779	1.98		Q			V
20+35	8.4916	1.99		Q			V
20+40	8.5053	1.99		Q			V
20+45	8.5191	2.00		Q			V
20+50	8.5325	1.95		Q			V
20+55	8.5444	1.72		Q			V
21+ 0	8.5550	1.55		Q			V
21+ 5	8.5656	1.54		Q			V
21+10	8.5775	1.73		Q			V
21+15	8.5905	1.88		Q			V
21+20	8.6034	1.87		Q			V
21+25	8.6149	1.68		Q			V
21+30	8.6253	1.51		Q			V
21+35	8.6357	1.51		Q			V
21+40	8.6474	1.70		Q			V
21+45	8.6602	1.86		Q			V
21+50	8.6730	1.86		Q			V
21+55	8.6845	1.66		Q			V
22+ 0	8.6948	1.50		Q			V
22+ 5	8.7052	1.50		Q			V
22+10	8.7169	1.70		Q			V
22+15	8.7297	1.86		Q			V
22+20	8.7425	1.86		Q			V
22+25	8.7539	1.66		Q			V
22+30	8.7643	1.50		Q			V
22+35	8.7743	1.45		Q			V
22+40	8.7840	1.42		Q			V
22+45	8.7937	1.40		Q			V
22+50	8.8032	1.38		Q			V
22+55	8.8126	1.37		Q			V
23+ 0	8.8220	1.36		Q			V
23+ 5	8.8314	1.36		Q			V
23+10	8.8408	1.36		Q			V
23+15	8.8501	1.35		Q			V
23+20	8.8594	1.35		Q			V
23+25	8.8686	1.35		Q			V
23+30	8.8779	1.35		Q			V
23+35	8.8872	1.35		Q			V
23+40	8.8964	1.35		Q			V
23+45	8.9057	1.35		Q			V
23+50	8.9150	1.35		Q			V
23+55	8.9242	1.35		Q			V
24+ 0	8.9335	1.35		Q			V
24+ 5	8.9420	1.24		Q			V
24+10	8.9474	0.78		Q			V
24+15	8.9503	0.42		Q			V

24+20	8.9523	0.28	Q				V
24+25	8.9537	0.20	Q				V
24+30	8.9547	0.15	Q				V
24+35	8.9554	0.11	Q				V
24+40	8.9559	0.08	Q				V
24+45	8.9563	0.06	Q				V
24+50	8.9566	0.04	Q				V
24+55	8.9567	0.02	Q				V
25+ 0	8.9569	0.02	Q				V
25+ 5	8.9569	0.01	Q				V

FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 01/06/20

HILLWOOD - APOLLO PROJECT
2 YEAR STORM EVENT BASIN ROUTING
1930BR242
DS

Program License Serial Number 6145

********** HYDROGRAPH INFORMATION **********

From study/file name: 1930PUH2242.rte
**********HYDROGRAPH DATA**********
Number of intervals = 301
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 15.258 (CFS)
Total volume = 8.957 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****
_____

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 301
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

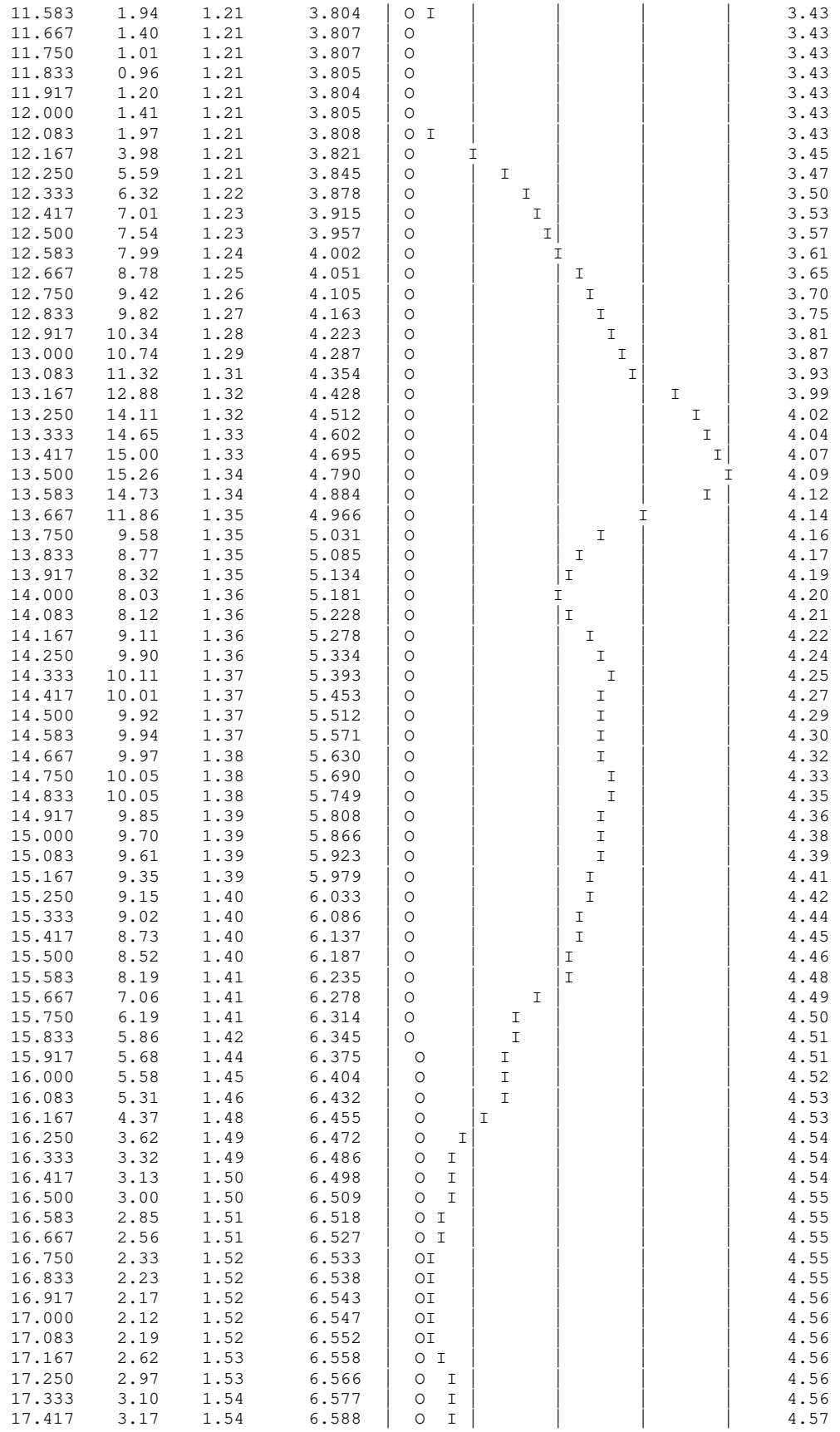
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.739	0.500	0.737	0.741
2.000	2.218	0.860	2.215	2.221
3.000	3.327	1.120	3.323	3.331
4.000	4.435	1.320	4.430	4.440
4.500	6.323	1.410	6.318	6.328
5.000	8.291	2.400	8.283	8.299
6.000	12.386	3.450	12.374	12.398
7.000	16.882	49.560	16.711	17.053
8.000	21.702	68.940	21.465	21.939
9.000	26.849	83.890	26.560	27.138

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	3.8	7.63	11.44	15.26	Depth (Ft.)
0.083	0.11	0.00	0.000	O					0.00
0.167	0.56	0.00	0.003	OI					0.00
0.250	0.92	0.01	0.008	OI					0.01
0.333	1.12	0.01	0.015	O I					0.02
0.417	1.42	0.02	0.023	O I					0.03
0.500	1.66	0.02	0.034	O I					0.05
0.583	1.77	0.03	0.045	O I					0.06
0.667	1.84	0.04	0.058	O I					0.08
0.750	1.89	0.05	0.070	O I					0.09
0.833	1.98	0.06	0.083	O I					0.11
0.917	2.23	0.07	0.097	O I					0.13
1.000	2.43	0.08	0.113	O I					0.15
1.083	2.47	0.09	0.129	O I					0.17
1.167	2.30	0.10	0.145	O I					0.20
1.250	2.15	0.11	0.160	O I					0.22
1.333	2.10	0.12	0.173	O I					0.23
1.417	2.08	0.13	0.187	O I					0.25
1.500	2.06	0.14	0.200	O I					0.27
1.583	2.05	0.14	0.214	O I					0.29
1.667	2.04	0.15	0.227	O I					0.31
1.750	2.04	0.16	0.240	O I					0.32
1.833	2.09	0.17	0.253	O I					0.34
1.917	2.31	0.18	0.267	O I					0.36
2.000	2.49	0.19	0.282	O I					0.38
2.083	2.55	0.20	0.298	O I					0.40
2.167	2.59	0.21	0.314	O I					0.42
2.250	2.62	0.22	0.330	O I					0.45
2.333	2.64	0.23	0.347	O I					0.47
2.417	2.65	0.25	0.364	O I					0.49
2.500	2.66	0.26	0.380	O I					0.51
2.583	2.73	0.27	0.397	O I					0.54
2.667	2.96	0.28	0.415	O I					0.56
2.750	3.14	0.29	0.434	O I					0.59
2.833	3.22	0.31	0.453	O I					0.61
2.917	3.26	0.32	0.474	O I					0.64
3.000	3.29	0.33	0.494	O I					0.67
3.083	3.31	0.35	0.514	O I					0.70
3.167	3.32	0.36	0.535	O I					0.72
3.250	3.33	0.38	0.555	O I					0.75
3.333	3.34	0.39	0.575	O I					0.78
3.417	3.35	0.40	0.596	O I					0.81
3.500	3.35	0.42	0.616	O I					0.83
3.583	3.36	0.43	0.636	O I					0.86
3.667	3.36	0.44	0.656	O I					0.89
3.750	3.36	0.46	0.676	O I					0.92
3.833	3.42	0.47	0.697	O I					0.94
3.917	3.64	0.49	0.718	O I					0.97
4.000	3.82	0.50	0.740	O I					1.00
4.083	3.89	0.51	0.763	O I					1.02
4.167	3.93	0.51	0.786	O I					1.03
4.250	3.96	0.52	0.810	O I					1.05
4.333	4.04	0.52	0.834	O I					1.06
4.417	4.28	0.53	0.859	O I					1.08
4.500	4.47	0.54	0.885	O I					1.10
4.583	4.55	0.54	0.913	O I					1.12
4.667	4.59	0.55	0.941	O I					1.14
4.750	4.63	0.56	0.968	O I					1.16
4.833	4.71	0.56	0.997	O I					1.17
4.917	4.95	0.57	1.026	O I					1.19
5.000	5.14	0.58	1.057	O I					1.21
5.083	5.11	0.58	1.088	O I					1.24
5.167	4.71	0.59	1.118	O I					1.26
5.250	4.38	0.60	1.145	O I					1.27
5.333	4.32	0.61	1.171	O I					1.29
5.417	4.48	0.61	1.197	O I					1.31
5.500	4.61	0.62	1.224	O I					1.33
5.583	4.71	0.62	1.252	O I					1.35

5.667	4.95	0.63	1.281	O	I			1.37
5.750	5.14	0.64	1.311	O	I			1.39
5.833	5.22	0.65	1.342	O	I			1.41
5.917	5.26	0.65	1.374	O	I			1.43
6.000	5.29	0.66	1.406	O	I			1.45
6.083	5.37	0.67	1.438	O	I			1.47
6.167	5.61	0.68	1.471	O	I			1.50
6.250	5.81	0.69	1.506	O	I			1.52
6.333	5.89	0.70	1.541	O	I			1.54
6.417	5.94	0.70	1.577	O	I			1.57
6.500	5.97	0.71	1.613	O	I			1.59
6.583	6.05	0.72	1.650	O	I			1.62
6.667	6.29	0.73	1.687	O	I			1.64
6.750	6.49	0.74	1.726	O	I			1.67
6.833	6.56	0.75	1.766	O	I			1.69
6.917	6.61	0.76	1.806	O	I			1.72
7.000	6.64	0.77	1.847	O	I			1.75
7.083	6.67	0.78	1.887	O	I			1.78
7.167	6.69	0.79	1.928	O	I			1.80
7.250	6.70	0.80	1.968	O	I			1.83
7.333	6.76	0.81	2.009	O	I			1.86
7.417	6.99	0.82	2.051	O	I			1.89
7.500	7.18	0.83	2.094	O	I			1.92
7.583	7.31	0.84	2.138	O	I			1.95
7.667	7.58	0.85	2.184	O	I			1.98
7.750	7.79	0.86	2.231	O	I			2.01
7.833	7.93	0.87	2.279	O	I			2.05
7.917	8.21	0.89	2.328	O	I			2.10
8.000	8.43	0.90	2.379	O	I			2.15
8.083	8.64	0.91	2.432	O	I			2.19
8.167	9.15	0.92	2.487	O	I			2.24
8.250	9.56	0.94	2.545	O	I			2.29
8.333	9.73	0.95	2.605	O	I			2.35
8.417	9.83	0.96	2.666	O	I			2.40
8.500	9.91	0.98	2.727	O	I			2.46
8.583	10.01	0.99	2.789	O	I			2.51
8.667	10.28	1.01	2.852	O	I			2.57
8.750	10.49	1.02	2.916	O	I			2.63
8.833	10.63	1.04	2.982	O	I			2.69
8.917	10.92	1.05	3.049	O	I			2.75
9.000	11.13	1.07	3.117	O	I			2.81
9.083	10.30	1.09	3.184	O	I			2.87
9.167	6.54	1.10	3.234	O	I			2.92
9.250	3.55	1.10	3.261	O	I			2.94
9.333	2.51	1.11	3.275	O	I			2.95
9.417	2.17	1.11	3.283	O	I			2.96
9.500	1.99	1.11	3.290	O	I			2.97
9.583	1.89	1.11	3.296	O	I			2.97
9.667	2.05	1.11	3.301	O	I			2.98
9.750	2.18	1.12	3.308	O	I			2.98
9.833	2.29	1.12	3.316	O	I			2.99
9.917	2.59	1.12	3.325	O	I			3.00
10.000	2.85	1.12	3.336	O	I			3.01
10.083	3.52	1.12	3.350	O	I			3.02
10.167	5.86	1.13	3.375	O	I			3.04
10.250	7.76	1.14	3.414	O	I			3.08
10.333	8.52	1.14	3.462	O	I			3.12
10.417	8.98	1.15	3.515	O	I			3.17
10.500	9.29	1.16	3.570	O	I			3.22
10.583	8.87	1.17	3.624	O	I			3.27
10.667	6.36	1.18	3.668	O	I			3.31
10.750	4.38	1.19	3.697	O	I			3.33
10.833	3.70	1.19	3.717	O	I			3.35
10.917	3.34	1.19	3.733	O	I			3.37
11.000	3.12	1.20	3.747	O	I			3.38
11.083	2.92	1.20	3.759	O	I			3.39
11.167	2.58	1.20	3.770	O	I			3.40
11.250	2.29	1.20	3.778	O	I			3.41
11.333	2.17	1.20	3.786	O	I			3.41
11.417	2.10	1.20	3.792	O	I			3.42
11.500	2.08	1.21	3.798	O	I			3.43



17.500	3.22	1.55	6.599	O I				4.57
17.583	3.26	1.55	6.611	O I				4.57
17.667	3.28	1.56	6.622	O I				4.58
17.750	3.31	1.57	6.634	O I				4.58
17.833	3.27	1.57	6.646	O I				4.58
17.917	3.06	1.58	6.657	O I				4.58
18.000	2.89	1.58	6.667	O I				4.59
18.083	2.82	1.59	6.675	O I				4.59
18.167	2.79	1.59	6.684	O I				4.59
18.250	2.76	1.60	6.692	O I				4.59
18.333	2.74	1.60	6.700	O I				4.60
18.417	2.73	1.60	6.708	O I				4.60
18.500	2.72	1.61	6.716	O I				4.60
18.583	2.65	1.61	6.723	O I				4.60
18.667	2.42	1.61	6.729	O I				4.60
18.750	2.24	1.62	6.734	OI				4.60
18.833	2.11	1.62	6.738	OI				4.61
18.917	1.84	1.62	6.740	O				4.61
19.000	1.63	1.62	6.741	O				4.61
19.083	1.59	1.62	6.741	O				4.61
19.167	1.77	1.62	6.742	O				4.61
19.250	1.91	1.62	6.743	O				4.61
19.333	2.00	1.62	6.745	OI				4.61
19.417	2.25	1.62	6.749	OI				4.61
19.500	2.44	1.63	6.754	O I				4.61
19.583	2.46	1.63	6.759	O I				4.61
19.667	2.28	1.63	6.765	OI				4.61
19.750	2.14	1.63	6.769	OI				4.61
19.833	2.04	1.64	6.772	OI				4.61
19.917	1.79	1.64	6.774	O				4.61
20.000	1.59	1.64	6.774	O				4.61
20.083	1.57	1.64	6.774	O				4.61
20.167	1.75	1.64	6.774	O				4.61
20.250	1.90	1.64	6.775	O				4.61
20.333	1.94	1.64	6.777	OI				4.62
20.417	1.97	1.64	6.779	OI				4.62
20.500	1.98	1.64	6.781	OI				4.62
20.583	1.99	1.64	6.784	OI				4.62
20.667	1.99	1.64	6.786	OI				4.62
20.750	2.00	1.64	6.789	OI				4.62
20.833	1.95	1.65	6.791	OI				4.62
20.917	1.72	1.65	6.792	O				4.62
21.000	1.55	1.65	6.792	O				4.62
21.083	1.54	1.65	6.791	O				4.62
21.167	1.73	1.65	6.791	O				4.62
21.250	1.88	1.65	6.792	O				4.62
21.333	1.87	1.65	6.794	O				4.62
21.417	1.68	1.65	6.795	O				4.62
21.500	1.51	1.65	6.795	O				4.62
21.583	1.51	1.65	6.794	O				4.62
21.667	1.70	1.65	6.793	O				4.62
21.750	1.86	1.65	6.794	O				4.62
21.833	1.86	1.65	6.796	O				4.62
21.917	1.66	1.65	6.796	O				4.62
22.000	1.50	1.65	6.796	O				4.62
22.083	1.50	1.65	6.795	O				4.62
22.167	1.70	1.65	6.795	O				4.62
22.250	1.86	1.65	6.796	O				4.62
22.333	1.86	1.65	6.797	O				4.62
22.417	1.66	1.65	6.798	O				4.62
22.500	1.50	1.65	6.797	O				4.62
22.583	1.45	1.65	6.796	O				4.62
22.667	1.42	1.65	6.795	IO				4.62
22.750	1.40	1.65	6.793	IO				4.62
22.833	1.38	1.65	6.791	IO				4.62
22.917	1.37	1.64	6.789	IO				4.62
23.000	1.36	1.64	6.788	IO				4.62
23.083	1.36	1.64	6.786	IO				4.62
23.167	1.36	1.64	6.784	IO				4.62
23.250	1.35	1.64	6.782	IO				4.62
23.333	1.35	1.64	6.780	IO				4.62

23.417	1.35	1.64	6.778	| IO	|	|	|	4.62
23.500	1.35	1.64	6.776	| IO	|	|	|	4.62
23.583	1.35	1.64	6.774	| IO	|	|	|	4.61
23.667	1.35	1.64	6.772	| IO	|	|	|	4.61
23.750	1.35	1.63	6.770	| IO	|	|	|	4.61
23.833	1.35	1.63	6.768	| IO	|	|	|	4.61
23.917	1.35	1.63	6.766	| IO	|	|	|	4.61
24.000	1.35	1.63	6.764	| IO	|	|	|	4.61
24.083	1.24	1.63	6.761	| IO	|	|	|	4.61
24.167	0.78	1.63	6.757	|I O	|	|	|	4.61
24.250	0.42	1.62	6.750	I O	|	|	|	4.61
24.333	0.28	1.62	6.741	I O	|	|	|	4.61
24.417	0.20	1.62	6.732	I O	|	|	|	4.60
24.500	0.15	1.61	6.722	I O	|	|	|	4.60
24.583	0.11	1.61	6.712	I O	|	|	|	4.60
24.667	0.08	1.60	6.701	I O	|	|	|	4.60
24.750	0.06	1.60	6.691	I O	|	|	|	4.59
24.833	0.04	1.59	6.680	I O	|	|	|	4.59
24.917	0.02	1.58	6.669	I O	|	|	|	4.59
25.000	0.02	1.58	6.659	I O	|	|	|	4.59
25.083	0.01	1.57	6.648	I O	|	|	|	4.58
25.167	0.00	1.57	6.637	I O	|	|	|	4.58
25.250	0.00	1.56	6.626	I O	|	|	|	4.58
25.333	0.00	1.56	6.616	I O	|	|	|	4.57
25.417	0.00	1.55	6.605	I O	|	|	|	4.57
25.500	0.00	1.55	6.594	I O	|	|	|	4.57
25.583	0.00	1.54	6.584	I O	|	|	|	4.57
25.667	0.00	1.54	6.573	I O	|	|	|	4.56
25.750	0.00	1.53	6.562	I O	|	|	|	4.56
25.833	0.00	1.53	6.552	I O	|	|	|	4.56
25.917	0.00	1.52	6.541	I O	|	|	|	4.56
26.000	0.00	1.51	6.531	I O	|	|	|	4.55
26.083	0.00	1.51	6.521	I O	|	|	|	4.55
26.167	0.00	1.50	6.510	I O	|	|	|	4.55
26.250	0.00	1.50	6.500	I O	|	|	|	4.54
26.333	0.00	1.49	6.490	I O	|	|	|	4.54
26.417	0.00	1.49	6.479	I O	|	|	|	4.54
26.500	0.00	1.48	6.469	I O	|	|	|	4.54
26.583	0.00	1.48	6.459	I O	|	|	|	4.53
26.667	0.00	1.47	6.449	I O	|	|	|	4.53
26.750	0.00	1.47	6.439	I O	|	|	|	4.53
26.833	0.00	1.46	6.428	I O	|	|	|	4.53
26.917	0.00	1.46	6.418	I O	|	|	|	4.52
27.000	0.00	1.45	6.408	I O	|	|	|	4.52
27.083	0.00	1.45	6.398	I O	|	|	|	4.52
27.167	0.00	1.44	6.388	I O	|	|	|	4.52
27.250	0.00	1.44	6.378	I O	|	|	|	4.51
27.333	0.00	1.43	6.369	I O	|	|	|	4.51
27.417	0.00	1.43	6.359	I O	|	|	|	4.51
27.500	0.00	1.42	6.349	I O	|	|	|	4.51
27.583	0.00	1.42	6.339	I O	|	|	|	4.50
27.667	0.00	1.41	6.329	I O	|	|	|	4.50
27.750	0.00	1.41	6.320	I O	|	|	|	4.50
27.833	0.00	1.41	6.310	I O	|	|	|	4.50
27.917	0.00	1.41	6.300	I O	|	|	|	4.49
28.000	0.00	1.41	6.291	I O	|	|	|	4.49
28.083	0.00	1.41	6.281	I O	|	|	|	4.49
28.167	0.00	1.41	6.271	I O	|	|	|	4.49
28.250	0.00	1.41	6.261	I O	|	|	|	4.48
28.333	0.00	1.41	6.252	I O	|	|	|	4.48
28.417	0.00	1.41	6.242	I O	|	|	|	4.48
28.500	0.00	1.41	6.232	I O	|	|	|	4.48
28.583	0.00	1.41	6.223	I O	|	|	|	4.47
28.667	0.00	1.40	6.213	I O	|	|	|	4.47
28.750	0.00	1.40	6.203	I O	|	|	|	4.47
28.833	0.00	1.40	6.194	I O	|	|	|	4.47
28.917	0.00	1.40	6.184	I O	|	|	|	4.46
29.000	0.00	1.40	6.174	I O	|	|	|	4.46
29.083	0.00	1.40	6.165	I O	|	|	|	4.46
29.167	0.00	1.40	6.155	I O	|	|	|	4.46
29.250	0.00	1.40	6.145	I O	|	|	|	4.45

29.333	0.00	1.40	6.136	I	O				4.45
29.417	0.00	1.40	6.126	I	O				4.45
29.500	0.00	1.40	6.116	I	O				4.45
29.583	0.00	1.40	6.107	I	O				4.44
29.667	0.00	1.40	6.097	I	O				4.44
29.750	0.00	1.40	6.088	I	O				4.44
29.833	0.00	1.40	6.078	I	O				4.44
29.917	0.00	1.40	6.068	I	O				4.43
30.000	0.00	1.40	6.059	I	O				4.43
30.083	0.00	1.40	6.049	I	O				4.43
30.167	0.00	1.40	6.039	I	O				4.42
30.250	0.00	1.40	6.030	I	O				4.42
30.333	0.00	1.40	6.020	I	O				4.42
30.417	0.00	1.40	6.011	I	O				4.42
30.500	0.00	1.39	6.001	I	O				4.41
30.583	0.00	1.39	5.991	I	O				4.41
30.667	0.00	1.39	5.982	I	O				4.41
30.750	0.00	1.39	5.972	I	O				4.41
30.833	0.00	1.39	5.963	I	O				4.40
30.917	0.00	1.39	5.953	I	O				4.40
31.000	0.00	1.39	5.943	I	O				4.40
31.083	0.00	1.39	5.934	I	O				4.40
31.167	0.00	1.39	5.924	I	O				4.39
31.250	0.00	1.39	5.915	I	O				4.39
31.333	0.00	1.39	5.905	I	O				4.39
31.417	0.00	1.39	5.896	I	O				4.39
31.500	0.00	1.39	5.886	I	O				4.38
31.583	0.00	1.39	5.876	I	O				4.38
31.667	0.00	1.39	5.867	I	O				4.38
31.750	0.00	1.39	5.857	I	O				4.38
31.833	0.00	1.39	5.848	I	O				4.37
31.917	0.00	1.39	5.838	I	O				4.37
32.000	0.00	1.39	5.829	I	O				4.37
32.083	0.00	1.39	5.819	I	O				4.37
32.167	0.00	1.39	5.810	I	O				4.36
32.250	0.00	1.39	5.800	I	O				4.36
32.333	0.00	1.38	5.790	I	O				4.36
32.417	0.00	1.38	5.781	I	O				4.36
32.500	0.00	1.38	5.771	I	O				4.35
32.583	0.00	1.38	5.762	I	O				4.35
32.667	0.00	1.38	5.752	I	O				4.35
32.750	0.00	1.38	5.743	I	O				4.35
32.833	0.00	1.38	5.733	I	O				4.34
32.917	0.00	1.38	5.724	I	O				4.34
33.000	0.00	1.38	5.714	I	O				4.34
33.083	0.00	1.38	5.705	I	O				4.34
33.167	0.00	1.38	5.695	I	O				4.33
33.250	0.00	1.38	5.686	I	O				4.33
33.333	0.00	1.38	5.676	I	O				4.33
33.417	0.00	1.38	5.667	I	O				4.33
33.500	0.00	1.38	5.657	I	O				4.32
33.583	0.00	1.38	5.648	I	O				4.32
33.667	0.00	1.38	5.638	I	O				4.32
33.750	0.00	1.38	5.629	I	O				4.32
33.833	0.00	1.38	5.619	I	O				4.31
33.917	0.00	1.38	5.610	I	O				4.31
34.000	0.00	1.38	5.600	I	O				4.31
34.083	0.00	1.38	5.591	I	O				4.31
34.167	0.00	1.37	5.581	I	O				4.30
34.250	0.00	1.37	5.572	I	O				4.30
34.333	0.00	1.37	5.562	I	O				4.30
34.417	0.00	1.37	5.553	I	O				4.30
34.500	0.00	1.37	5.544	I	O				4.29
34.583	0.00	1.37	5.534	I	O				4.29
34.667	0.00	1.37	5.525	I	O				4.29
34.750	0.00	1.37	5.515	I	O				4.29
34.833	0.00	1.37	5.506	I	O				4.28
34.917	0.00	1.37	5.496	I	O				4.28
35.000	0.00	1.37	5.487	I	O				4.28
35.083	0.00	1.37	5.477	I	O				4.28
35.167	0.00	1.37	5.468	I	O				4.27

35.250	0.00	1.37	5.459	I	O				4.27
35.333	0.00	1.37	5.449	I	O				4.27
35.417	0.00	1.37	5.440	I	O				4.27
35.500	0.00	1.37	5.430	I	O				4.26
35.583	0.00	1.37	5.421	I	O				4.26
35.667	0.00	1.37	5.411	I	O				4.26
35.750	0.00	1.37	5.402	I	O				4.26
35.833	0.00	1.37	5.393	I	O				4.25
35.917	0.00	1.37	5.383	I	O				4.25
36.000	0.00	1.36	5.374	I	O				4.25
36.083	0.00	1.36	5.364	I	O				4.25
36.167	0.00	1.36	5.355	I	O				4.24
36.250	0.00	1.36	5.346	I	O				4.24
36.333	0.00	1.36	5.336	I	O				4.24
36.417	0.00	1.36	5.327	I	O				4.24
36.500	0.00	1.36	5.318	I	O				4.23
36.583	0.00	1.36	5.308	I	O				4.23
36.667	0.00	1.36	5.299	I	O				4.23
36.750	0.00	1.36	5.289	I	O				4.23
36.833	0.00	1.36	5.280	I	O				4.22
36.917	0.00	1.36	5.271	I	O				4.22
37.000	0.00	1.36	5.261	I	O				4.22
37.083	0.00	1.36	5.252	I	O				4.22
37.167	0.00	1.36	5.243	I	O				4.21
37.250	0.00	1.36	5.233	I	O				4.21
37.333	0.00	1.36	5.224	I	O				4.21
37.417	0.00	1.36	5.215	I	O				4.21
37.500	0.00	1.36	5.205	I	O				4.20
37.583	0.00	1.36	5.196	I	O				4.20
37.667	0.00	1.36	5.186	I	O				4.20
37.750	0.00	1.36	5.177	I	O				4.20
37.833	0.00	1.35	5.168	I	O				4.19
37.917	0.00	1.35	5.159	I	O				4.19
38.000	0.00	1.35	5.149	I	O				4.19
38.083	0.00	1.35	5.140	I	O				4.19
38.167	0.00	1.35	5.131	I	O				4.18
38.250	0.00	1.35	5.121	I	O				4.18
38.333	0.00	1.35	5.112	I	O				4.18
38.417	0.00	1.35	5.103	I	O				4.18
38.500	0.00	1.35	5.093	I	O				4.17
38.583	0.00	1.35	5.084	I	O				4.17
38.667	0.00	1.35	5.075	I	O				4.17
38.750	0.00	1.35	5.065	I	O				4.17
38.833	0.00	1.35	5.056	I	O				4.16
38.917	0.00	1.35	5.047	I	O				4.16
39.000	0.00	1.35	5.037	I	O				4.16
39.083	0.00	1.35	5.028	I	O				4.16
39.167	0.00	1.35	5.019	I	O				4.15
39.250	0.00	1.35	5.010	I	O				4.15
39.333	0.00	1.35	5.000	I	O				4.15
39.417	0.00	1.35	4.991	I	O				4.15
39.500	0.00	1.35	4.982	I	O				4.14
39.583	0.00	1.35	4.973	I	O				4.14
39.667	0.00	1.35	4.963	I	O				4.14
39.750	0.00	1.34	4.954	I	O				4.14
39.833	0.00	1.34	4.945	I	O				4.13
39.917	0.00	1.34	4.935	I	O				4.13
40.000	0.00	1.34	4.926	I	O				4.13
40.083	0.00	1.34	4.917	I	O				4.13
40.167	0.00	1.34	4.908	I	O				4.13
40.250	0.00	1.34	4.899	I	O				4.12
40.333	0.00	1.34	4.889	I	O				4.12
40.417	0.00	1.34	4.880	I	O				4.12
40.500	0.00	1.34	4.871	I	O				4.12
40.583	0.00	1.34	4.862	I	O				4.11
40.667	0.00	1.34	4.852	I	O				4.11
40.750	0.00	1.34	4.843	I	O				4.11
40.833	0.00	1.34	4.834	I	O				4.11
40.917	0.00	1.34	4.825	I	O				4.10
41.000	0.00	1.34	4.815	I	O				4.10
41.083	0.00	1.34	4.806	I	O				4.10

41.167	0.00	1.34	4.797	I	O				4.10
41.250	0.00	1.34	4.788	I	O				4.09
41.333	0.00	1.34	4.779	I	O				4.09
41.417	0.00	1.34	4.769	I	O				4.09
41.500	0.00	1.34	4.760	I	O				4.09
41.583	0.00	1.34	4.751	I	O				4.08
41.667	0.00	1.33	4.742	I	O				4.08
41.750	0.00	1.33	4.733	I	O				4.08
41.833	0.00	1.33	4.723	I	O				4.08
41.917	0.00	1.33	4.714	I	O				4.07
42.000	0.00	1.33	4.705	I	O				4.07
42.083	0.00	1.33	4.696	I	O				4.07
42.167	0.00	1.33	4.687	I	O				4.07
42.250	0.00	1.33	4.678	I	O				4.06
42.333	0.00	1.33	4.668	I	O				4.06
42.417	0.00	1.33	4.659	I	O				4.06
42.500	0.00	1.33	4.650	I	O				4.06
42.583	0.00	1.33	4.641	I	O				4.05
42.667	0.00	1.33	4.632	I	O				4.05
42.750	0.00	1.33	4.623	I	O				4.05
42.833	0.00	1.33	4.613	I	O				4.05
42.917	0.00	1.33	4.604	I	O				4.04
43.000	0.00	1.33	4.595	I	O				4.04
43.083	0.00	1.33	4.586	I	O				4.04
43.167	0.00	1.33	4.577	I	O				4.04
43.250	0.00	1.33	4.568	I	O				4.04
43.333	0.00	1.33	4.559	I	O				4.03
43.417	0.00	1.33	4.549	I	O				4.03
43.500	0.00	1.33	4.540	I	O				4.03
43.583	0.00	1.32	4.531	I	O				4.03
43.667	0.00	1.32	4.522	I	O				4.02
43.750	0.00	1.32	4.513	I	O				4.02
43.833	0.00	1.32	4.504	I	O				4.02
43.917	0.00	1.32	4.495	I	O				4.02
44.000	0.00	1.32	4.486	I	O				4.01
44.083	0.00	1.32	4.477	I	O				4.01
44.167	0.00	1.32	4.467	I	O				4.01
44.250	0.00	1.32	4.458	I	O				4.01
44.333	0.00	1.32	4.449	I	O				4.00
44.417	0.00	1.32	4.440	I	O				4.00
44.500	0.00	1.32	4.431	I	O				4.00
44.583	0.00	1.32	4.422	I	O				3.99
44.667	0.00	1.32	4.413	I	O				3.98
44.750	0.00	1.31	4.404	I	O				3.97
44.833	0.00	1.31	4.395	I	O				3.96
44.917	0.00	1.31	4.386	I	O				3.96
45.000	0.00	1.31	4.377	I	O				3.95
45.083	0.00	1.31	4.368	I	O				3.94
45.167	0.00	1.31	4.359	I	O				3.93
45.250	0.00	1.30	4.350	I	O				3.92
45.333	0.00	1.30	4.341	I	O				3.91
45.417	0.00	1.30	4.332	I	O				3.91
45.500	0.00	1.30	4.323	I	O				3.90
45.583	0.00	1.30	4.314	I	O				3.89
45.667	0.00	1.30	4.305	I	O				3.88
45.750	0.00	1.29	4.296	I	O				3.87
45.833	0.00	1.29	4.287	I	O				3.87
45.917	0.00	1.29	4.278	I	O				3.86
46.000	0.00	1.29	4.269	I	O				3.85
46.083	0.00	1.29	4.260	I	O				3.84
46.167	0.00	1.29	4.252	I	O				3.83
46.250	0.00	1.29	4.243	I	O				3.83
46.333	0.00	1.28	4.234	I	O				3.82
46.417	0.00	1.28	4.225	I	O				3.81
46.500	0.00	1.28	4.216	I	O				3.80
46.583	0.00	1.28	4.207	I	O				3.79
46.667	0.00	1.28	4.199	I	O				3.79
46.750	0.00	1.28	4.190	I	O				3.78
46.833	0.00	1.27	4.181	I	O				3.77
46.917	0.00	1.27	4.172	I	O				3.76
47.000	0.00	1.27	4.163	I	O				3.75

47.083	0.00	1.27	4.155	I	O				3.75
47.167	0.00	1.27	4.146	I	O				3.74
47.250	0.00	1.27	4.137	I	O				3.73
47.333	0.00	1.26	4.129	I	O				3.72
47.417	0.00	1.26	4.120	I	O				3.72
47.500	0.00	1.26	4.111	I	O				3.71
47.583	0.00	1.26	4.102	I	O				3.70
47.667	0.00	1.26	4.094	I	O				3.69
47.750	0.00	1.26	4.085	I	O				3.68
47.833	0.00	1.26	4.076	I	O				3.68
47.917	0.00	1.25	4.068	I	O				3.67
48.000	0.00	1.25	4.059	I	O				3.66
48.083	0.00	1.25	4.051	I	O				3.65
48.167	0.00	1.25	4.042	I	O				3.65
48.250	0.00	1.25	4.033	I	O				3.64
48.333	0.00	1.25	4.025	I	O				3.63
48.417	0.00	1.24	4.016	I	O				3.62
48.500	0.00	1.24	4.008	I	O				3.61
48.583	0.00	1.24	3.999	I	O				3.61
48.667	0.00	1.24	3.991	I	O				3.60
48.750	0.00	1.24	3.982	I	O				3.59
48.833	0.00	1.24	3.974	I	O				3.58
48.917	0.00	1.24	3.965	I	O				3.58
49.000	0.00	1.23	3.956	I	O				3.57
49.083	0.00	1.23	3.948	I	O				3.56
49.167	0.00	1.23	3.940	I	O				3.55
49.250	0.00	1.23	3.931	I	O				3.55
49.333	0.00	1.23	3.923	I	O				3.54
49.417	0.00	1.23	3.914	I	O				3.53
49.500	0.00	1.22	3.906	I	O				3.52
49.583	0.00	1.22	3.897	I	O				3.51
49.667	0.00	1.22	3.889	I	O				3.51
49.750	0.00	1.22	3.880	I	O				3.50
49.833	0.00	1.22	3.872	I	O				3.49
49.917	0.00	1.22	3.864	I	O				3.48
50.000	0.00	1.22	3.855	I	O				3.48
50.083	0.00	1.21	3.847	I	O				3.47
50.167	0.00	1.21	3.839	I	O				3.46
50.250	0.00	1.21	3.830	I	O				3.45
50.333	0.00	1.21	3.822	I	O				3.45
50.417	0.00	1.21	3.814	I	O				3.44
50.500	0.00	1.21	3.805	I	O				3.43
50.583	0.00	1.20	3.797	I	O				3.42
50.667	0.00	1.20	3.789	I	O				3.42
50.750	0.00	1.20	3.780	I	O				3.41
50.833	0.00	1.20	3.772	I	O				3.40
50.917	0.00	1.20	3.764	I	O				3.39
51.000	0.00	1.20	3.756	I	O				3.39
51.083	0.00	1.20	3.747	I	O				3.38
51.167	0.00	1.19	3.739	I	O				3.37
51.250	0.00	1.19	3.731	I	O				3.36
51.333	0.00	1.19	3.723	I	O				3.36
51.417	0.00	1.19	3.714	I	O				3.35
51.500	0.00	1.19	3.706	I	O				3.34
51.583	0.00	1.19	3.698	I	O				3.33
51.667	0.00	1.19	3.690	I	O				3.33
51.750	0.00	1.18	3.682	I	O				3.32
51.833	0.00	1.18	3.674	I	O				3.31
51.917	0.00	1.18	3.666	I	O				3.31
52.000	0.00	1.18	3.657	I	O				3.30
52.083	0.00	1.18	3.649	I	O				3.29
52.167	0.00	1.18	3.641	I	O				3.28
52.250	0.00	1.18	3.633	I	O				3.28
52.333	0.00	1.17	3.625	I	O				3.27
52.417	0.00	1.17	3.617	I	O				3.26
52.500	0.00	1.17	3.609	I	O				3.25
52.583	0.00	1.17	3.601	I	O				3.25
52.667	0.00	1.17	3.593	I	O				3.24
52.750	0.00	1.17	3.585	I	O				3.23
52.833	0.00	1.17	3.577	I	O				3.23
52.917	0.00	1.16	3.569	I	O				3.22

53.000	0.00	1.16	3.561	I	O				3.21
53.083	0.00	1.16	3.553	I	O				3.20
53.167	0.00	1.16	3.545	I	O				3.20
53.250	0.00	1.16	3.537	I	O				3.19
53.333	0.00	1.16	3.529	I	O				3.18
53.417	0.00	1.15	3.521	I	O				3.17
53.500	0.00	1.15	3.513	I	O				3.17
53.583	0.00	1.15	3.505	I	O				3.16
53.667	0.00	1.15	3.497	I	O				3.15
53.750	0.00	1.15	3.489	I	O				3.15
53.833	0.00	1.15	3.481	I	O				3.14
53.917	0.00	1.15	3.473	I	O				3.13
54.000	0.00	1.14	3.465	I	O				3.12
54.083	0.00	1.14	3.457	I	O				3.12
54.167	0.00	1.14	3.450	I	O				3.11
54.250	0.00	1.14	3.442	I	O				3.10
54.333	0.00	1.14	3.434	I	O				3.10
54.417	0.00	1.14	3.426	I	O				3.09
54.500	0.00	1.14	3.418	I	O				3.08
54.583	0.00	1.14	3.410	I	O				3.08
54.667	0.00	1.13	3.403	I	O				3.07
54.750	0.00	1.13	3.395	I	O				3.06
54.833	0.00	1.13	3.387	I	O				3.05
54.917	0.00	1.13	3.379	I	O				3.05
55.000	0.00	1.13	3.371	I	O				3.04
55.083	0.00	1.13	3.364	I	O				3.03
55.167	0.00	1.13	3.356	I	O				3.03
55.250	0.00	1.12	3.348	I	O				3.02
55.333	0.00	1.12	3.340	I	O				3.01
55.417	0.00	1.12	3.333	I	O				3.01
55.500	0.00	1.12	3.325	I	O				3.00
55.583	0.00	1.12	3.317	I	O				2.99
55.667	0.00	1.12	3.310	I	O				2.98
55.750	0.00	1.11	3.302	I	O				2.98
55.833	0.00	1.11	3.294	I	O				2.97
55.917	0.00	1.11	3.287	I	O				2.96
56.000	0.00	1.11	3.279	I	O				2.96
56.083	0.00	1.11	3.271	I	O				2.95
56.167	0.00	1.11	3.264	I	O				2.94
56.250	0.00	1.10	3.256	I	O				2.94
56.333	0.00	1.10	3.248	I	O				2.93
56.417	0.00	1.10	3.241	I	O				2.92
56.500	0.00	1.10	3.233	I	O				2.92
56.583	0.00	1.10	3.226	I	O				2.91
56.667	0.00	1.09	3.218	I	O				2.90
56.750	0.00	1.09	3.211	I	O				2.90
56.833	0.00	1.09	3.203	I	O				2.89
56.917	0.00	1.09	3.196	I	O				2.88
57.000	0.00	1.09	3.188	I	O				2.87
57.083	0.00	1.09	3.181	I	O				2.87
57.167	0.00	1.08	3.173	I	O				2.86
57.250	0.00	1.08	3.166	I	O				2.85
57.333	0.00	1.08	3.158	I	O				2.85
57.417	0.00	1.08	3.151	I	O				2.84
57.500	0.00	1.08	3.143	I	O				2.83
57.583	0.00	1.08	3.136	I	O				2.83
57.667	0.00	1.07	3.129	I	O				2.82
57.750	0.00	1.07	3.121	I	O				2.81
57.833	0.00	1.07	3.114	I	O				2.81
57.917	0.00	1.07	3.106	I	O				2.80
58.000	0.00	1.07	3.099	I	O				2.79
58.083	0.00	1.06	3.092	I	O				2.79
58.167	0.00	1.06	3.084	I	O				2.78
58.250	0.00	1.06	3.077	I	O				2.77
58.333	0.00	1.06	3.070	I	O				2.77
58.417	0.00	1.06	3.063	I	O				2.76
58.500	0.00	1.06	3.055	I	O				2.75
58.583	0.00	1.05	3.048	I	O				2.75
58.667	0.00	1.05	3.041	I	O				2.74
58.750	0.00	1.05	3.033	I	O				2.74
58.833	0.00	1.05	3.026	I	O				2.73

58.917	0.00	1.05	3.019	I O				2.72
59.000	0.00	1.05	3.012	I O				2.72
59.083	0.00	1.04	3.005	I O				2.71
59.167	0.00	1.04	2.997	I O				2.70
59.250	0.00	1.04	2.990	I O				2.70
59.333	0.00	1.04	2.983	I O				2.69
59.417	0.00	1.04	2.976	I O				2.68
59.500	0.00	1.04	2.969	I O				2.68
59.583	0.00	1.03	2.962	I O				2.67
59.667	0.00	1.03	2.955	I O				2.66
59.750	0.00	1.03	2.947	I O				2.66
59.833	0.00	1.03	2.940	I O				2.65
59.917	0.00	1.03	2.933	I O				2.64
60.000	0.00	1.03	2.926	I O				2.64
60.083	0.00	1.02	2.919	I O				2.63
60.167	0.00	1.02	2.912	I O				2.63
60.250	0.00	1.02	2.905	I O				2.62
60.333	0.00	1.02	2.898	I O				2.61
60.417	0.00	1.02	2.891	I O				2.61
60.500	0.00	1.02	2.884	I O				2.60
60.583	0.00	1.01	2.877	I O				2.59
60.667	0.00	1.01	2.870	I O				2.59
60.750	0.00	1.01	2.863	I O				2.58
60.833	0.00	1.01	2.856	I O				2.58
60.917	0.00	1.01	2.849	I O				2.57
61.000	0.00	1.01	2.842	I O				2.56
61.083	0.00	1.00	2.835	I O				2.56
61.167	0.00	1.00	2.828	I O				2.55
61.250	0.00	1.00	2.821	I O				2.54
61.333	0.00	1.00	2.815	I O				2.54
61.417	0.00	1.00	2.808	I O				2.53
61.500	0.00	1.00	2.801	I O				2.53
61.583	0.00	1.00	2.794	I O				2.52
61.667	0.00	0.99	2.787	I O				2.51
61.750	0.00	0.99	2.780	I O				2.51
61.833	0.00	0.99	2.773	I O				2.50
61.917	0.00	0.99	2.767	I O				2.49
62.000	0.00	0.99	2.760	I O				2.49
62.083	0.00	0.99	2.753	I O				2.48
62.167	0.00	0.98	2.746	I O				2.48
62.250	0.00	0.98	2.740	I O				2.47
62.333	0.00	0.98	2.733	I O				2.46
62.417	0.00	0.98	2.726	I O				2.46
62.500	0.00	0.98	2.719	I O				2.45
62.583	0.00	0.98	2.713	I O				2.45
62.667	0.00	0.97	2.706	I O				2.44
62.750	0.00	0.97	2.699	I O				2.43
62.833	0.00	0.97	2.692	I O				2.43
62.917	0.00	0.97	2.686	I O				2.42
63.000	0.00	0.97	2.679	I O				2.42
63.083	0.00	0.97	2.672	I O				2.41
63.167	0.00	0.96	2.666	I O				2.40
63.250	0.00	0.96	2.659	I O				2.40
63.333	0.00	0.96	2.652	I O				2.39
63.417	0.00	0.96	2.646	I O				2.39
63.500	0.00	0.96	2.639	I O				2.38
63.583	0.00	0.96	2.633	I O				2.37
63.667	0.00	0.96	2.626	I O				2.37
63.750	0.00	0.95	2.619	I O				2.36
63.833	0.00	0.95	2.613	IO				2.36
63.917	0.00	0.95	2.606	IO				2.35
64.000	0.00	0.95	2.600	IO				2.34
64.083	0.00	0.95	2.593	IO				2.34
64.167	0.00	0.95	2.587	IO				2.33
64.250	0.00	0.94	2.580	IO				2.33
64.333	0.00	0.94	2.574	IO				2.32
64.417	0.00	0.94	2.567	IO				2.31
64.500	0.00	0.94	2.561	IO				2.31
64.583	0.00	0.94	2.554	IO				2.30
64.667	0.00	0.94	2.548	IO				2.30
64.750	0.00	0.94	2.541	IO				2.29

64.833	0.00	0.93	2.535	IO				2.29
64.917	0.00	0.93	2.529	IO				2.28
65.000	0.00	0.93	2.522	IO				2.27
65.083	0.00	0.93	2.516	IO				2.27
65.167	0.00	0.93	2.509	IO				2.26
65.250	0.00	0.93	2.503	IO				2.26
65.333	0.00	0.93	2.497	IO				2.25
65.417	0.00	0.92	2.490	IO				2.25
65.500	0.00	0.92	2.484	IO				2.24
65.583	0.00	0.92	2.477	IO				2.23
65.667	0.00	0.92	2.471	IO				2.23
65.750	0.00	0.92	2.465	IO				2.22
65.833	0.00	0.92	2.458	IO				2.22
65.917	0.00	0.91	2.452	IO				2.21
66.000	0.00	0.91	2.446	IO				2.21
66.083	0.00	0.91	2.440	IO				2.20
66.167	0.00	0.91	2.433	IO				2.19
66.250	0.00	0.91	2.427	IO				2.19
66.333	0.00	0.91	2.421	IO				2.18
66.417	0.00	0.91	2.415	IO				2.18
66.500	0.00	0.90	2.408	IO				2.17
66.583	0.00	0.90	2.402	IO				2.17
66.667	0.00	0.90	2.396	IO				2.16
66.750	0.00	0.90	2.390	IO				2.15
66.833	0.00	0.90	2.383	IO				2.15
66.917	0.00	0.90	2.377	IO				2.14
67.000	0.00	0.90	2.371	IO				2.14
67.083	0.00	0.89	2.365	IO				2.13
67.167	0.00	0.89	2.359	IO				2.13
67.250	0.00	0.89	2.353	IO				2.12
67.333	0.00	0.89	2.347	IO				2.12
67.417	0.00	0.89	2.340	IO				2.11
67.500	0.00	0.89	2.334	IO				2.10
67.583	0.00	0.89	2.328	IO				2.10
67.667	0.00	0.88	2.322	IO				2.09
67.750	0.00	0.88	2.316	IO				2.09
67.833	0.00	0.88	2.310	IO				2.08
67.917	0.00	0.88	2.304	IO				2.08
68.000	0.00	0.88	2.298	IO				2.07
68.083	0.00	0.88	2.292	IO				2.07
68.167	0.00	0.88	2.286	IO				2.06
68.250	0.00	0.87	2.280	IO				2.06
68.333	0.00	0.87	2.274	IO				2.05
68.417	0.00	0.87	2.268	IO				2.04
68.500	0.00	0.87	2.262	IO				2.04
68.583	0.00	0.87	2.256	IO				2.03
68.667	0.00	0.87	2.250	IO				2.03
68.750	0.00	0.87	2.244	IO				2.02
68.833	0.00	0.86	2.238	IO				2.02
68.917	0.00	0.86	2.232	IO				2.01
69.000	0.00	0.86	2.226	IO				2.01
69.083	0.00	0.86	2.220	IO				2.00
69.167	0.00	0.86	2.214	IO				2.00
69.250	0.00	0.86	2.208	IO				1.99
69.333	0.00	0.86	2.202	IO				1.99
69.417	0.00	0.85	2.196	IO				1.99
69.500	0.00	0.85	2.190	IO				1.98
69.583	0.00	0.85	2.185	IO				1.98
69.667	0.00	0.85	2.179	IO				1.97
69.750	0.00	0.85	2.173	IO				1.97
69.833	0.00	0.85	2.167	IO				1.97
69.917	0.00	0.85	2.161	IO				1.96
70.000	0.00	0.84	2.155	IO				1.96
70.083	0.00	0.84	2.150	IO				1.95
70.167	0.00	0.84	2.144	IO				1.95
70.250	0.00	0.84	2.138	IO				1.95
70.333	0.00	0.84	2.132	IO				1.94
70.417	0.00	0.84	2.126	IO				1.94
70.500	0.00	0.84	2.121	IO				1.93
70.583	0.00	0.83	2.115	IO				1.93
70.667	0.00	0.83	2.109	IO				1.93

70.750	0.00	0.83	2.103	IO				1.92
70.833	0.00	0.83	2.098	IO				1.92
70.917	0.00	0.83	2.092	IO				1.91
71.000	0.00	0.83	2.086	IO				1.91
71.083	0.00	0.83	2.081	IO				1.91
71.167	0.00	0.83	2.075	IO				1.90
71.250	0.00	0.82	2.069	IO				1.90
71.333	0.00	0.82	2.064	IO				1.90
71.417	0.00	0.82	2.058	IO				1.89
71.500	0.00	0.82	2.052	IO				1.89
71.583	0.00	0.82	2.047	IO				1.88
71.667	0.00	0.82	2.041	IO				1.88
71.750	0.00	0.82	2.035	IO				1.88
71.833	0.00	0.81	2.030	IO				1.87
71.917	0.00	0.81	2.024	IO				1.87
72.000	0.00	0.81	2.018	IO				1.87
72.083	0.00	0.81	2.013	IO				1.86
72.167	0.00	0.81	2.007	IO				1.86
72.250	0.00	0.81	2.002	IO				1.85
72.333	0.00	0.81	1.996	IO				1.85
72.417	0.00	0.80	1.991	IO				1.85
72.500	0.00	0.80	1.985	IO				1.84
72.583	0.00	0.80	1.980	IO				1.84
72.667	0.00	0.80	1.974	IO				1.84
72.750	0.00	0.80	1.969	IO				1.83
72.833	0.00	0.80	1.963	IO				1.83
72.917	0.00	0.80	1.958	IO				1.82
73.000	0.00	0.80	1.952	IO				1.82
73.083	0.00	0.79	1.947	IO				1.82
73.167	0.00	0.79	1.941	IO				1.81
73.250	0.00	0.79	1.936	IO				1.81
73.333	0.00	0.79	1.930	IO				1.81
73.417	0.00	0.79	1.925	IO				1.80
73.500	0.00	0.79	1.919	IO				1.80
73.583	0.00	0.79	1.914	IO				1.79
73.667	0.00	0.78	1.909	IO				1.79
73.750	0.00	0.78	1.903	IO				1.79
73.833	0.00	0.78	1.898	IO				1.78
73.917	0.00	0.78	1.892	IO				1.78
74.000	0.00	0.78	1.887	IO				1.78
74.083	0.00	0.78	1.882	IO				1.77
74.167	0.00	0.78	1.876	IO				1.77
74.250	0.00	0.78	1.871	IO				1.77
74.333	0.00	0.77	1.866	IO				1.76
74.417	0.00	0.77	1.860	IO				1.76
74.500	0.00	0.77	1.855	IO				1.75
74.583	0.00	0.77	1.850	IO				1.75
74.667	0.00	0.77	1.844	IO				1.75
74.750	0.00	0.77	1.839	IO				1.74
74.833	0.00	0.77	1.834	IO				1.74
74.917	0.00	0.77	1.829	IO				1.74
75.000	0.00	0.76	1.823	IO				1.73
75.083	0.00	0.76	1.818	IO				1.73
75.167	0.00	0.76	1.813	IO				1.73
75.250	0.00	0.76	1.808	IO				1.72
75.333	0.00	0.76	1.802	IO				1.72
75.417	0.00	0.76	1.797	IO				1.72
75.500	0.00	0.76	1.792	IO				1.71
75.583	0.00	0.76	1.787	IO				1.71
75.667	0.00	0.75	1.781	IO				1.70
75.750	0.00	0.75	1.776	IO				1.70
75.833	0.00	0.75	1.771	IO				1.70
75.917	0.00	0.75	1.766	IO				1.69
76.000	0.00	0.75	1.761	IO				1.69
76.083	0.00	0.75	1.756	IO				1.69
76.167	0.00	0.75	1.750	IO				1.68
76.250	0.00	0.74	1.745	IO				1.68
76.333	0.00	0.74	1.740	IO				1.68
76.417	0.00	0.74	1.735	IO				1.67
76.500	0.00	0.74	1.730	IO				1.67
76.583	0.00	0.74	1.725	IO				1.67

76.667	0.00	0.74	1.720	IO				1.66
76.750	0.00	0.74	1.715	IO				1.66
76.833	0.00	0.74	1.710	IO				1.66
76.917	0.00	0.74	1.705	IO				1.65
77.000	0.00	0.73	1.700	IO				1.65
77.083	0.00	0.73	1.694	IO				1.65
77.167	0.00	0.73	1.689	IO				1.64
77.250	0.00	0.73	1.684	IO				1.64
77.333	0.00	0.73	1.679	IO				1.64
77.417	0.00	0.73	1.674	IO				1.63
77.500	0.00	0.73	1.669	IO				1.63
77.583	0.00	0.73	1.664	IO				1.63
77.667	0.00	0.72	1.659	IO				1.62
77.750	0.00	0.72	1.654	IO				1.62
77.833	0.00	0.72	1.649	IO				1.62
77.917	0.00	0.72	1.644	IO				1.61
78.000	0.00	0.72	1.639	IO				1.61
78.083	0.00	0.72	1.635	IO				1.61
78.167	0.00	0.72	1.630	IO				1.60
78.250	0.00	0.72	1.625	IO				1.60
78.333	0.00	0.71	1.620	IO				1.60
78.417	0.00	0.71	1.615	IO				1.59
78.500	0.00	0.71	1.610	IO				1.59
78.583	0.00	0.71	1.605	IO				1.59
78.667	0.00	0.71	1.600	IO				1.58
78.750	0.00	0.71	1.595	IO				1.58
78.833	0.00	0.71	1.590	IO				1.58
78.917	0.00	0.71	1.585	IO				1.57
79.000	0.00	0.70	1.581	IO				1.57
79.083	0.00	0.70	1.576	IO				1.57
79.167	0.00	0.70	1.571	IO				1.56
79.250	0.00	0.70	1.566	IO				1.56
79.333	0.00	0.70	1.561	IO				1.56
79.417	0.00	0.70	1.556	IO				1.55
79.500	0.00	0.70	1.552	IO				1.55
79.583	0.00	0.70	1.547	IO				1.55
79.667	0.00	0.70	1.542	IO				1.54
79.750	0.00	0.69	1.537	IO				1.54
79.833	0.00	0.69	1.532	IO				1.54
79.917	0.00	0.69	1.528	IO				1.53
80.000	0.00	0.69	1.523	IO				1.53
80.083	0.00	0.69	1.518	IO				1.53
80.167	0.00	0.69	1.513	IO				1.52
80.250	0.00	0.69	1.509	IO				1.52
80.333	0.00	0.69	1.504	IO				1.52
80.417	0.00	0.69	1.499	IO				1.51
80.500	0.00	0.68	1.495	IO				1.51
80.583	0.00	0.68	1.490	IO				1.51
80.667	0.00	0.68	1.485	IO				1.50
80.750	0.00	0.68	1.480	IO				1.50
80.833	0.00	0.68	1.476	IO				1.50
80.917	0.00	0.68	1.471	IO				1.49
81.000	0.00	0.68	1.466	IO				1.49
81.083	0.00	0.68	1.462	IO				1.49
81.167	0.00	0.67	1.457	IO				1.49
81.250	0.00	0.67	1.452	IO				1.48
81.333	0.00	0.67	1.448	IO				1.48
81.417	0.00	0.67	1.443	IO				1.48
81.500	0.00	0.67	1.439	IO				1.47
81.583	0.00	0.67	1.434	IO				1.47
81.667	0.00	0.67	1.429	IO				1.47
81.750	0.00	0.67	1.425	IO				1.46
81.833	0.00	0.67	1.420	IO				1.46
81.917	0.00	0.66	1.416	IO				1.46
82.000	0.00	0.66	1.411	IO				1.45
82.083	0.00	0.66	1.406	IO				1.45
82.167	0.00	0.66	1.402	IO				1.45
82.250	0.00	0.66	1.397	IO				1.45
82.333	0.00	0.66	1.393	IO				1.44
82.417	0.00	0.66	1.388	IO				1.44
82.500	0.00	0.66	1.384	IO				1.44

82.583	0.00	0.66	1.379	IO				1.43
82.667	0.00	0.65	1.375	IO				1.43
82.750	0.00	0.65	1.370	IO				1.43
82.833	0.00	0.65	1.366	IO				1.42
82.917	0.00	0.65	1.361	IO				1.42
83.000	0.00	0.65	1.357	IO				1.42
83.083	0.00	0.65	1.352	IO				1.41
83.167	0.00	0.65	1.348	IO				1.41
83.250	0.00	0.65	1.343	IO				1.41
83.333	0.00	0.65	1.339	IO				1.41
83.417	0.00	0.64	1.334	IO				1.40
83.500	0.00	0.64	1.330	IO				1.40
83.583	0.00	0.64	1.326	IO				1.40
83.667	0.00	0.64	1.321	IO				1.39
83.750	0.00	0.64	1.317	IO				1.39
83.833	0.00	0.64	1.312	IO				1.39
83.917	0.00	0.64	1.308	IO				1.38
84.000	0.00	0.64	1.304	IO				1.38
84.083	0.00	0.64	1.299	IO				1.38
84.167	0.00	0.64	1.295	IO				1.38
84.250	0.00	0.63	1.290	IO				1.37
84.333	0.00	0.63	1.286	IO				1.37
84.417	0.00	0.63	1.282	IO				1.37
84.500	0.00	0.63	1.277	IO				1.36
84.583	0.00	0.63	1.273	IO				1.36
84.667	0.00	0.63	1.269	IO				1.36
84.750	0.00	0.63	1.264	IO				1.36
84.833	0.00	0.63	1.260	IO				1.35
84.917	0.00	0.63	1.256	IO				1.35
85.000	0.00	0.62	1.251	IO				1.35
85.083	0.00	0.62	1.247	IO				1.34
85.167	0.00	0.62	1.243	IO				1.34
85.250	0.00	0.62	1.238	IO				1.34
85.333	0.00	0.62	1.234	IO				1.33
85.417	0.00	0.62	1.230	IO				1.33
85.500	0.00	0.62	1.226	IO				1.33
85.583	0.00	0.62	1.221	IO				1.33
85.667	0.00	0.62	1.217	IO				1.32
85.750	0.00	0.62	1.213	IO				1.32
85.833	0.00	0.61	1.209	IO				1.32
85.917	0.00	0.61	1.204	IO				1.31
86.000	0.00	0.61	1.200	IO				1.31
86.083	0.00	0.61	1.196	IO				1.31
86.167	0.00	0.61	1.192	IO				1.31
86.250	0.00	0.61	1.188	IO				1.30
86.333	0.00	0.61	1.183	IO				1.30
86.417	0.00	0.61	1.179	IO				1.30
86.500	0.00	0.61	1.175	IO				1.29
86.583	0.00	0.61	1.171	IO				1.29
86.667	0.00	0.60	1.167	IO				1.29
86.750	0.00	0.60	1.163	IO				1.29
86.833	0.00	0.60	1.158	IO				1.28
86.917	0.00	0.60	1.154	IO				1.28
87.000	0.00	0.60	1.150	IO				1.28
87.083	0.00	0.60	1.146	IO				1.28
87.167	0.00	0.60	1.142	IO				1.27
87.250	0.00	0.60	1.138	IO				1.27
87.333	0.00	0.60	1.134	IO				1.27
87.417	0.00	0.60	1.130	IO				1.26
87.500	0.00	0.59	1.125	IO				1.26
87.583	0.00	0.59	1.121	IO				1.26
87.667	0.00	0.59	1.117	IO				1.26
87.750	0.00	0.59	1.113	IO				1.25
87.833	0.00	0.59	1.109	IO				1.25
87.917	0.00	0.59	1.105	IO				1.25
88.000	0.00	0.59	1.101	IO				1.24
88.083	0.00	0.59	1.097	IO				1.24
88.167	0.00	0.59	1.093	IO				1.24
88.250	0.00	0.59	1.089	IO				1.24
88.333	0.00	0.58	1.085	IO				1.23
88.417	0.00	0.58	1.081	IO				1.23

88.500	0.00	0.58	1.077	IO				1.23
88.583	0.00	0.58	1.073	IO				1.23
88.667	0.00	0.58	1.069	IO				1.22
88.750	0.00	0.58	1.065	IO				1.22
88.833	0.00	0.58	1.061	IO				1.22
88.917	0.00	0.58	1.057	IO				1.21
89.000	0.00	0.58	1.053	IO				1.21
89.083	0.00	0.58	1.049	IO				1.21
89.167	0.00	0.57	1.045	IO				1.21
89.250	0.00	0.57	1.041	IO				1.20
89.333	0.00	0.57	1.037	IO				1.20
89.417	0.00	0.57	1.033	IO				1.20
89.500	0.00	0.57	1.029	IO				1.20
89.583	0.00	0.57	1.025	IO				1.19
89.667	0.00	0.57	1.021	IO				1.19
89.750	0.00	0.57	1.017	IO				1.19
89.833	0.00	0.57	1.014	IO				1.19
89.917	0.00	0.57	1.010	IO				1.18
90.000	0.00	0.56	1.006	IO				1.18
90.083	0.00	0.56	1.002	IO				1.18
90.167	0.00	0.56	0.998	IO				1.18
90.250	0.00	0.56	0.994	IO				1.17
90.333	0.00	0.56	0.990	IO				1.17
90.417	0.00	0.56	0.986	IO				1.17
90.500	0.00	0.56	0.983	IO				1.16
90.583	0.00	0.56	0.979	IO				1.16
90.667	0.00	0.56	0.975	IO				1.16
90.750	0.00	0.56	0.971	IO				1.16
90.833	0.00	0.56	0.967	IO				1.15
90.917	0.00	0.55	0.963	IO				1.15
91.000	0.00	0.55	0.960	IO				1.15
91.083	0.00	0.55	0.956	IO				1.15
91.167	0.00	0.55	0.952	IO				1.14
91.250	0.00	0.55	0.948	IO				1.14
91.333	0.00	0.55	0.944	IO				1.14
91.417	0.00	0.55	0.941	IO				1.14
91.500	0.00	0.55	0.937	IO				1.13
91.583	0.00	0.55	0.933	IO				1.13
91.667	0.00	0.55	0.929	IO				1.13
91.750	0.00	0.55	0.926	IO				1.13
91.833	0.00	0.54	0.922	IO				1.12
91.917	0.00	0.54	0.918	IO				1.12
92.000	0.00	0.54	0.914	IO				1.12
92.083	0.00	0.54	0.911	IO				1.12
92.167	0.00	0.54	0.907	IO				1.11
92.250	0.00	0.54	0.903	IO				1.11
92.333	0.00	0.54	0.899	IO				1.11
92.417	0.00	0.54	0.896	IO				1.11
92.500	0.00	0.54	0.892	IO				1.10
92.583	0.00	0.54	0.888	IO				1.10
92.667	0.00	0.54	0.885	IO				1.10
92.750	0.00	0.53	0.881	IO				1.10
92.833	0.00	0.53	0.877	IO				1.09
92.917	0.00	0.53	0.874	IO				1.09
93.000	0.00	0.53	0.870	IO				1.09
93.083	0.00	0.53	0.866	IO				1.09
93.167	0.00	0.53	0.863	IO				1.08
93.250	0.00	0.53	0.859	IO				1.08
93.333	0.00	0.53	0.855	IO				1.08
93.417	0.00	0.53	0.852	IO				1.08
93.500	0.00	0.53	0.848	IO				1.07
93.583	0.00	0.53	0.844	IO				1.07
93.667	0.00	0.52	0.841	IO				1.07
93.750	0.00	0.52	0.837	IO				1.07
93.833	0.00	0.52	0.834	IO				1.06
93.917	0.00	0.52	0.830	IO				1.06
94.000	0.00	0.52	0.826	IO				1.06
94.083	0.00	0.52	0.823	IO				1.06
94.167	0.00	0.52	0.819	IO				1.05
94.250	0.00	0.52	0.816	IO				1.05
94.333	0.00	0.52	0.812	IO				1.05

94.417	0.00	0.52	0.808	IO				1.05
94.500	0.00	0.52	0.805	IO				1.04
94.583	0.00	0.52	0.801	IO				1.04
94.667	0.00	0.51	0.798	IO				1.04
94.750	0.00	0.51	0.794	IO				1.04
94.833	0.00	0.51	0.791	IO				1.03
94.917	0.00	0.51	0.787	IO				1.03
95.000	0.00	0.51	0.784	IO				1.03
95.083	0.00	0.51	0.780	IO				1.03
95.167	0.00	0.51	0.777	IO				1.03
95.250	0.00	0.51	0.773	IO				1.02
95.333	0.00	0.51	0.770	IO				1.02
95.417	0.00	0.51	0.766	IO				1.02
95.500	0.00	0.51	0.763	IO				1.02
95.583	0.00	0.50	0.759	IO				1.01
95.667	0.00	0.50	0.756	IO				1.01
95.750	0.00	0.50	0.752	IO				1.01
95.833	0.00	0.50	0.749	IO				1.01
95.917	0.00	0.50	0.745	IO				1.00
96.000	0.00	0.50	0.742	IO				1.00
96.083	0.00	0.50	0.738	IO				1.00
96.167	0.00	0.50	0.735	IO				0.99
96.250	0.00	0.49	0.732	IO				0.99
96.333	0.00	0.49	0.728	IO				0.99
96.417	0.00	0.49	0.725	IO				0.98
96.500	0.00	0.49	0.721	IO				0.98
96.583	0.00	0.49	0.718	IO				0.97
96.667	0.00	0.48	0.715	IO				0.97
96.750	0.00	0.48	0.711	IO				0.96
96.833	0.00	0.48	0.708	IO				0.96
96.917	0.00	0.48	0.705	IO				0.95
97.000	0.00	0.47	0.702	O				0.95
97.083	0.00	0.47	0.698	O				0.94
97.167	0.00	0.47	0.695	O				0.94
97.250	0.00	0.47	0.692	O				0.94
97.333	0.00	0.47	0.689	O				0.93
97.417	0.00	0.46	0.685	O				0.93
97.500	0.00	0.46	0.682	O				0.92
97.583	0.00	0.46	0.679	O				0.92
97.667	0.00	0.46	0.676	O				0.91
97.750	0.00	0.46	0.673	O				0.91
97.833	0.00	0.45	0.670	O				0.91
97.917	0.00	0.45	0.667	O				0.90
98.000	0.00	0.45	0.663	O				0.90
98.083	0.00	0.45	0.660	O				0.89
98.167	0.00	0.44	0.657	O				0.89
98.250	0.00	0.44	0.654	O				0.89
98.333	0.00	0.44	0.651	O				0.88
98.417	0.00	0.44	0.648	O				0.88
98.500	0.00	0.44	0.645	O				0.87
98.583	0.00	0.43	0.642	O				0.87
98.667	0.00	0.43	0.639	O				0.86
98.750	0.00	0.43	0.636	O				0.86
98.833	0.00	0.43	0.633	O				0.86
98.917	0.00	0.43	0.630	O				0.85
99.000	0.00	0.42	0.627	O				0.85
99.083	0.00	0.42	0.624	O				0.84
99.167	0.00	0.42	0.622	O				0.84
99.250	0.00	0.42	0.619	O				0.84
99.333	0.00	0.42	0.616	O				0.83
99.417	0.00	0.41	0.613	O				0.83
99.500	0.00	0.41	0.610	O				0.83
99.583	0.00	0.41	0.607	O				0.82
99.667	0.00	0.41	0.604	O				0.82
99.750	0.00	0.41	0.602	O				0.81
99.833	0.00	0.41	0.599	O				0.81
99.917	0.00	0.40	0.596	O				0.81
100.000	0.00	0.40	0.593	O				0.80
100.083	0.00	0.40	0.590	O				0.80
100.167	0.00	0.40	0.588	O				0.80
100.250	0.00	0.40	0.585	O				0.79

100.333	0.00	0.39	0.582	O					0.79
100.417	0.00	0.39	0.580	O					0.78
100.500	0.00	0.39	0.577	O					0.78
100.583	0.00	0.39	0.574	O					0.78
100.667	0.00	0.39	0.572	O					0.77
100.750	0.00	0.38	0.569	O					0.77
100.833	0.00	0.38	0.566	O					0.77
100.917	0.00	0.38	0.564	O					0.76
101.000	0.00	0.38	0.561	O					0.76
101.083	0.00	0.38	0.558	O					0.76
101.167	0.00	0.38	0.556	O					0.75
101.250	0.00	0.37	0.553	O					0.75
101.333	0.00	0.37	0.551	O					0.75
101.417	0.00	0.37	0.548	O					0.74
101.500	0.00	0.37	0.545	O					0.74
101.583	0.00	0.37	0.543	O					0.73
101.667	0.00	0.37	0.540	O					0.73
101.750	0.00	0.36	0.538	O					0.73
101.833	0.00	0.36	0.535	O					0.72
101.917	0.00	0.36	0.533	O					0.72
102.000	0.00	0.36	0.530	O					0.72
102.083	0.00	0.36	0.528	O					0.71
102.167	0.00	0.36	0.526	O					0.71
102.250	0.00	0.35	0.523	O					0.71
102.333	0.00	0.35	0.521	O					0.70
102.417	0.00	0.35	0.518	O					0.70
102.500	0.00	0.35	0.516	O					0.70
102.583	0.00	0.35	0.513	O					0.69
102.667	0.00	0.35	0.511	O					0.69
102.750	0.00	0.34	0.509	O					0.69
102.833	0.00	0.34	0.506	O					0.69
102.917	0.00	0.34	0.504	O					0.68
103.000	0.00	0.34	0.502	O					0.68
103.083	0.00	0.34	0.499	O					0.68
103.167	0.00	0.34	0.497	O					0.67
103.250	0.00	0.33	0.495	O					0.67
103.333	0.00	0.33	0.492	O					0.67
103.417	0.00	0.33	0.490	O					0.66
103.500	0.00	0.33	0.488	O					0.66
103.583	0.00	0.33	0.486	O					0.66
103.667	0.00	0.33	0.483	O					0.65
103.750	0.00	0.33	0.481	O					0.65
103.833	0.00	0.32	0.479	O					0.65
103.917	0.00	0.32	0.477	O					0.64
104.000	0.00	0.32	0.474	O					0.64
104.083	0.00	0.32	0.472	O					0.64
104.167	0.00	0.32	0.470	O					0.64
104.250	0.00	0.32	0.468	O					0.63
104.333	0.00	0.31	0.466	O					0.63
104.417	0.00	0.31	0.463	O					0.63
104.500	0.00	0.31	0.461	O					0.62
104.583	0.00	0.31	0.459	O					0.62
104.667	0.00	0.31	0.457	O					0.62
104.750	0.00	0.31	0.455	O					0.62
104.833	0.00	0.31	0.453	O					0.61
104.917	0.00	0.30	0.451	O					0.61
105.000	0.00	0.30	0.449	O					0.61
105.083	0.00	0.30	0.446	O					0.60
105.167	0.00	0.30	0.444	O					0.60
105.250	0.00	0.30	0.442	O					0.60
105.333	0.00	0.30	0.440	O					0.60
105.417	0.00	0.30	0.438	O					0.59
105.500	0.00	0.30	0.436	O					0.59
105.583	0.00	0.29	0.434	O					0.59
105.667	0.00	0.29	0.432	O					0.58
105.750	0.00	0.29	0.430	O					0.58
105.833	0.00	0.29	0.428	O					0.58
105.917	0.00	0.29	0.426	O					0.58
106.000	0.00	0.29	0.424	O					0.57
106.083	0.00	0.29	0.422	O					0.57
106.167	0.00	0.28	0.420	O					0.57

106.250	0.00	0.28	0.418	O					0.57
106.333	0.00	0.28	0.416	O					0.56
106.417	0.00	0.28	0.414	O					0.56
106.500	0.00	0.28	0.412	O					0.56
106.583	0.00	0.28	0.411	O					0.56
106.667	0.00	0.28	0.409	O					0.55
106.750	0.00	0.28	0.407	O					0.55
106.833	0.00	0.27	0.405	O					0.55
106.917	0.00	0.27	0.403	O					0.55
107.000	0.00	0.27	0.401	O					0.54
107.083	0.00	0.27	0.399	O					0.54
107.167	0.00	0.27	0.397	O					0.54
107.250	0.00	0.27	0.396	O					0.54
107.333	0.00	0.27	0.394	O					0.53
107.417	0.00	0.27	0.392	O					0.53
107.500	0.00	0.26	0.390	O					0.53
107.583	0.00	0.26	0.388	O					0.53
107.667	0.00	0.26	0.386	O					0.52
107.750	0.00	0.26	0.385	O					0.52
107.833	0.00	0.26	0.383	O					0.52
107.917	0.00	0.26	0.381	O					0.52
108.000	0.00	0.26	0.379	O					0.51
108.083	0.00	0.26	0.377	O					0.51
108.167	0.00	0.25	0.376	O					0.51
108.250	0.00	0.25	0.374	O					0.51
108.333	0.00	0.25	0.372	O					0.50
108.417	0.00	0.25	0.371	O					0.50
108.500	0.00	0.25	0.369	O					0.50
108.583	0.00	0.25	0.367	O					0.50
108.667	0.00	0.25	0.365	O					0.49
108.750	0.00	0.25	0.364	O					0.49
108.833	0.00	0.24	0.362	O					0.49
108.917	0.00	0.24	0.360	O					0.49
109.000	0.00	0.24	0.359	O					0.49
109.083	0.00	0.24	0.357	O					0.48
109.167	0.00	0.24	0.355	O					0.48
109.250	0.00	0.24	0.354	O					0.48
109.333	0.00	0.24	0.352	O					0.48
109.417	0.00	0.24	0.350	O					0.47
109.500	0.00	0.24	0.349	O					0.47
109.583	0.00	0.23	0.347	O					0.47
109.667	0.00	0.23	0.346	O					0.47
109.750	0.00	0.23	0.344	O					0.47
109.833	0.00	0.23	0.342	O					0.46
109.917	0.00	0.23	0.341	O					0.46
110.000	0.00	0.23	0.339	O					0.46
110.083	0.00	0.23	0.338	O					0.46
110.167	0.00	0.23	0.336	O					0.45
110.250	0.00	0.23	0.334	O					0.45
110.333	0.00	0.23	0.333	O					0.45
110.417	0.00	0.22	0.331	O					0.45
110.500	0.00	0.22	0.330	O					0.45
110.583	0.00	0.22	0.328	O					0.44
110.667	0.00	0.22	0.327	O					0.44
110.750	0.00	0.22	0.325	O					0.44
110.833	0.00	0.22	0.324	O					0.44
110.917	0.00	0.22	0.322	O					0.44
111.000	0.00	0.22	0.321	O					0.43
111.083	0.00	0.22	0.319	O					0.43
111.167	0.00	0.21	0.318	O					0.43
111.250	0.00	0.21	0.316	O					0.43
111.333	0.00	0.21	0.315	O					0.43
111.417	0.00	0.21	0.313	O					0.42
111.500	0.00	0.21	0.312	O					0.42
111.583	0.00	0.21	0.310	O					0.42
111.667	0.00	0.21	0.309	O					0.42
111.750	0.00	0.21	0.308	O					0.42
111.833	0.00	0.21	0.306	O					0.41
111.917	0.00	0.21	0.305	O					0.41
112.000	0.00	0.21	0.303	O					0.41
112.083	0.00	0.20	0.302	O					0.41

112.167	0.00	0.20	0.300	O	|	|	|	|	0.41
112.250	0.00	0.20	0.299	O	|	|	|	|	0.40
112.333	0.00	0.20	0.298	O	|	|	|	|	0.40
112.417	0.00	0.20	0.296	O	|	|	|	|	0.40
112.500	0.00	0.20	0.295	O	|	|	|	|	0.40
112.583	0.00	0.20	0.294	O	|	|	|	|	0.40
112.667	0.00	0.20	0.292	O	|	|	|	|	0.40
112.750	0.00	0.20	0.291	O	|	|	|	|	0.39
112.833	0.00	0.20	0.289	O	|	|	|	|	0.39
112.917	0.00	0.19	0.288	O	|	|	|	|	0.39
113.000	0.00	0.19	0.287	O	|	|	|	|	0.39
113.083	0.00	0.19	0.285	O	|	|	|	|	0.39
113.167	0.00	0.19	0.284	O	|	|	|	|	0.38
113.250	0.00	0.19	0.283	O	|	|	|	|	0.38
113.333	0.00	0.19	0.281	O	|	|	|	|	0.38
113.417	0.00	0.19	0.280	O	|	|	|	|	0.38
113.500	0.00	0.19	0.279	O	|	|	|	|	0.38
113.583	0.00	0.19	0.278	O	|	|	|	|	0.38
113.667	0.00	0.19	0.276	O	|	|	|	|	0.37
113.750	0.00	0.19	0.275	O	|	|	|	|	0.37
113.833	0.00	0.19	0.274	O	|	|	|	|	0.37
113.917	0.00	0.18	0.272	O	|	|	|	|	0.37
114.000	0.00	0.18	0.271	O	|	|	|	|	0.37
114.083	0.00	0.18	0.270	O	|	|	|	|	0.37
114.167	0.00	0.18	0.269	O	|	|	|	|	0.36
114.250	0.00	0.18	0.267	O	|	|	|	|	0.36
114.333	0.00	0.18	0.266	O	|	|	|	|	0.36
114.417	0.00	0.18	0.265	O	|	|	|	|	0.36
114.500	0.00	0.18	0.264	O	|	|	|	|	0.36
114.583	0.00	0.18	0.262	O	|	|	|	|	0.36
114.667	0.00	0.18	0.261	O	|	|	|	|	0.35
114.750	0.00	0.18	0.260	O	|	|	|	|	0.35
114.833	0.00	0.18	0.259	O	|	|	|	|	0.35
114.917	0.00	0.17	0.258	O	|	|	|	|	0.35
115.000	0.00	0.17	0.256	O	|	|	|	|	0.35
115.083	0.00	0.17	0.255	O	|	|	|	|	0.35
115.167	0.00	0.17	0.254	O	|	|	|	|	0.34
115.250	0.00	0.17	0.253	O	|	|	|	|	0.34
115.333	0.00	0.17	0.252	O	|	|	|	|	0.34
115.417	0.00	0.17	0.251	O	|	|	|	|	0.34
115.500	0.00	0.17	0.249	O	|	|	|	|	0.34
115.583	0.00	0.17	0.248	O	|	|	|	|	0.34
115.667	0.00	0.17	0.247	O	|	|	|	|	0.33
115.750	0.00	0.17	0.246	O	|	|	|	|	0.33
115.833	0.00	0.17	0.245	O	|	|	|	|	0.33
115.917	0.00	0.16	0.244	O	|	|	|	|	0.33
116.000	0.00	0.16	0.242	O	|	|	|	|	0.33
116.083	0.00	0.16	0.241	O	|	|	|	|	0.33
116.167	0.00	0.16	0.240	O	|	|	|	|	0.33
116.250	0.00	0.16	0.239	O	|	|	|	|	0.32
116.333	0.00	0.16	0.238	O	|	|	|	|	0.32
116.417	0.00	0.16	0.237	O	|	|	|	|	0.32
116.500	0.00	0.16	0.236	O	|	|	|	|	0.32
116.583	0.00	0.16	0.235	O	|	|	|	|	0.32
116.667	0.00	0.16	0.234	O	|	|	|	|	0.32
116.750	0.00	0.16	0.233	O	|	|	|	|	0.31
116.833	0.00	0.16	0.231	O	|	|	|	|	0.31
116.917	0.00	0.16	0.230	O	|	|	|	|	0.31
117.000	0.00	0.16	0.229	O	|	|	|	|	0.31
117.083	0.00	0.15	0.228	O	|	|	|	|	0.31
117.167	0.00	0.15	0.227	O	|	|	|	|	0.31
117.250	0.00	0.15	0.226	O	|	|	|	|	0.31
117.333	0.00	0.15	0.225	O	|	|	|	|	0.30
117.417	0.00	0.15	0.224	O	|	|	|	|	0.30
117.500	0.00	0.15	0.223	O	|	|	|	|	0.30
117.583	0.00	0.15	0.222	O	|	|	|	|	0.30
117.667	0.00	0.15	0.221	O	|	|	|	|	0.30
117.750	0.00	0.15	0.220	O	|	|	|	|	0.30
117.833	0.00	0.15	0.219	O	|	|	|	|	0.30
117.917	0.00	0.15	0.218	O	|	|	|	|	0.29
118.000	0.00	0.15	0.217	O	|	|	|	|	0.29

118.083	0.00	0.15	0.216	O				0.29
118.167	0.00	0.15	0.215	O				0.29
118.250	0.00	0.14	0.214	O				0.29
118.333	0.00	0.14	0.213	O				0.29
118.417	0.00	0.14	0.212	O				0.29
118.500	0.00	0.14	0.211	O				0.29
118.583	0.00	0.14	0.210	O				0.28
118.667	0.00	0.14	0.209	O				0.28
118.750	0.00	0.14	0.208	O				0.28
118.833	0.00	0.14	0.207	O				0.28
118.917	0.00	0.14	0.206	O				0.28
119.000	0.00	0.14	0.205	O				0.28
119.083	0.00	0.14	0.204	O				0.28
119.167	0.00	0.14	0.203	O				0.27
119.250	0.00	0.14	0.202	O				0.27
119.333	0.00	0.14	0.201	O				0.27
119.417	0.00	0.14	0.200	O				0.27
119.500	0.00	0.13	0.199	O				0.27
119.583	0.00	0.13	0.198	O				0.27
119.667	0.00	0.13	0.198	O				0.27
119.750	0.00	0.13	0.197	O				0.27
119.833	0.00	0.13	0.196	O				0.26
119.917	0.00	0.13	0.195	O				0.26
120.000	0.00	0.13	0.194	O				0.26
120.083	0.00	0.13	0.193	O				0.26
120.167	0.00	0.13	0.192	O				0.26
120.250	0.00	0.13	0.191	O				0.26
120.333	0.00	0.13	0.190	O				0.26
120.417	0.00	0.13	0.189	O				0.26
120.500	0.00	0.13	0.189	O				0.26
120.583	0.00	0.13	0.188	O				0.25
120.667	0.00	0.13	0.187	O				0.25
120.750	0.00	0.13	0.186	O				0.25
120.833	0.00	0.13	0.185	O				0.25
120.917	0.00	0.12	0.184	O				0.25
121.000	0.00	0.12	0.183	O				0.25
121.083	0.00	0.12	0.182	O				0.25
121.167	0.00	0.12	0.182	O				0.25
121.250	0.00	0.12	0.181	O				0.24
121.333	0.00	0.12	0.180	O				0.24
121.417	0.00	0.12	0.179	O				0.24
121.500	0.00	0.12	0.178	O				0.24
121.583	0.00	0.12	0.177	O				0.24
121.667	0.00	0.12	0.177	O				0.24
121.750	0.00	0.12	0.176	O				0.24
121.833	0.00	0.12	0.175	O				0.24
121.917	0.00	0.12	0.174	O				0.24
122.000	0.00	0.12	0.173	O				0.23
122.083	0.00	0.12	0.173	O				0.23
122.167	0.00	0.12	0.172	O				0.23
122.250	0.00	0.12	0.171	O				0.23
122.333	0.00	0.12	0.170	O				0.23
122.417	0.00	0.11	0.169	O				0.23
122.500	0.00	0.11	0.169	O				0.23
122.583	0.00	0.11	0.168	O				0.23
122.667	0.00	0.11	0.167	O				0.23
122.750	0.00	0.11	0.166	O				0.22
122.833	0.00	0.11	0.165	O				0.22
122.917	0.00	0.11	0.165	O				0.22
123.000	0.00	0.11	0.164	O				0.22
123.083	0.00	0.11	0.163	O				0.22
123.167	0.00	0.11	0.162	O				0.22
123.250	0.00	0.11	0.162	O				0.22
123.333	0.00	0.11	0.161	O				0.22
123.417	0.00	0.11	0.160	O				0.22
123.500	0.00	0.11	0.159	O				0.22
123.583	0.00	0.11	0.159	O				0.21
123.667	0.00	0.11	0.158	O				0.21
123.750	0.00	0.11	0.157	O				0.21
123.833	0.00	0.11	0.156	O				0.21
123.917	0.00	0.11	0.156	O				0.21

124.000	0.00	0.10	0.155	O					0.21
124.083	0.00	0.10	0.154	O					0.21
124.167	0.00	0.10	0.154	O					0.21
124.250	0.00	0.10	0.153	O					0.21
124.333	0.00	0.10	0.152	O					0.21
124.417	0.00	0.10	0.151	O					0.20
124.500	0.00	0.10	0.151	O					0.20
124.583	0.00	0.10	0.150	O					0.20
124.667	0.00	0.10	0.149	O					0.20
124.750	0.00	0.10	0.149	O					0.20
124.833	0.00	0.10	0.148	O					0.20
124.917	0.00	0.10	0.147	O					0.20
125.000	0.00	0.10	0.147	O					0.20
125.083	0.00	0.10	0.146	O					0.20
125.167	0.00	0.10	0.145	O					0.20
125.250	0.00	0.10	0.145	O					0.20
125.333	0.00	0.10	0.144	O					0.19
125.417	0.00	0.10	0.143	O					0.19
125.500	0.00	0.10	0.143	O					0.19
125.583	0.00	0.10	0.142	O					0.19
125.667	0.00	0.10	0.141	O					0.19
125.750	0.00	0.10	0.141	O					0.19
125.833	0.00	0.09	0.140	O					0.19
125.917	0.00	0.09	0.139	O					0.19
126.000	0.00	0.09	0.139	O					0.19
126.083	0.00	0.09	0.138	O					0.19
126.167	0.00	0.09	0.137	O					0.19
126.250	0.00	0.09	0.137	O					0.18
126.333	0.00	0.09	0.136	O					0.18
126.417	0.00	0.09	0.135	O					0.18
126.500	0.00	0.09	0.135	O					0.18
126.583	0.00	0.09	0.134	O					0.18
126.667	0.00	0.09	0.134	O					0.18
126.750	0.00	0.09	0.133	O					0.18
126.833	0.00	0.09	0.132	O					0.18
126.917	0.00	0.09	0.132	O					0.18
127.000	0.00	0.09	0.131	O					0.18
127.083	0.00	0.09	0.130	O					0.18
127.167	0.00	0.09	0.130	O					0.18
127.250	0.00	0.09	0.129	O					0.17
127.333	0.00	0.09	0.129	O					0.17
127.417	0.00	0.09	0.128	O					0.17
127.500	0.00	0.09	0.127	O					0.17
127.583	0.00	0.09	0.127	O					0.17
127.667	0.00	0.09	0.126	O					0.17
127.750	0.00	0.09	0.126	O					0.17
127.833	0.00	0.08	0.125	O					0.17
127.917	0.00	0.08	0.125	O					0.17
128.000	0.00	0.08	0.124	O					0.17
128.083	0.00	0.08	0.123	O					0.17
128.167	0.00	0.08	0.123	O					0.17
128.250	0.00	0.08	0.122	O					0.17
128.333	0.00	0.08	0.122	O					0.16
128.417	0.00	0.08	0.121	O					0.16
128.500	0.00	0.08	0.121	O					0.16
128.583	0.00	0.08	0.120	O					0.16
128.667	0.00	0.08	0.119	O					0.16
128.750	0.00	0.08	0.119	O					0.16
128.833	0.00	0.08	0.118	O					0.16
128.917	0.00	0.08	0.118	O					0.16
129.000	0.00	0.08	0.117	O					0.16
129.083	0.00	0.08	0.117	O					0.16
129.167	0.00	0.08	0.116	O					0.16
129.250	0.00	0.08	0.116	O					0.16
129.333	0.00	0.08	0.115	O					0.16
129.417	0.00	0.08	0.115	O					0.15
129.500	0.00	0.08	0.114	O					0.15
129.583	0.00	0.08	0.113	O					0.15
129.667	0.00	0.08	0.113	O					0.15
129.750	0.00	0.08	0.112	O					0.15
129.833	0.00	0.08	0.112	O					0.15

129.917	0.00	0.08	0.111	O					0.15
130.000	0.00	0.07	0.111	O					0.15
130.083	0.00	0.07	0.110	O					0.15
130.167	0.00	0.07	0.110	O					0.15
130.250	0.00	0.07	0.109	O					0.15
130.333	0.00	0.07	0.109	O					0.15
130.417	0.00	0.07	0.108	O					0.15
130.500	0.00	0.07	0.108	O					0.15
130.583	0.00	0.07	0.107	O					0.15
130.667	0.00	0.07	0.107	O					0.14
130.750	0.00	0.07	0.106	O					0.14
130.833	0.00	0.07	0.106	O					0.14
130.917	0.00	0.07	0.105	O					0.14
131.000	0.00	0.07	0.105	O					0.14
131.083	0.00	0.07	0.104	O					0.14
131.167	0.00	0.07	0.104	O					0.14
131.250	0.00	0.07	0.103	O					0.14
131.333	0.00	0.07	0.103	O					0.14
131.417	0.00	0.07	0.102	O					0.14
131.500	0.00	0.07	0.102	O					0.14
131.583	0.00	0.07	0.101	O					0.14
131.667	0.00	0.07	0.101	O					0.14
131.750	0.00	0.07	0.101	O					0.14
131.833	0.00	0.07	0.100	O					0.14
131.917	0.00	0.07	0.100	O					0.13
132.000	0.00	0.07	0.099	O					0.13
132.083	0.00	0.07	0.099	O					0.13
132.167	0.00	0.07	0.098	O					0.13
132.250	0.00	0.07	0.098	O					0.13
132.333	0.00	0.07	0.097	O					0.13
132.417	0.00	0.07	0.097	O					0.13
132.500	0.00	0.07	0.096	O					0.13
132.583	0.00	0.06	0.096	O					0.13
132.667	0.00	0.06	0.095	O					0.13
132.750	0.00	0.06	0.095	O					0.13
132.833	0.00	0.06	0.095	O					0.13
132.917	0.00	0.06	0.094	O					0.13
133.000	0.00	0.06	0.094	O					0.13
133.083	0.00	0.06	0.093	O					0.13
133.167	0.00	0.06	0.093	O					0.13
133.250	0.00	0.06	0.092	O					0.13
133.333	0.00	0.06	0.092	O					0.12
133.417	0.00	0.06	0.092	O					0.12
133.500	0.00	0.06	0.091	O					0.12
133.583	0.00	0.06	0.091	O					0.12
133.667	0.00	0.06	0.090	O					0.12
133.750	0.00	0.06	0.090	O					0.12
133.833	0.00	0.06	0.089	O					0.12
133.917	0.00	0.06	0.089	O					0.12
134.000	0.00	0.06	0.089	O					0.12
134.083	0.00	0.06	0.088	O					0.12
134.167	0.00	0.06	0.088	O					0.12
134.250	0.00	0.06	0.087	O					0.12
134.333	0.00	0.06	0.087	O					0.12
134.417	0.00	0.06	0.087	O					0.12
134.500	0.00	0.06	0.086	O					0.12
134.583	0.00	0.06	0.086	O					0.12
134.667	0.00	0.06	0.085	O					0.12
134.750	0.00	0.06	0.085	O					0.11
134.833	0.00	0.06	0.085	O					0.11
134.917	0.00	0.06	0.084	O					0.11
135.000	0.00	0.06	0.084	O					0.11
135.083	0.00	0.06	0.083	O					0.11
135.167	0.00	0.06	0.083	O					0.11
135.250	0.00	0.06	0.083	O					0.11
135.333	0.00	0.06	0.082	O					0.11
135.417	0.00	0.06	0.082	O					0.11
135.500	0.00	0.06	0.081	O					0.11
135.583	0.00	0.05	0.081	O					0.11
135.667	0.00	0.05	0.081	O					0.11
135.750	0.00	0.05	0.080	O					0.11

135.833	0.00	0.05	0.080	O					0.11
135.917	0.00	0.05	0.080	O					0.11
136.000	0.00	0.05	0.079	O					0.11
136.083	0.00	0.05	0.079	O					0.11
136.167	0.00	0.05	0.079	O					0.11
136.250	0.00	0.05	0.078	O					0.11
136.333	0.00	0.05	0.078	O					0.11
136.417	0.00	0.05	0.077	O					0.10
136.500	0.00	0.05	0.077	O					0.10
136.583	0.00	0.05	0.077	O					0.10
136.667	0.00	0.05	0.076	O					0.10
136.750	0.00	0.05	0.076	O					0.10
136.833	0.00	0.05	0.076	O					0.10
136.917	0.00	0.05	0.075	O					0.10
137.000	0.00	0.05	0.075	O					0.10
137.083	0.00	0.05	0.075	O					0.10
137.167	0.00	0.05	0.074	O					0.10
137.250	0.00	0.05	0.074	O					0.10
137.333	0.00	0.05	0.074	O					0.10
137.417	0.00	0.05	0.073	O					0.10
137.500	0.00	0.05	0.073	O					0.10
137.583	0.00	0.05	0.073	O					0.10
137.667	0.00	0.05	0.072	O					0.10
137.750	0.00	0.05	0.072	O					0.10
137.833	0.00	0.05	0.072	O					0.10
137.917	0.00	0.05	0.071	O					0.10
138.000	0.00	0.05	0.071	O					0.10
138.083	0.00	0.05	0.071	O					0.10
138.167	0.00	0.05	0.070	O					0.09
138.250	0.00	0.05	0.070	O					0.09
138.333	0.00	0.05	0.070	O					0.09
138.417	0.00	0.05	0.069	O					0.09
138.500	0.00	0.05	0.069	O					0.09
138.583	0.00	0.05	0.069	O					0.09
138.667	0.00	0.05	0.068	O					0.09
138.750	0.00	0.05	0.068	O					0.09
138.833	0.00	0.05	0.068	O					0.09
138.917	0.00	0.05	0.067	O					0.09
139.000	0.00	0.05	0.067	O					0.09
139.083	0.00	0.05	0.067	O					0.09
139.167	0.00	0.04	0.066	O					0.09
139.250	0.00	0.04	0.066	O					0.09
139.333	0.00	0.04	0.066	O					0.09
139.417	0.00	0.04	0.065	O					0.09
139.500	0.00	0.04	0.065	O					0.09
139.583	0.00	0.04	0.065	O					0.09
139.667	0.00	0.04	0.065	O					0.09
139.750	0.00	0.04	0.064	O					0.09
139.833	0.00	0.04	0.064	O					0.09
139.917	0.00	0.04	0.064	O					0.09
140.000	0.00	0.04	0.063	O					0.09
140.083	0.00	0.04	0.063	O					0.09
140.167	0.00	0.04	0.063	O					0.08
140.250	0.00	0.04	0.062	O					0.08
140.333	0.00	0.04	0.062	O					0.08
140.417	0.00	0.04	0.062	O					0.08
140.500	0.00	0.04	0.062	O					0.08
140.583	0.00	0.04	0.061	O					0.08
140.667	0.00	0.04	0.061	O					0.08
140.750	0.00	0.04	0.061	O					0.08
140.833	0.00	0.04	0.060	O					0.08
140.917	0.00	0.04	0.060	O					0.08
141.000	0.00	0.04	0.060	O					0.08
141.083	0.00	0.04	0.060	O					0.08
141.167	0.00	0.04	0.059	O					0.08
141.250	0.00	0.04	0.059	O					0.08
141.333	0.00	0.04	0.059	O					0.08
141.417	0.00	0.04	0.059	O					0.08
141.500	0.00	0.04	0.058	O					0.08
141.583	0.00	0.04	0.058	O					0.08
141.667	0.00	0.04	0.058	O					0.08

141.750	0.00	0.04	0.057	O	|	|	|	|	0.08
141.833	0.00	0.04	0.057	O	|	|	|	|	0.08
141.917	0.00	0.04	0.057	O	|	|	|	|	0.08
142.000	0.00	0.04	0.057	O	|	|	|	|	0.08
142.083	0.00	0.04	0.056	O	|	|	|	|	0.08
142.167	0.00	0.04	0.056	O	|	|	|	|	0.08
142.250	0.00	0.04	0.056	O	|	|	|	|	0.08
142.333	0.00	0.04	0.056	O	|	|	|	|	0.08
142.417	0.00	0.04	0.055	O	|	|	|	|	0.07
142.500	0.00	0.04	0.055	O	|	|	|	|	0.07
142.583	0.00	0.04	0.055	O	|	|	|	|	0.07
142.667	0.00	0.04	0.055	O	|	|	|	|	0.07
142.750	0.00	0.04	0.054	O	|	|	|	|	0.07
142.833	0.00	0.04	0.054	O	|	|	|	|	0.07
142.917	0.00	0.04	0.054	O	|	|	|	|	0.07
143.000	0.00	0.04	0.054	O	|	|	|	|	0.07
143.083	0.00	0.04	0.053	O	|	|	|	|	0.07
143.167	0.00	0.04	0.053	O	|	|	|	|	0.07
143.250	0.00	0.04	0.053	O	|	|	|	|	0.07
143.333	0.00	0.04	0.053	O	|	|	|	|	0.07
143.417	0.00	0.04	0.052	O	|	|	|	|	0.07
143.500	0.00	0.04	0.052	O	|	|	|	|	0.07
143.583	0.00	0.04	0.052	O	|	|	|	|	0.07
143.667	0.00	0.03	0.052	O	|	|	|	|	0.07
143.750	0.00	0.03	0.051	O	|	|	|	|	0.07
143.833	0.00	0.03	0.051	O	|	|	|	|	0.07
143.917	0.00	0.03	0.051	O	|	|	|	|	0.07
144.000	0.00	0.03	0.051	O	|	|	|	|	0.07
144.083	0.00	0.03	0.050	O	|	|	|	|	0.07
144.167	0.00	0.03	0.050	O	|	|	|	|	0.07
144.250	0.00	0.03	0.050	O	|	|	|	|	0.07
144.333	0.00	0.03	0.050	O	|	|	|	|	0.07
144.417	0.00	0.03	0.049	O	|	|	|	|	0.07
144.500	0.00	0.03	0.049	O	|	|	|	|	0.07
144.583	0.00	0.03	0.049	O	|	|	|	|	0.07
144.667	0.00	0.03	0.049	O	|	|	|	|	0.07
144.750	0.00	0.03	0.049	O	|	|	|	|	0.07
144.833	0.00	0.03	0.048	O	|	|	|	|	0.07
144.917	0.00	0.03	0.048	O	|	|	|	|	0.07
145.000	0.00	0.03	0.048	O	|	|	|	|	0.06
145.083	0.00	0.03	0.048	O	|	|	|	|	0.06
145.167	0.00	0.03	0.047	O	|	|	|	|	0.06
145.250	0.00	0.03	0.047	O	|	|	|	|	0.06
145.333	0.00	0.03	0.047	O	|	|	|	|	0.06
145.417	0.00	0.03	0.047	O	|	|	|	|	0.06
145.500	0.00	0.03	0.047	O	|	|	|	|	0.06
145.583	0.00	0.03	0.046	O	|	|	|	|	0.06
145.667	0.00	0.03	0.046	O	|	|	|	|	0.06
145.750	0.00	0.03	0.046	O	|	|	|	|	0.06
145.833	0.00	0.03	0.046	O	|	|	|	|	0.06
145.917	0.00	0.03	0.046	O	|	|	|	|	0.06
146.000	0.00	0.03	0.045	O	|	|	|	|	0.06
146.083	0.00	0.03	0.045	O	|	|	|	|	0.06
146.167	0.00	0.03	0.045	O	|	|	|	|	0.06
146.250	0.00	0.03	0.045	O	|	|	|	|	0.06
146.333	0.00	0.03	0.044	O	|	|	|	|	0.06
146.417	0.00	0.03	0.044	O	|	|	|	|	0.06
146.500	0.00	0.03	0.044	O	|	|	|	|	0.06
146.583	0.00	0.03	0.044	O	|	|	|	|	0.06
146.667	0.00	0.03	0.044	O	|	|	|	|	0.06
146.750	0.00	0.03	0.043	O	|	|	|	|	0.06
146.833	0.00	0.03	0.043	O	|	|	|	|	0.06
146.917	0.00	0.03	0.043	O	|	|	|	|	0.06
147.000	0.00	0.03	0.043	O	|	|	|	|	0.06
147.083	0.00	0.03	0.043	O	|	|	|	|	0.06
147.167	0.00	0.03	0.042	O	|	|	|	|	0.06
147.250	0.00	0.03	0.042	O	|	|	|	|	0.06
147.333	0.00	0.03	0.042	O	|	|	|	|	0.06
147.417	0.00	0.03	0.042	O	|	|	|	|	0.06
147.500	0.00	0.03	0.042	O	|	|	|	|	0.06
147.583	0.00	0.03	0.041	O	|	|	|	|	0.06

147.667	0.00	0.03	0.041	O	|	|	|	|	0.06
147.750	0.00	0.03	0.041	O	|	|	|	|	0.06
147.833	0.00	0.03	0.041	O	|	|	|	|	0.06
147.917	0.00	0.03	0.041	O	|	|	|	|	0.06
148.000	0.00	0.03	0.041	O	|	|	|	|	0.05
148.083	0.00	0.03	0.040	O	|	|	|	|	0.05
148.167	0.00	0.03	0.040	O	|	|	|	|	0.05
148.250	0.00	0.03	0.040	O	|	|	|	|	0.05
148.333	0.00	0.03	0.040	O	|	|	|	|	0.05
148.417	0.00	0.03	0.040	O	|	|	|	|	0.05
148.500	0.00	0.03	0.039	O	|	|	|	|	0.05
148.583	0.00	0.03	0.039	O	|	|	|	|	0.05
148.667	0.00	0.03	0.039	O	|	|	|	|	0.05
148.750	0.00	0.03	0.039	O	|	|	|	|	0.05
148.833	0.00	0.03	0.039	O	|	|	|	|	0.05
148.917	0.00	0.03	0.038	O	|	|	|	|	0.05
149.000	0.00	0.03	0.038	O	|	|	|	|	0.05
149.083	0.00	0.03	0.038	O	|	|	|	|	0.05
149.167	0.00	0.03	0.038	O	|	|	|	|	0.05
149.250	0.00	0.03	0.038	O	|	|	|	|	0.05
149.333	0.00	0.03	0.038	O	|	|	|	|	0.05
149.417	0.00	0.03	0.037	O	|	|	|	|	0.05
149.500	0.00	0.03	0.037	O	|	|	|	|	0.05
149.583	0.00	0.03	0.037	O	|	|	|	|	0.05
149.667	0.00	0.02	0.037	O	|	|	|	|	0.05
149.750	0.00	0.02	0.037	O	|	|	|	|	0.05
149.833	0.00	0.02	0.037	O	|	|	|	|	0.05
149.917	0.00	0.02	0.036	O	|	|	|	|	0.05
150.000	0.00	0.02	0.036	O	|	|	|	|	0.05
150.083	0.00	0.02	0.036	O	|	|	|	|	0.05
150.167	0.00	0.02	0.036	O	|	|	|	|	0.05
150.250	0.00	0.02	0.036	O	|	|	|	|	0.05
150.333	0.00	0.02	0.036	O	|	|	|	|	0.05
150.417	0.00	0.02	0.035	O	|	|	|	|	0.05
150.500	0.00	0.02	0.035	O	|	|	|	|	0.05
150.583	0.00	0.02	0.035	O	|	|	|	|	0.05
150.667	0.00	0.02	0.035	O	|	|	|	|	0.05
150.750	0.00	0.02	0.035	O	|	|	|	|	0.05
150.833	0.00	0.02	0.035	O	|	|	|	|	0.05
150.917	0.00	0.02	0.034	O	|	|	|	|	0.05
151.000	0.00	0.02	0.034	O	|	|	|	|	0.05
151.083	0.00	0.02	0.034	O	|	|	|	|	0.05
151.167	0.00	0.02	0.034	O	|	|	|	|	0.05
151.250	0.00	0.02	0.034	O	|	|	|	|	0.05
151.333	0.00	0.02	0.034	O	|	|	|	|	0.05
151.417	0.00	0.02	0.033	O	|	|	|	|	0.05
151.500	0.00	0.02	0.033	O	|	|	|	|	0.05
151.583	0.00	0.02	0.033	O	|	|	|	|	0.04
151.667	0.00	0.02	0.033	O	|	|	|	|	0.04
151.750	0.00	0.02	0.033	O	|	|	|	|	0.04
151.833	0.00	0.02	0.033	O	|	|	|	|	0.04
151.917	0.00	0.02	0.033	O	|	|	|	|	0.04
152.000	0.00	0.02	0.032	O	|	|	|	|	0.04
152.083	0.00	0.02	0.032	O	|	|	|	|	0.04
152.167	0.00	0.02	0.032	O	|	|	|	|	0.04
152.250	0.00	0.02	0.032	O	|	|	|	|	0.04
152.333	0.00	0.02	0.032	O	|	|	|	|	0.04
152.417	0.00	0.02	0.032	O	|	|	|	|	0.04
152.500	0.00	0.02	0.031	O	|	|	|	|	0.04
152.583	0.00	0.02	0.031	O	|	|	|	|	0.04
152.667	0.00	0.02	0.031	O	|	|	|	|	0.04
152.750	0.00	0.02	0.031	O	|	|	|	|	0.04
152.833	0.00	0.02	0.031	O	|	|	|	|	0.04
152.917	0.00	0.02	0.031	O	|	|	|	|	0.04
153.000	0.00	0.02	0.031	O	|	|	|	|	0.04
153.083	0.00	0.02	0.030	O	|	|	|	|	0.04
153.167	0.00	0.02	0.030	O	|	|	|	|	0.04
153.250	0.00	0.02	0.030	O	|	|	|	|	0.04
153.333	0.00	0.02	0.030	O	|	|	|	|	0.04
153.417	0.00	0.02	0.030	O	|	|	|	|	0.04
153.500	0.00	0.02	0.030	O	|	|	|	|	0.04

153.583	0.00	0.02	0.030	O					0.04
153.667	0.00	0.02	0.030	O					0.04
153.750	0.00	0.02	0.029	O					0.04
153.833	0.00	0.02	0.029	O					0.04
153.917	0.00	0.02	0.029	O					0.04
154.000	0.00	0.02	0.029	O					0.04
154.083	0.00	0.02	0.029	O					0.04
154.167	0.00	0.02	0.029	O					0.04
154.250	0.00	0.02	0.029	O					0.04
154.333	0.00	0.02	0.028	O					0.04
154.417	0.00	0.02	0.028	O					0.04
154.500	0.00	0.02	0.028	O					0.04
154.583	0.00	0.02	0.028	O					0.04
154.667	0.00	0.02	0.028	O					0.04
154.750	0.00	0.02	0.028	O					0.04
154.833	0.00	0.02	0.028	O					0.04
154.917	0.00	0.02	0.028	O					0.04
155.000	0.00	0.02	0.027	O					0.04
155.083	0.00	0.02	0.027	O					0.04
155.167	0.00	0.02	0.027	O					0.04
155.250	0.00	0.02	0.027	O					0.04
155.333	0.00	0.02	0.027	O					0.04
155.417	0.00	0.02	0.027	O					0.04
155.500	0.00	0.02	0.027	O					0.04
155.583	0.00	0.02	0.027	O					0.04
155.667	0.00	0.02	0.026	O					0.04
155.750	0.00	0.02	0.026	O					0.04
155.833	0.00	0.02	0.026	O					0.04
155.917	0.00	0.02	0.026	O					0.04
156.000	0.00	0.02	0.026	O					0.04
156.083	0.00	0.02	0.026	O					0.03
156.167	0.00	0.02	0.026	O					0.03
156.250	0.00	0.02	0.026	O					0.03
156.333	0.00	0.02	0.025	O					0.03
156.417	0.00	0.02	0.025	O					0.03
156.500	0.00	0.02	0.025	O					0.03
156.583	0.00	0.02	0.025	O					0.03
156.667	0.00	0.02	0.025	O					0.03
156.750	0.00	0.02	0.025	O					0.03
156.833	0.00	0.02	0.025	O					0.03
156.917	0.00	0.02	0.025	O					0.03
157.000	0.00	0.02	0.024	O					0.03
157.083	0.00	0.02	0.024	O					0.03
157.167	0.00	0.02	0.024	O					0.03
157.250	0.00	0.02	0.024	O					0.03
157.333	0.00	0.02	0.024	O					0.03
157.417	0.00	0.02	0.024	O					0.03
157.500	0.00	0.02	0.024	O					0.03
157.583	0.00	0.02	0.024	O					0.03
157.667	0.00	0.02	0.024	O					0.03
157.750	0.00	0.02	0.023	O					0.03
157.833	0.00	0.02	0.023	O					0.03
157.917	0.00	0.02	0.023	O					0.03
158.000	0.00	0.02	0.023	O					0.03
158.083	0.00	0.02	0.023	O					0.03
158.167	0.00	0.02	0.023	O					0.03
158.250	0.00	0.02	0.023	O					0.03
158.333	0.00	0.02	0.023	O					0.03
158.417	0.00	0.02	0.023	O					0.03
158.500	0.00	0.02	0.023	O					0.03
158.583	0.00	0.02	0.022	O					0.03
158.667	0.00	0.02	0.022	O					0.03
158.750	0.00	0.02	0.022	O					0.03
158.833	0.00	0.01	0.022	O					0.03
158.917	0.00	0.01	0.022	O					0.03
159.000	0.00	0.01	0.022	O					0.03
159.083	0.00	0.01	0.022	O					0.03
159.167	0.00	0.01	0.022	O					0.03
159.250	0.00	0.01	0.022	O					0.03
159.333	0.00	0.01	0.021	O					0.03
159.417	0.00	0.01	0.021	O					0.03

159.500	0.00	0.01	0.021	O	|	|	|	|	0.03
159.583	0.00	0.01	0.021	O	|	|	|	|	0.03
159.667	0.00	0.01	0.021	O	|	|	|	|	0.03
159.750	0.00	0.01	0.021	O	|	|	|	|	0.03
159.833	0.00	0.01	0.021	O	|	|	|	|	0.03
159.917	0.00	0.01	0.021	O	|	|	|	|	0.03
160.000	0.00	0.01	0.021	O	|	|	|	|	0.03
160.083	0.00	0.01	0.021	O	|	|	|	|	0.03
160.167	0.00	0.01	0.021	O	|	|	|	|	0.03
160.250	0.00	0.01	0.020	O	|	|	|	|	0.03
160.333	0.00	0.01	0.020	O	|	|	|	|	0.03
160.417	0.00	0.01	0.020	O	|	|	|	|	0.03
160.500	0.00	0.01	0.020	O	|	|	|	|	0.03
160.583	0.00	0.01	0.020	O	|	|	|	|	0.03
160.667	0.00	0.01	0.020	O	|	|	|	|	0.03
160.750	0.00	0.01	0.020	O	|	|	|	|	0.03
160.833	0.00	0.01	0.020	O	|	|	|	|	0.03
160.917	0.00	0.01	0.020	O	|	|	|	|	0.03
161.000	0.00	0.01	0.020	O	|	|	|	|	0.03
161.083	0.00	0.01	0.019	O	|	|	|	|	0.03
161.167	0.00	0.01	0.019	O	|	|	|	|	0.03
161.250	0.00	0.01	0.019	O	|	|	|	|	0.03
161.333	0.00	0.01	0.019	O	|	|	|	|	0.03
161.417	0.00	0.01	0.019	O	|	|	|	|	0.03
161.500	0.00	0.01	0.019	O	|	|	|	|	0.03
161.583	0.00	0.01	0.019	O	|	|	|	|	0.03
161.667	0.00	0.01	0.019	O	|	|	|	|	0.03
161.750	0.00	0.01	0.019	O	|	|	|	|	0.03
161.833	0.00	0.01	0.019	O	|	|	|	|	0.03
161.917	0.00	0.01	0.019	O	|	|	|	|	0.03
162.000	0.00	0.01	0.019	O	|	|	|	|	0.03
162.083	0.00	0.01	0.018	O	|	|	|	|	0.02
162.167	0.00	0.01	0.018	O	|	|	|	|	0.02
162.250	0.00	0.01	0.018	O	|	|	|	|	0.02
162.333	0.00	0.01	0.018	O	|	|	|	|	0.02
162.417	0.00	0.01	0.018	O	|	|	|	|	0.02
162.500	0.00	0.01	0.018	O	|	|	|	|	0.02
162.583	0.00	0.01	0.018	O	|	|	|	|	0.02
162.667	0.00	0.01	0.018	O	|	|	|	|	0.02
162.750	0.00	0.01	0.018	O	|	|	|	|	0.02
162.833	0.00	0.01	0.018	O	|	|	|	|	0.02
162.917	0.00	0.01	0.018	O	|	|	|	|	0.02
163.000	0.00	0.01	0.018	O	|	|	|	|	0.02
163.083	0.00	0.01	0.017	O	|	|	|	|	0.02
163.167	0.00	0.01	0.017	O	|	|	|	|	0.02
163.250	0.00	0.01	0.017	O	|	|	|	|	0.02
163.333	0.00	0.01	0.017	O	|	|	|	|	0.02
163.417	0.00	0.01	0.017	O	|	|	|	|	0.02
163.500	0.00	0.01	0.017	O	|	|	|	|	0.02
163.583	0.00	0.01	0.017	O	|	|	|	|	0.02
163.667	0.00	0.01	0.017	O	|	|	|	|	0.02
163.750	0.00	0.01	0.017	O	|	|	|	|	0.02
163.833	0.00	0.01	0.017	O	|	|	|	|	0.02
163.917	0.00	0.01	0.017	O	|	|	|	|	0.02
164.000	0.00	0.01	0.017	O	|	|	|	|	0.02
164.083	0.00	0.01	0.016	O	|	|	|	|	0.02
164.167	0.00	0.01	0.016	O	|	|	|	|	0.02
164.250	0.00	0.01	0.016	O	|	|	|	|	0.02
164.333	0.00	0.01	0.016	O	|	|	|	|	0.02
164.417	0.00	0.01	0.016	O	|	|	|	|	0.02
164.500	0.00	0.01	0.016	O	|	|	|	|	0.02
164.583	0.00	0.01	0.016	O	|	|	|	|	0.02
164.667	0.00	0.01	0.016	O	|	|	|	|	0.02
164.750	0.00	0.01	0.016	O	|	|	|	|	0.02
164.833	0.00	0.01	0.016	O	|	|	|	|	0.02
164.917	0.00	0.01	0.016	O	|	|	|	|	0.02
165.000	0.00	0.01	0.016	O	|	|	|	|	0.02
165.083	0.00	0.01	0.016	O	|	|	|	|	0.02
165.167	0.00	0.01	0.016	O	|	|	|	|	0.02
165.250	0.00	0.01	0.015	O	|	|	|	|	0.02
165.333	0.00	0.01	0.015	O	|	|	|	|	0.02

165.417	0.00	0.01	0.015	O	|	|	|	|	0.02
165.500	0.00	0.01	0.015	O	|	|	|	|	0.02
165.583	0.00	0.01	0.015	O	|	|	|	|	0.02
165.667	0.00	0.01	0.015	O	|	|	|	|	0.02
165.750	0.00	0.01	0.015	O	|	|	|	|	0.02
165.833	0.00	0.01	0.015	O	|	|	|	|	0.02
165.917	0.00	0.01	0.015	O	|	|	|	|	0.02
166.000	0.00	0.01	0.015	O	|	|	|	|	0.02
166.083	0.00	0.01	0.015	O	|	|	|	|	0.02
166.167	0.00	0.01	0.015	O	|	|	|	|	0.02
166.250	0.00	0.01	0.015	O	|	|	|	|	0.02
166.333	0.00	0.01	0.015	O	|	|	|	|	0.02
166.417	0.00	0.01	0.014	O	|	|	|	|	0.02
166.500	0.00	0.01	0.014	O	|	|	|	|	0.02
166.583	0.00	0.01	0.014	O	|	|	|	|	0.02
166.667	0.00	0.01	0.014	O	|	|	|	|	0.02

Remaining water in basin = 0.01 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 1.649 (CFS)
Total volume = 8.943 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Appendix 8: Source Control

This section will be completed and addressed at the time of the final WQMP submittal

Pollutant Sources/Source Control Checklist

Appendix 9: O&M

This section will be completed and addressed at the time of the final WQMP submittal

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Appendix 10: Educational Materials

This section will be completed and addressed at the time of the final WQMP submittal

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information