

Appendix A

Storm Drainage Maintenance Plan



City of Monterey

Storm Drainage Maintenance Plan (SDMP)

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List of Acronyms

ACOE	U.S. Army Corps of Engineers
BMP	Best Management Practice
CalEPA	California Environmental Protection Agency
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CDFG	California Natural Resources Agency
CDP	Coastal Development Permit
EPA	Environmental Protection Agency
JD	Jurisdictional Determination
NPDES	National Pollutant Discharge Elimination System
PWS	Public Works Supervisor
RWQCB	Central Coast Regional Water Quality Control Board
SDMP	Storm Drainage Maintenance Plan
SWRCB	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service
WDRs	Waste Discharge Requirements

1. Executive Summary

Stormwater drainage systems serve multiple purposes: conveying stormwater and urban runoff downstream; protecting property from flooding during high-flow storm events; protecting water quality by filtering pollutants from urban runoff; and sustaining wildlife. To that end, modern stormwater facilities must integrate conventional flood control strategies for large, infrequent rain events with stormwater quality strategies and natural resource protection.

The City of Monterey (City) is responsible for maintaining adequate drainage facilities to manage stormwater runoff in an efficient, economic, environmentally, and aesthetically acceptable manner for the protection of property and life. The City's stormwater system conveys stormwater to protect the life and property of its citizens from potential flooding. The system also serves to convey urban runoff from development such as irrigated landscape areas, driveways, and streets that flow into drainage facilities and, ultimately, to the Monterey Bay and Pacific Ocean. The City's stormwater system helps protect water quality; and open channels can support natural resources including wetland habitat. The long-term performance of the entire system is dependent upon ongoing and proper maintenance.

This Storm Drainage Maintenance Plan (SDMP) describes specific maintenance methods and procedures to guide the City's annual maintenance activities to ensure the system's functioning. The SDMP provides detailed methods for maintaining the surface drainage system, which is comprised of drainage channels and Structural Best Management Practices (BMPs) such as detention basins, which are the responsibility of the City's Public Works Department. The SDMP is also the City's manual to guide the performance of authorized activities under permits issued to the City by applicable state and federal agencies with regulatory authority over biological and aquatic resources. These state and federal agencies include the US Environmental Protection Agency (EPA), US Army Corps of Engineers (ACOE), US Fish and Wildlife Service (USFWS), State Water Resources Control Board (SWRCB)/Central Coast Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and California Coastal Commission (CCC).

This SDMP provides a comprehensive approach to identify and regulate maintenance within the surface drainage system facilities analyzed as a part of this project. It will govern future maintenance activities needed to allow the City's storm water system to effectively convey flood water, provide for public safety and the protection of property. This document also establishes an integrated approach to maintenance by outlining the specific methods and procedures to minimize impacts to water quality and natural resources.

2. Introduction

The City of Monterey is responsible for the water quality of storm water runoff into and discharged from its storm drainage collection system, and maintaining and operating the City's storm drainage control facilities. The City's Public Works Department includes engineers and environmental compliance staff who collaborate to ensure the storm and surface drainage system is functioning to meet environmental requirements and to provide public health, safety, and general welfare benefits to the City's residents.

As defined by Municipal Code Chapter 31.5-6(t), the City Storm Drain System are the publicly-owned facilities operated by the City by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures which are within the City and are not part of a publicly owned treatment works as defined at 40 CFR §403.3(q). The storm drainage collection system is comprised of both surface and subsurface features.

2.1. Background – Origin of the Program

The Storm Drainage Maintenance Plan (Project) is intended, in part, to address concerns from 2009 audits the Environmental Protection Agency (EPA) and Central Coast Regional Water Quality Control Board (RWQCB) related to the City completing work without proper regulatory permits or certifications.

Prior to 2010, the City regularly maintained the storm drain system, including facilities within natural waterways, to maintain existing facilities in good, safe condition, at design capacity. At that time, limits of the agencies' jurisdictions were not uniformly identified and the need to have permits in hand for many of the maintenance activities were not consistently implemented.

In 2010 and 2013, the City received notices from the EPA and RWQCB requesting that the City complete a jurisdictional determination to identify jurisdictional waters and identify permitting needs for work that may affect jurisdictional waterways. The City ceased routine maintenance activities within potentially jurisdictional waterways in response to the notifications.

The City is working to comply with this direction and anticipates developing a citywide storm drainage maintenance program that will require work to be completed in phases. The City's long-term goal is to identify jurisdictional aquatic resources within and adjacent to all City-maintained structures and develop a City-wide SDMP that supports a watershed approach to drainage maintenance planning and implementation, while maintaining facilities in good condition and minimizing the risk of flooding and property damage.

However, certain sites urgently require maintenance that cannot wait for a City-wide comprehensive program to be finalized. Thus, as the first phase of the project, the City has identified the highest priority sites that require maintenance as soon as possible. Many of these sites experienced flooding, clogging, excessive sedimentation, or washouts during the above

average rains of the 2016-2017 season. This project identifies jurisdictional areas, maintenance needs and techniques, and resource protections for these priority sites.

2.2.Purpose and Need

The purpose of the Storm Drainage Maintenance Plan is to guide the City's oversight responsibilities and management of its storm drainage systems by outlining annual drainage maintenance planning and implementation activities over a 5-year period. This SDMP identifies specific maintenance locations and activities to be conducted over a 5-year period that the City can use to secure the necessary regulatory permit coverages and approvals to guide their work. Under the state and federal regulations, maintenance activities described in this SDMP that could impact wetland habitat and/or species protected by state and federal endangered species acts would require one or more of the following permits or approvals.

404 Permit

Under Section 404 of the federal Clean Water Act (CWA), a permit issued by the Corps would be required for maintenance proposals that would affect "waters of the United States". The City is proposing to obtain an Individual 404 Permit under which it would conduct future maintenance activities pursuant to the proposed Master Program.

401 Certification

A Section 401 Water Quality Certification issued by the RWQCB would be required for all maintenance proposals within waters of the U.S. The City is proposing to obtain a five-year 401 Certification for the 29 maintenance sites.

Wastewater Discharge Requirements

Waste Discharge Requirements (WDRs) are required from the RWQCB when a Water of the State (instead of a Water of the U.S.) may experience a water quality impact from the project. This could include a project-specific WDR (in lieu of a 401 Certification) or a dewatering WDR. Dewatering is necessary when water within the storm water facility must be removed so that maintenance may be accomplished. 27 of the 29 maintenance sites are Waters of the U.S. The two sites that are not considered Waters of the U.S. (under USACE jurisdiction) include Site 33 Garden Court Basin and Site 29 Virgen/Grant St. Swale.

1605 Streambed Alteration Agreement

A Section 1605 Streambed Alteration Agreement issued by CDFG would be required for maintenance proposals that would impact streambeds. The City is proposing to obtain a Master 1605 Streambed Alteration Agreement under which it would conduct future maintenance activities pursuant to the proposed Master Program.

National Pollutant Discharge Elimination System Permit(s)

This City's actions will need to comply with applicable sections of the Water Quality Order No. 2013-0001-DWQ (National Pollutant Discharge Elimination System (NPDES) General Permit No.

CAS0000004 WDRs for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)). Also as applicable, the total area of land disturbance annual may require coverage under the SWRCB Construction General Permit No. 20009-0009-DWQ permitto conduct maintenance when water quality impacts such as land disturbance may occur during maintenance.

Coastal Development Permit

A Coastal Development Permit (CDP) issued by the California Coastal Commission would be required for maintenance within the Coastal Commission Permit jurisdiction and the Deferred Certification Areas of the Coastal Zone.

2.3. Plan Goals and Objectives

The objectives of the proposed project are to:

1. Conduct and obtain a Jurisdictional Determination (JD) for the location of Waters of the US aquatic resources within the City of Monterey that supports a watershed approach to drainage maintenance planning and implementation.
2. Develop a SDMP that identifies specific annual maintenance projects to be completed over a five-year period.
3. Obtain necessary regulatory permits/coverages for maintenance projects to span a five-year period.
4. Conduct a CEQA analysis on the JD and SDMP.

This SDMP is the work product associated with the second objective. The goal of the SDMP is to identify near-term maintenance activities that balance the need to restore conveyance capacity with strategies to protect water quality and biological resources. The SDMP objectives to meet that goal include:

- Providing an inventory of conditions at 29 high priority storm drainage maintenance locations within the City's storm drainage system;
- Identifying the methods by which the storm system locations will be maintained; and
- Outlining the authorized activities as a guide to the City, as well as state and federal agencies with regulatory authority over the biological resources and water quality that could be affected by the maintenance.

3. Storm Water Drainage System Maintenance Locations

Over the 5-year permit period maintenance activities are proposed at 29 priority locations within approximately 6,455 miles of stormwater facilities within the City's storm drainage system. All the priority locations are within the City's surface system, specifically within the channel network that conveys stormwater runoff to the Monterey Bay. These channels have been grouped according to the larger drainage basins in which they are located. Figure 1 identifies each of the drainage basins within which maintenance activities are proposed.

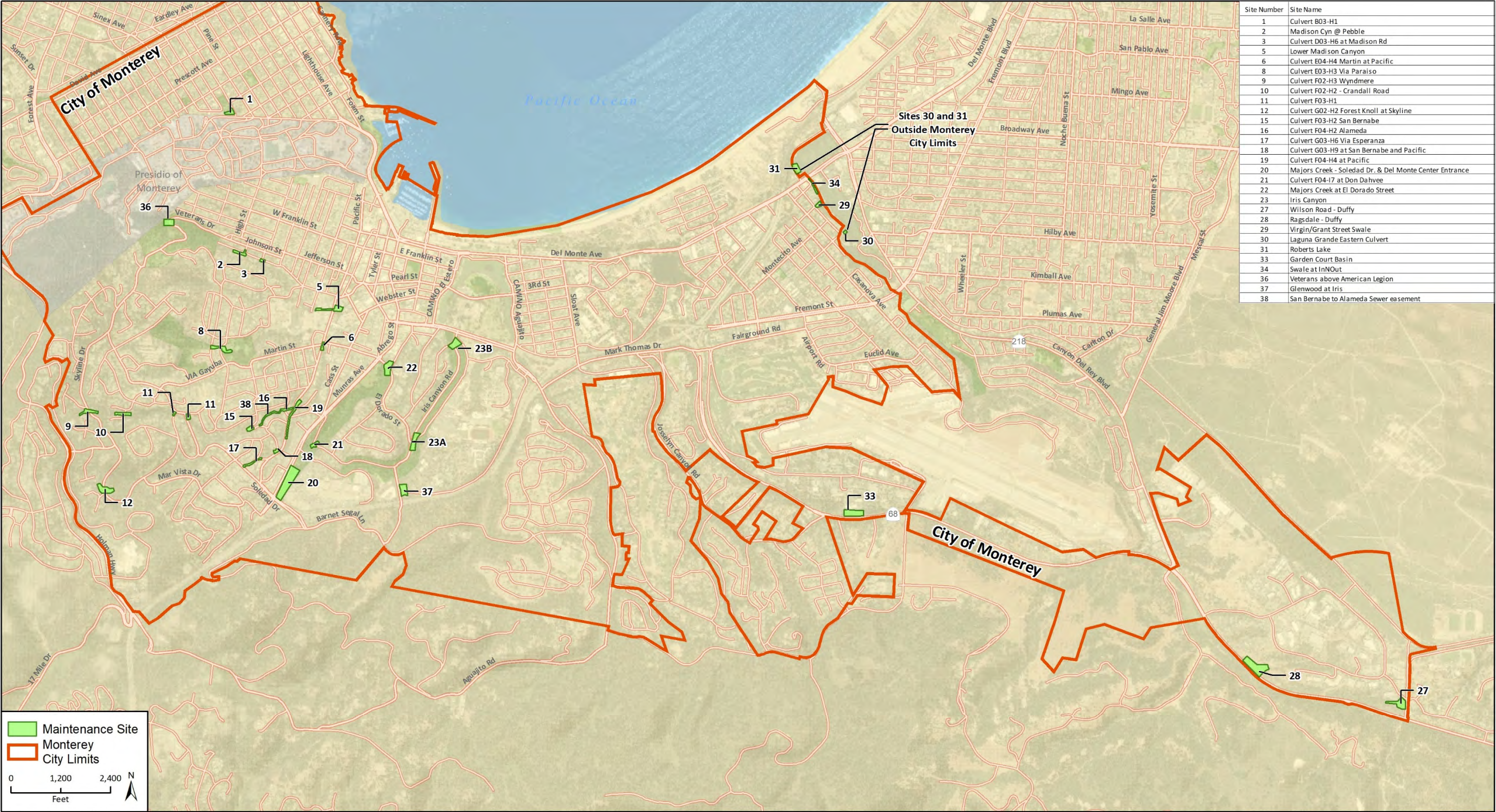
Thirty-eight (38) maintenance sites were originally proposed and are shown in Figure 1. That number was reduced to 29 when nine sites were removed from inclusion in the SDMP, generally due to access issues (private property or the City has no easement). Additionally, some sites are under contract for analysis with another firm and are not addressed in this report. These sites will be included in the SDMP at a later date, when access can be arranged, and additional analysis has been completed. The maintenance site numbers are retained from the previous analysis accounting for 29 projects numbered between 1 and 38.

Detention Ponds/Structural BMPs

Detention Ponds are constructed features that typically collect runoff (and associated sediment, debris and trash), from both the surface and subsurface storm drain system. Detention Ponds typically include an overflow system, outlet, or spillway to convey stormwater runoff downstream when the pond capacity is exceeded.

For tracking purposes, a number has been assigned to each of the priority maintenance locations. Table 1 lists each of the 29 priority maintenance locations, its type and the drainage basin within which it is located. Detailed maps illustrating the location of each priority maintenance location and the proposed maintenance area are contained in Appendix A.

Figure 1. Storm Water Drainages and Facility Locations



Imagery provided by Microsoft Bing and its licensors © 2018. Storm Water Facilities 11x17

Table 1. Storm Water Drainage Maintenance Facility Locations¹

Site Number	Drainage Basin	Site Name	Total Maintenance Length (ft)	Channe Type Length		Estimated Disturbance Width (ft)	Coastal Zone?
				Concrete Bottom	Earthen Bottom		
1	NEW MONTEREY-DRAKE	Culvert B03-H1 at Oak Newton Park	110	0	110	5	No
2	HARTNELL DRAINAGE	Madison Canyon (armoring reach near Pebble Street) and Culvert D03-H4	270	0	270	5 to 20	No
3	HARTNELL DRAINAGE	Culvert D03-H6 - Madison south of Manzanita	115	0	115	10 to 15	No
4	HARTNELL DRAINAGE	Culvert E04-H1 - Herrman Drive	Not in Plan				
5	HARTNELL DRAINAGE	Lower Madison Canyon (behind Fire trailers downstream to Library reach) & culvert E04-H3	215	0	215	15	No
6	HARTNELL DRAINAGE	Culvert E04-H4 - Martin at Pacific to Library	95	0	95	25	No
7	HARTNELL DRAINAGE	Culvert E04-H6 between Hartnell and Munras	Not in Plan				
8	HARTNELL DRAINAGE	Culvert E03-H3 - near Via Paraiso Park	505	0	505	20	No
9	HARTNELL DRAINAGE	Culvert F02-H3 - Wyndmere	35	0	35	40	No
10	HARTNELL DRAINAGE	Culvert F02-H2 - Crandall Road	90	0	90	40	No
11	HARTNELL DRAINAGE	Culvert F03-H1 Mar Vista at Soledad	55	0	55	25 to 40	No
12	HARTNELL DRAINAGE	Culvert G02-H2 at Forest Knoll and Skyline	245	0	245	20	No
13	HARTNELL DRAINAGE	Culvert G02-H4 at Skyline and Mar Vista	Not in Plan				
14	HARTNELL DRAINAGE	Hartnell Creek at Soledad Place & Soledad Drive & Culvert G03-H4	Not in Plan				
15	HARTNELL DRAINAGE	Culvert F03-H2 San Bernabe	130	0	130	15	No
16	HARTNELL DRAINAGE	Culvert F04-H2 - Alameda	135	0	135	10	No
17	HARTNELL DRAINAGE	Culvert G03-H6 at Via Esperanza	440	0	440	25	No
18	HARTNELL DRAINAGE	Culvert G03-H9 at San Bernabe & Pacific	100	0	100	40	No
19	HARTNELL DRAINAGE	Culvert F04-H4 at Pacific	925	0	925	10	
20	EL ESTERO DRAINAGE	Majors Creek (upstream reach between Soledad Drive and Del Monte Center entrance)	460	0	460	40	No
21	EL ESTERO DRAINAGE	Culvert F04-I7 at Don Dahvee	120	0	120	15	No
22	EL ESTERO DRAINAGE	Majors Creek at El Dorado Street (Downstream) & Culverts E05-H1 and F05-H2	300	0	300	20	No
23	EL ESTERO DRAINAGE	Iris Canyon, between Via Mirada and El Dorado	100	0	100	35 to 75	No
24	EL ESTERO DRAINAGE	Lagunita Mirada - Duffy	Not in Plan				
25	EL ESTERO DRAINAGE	Aguajito Creek between Castro Way and Monhollan Road	Not in Plan				
26	EL ESTERO DRAINAGE	Washerwomans Pond - Duffy	Not in Plan				
27	LAGUNA GRANDE	Wilson Road Detention Basin	NA	NA	NA	150	No
28	LAGUNA GRANDE	Highway 68 (Lower Ragsdale) detention basin	NA	NA	NA	100	No
29	LAGUNA GRANDE	Unnamed drainage path at Virgin & Grant Streets (leads to Laguna Grande Lake)	70	0	70	30	Yes
30	LAGUNA GRANDE	Roberts Lake/Laguna Grande Eastern Culvert	80	0	80	20	Yes
31	LAGUNA GRANDE	Roberts Lake/Laguna Grande West Outfall	350	0	350	25 to 50	Yes
32	DEL MONTE LAKE (NPS)	Culvert G07-H1 at Josselyn Cyn Rd.	Not in Plan				
33	DEL MONTE LAKE (NPS)	Garden Court Basin	NA	NA	NA	150	No
34	LAGUNA GRANDE	In-N-OutSwale	425	0	425	35	Yes
35	HARTNELL DRAINAGE	Via Del Rey	Not in Plan				
36	HARTNELL DRAINAGE	Veterans Drive above American Legion	180	0	180	5	No
37	EL ESTERO DRAINAGE	Glenwood Circle at Iris	195	0	195	10 to 55	No
38	HARTNELL DRAINAGE	San Bernabe to Alameda Sewer Easement	710	0	710	40	No

¹ Thirty-eight (38) maintenance sites were originally proposed, and that number was reduced to 29 when the nine sites shaded in gray were removed from inclusion in the SDMP, generally due to access issues (private property or the City has no easement). These sites will be included in the SDMP at a later date, when access can be arranged, and additional analysis has been completed. The maintenance site numbers are retained from the previous analysis accounting for 29 projects numbered between 1 and 38.

4. Maintenance Methods

The primary maintenance method to maximize stormwater conveyance and reduce flood risk is removal of accumulated sediment, debris, trash, and vegetation with the potential to impede flow. Specific sediment and vegetation removal techniques and equipment will vary based upon the site-specific characteristics at each facility, such as: channel size (width and depth); channel type (concrete or earthen); flow characteristics; surrounding land uses; vegetation type and extent; and access constraints. Weather, time constraints, and/or restrictions related to the rainy season or sensitive bird breeding seasons may also affect the selected maintenance methodology and equipment selection to reduce costs and minimize indirect impacts.

4.1. Equipment Methods

The City, or private contractors, will maintain the storm drain facilities with City-owned or leased equipment. Equipment that cannot be accommodated within the designated access area identified on the Appendix A site maps, will not be used.

4.1.1. Heavy Equipment

The types of heavy mechanical, earth-moving equipment used for maintenance will include, but will not be limited to: 1-ton dump truck; 5-ton and larger dump truck; Backhoe; Loader; Skid Steer or bobcat; DR-mower; Wood chipper; All-terrain Vehicle; Excavator; Vactor; Portable Pump; and/or Bulldozer.

Equipment selection will be based upon the amount of material to remove and the facility's site and access constraints.

4.1.2. Hand-Tools

Channel maintenance can also be performed manually by crews using hand tools, which will include, but will not be limited to: Chainsaw; Clippers; Mowers; Weed Whips; and/or Hand-carried buckets/bales.

The use of hand-tools is limited to removal of small-scale vegetation or trash/debris removal conducted by a crew of 1-2 members. Hand-tools are also appropriate for use in locations where access to and within the channel is limited to on-foot.

4.2. Maintenance Methodologies and Techniques

Maintenance activities may affect the entire facility (bank to bank) or occur within a more narrow portion of the channel where active flow occurs along the bottom of the facility. In most cases, maintenance is expected to occur along the bottom of the facilities and approximately two feet up the adjacent banks to ensure the ability of the channels to transport floodwaters and prevent flooding.

4.2.1. Mechanical Maintenance

Mechanical maintenance will employ heavy equipment typical of excavation activities to remove sediment, silt, vegetation, and debris. The type of heavy equipment used at each site will depend upon the type and amount of material to be removed along with the facilities' site and access constraints, as identified in the Appendix A site maps.

For example, smaller equipment, such as a 4-foot wide skid steer, will typically be used for narrow and shorter channel lengths that are less than five feet wide and less than 1,000 feet long.

A backhoe will typically be used from the top of bank to clear accumulated vegetation and debris from the channel bottom or at culvert inlets and outlets.

Restoration or repair work such as slope stabilization and general improvements to enhance the stability and function of a facility will likely be performed with heavy equipment.

For Detention Ponds, the inlets, outlets, forebays, low flow channel liners, and energy dissipaters will be repaired as needed. Routine removal of sediment within Detention Pond forebays is anticipated. Non-routine maintenance will occur when sediment accumulation occupies more than 20% of the design capacity of the Detention Pond facility, as determined by the annual field survey (Section 5.1).

4.2.2. Non-Mechanical Maintenance

Routine maintenance of the surface channel system consists of trash and debris pickup and removal. Mowing and removal of vegetation such as shrubs and trees will be selectively performed to remove obstructions from the conveyance channel. Shrub and tree thinning will be performed with care to prevent soil destabilization. All dead trees and trees in the flow line with the potential to restrict flow, will be removed. This work will usually be performed with hand tools such as clippers and chainsaws.

Non-routine non-mechanical maintenance includes repair and replanting of eroded areas in detention basins and channels.

4.3. Access

The City's Public Works Director oversees the inspection and maintenance of all City-owned storm and surface water management systems within the City. The Public Works Department has the right of entry on any property within the City to perform inspections per the Monterey Municipal Code 31.5-22.

Access routes for each site are identified on the Appendix A site maps. Weeds will be removed from access areas to prevent introduction of invasive species and keep the path clear.

4.4. Staging and Stockpiling

All materials removed from the storm water facilities will be placed in dump trucks and hauled to an acceptable and appropriate landfill site, such as the Monterey Peninsula Landfill in Marina. Materials will not be stored on site. If temporary storage of removed material is required, temporary stockpile BMPs will be used to properly secure (contain and cover) the materials until they may be removed.

4.5. Runoff Control

The City will implement appropriate erosion prevent, sediment control, and materials management BMPs for the maintenance activities to minimize erosion and sediment and material movement, and reduce pollutants from entering the storm drain system to the maximum extent practicable. If dewatering is necessary prior to disposal of removed material, the dewatering will be managed to prevent excess water from flowing back into storm drains or creeks.

5. Maintenance Program

Maintenance pursuant to the SDMP will be conducted on an annual basis in accordance with the terms and conditions of the master permits, which include: a Coastal Development Permit (CDP); 401 Certification from the RWQCB (or WDRs); 1605 Streambed Alteration Agreement from CDFG; and 404 Permit from the Corps.

5.1. Annual Maintenance Needs Determination Process

5.1.1. Field Survey

The identified maintenance locations will be inspected by City staff once per year and after major storm events. The field survey will evaluate the functional and aesthetic aspects of each site to identify the necessary maintenance activities. The functional evaluation will consider performance and safety of the storm water facility whereas the aesthetic evaluation will consider any activities that would maintain or improve public acceptance of the facility.

Detention basins will be inspected to ensure that the basin continues to function as intended. Inlets and outlets will be examined for signs of clogging, erosion, slumping, excessive sedimentation levels, overgrowth, embankment and spillway integrity, and damage to any structural element.

During the inspections, City staff will identify contaminated stormwater, such as the presence of floating and suspended materials, oil and grease, discoloration, turbidity, odor, foam, or unusual vegetative growth.

If any portion of the storm sewer system looks or smells suspicious like gas or oil, chemical-smelling sludges, septic, etc., it will be reported and investigated as an illicit discharge in accordance to section E-9 of SWRCB Water Quality Order No. 2013-001-DWQ..

5.1.2. Prioritization

The field survey results will be used to prioritize the removal of debris, trash, sediment, overgrown or weedy vegetation at each storm water facility.

Major capital replacements such as repair of a failing retaining wall or reconstruction of an outlet structure, will similarly be prioritized based on the field survey results. Implementation of the larger capital replacement projects are not a part of this Plan at this time, and will be subject to budget availability and programming and prioritization outside this effort.

5.2. Annual Maintenance Plan

The Annual Maintenance Plan includes a description of each maintenance project to be conducted in the fall, before the rainy season begins, and represents the environmental documentation under CEQA. The Annual Maintenance Plan will summarize the results of the field survey, prioritization and a schedule for implementation.

5.2.1. Public Review

An Annual Maintenance Plan Summary will be posted on the City website during City's annual Capital Improvement Program (CIP) review and approval process.

5.3. Maintenance Implementation

Maintenance activities would be completed annually at 29 sites for a period of five years, with work activities lasting between one day and two weeks per site, per year. As a result of biological and weather constraints, it is anticipated that maintenance will occur during daytime hours and during the summer and early fall (dry season, May 1-September 30) prior to the rainy season (October 1 to April 30). Regulatory bird breeding season (typically from March to September) may also limit the time and duration which maintenance can be performed.

Following completion of the maintenance activities and removal of all spoils and equipment, site close-out activities will, as appropriate, include: installation of erosion control devices such as straw wattles, geotextile blankets/nets, and/or hydroseed; implementation of on-site erosion control measures; and/or securing the site from public access.

5.4. Maintenance Reporting

The goal of maintenance reporting is to create a record that tracks all cleaning activities. The records, updated annually, will identify (1) when and which facilities have been inspected and cleaned, (2) document any unusual flows or illicit discharges observed, and (3) any follow-up actions or referrals that were taken.

An Annual Maintenance Report will document the maintenance activities and mitigation measures which took place in the preceding year and outline the maintenance planned for the coming year. This same information will be provided to the appropriate state and federal agencies, if required

by regulatory permit coverage terms. Maintenance activities will be tracked and summarized in accordance to section E-11f of SWRCB Water Quality Order No. 2013-001-DWQ.

The Annual Maintenance Report is an opportunity to identify and program structural retrofits and design changes to specific facilities to improve their effective stormwater control function as well as to improve and/or simplify their long-term maintenance requirements. Modifications, if necessary, should be identified and incorporated into the following year's program as appropriate.

6. Emergency Maintenance

In the event of an emergency, the City may need to conduct maintenance activities which are not included in an annual maintenance plan. The City's Code and California Environmental Quality Act (CEQA) provide the following definitions of emergency situations. City Code Chapter 11 defines a local emergency as "the duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the City caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, earthquake, or other conditions." The purposes of Chapter 11 in the City Code is "to provide for the planning and response to major emergencies within the City of Monterey and governmental agencies contracting with the City for emergency services, and to provide assistance to and coordination of emergency response functions of the City with other affected agencies, jurisdictions, organizations, and persons within the Monterey County Operational Area, Office of Emergency Services Region(s) and the State of California."

For the purposes of CEQA, "Emergency" means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services.

As such, when a significant storm event is considered imminent and conditions within a part of a storm water conveyance system present a clear and imminent danger requiring immediate action to avoid or minimize a threat of loss or damage to life, property or essential public services, the City may undertake maintenance on an emergency basis.

Emergency maintenance within environmentally sensitive lands may be authorized in accordance with Emergency Permits from the respective agencies that have jurisdictional authority of those lands/drainages. If this were to occur, the City would communicate with the applicable agencies to identify Emergency Permit needs and pursue those accordingly.

7. References

City of Golden Stormwater Drainage Maintenance Plan, Revised May 2017,
<https://www.cityofgolden.net/media/StormwaterDrainageMtcePlan.pdf>

City of Monterey Municipal Code, Chapter 11 Emergency Management and Chapter 31.5 (3387, 05/07) Storm Water Management, <http://www.codepublishing.com/CA/Monterey/>

Santa Clara Valley Urban Runoff Pollution Prevention Program Public Agency Activities Control Measures, Performance Standard and Supporting Documents for Storm Drain System Operation and Maintenance (Final Draft – December 19, 1996) Model Performance Standard, (Revised March 1, 1999)

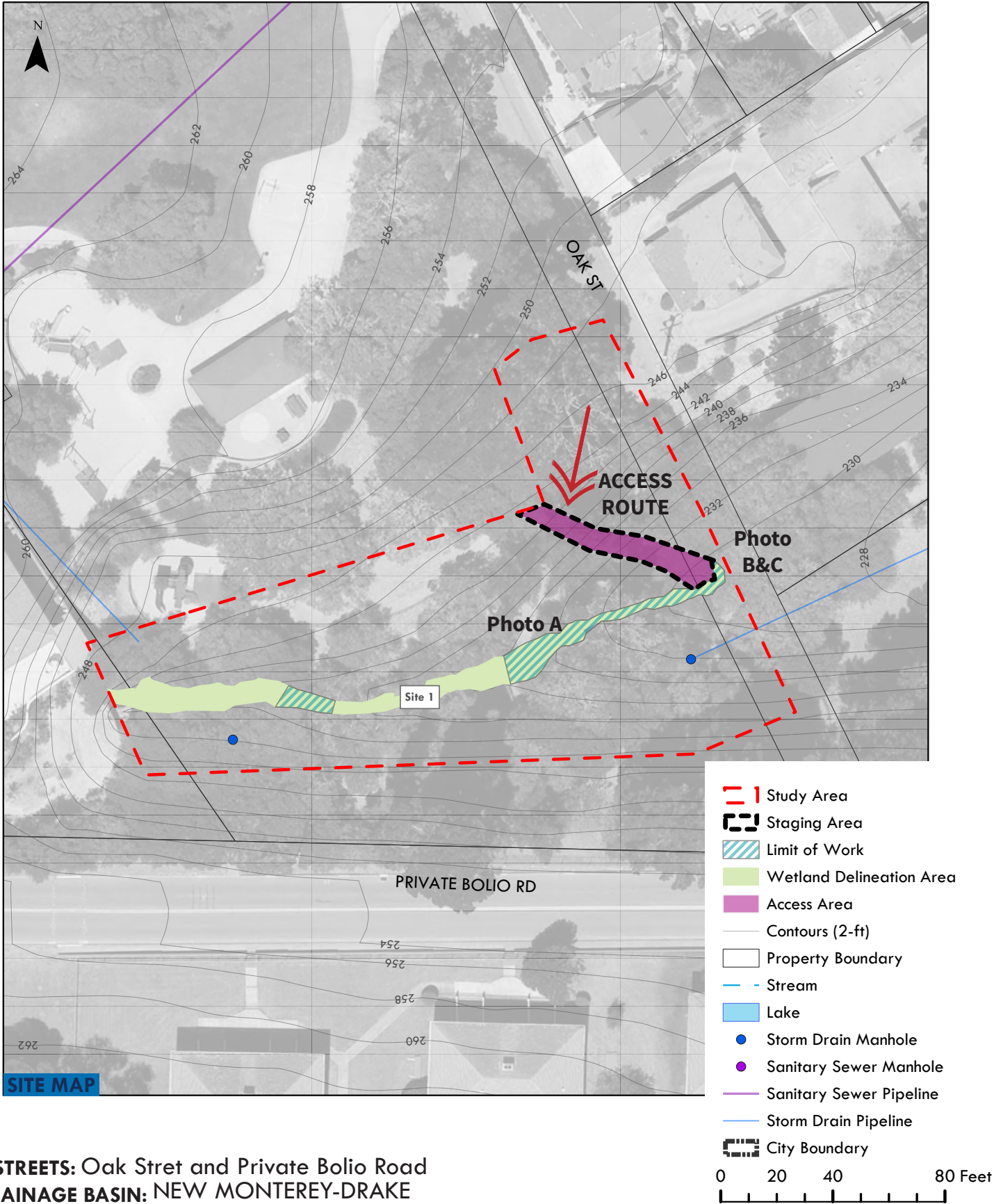
City of San Diego Master Storm Water System Maintenance Program, Revised October 2011

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Appendix A

Site Maps

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes an earthen channel flowing through Oak Newton Park. The channel is approximately 2-3-ft wide at its base, extending up to an open channel width of approximately 8-ft, with outlet through a trash rack and culvert. Vegetation is mostly grass with some trees with 60% vegetative cover observed on banks. Some rock and accumulated sediment was observed along the channel bottom. The adjacent land use includes park land, the Presidio of Monterey, single family residences, and roadways. There were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. No flood or erosion threats were observed. Vegetation around the culvert inlet was short, allowing adequate access and visibility.

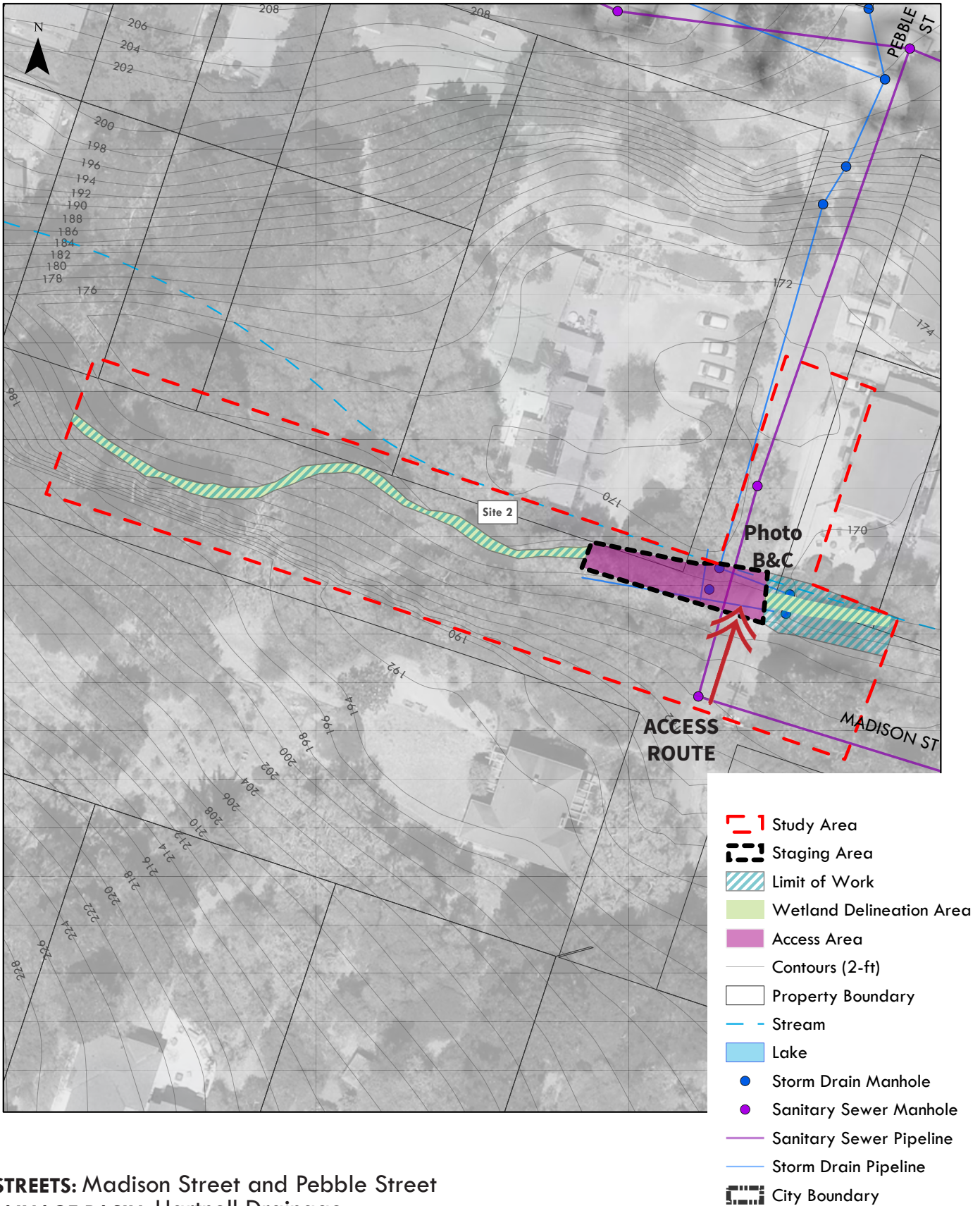
ENGINEERING ANALYSIS

The growth of vegetation in the inlet channels was not preventing access to evaluate condition and maintain facilities nor is it currently reducing the capacity of the system. Sediment accumulation in the channel and vegetation accumulation on the trash rack are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom and the trash rack will be removed annually. The site will be accessed from a park pathway to the northern channel bank. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 2-3-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 13, 2017. Site includes an earthen channel flowing through undeveloped land, and between residential properties and Madison Street. The channel is approximately 5-ft wide at its base, with near vertical banks extending up to an open channel width of approximately 5-ft. Vegetation is mostly grass with 80% vegetative cover observed on banks. Erosion was observed on the downstream right channel bank (photo C) where the channel passes through the backyard of a residential property. No significant rock or accumulated sediment was observed along the channel bottom. Within the limit of work, there were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. Vegetation around the culvert inlet was short, allowing adequate access and visibility.

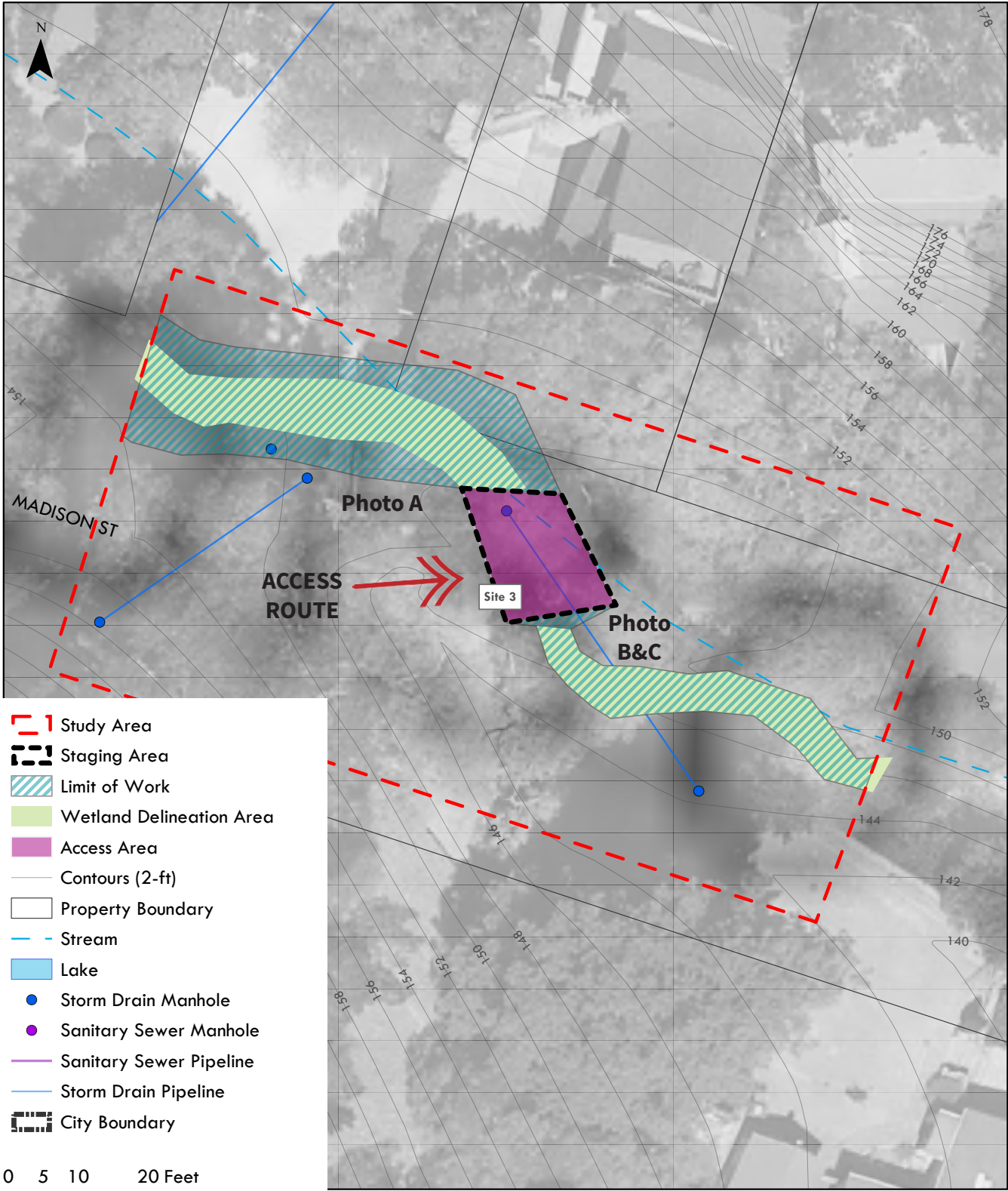
ENGINEERING ANALYSIS

Flooding is a risk, and has occurred in the past at this sight because of the proximity of the channel to the road and private residences. The growth of vegetation in the inlet channels was not preventing access to evaluate condition and maintain facilities nor is it currently reducing the capacity of the system. Sediment accumulation in the channel and vegetation accumulation in the channel are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom will be removed annually. The site will be accessed from Pebble Street. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 5-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Madison Street
CITY DRAINAGE BASIN: Hartnell Drainage



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 13, 2017. Site includes an earthen channel flowing between residential properties and Madison Street. The channel is approximately 4-ft wide at its base, with near vertical banks extending up to an open channel width of approximately 8-ft. Vegetation is mostly grass and berries with more than 80% vegetative cover upstream of Madison Street where the channel is overgrown with brambles and approximately 30% downstream of Madison Street. No significant rock or accumulated sediment was observed along the channel bottom. Within the limit of work, there were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. Vegetation around the culvert outlet was short, allowing adequate access and visibility; the inlet was obstructed by overgrown vegetation.

ENGINEERING ANALYSIS

The growth of vegetation in the channel is a maintenance concern, along with the close proximity of the channel to residential structures. The loose condition of the channel and bank material will potentially limit access and the types of tools used to perform maintenance activities.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated vegetation along the channel bottom will be removed annually. The site will be accessed from Madison Street. Work will be focused within the limits of the channel banks, to maintain the area below the bankfull width clear of overgrowth. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 5-ft bankfull width. A backhoe, from Madison Street, will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION

NOT IN PLAN

SETTING: ENVIRONMENTAL CONDITIONS

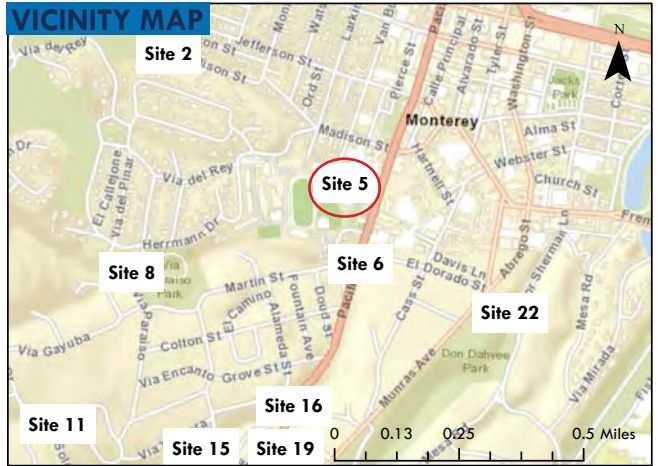
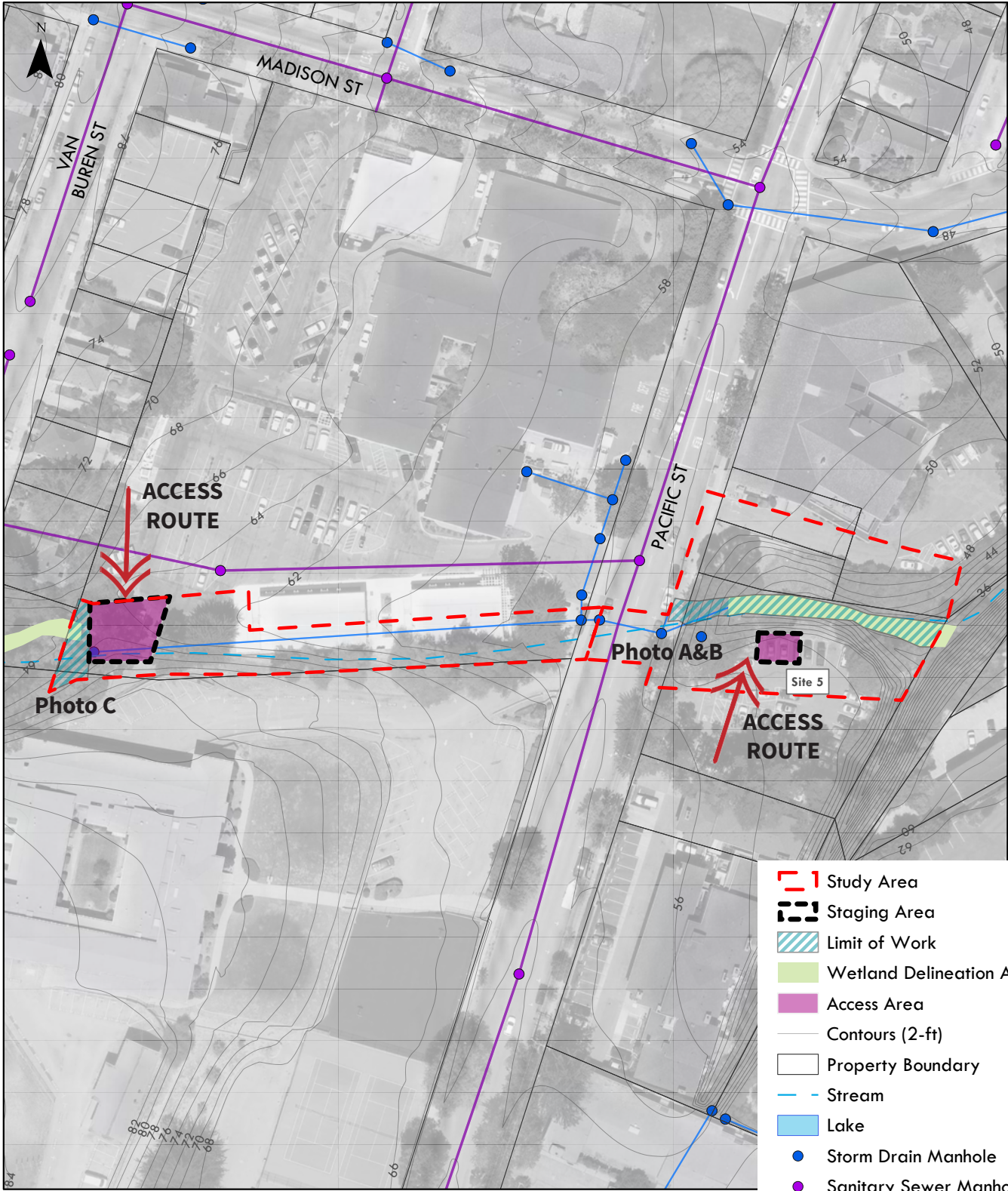
ENGINEERING ANALYSIS

PROJECT DESCRIPTION

Site 17 – upstream side is completely overgrown with ivy – can’t see channel
-downstream side is well maintained.

CROSS STREETS: Hermann Drive
CITY DRAINAGE BASIN: Hartnell Drainage

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 13, 2017. Site includes an earthen channel flowing west to east between Van Buren Street and Pacific Street. The western most section proposed for maintenance activities is accessed from the Police Station Parking lot; the eastern most section, east of Pacific Street is accessed through the library parking lot. A trash rack is located across the culvert inlet (Photo C) with evidence of sediment and debris accumulation. The channel is approximately 5-ft wide at its base, with near vertical banks extending up to a bankfull channel width of approximately 6-ft. Vegetation includes trees and low brush with 75% vegetative cover observed on banks. East of Pacific Street the channel is incised and approximately 15 feet lower than the parking lot elevation. Within the limit of work, there were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized.

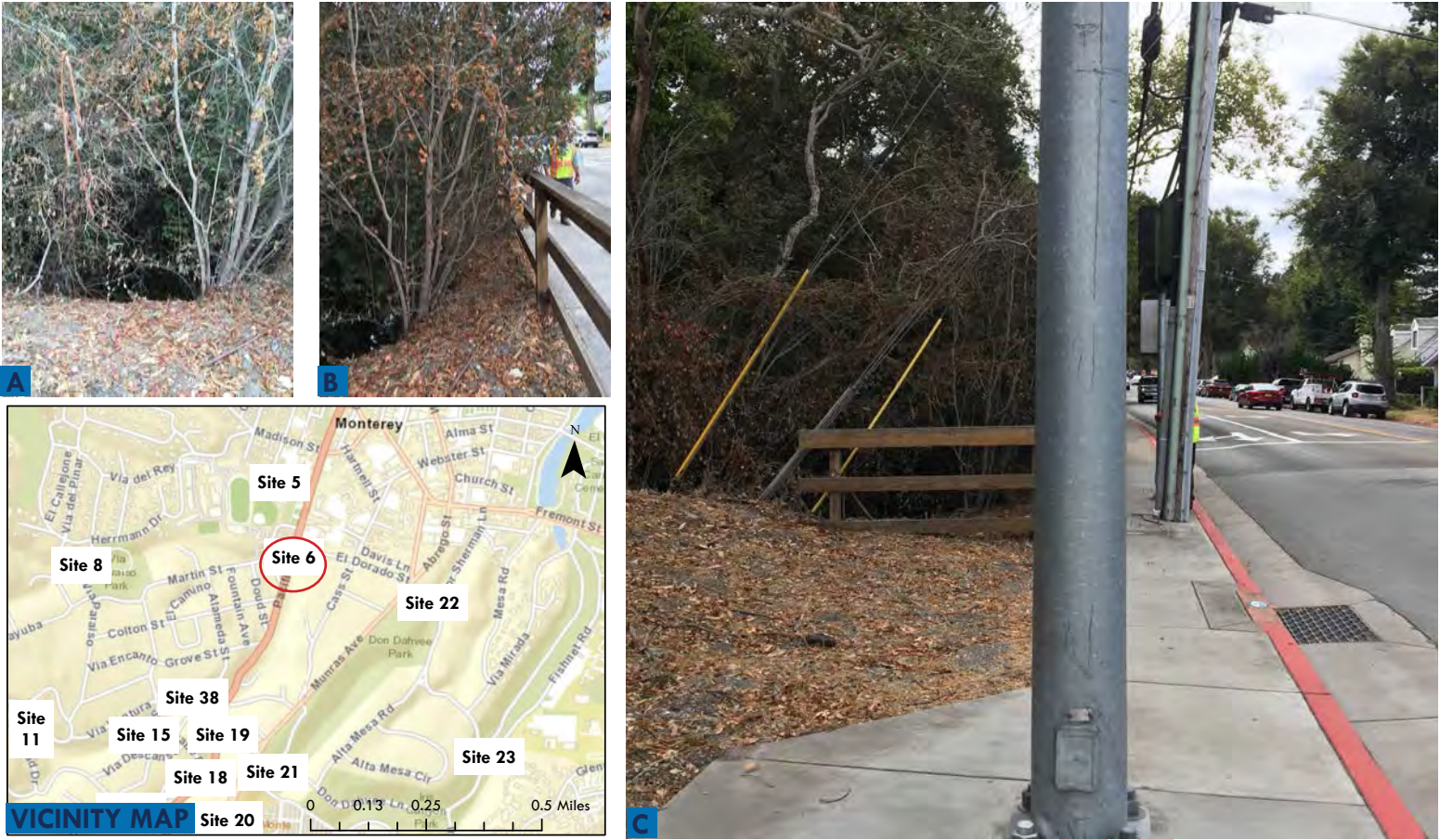
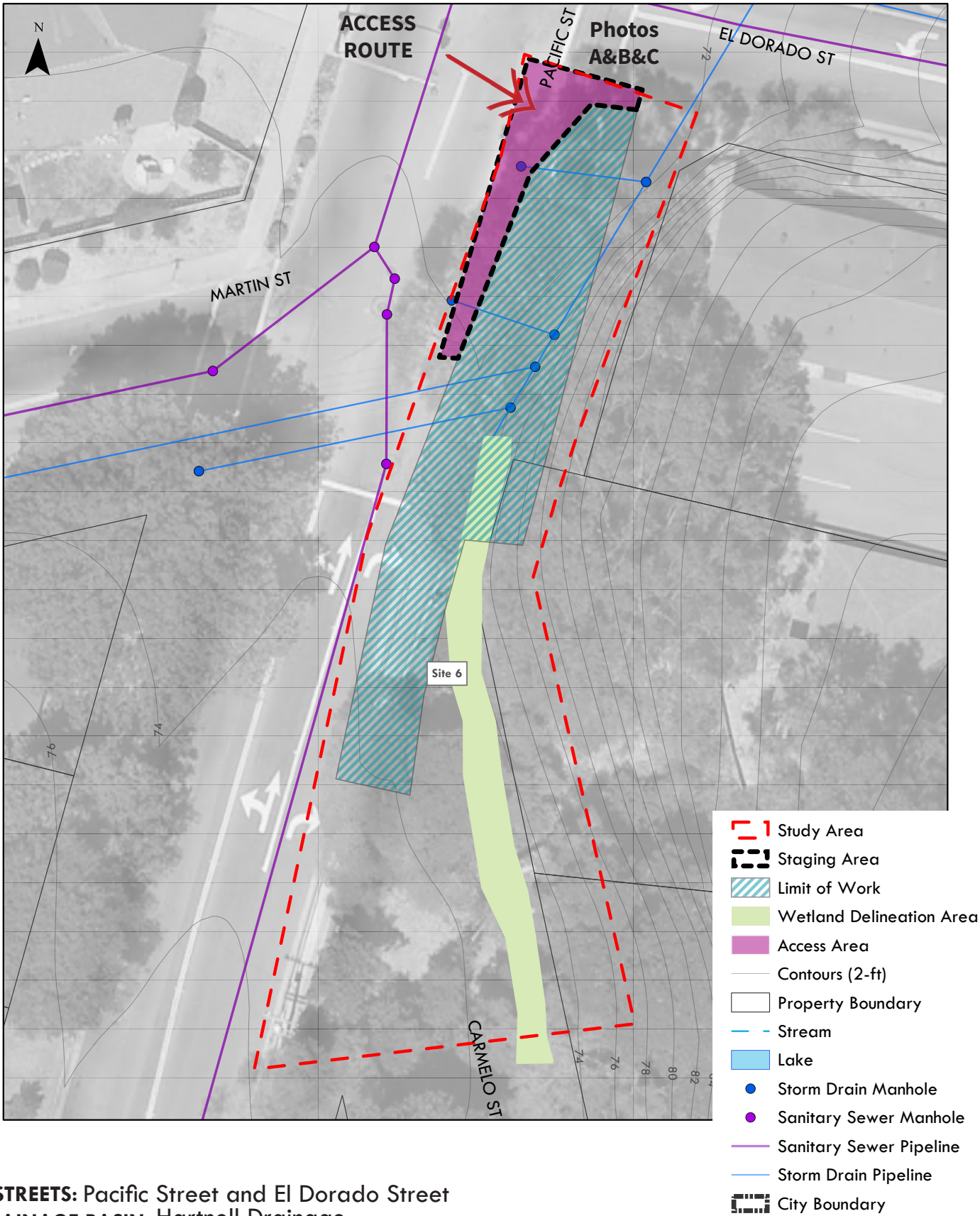
ENGINEERING ANALYSIS

Flooding is a risk, and has occurred in the past during large rain events (e.g., 1998). Sediment and debris accumulation at the trash rack and vegetation accumulation in the channel are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment, debris, and vegetation along the channel bottom will be removed annually. The site will be accessed from the adjacent parking lot areas. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 6-ft bankfull width. A backhoe will be used to remove debris from the trash rack, if big material is identified in the channel, or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 13, 2017. Site includes an earthen channel flowing parallel to Pacific Street. The channel is approximately 5-ft wide at its base, with near vertical banks extending up to an open channel width of approximately 8-ft. Vegetation is mostly trees and brush with over 80% vegetative cover observed on banks. No significant rock or accumulated sediment was observed along the channel bottom. Within the limit of work, there were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. Vegetation around the culvert inlet was dense, limiting access and visibility.

ENGINEERING ANALYSIS

Maintaining vegetation clear from the fenceline and sidewalk are a high priority at this site. Flooding and erosion are not existing concerns at this site.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation at the culvert inlet and along the channel bottom will be removed annually. The site will be accessed from Pacific Street near the intersection with El Dorado Street. Work will be focused within the limits of the channel banks and along the fenceline. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 5-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

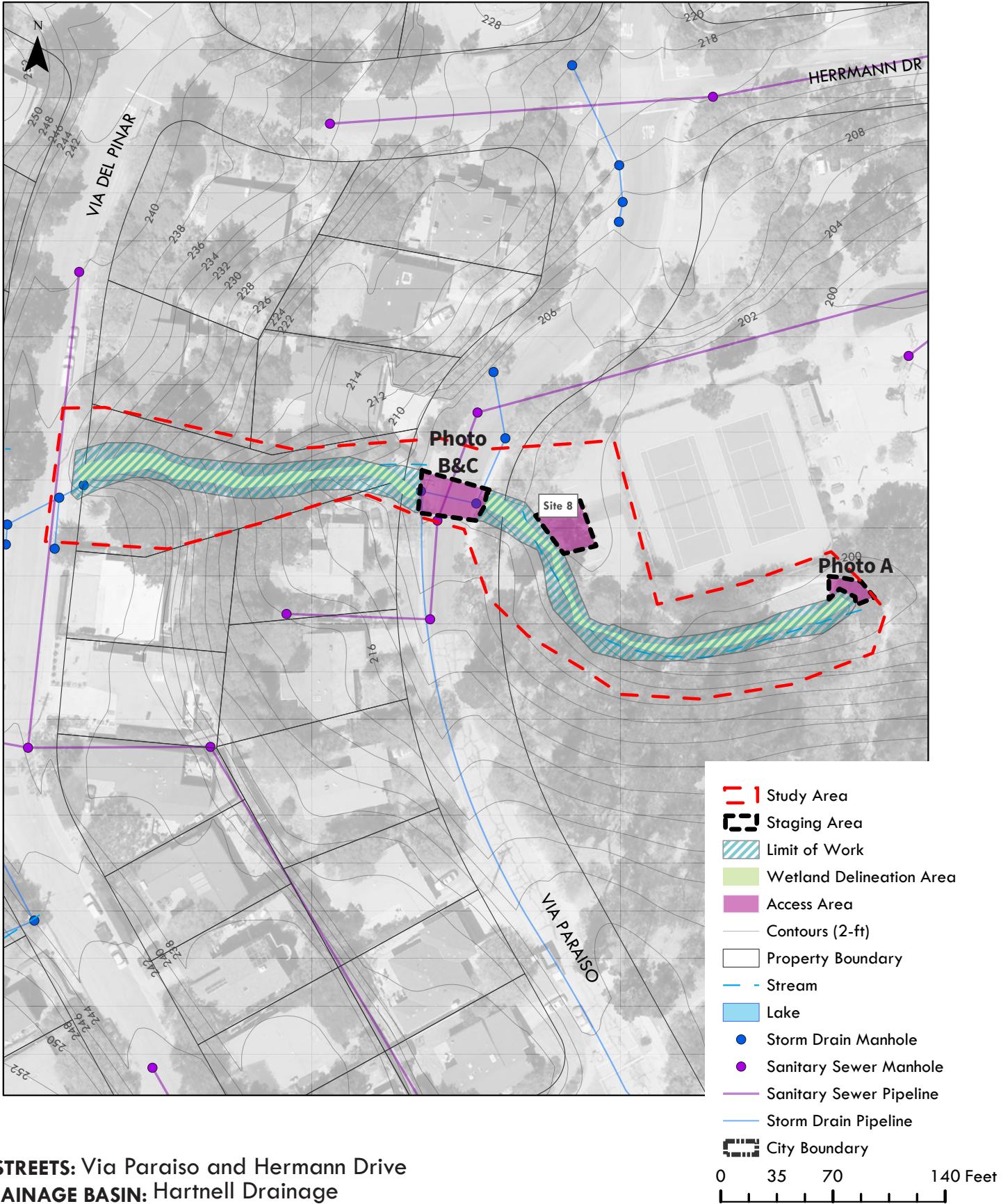
NOT IN PLAN

SETTING: ENVIRONMENTAL CONDITIONS

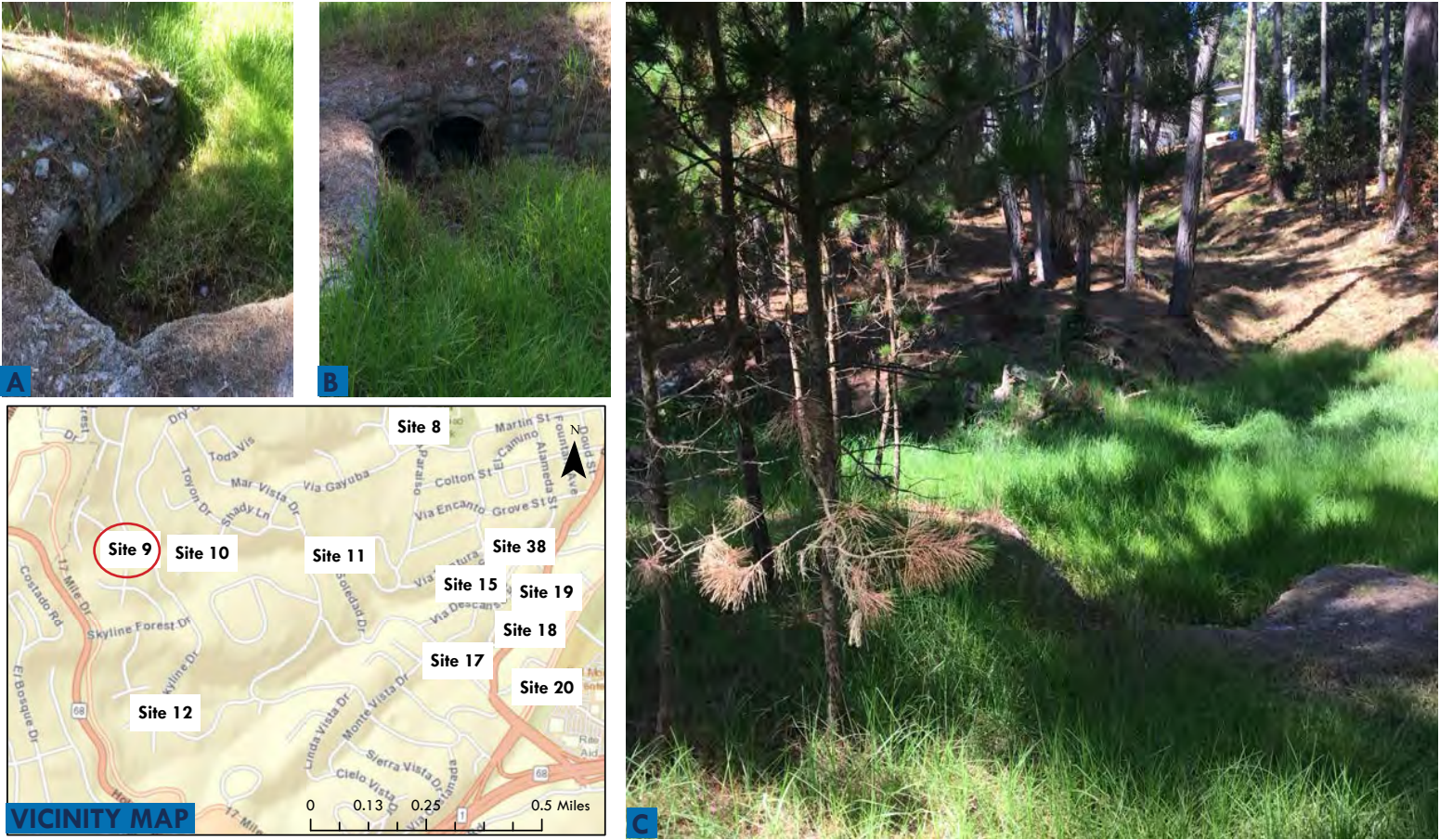
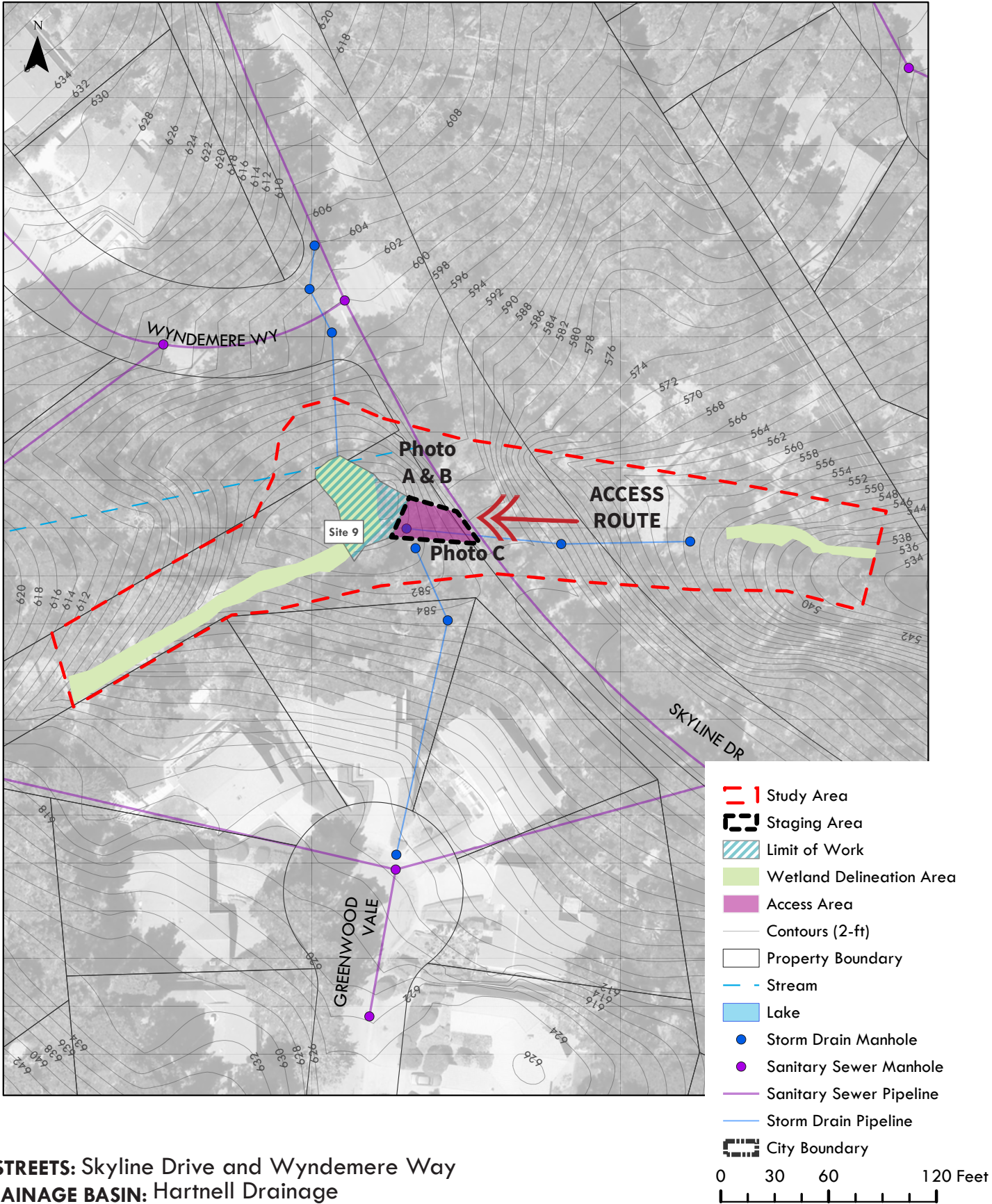
ENGINEERING ANALYSIS

PROJECT DESCRIPTION

LOCATION & SITE DESCRIPTION



LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes an earthen channel flowing in a gully between residential developments and roadways. A series of log drop structures have been installed in the upper (western) portion of the channel. Maintenance of those structures is not included in the annual maintenance SDMP limit of work, which is focused on the sediment basin at the base of the structures and upstream of Skyline Drive. The basin is approximately 30-ft wide at its base, with outlet through a 21-inch culvert beneath Skyline Drive. Vegetation is light brush and weeds with some trees. Accumulated vegetation and sediment was observed along the channel bottom and in front of the culvert. There were no significant fallen trees or tree limbs and the existing culvert beneath Skyline is considered to be undersized resulting in a backwater effect and localized flooding.

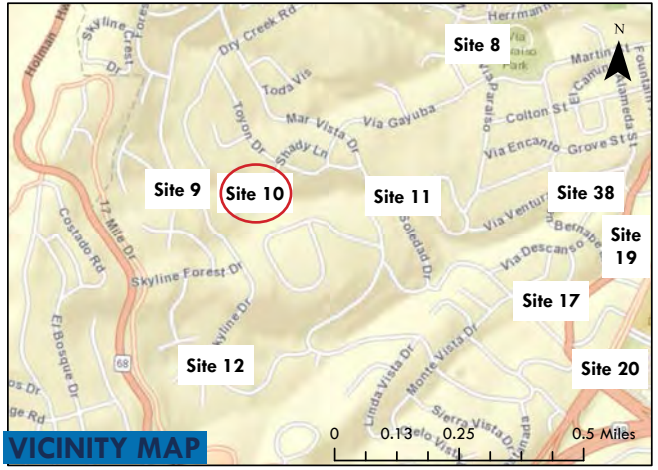
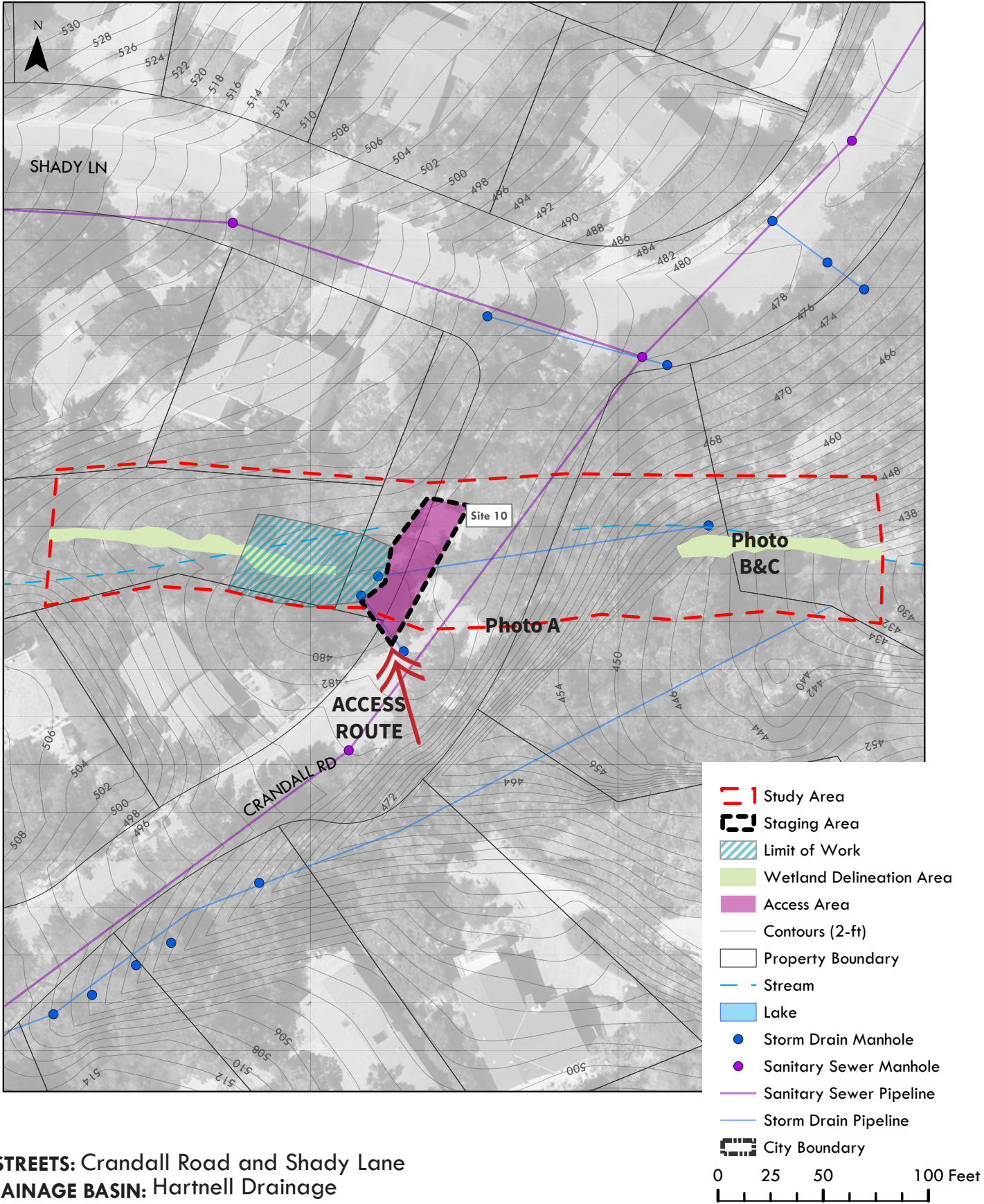
ENGINEERING ANALYSIS

The growth of vegetation in the basin was not preventing access to evaluate condition and maintain facilities. Sediment and vegetation accumulation in the basin are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the basin, accumulated sediment and vegetation along the basin bottom and in front of the culvert will be removed annually. The site will be accessed from an open space off of Skyline Drive. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the basin. A backhoe and dump trucks will be used if large quantities of material are identified in the basin or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes an earthen channel flowing in a gully between single family residences and roadways. A series of log drop structures have been installed in the upper (western) portion of the channel. Annual maintenance activities are expected to include the bottom two structures, a distance of approximately 40-ft upstream of the culvert inlet under Crandell Road. The channel is approximately 2-3-ft wide at its base, extending up to an open channel width of approximately 10-ft. Vegetation is mostly grass, weeds, poison oak with trees and approximately 30% vegetative cover observed on banks. Accumulated vegetation, rock, and sediment was observed along the channel bottom and in front of the culvert. Fallen trees and tree limbs in and around the channel were observed. None of the existing infrastructure is known to be undersized.

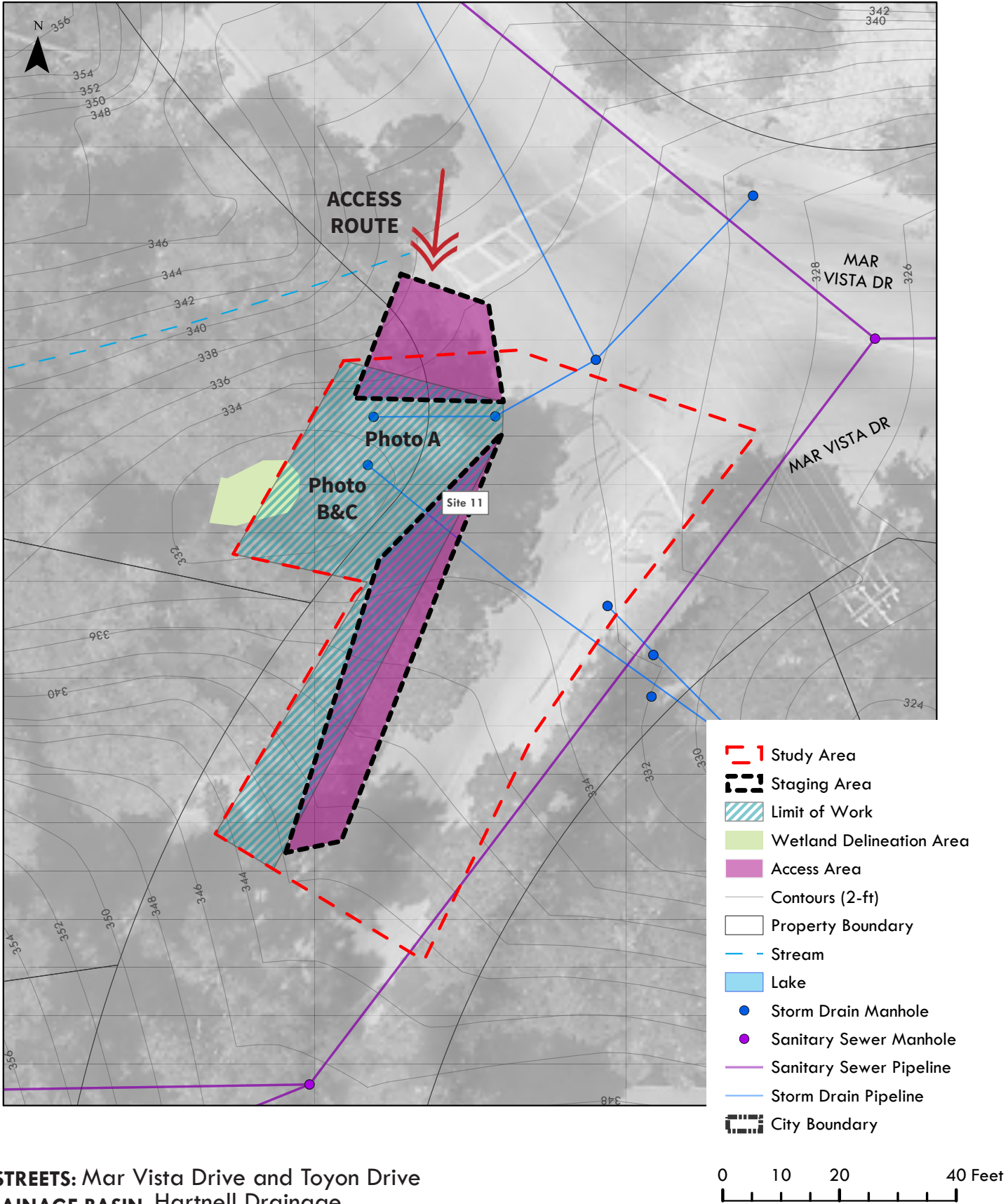
ENGINEERING ANALYSIS

The growth of vegetation in the channel was not preventing access to evaluate the facility condition. Some young pine trees are located in the access path and will need to be removed to allow maintenance activities to occur. Sediment, loose rock from the upstream armoring, and vegetation accumulation in the channel are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel accumulated sediment and vegetation along the channel bottom and in front of the culvert will be removed annually. The site will be accessed from an open space off of Crandall Road. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the active channel width. A backhoe and dump trucks will be used if large quantities of material are identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes an earthen channel near Mar Vista Drive. The channel is approximately 2-ft wide at its base, extending up to an open channel width of approximately 8-ft, with outlet through a trash rack and culvert. Vegetation is mostly dense brush with some trees with 95% vegetative cover observed on banks. Some rock and accumulated sediment was observed along the channel bottom. The adjacent land use includes single family residences and roadways. There were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. No flood or erosion threats were observed. Vegetation around the culvert inlet was short, allowing adequate access and visibility.

ENGINEERING ANALYSIS

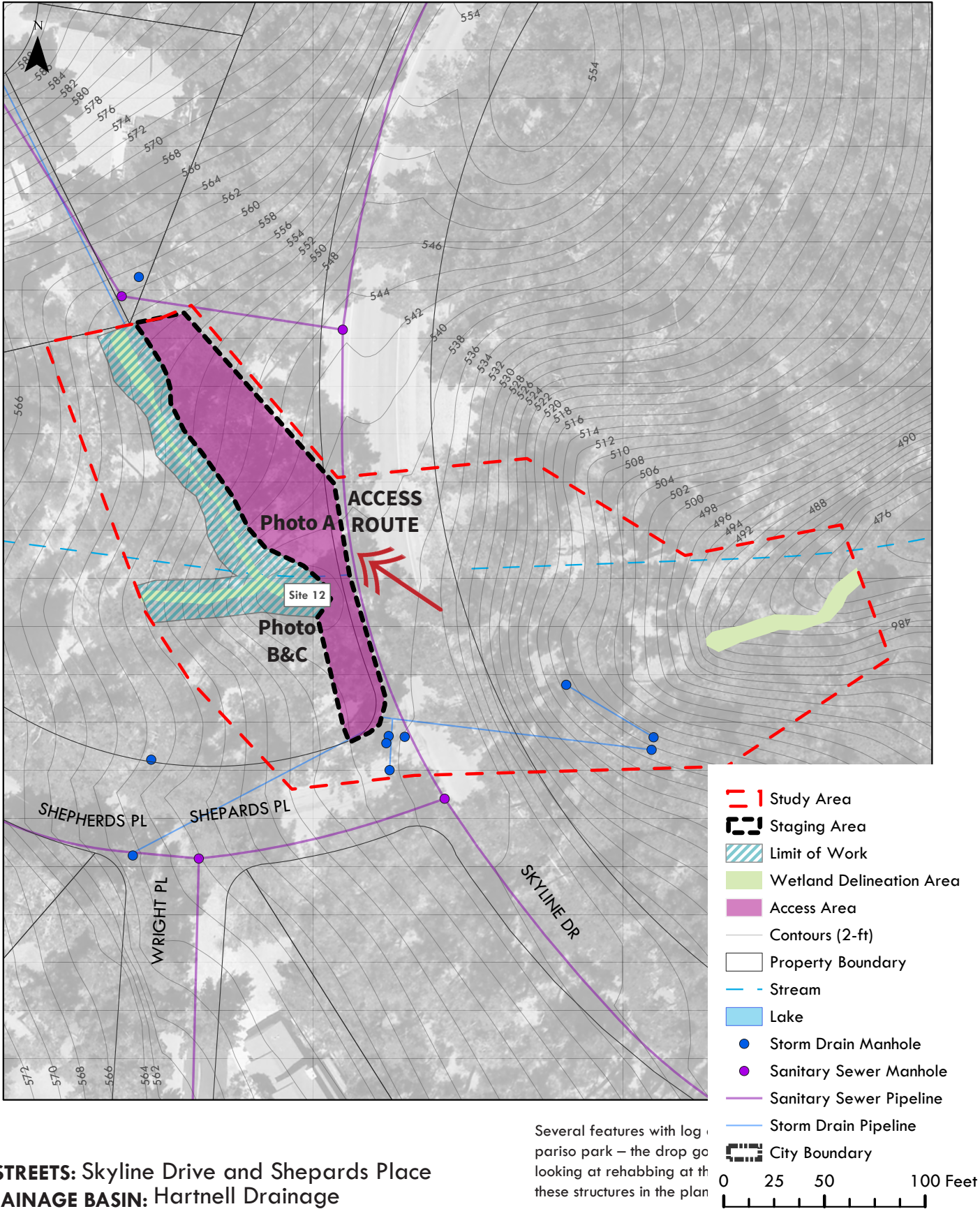
The growth of vegetation in the inlet channels was not preventing access to evaluate condition and maintain facilities nor is it currently reducing the capacity of the system. Sediment accumulation in the channel and vegetation accumulation on the trash rack are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom and the trash rack will be removed multiple times per year; before the rainy season, after big storm events and in the spring. The site will be accessed from Mar Vista Drive. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 2-ft bankfull width. A backhoe will be used to remove accumulated channel sediments and debris from the trash rack or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

CROSS STREETS: Mar Vista Drive and Toyon Drive
CITY DRAINAGE BASIN: Hartnell Drainage

LOCATION & SITE DESCRIPTION



CROSS STREETS: Skyline Drive and Shepards Place
CITY DRAINAGE BASIN: Hartnell Drainage



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes earthen channels flowing between single family residences and roadways. A series of drop structures have been installed in the upper (northern) portion of the channel. Annual maintenance activites are expected to include all the structures upstream of the culvert inlet under Skyline Drive. The channel is approximately 2-3-ft wide at its base, extending up to an open channel width of approximately 10-ft. Vegetation is mostly grass and brambles with trees and approximately 50% vegetative cover on banks. Accumulated vegetation, rock, and sediment was observed along the channel bottom and in front of the culvert. Fallen trees and/or tree limbs were observed above the channel banks. None of the existing infrastructure is known to be undersized. No flood or erosion threats were observed.

ENGINEERING ANALYSIS

The growth of vegetation in the inlet channels was not preventing access to evaluate condition and maintain facilities. Sediment and vegetation accumulation between the drop structures and upstream of the culvert are potentially reducing the capacity of the system. Sediment accumulation in the channel and vegetation accumulation on the trash rack are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom and the basin upstream of the culvert inlet will be removed annually. The site will be accessed from Skyline Drive and the left channel bank of the northern channel. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 2-3-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

NOT IN PLAN

SETTING: ENVIRONMENTAL CONDITIONS

ENGINEERING ANALYSIS

PROJECT DESCRIPTION

LOCATION & SITE DESCRIPTION

NOT IN PLAN

SETTING: ENVIRONMENTAL CONDITIONS

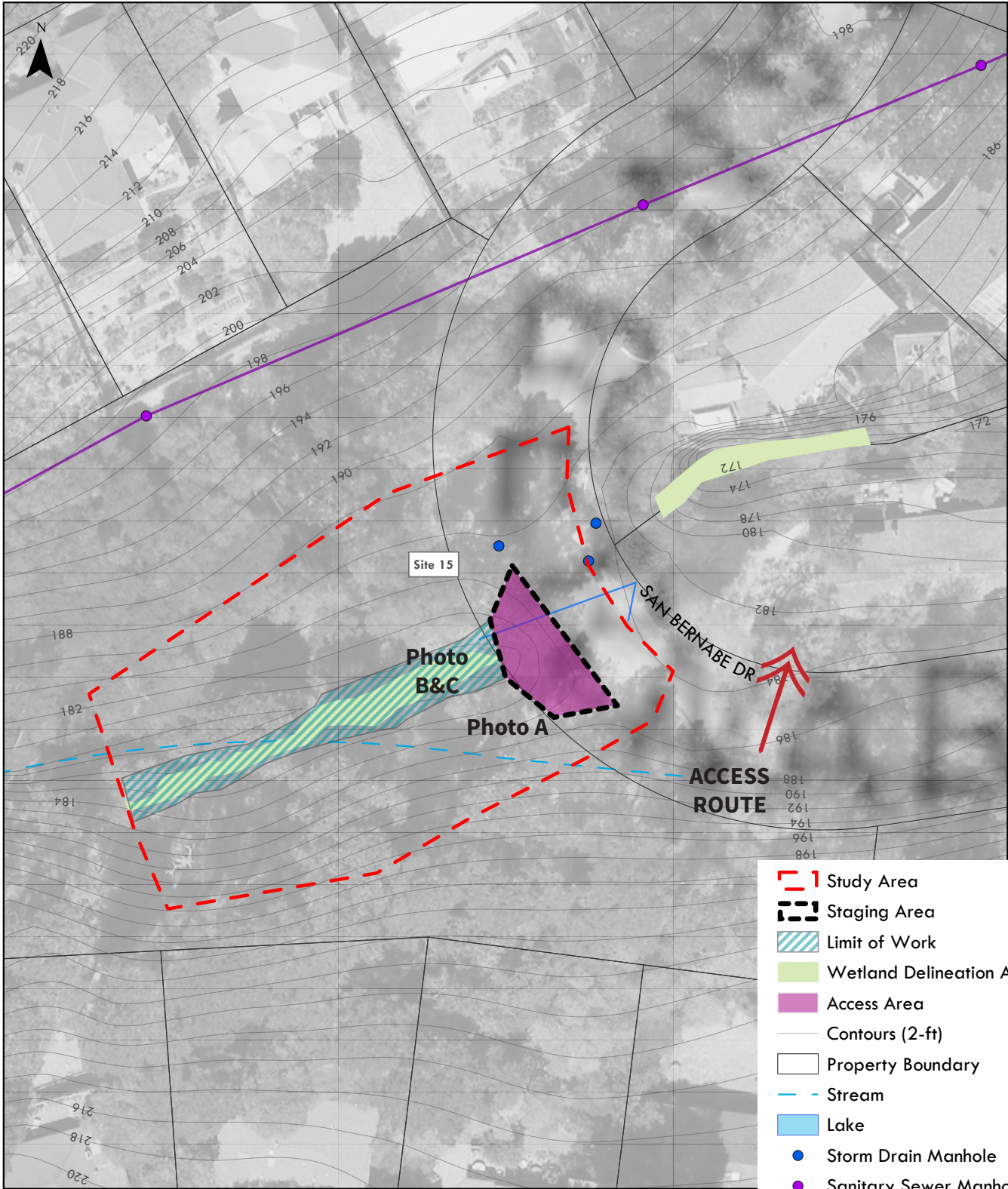
ENGINEERING ANALYSIS

PROJECT DESCRIPTION

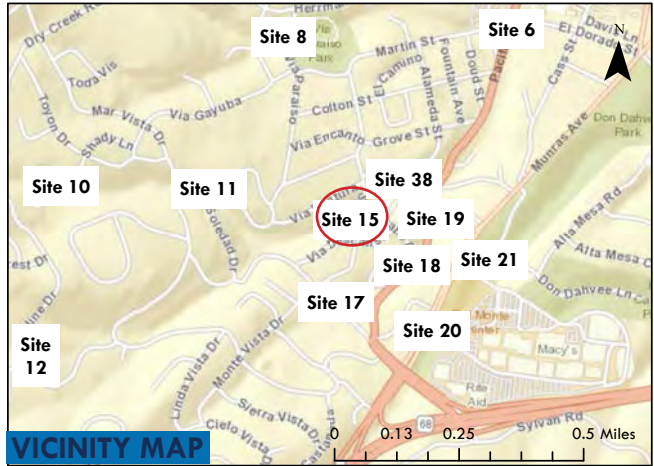
CROSS STREETS: Soledad Drive and Soledad Place

CITY DRAINAGE BASIN: Hartnell Drainage

LOCATION & SITE DESCRIPTION



CROSS STREETS: San Bernabe Drive near
CITY DRAINAGE BASIN: Hartnell Drainage



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes an earthen channel flowing through undeveloped land and between residential properties towards San Bernabe Drive. The channel is approximately 2-ft wide at its base extending up to an open channel width of approximately 5-ft. Vegetation is mostly light brush with weeds with 100% vegetative cover observed on banks. No significant rock or accumulated sediment was observed along the channel bottom. Within the limit of work, there were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. Vegetation around the culvert inlet was limiting access and visibility.

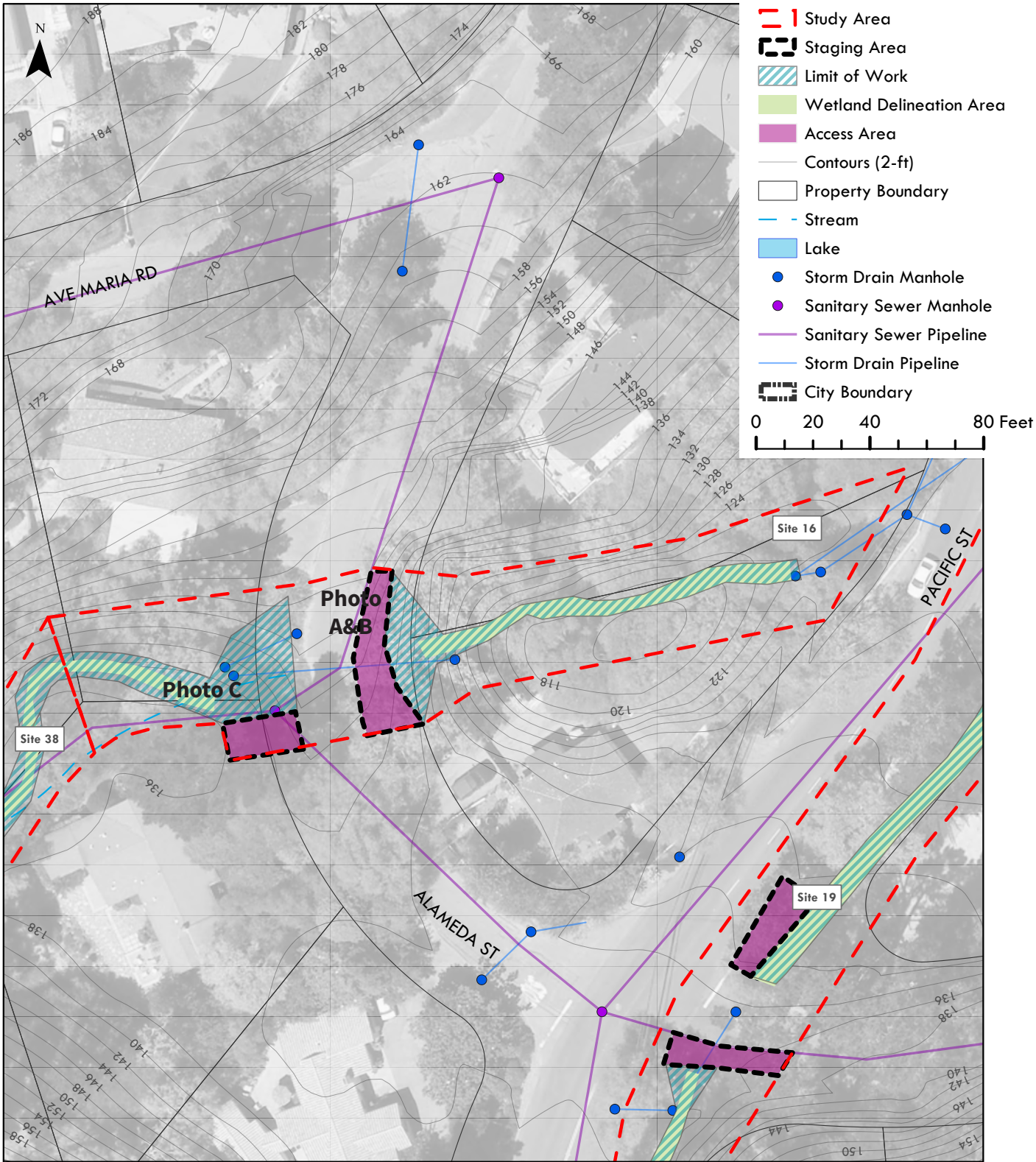
ENGINEERING ANALYSIS

Vegetation growth in the channel and at the culvert inlet are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom will be removed annually. The site will be accessed from San Bernabe Drive. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 2-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Ave Marie Rd and Alameda Street
CITY DRAINAGE BASIN: Hartnell Drainage



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes an earthen channel flowing between homes in a residential neighborhood. The channel is approximately 2-3-ft wide at its base, extending up to an open channel width of approximately 7-ft, with outlet through a box culvert beneath Alameda Street. Vegetation is mostly ivy and brambles, with some trees and 90% vegetative cover on banks. Some rock and accumulated sediment was observed along the channel bottom. There were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. No flood or erosion threats were observed. Vegetation around the culvert inlet was short, allowing adequate access and visibility, whereas vegetation on the downstream side was preventing access and evaluation of the facility.

ENGINEERING ANALYSIS

The growth of vegetation in the inlet channels was not preventing access to evaluate condition and maintain facilities nor is it currently reducing the capacity of the system. In the downstream section ivy and high vegetation is limiting visibility and access to maintain the conveyance capacity in the channel. Sediment, rock, and vegetation accumulation in the channel are maintenance concerns.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom will be removed annually. The site will be accessed from Alameda Street. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 2-3-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

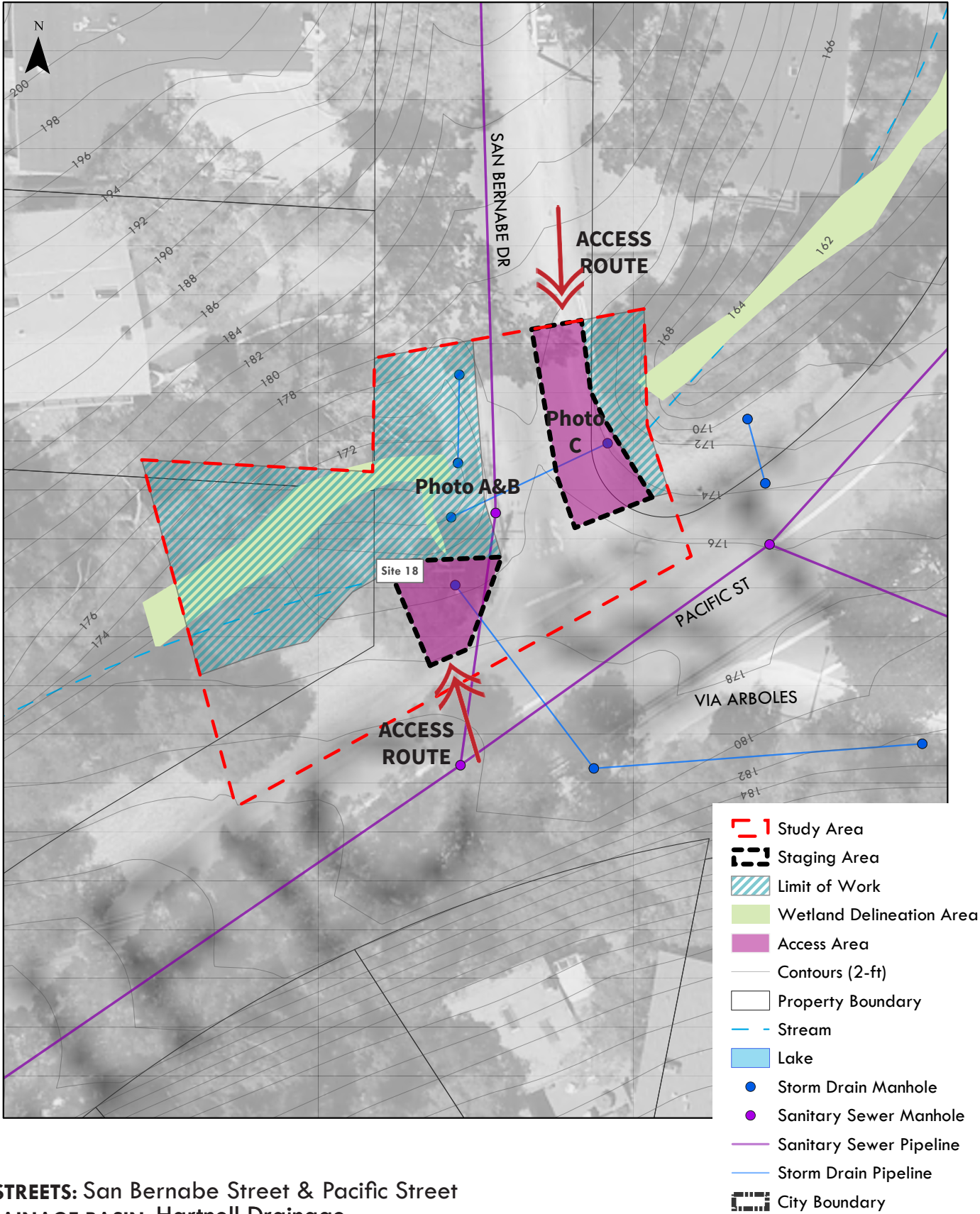
CROSS STREETS: Via Esperanza and Via Arcerolo Drive

Inspected on September 11, 2017. Site includes an earthen channel flowing between residential properties and Via Esperanza. The channel is approximately 2-ft wide at its base, extending up to an open channel width of approximately 6-ft. Vegetation is mostly dense brush with 100% vegetative cover observed on banks. Erosion was observed near a catch basin on Via Esperanza that appeared to be the result of localized flooding. No significant rock or accumulated sediment was observed along the channel bottom, though the dense vegetation obstructed access and visibility. Within the limit of work, there were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized.

The growth of vegetation in the channel was preventing access to evaluate condition and maintain facilities and is currently reducing the capacity of the system. Sediment accumulation in the channel and vegetation accumulation in the channel are maintenance concerns.

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom will be removed annually. The site will be accessed from Via Esperanza. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 2-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: San Bernabe Street & Pacific Street
CITY DRAINAGE BASIN: Hartnell Drainage



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes an earthen channel flowing and between residential properties and Pacific Street. The channel is approximately 1-ft wide at its base, extending up to an open channel width of approximately 5-ft. Vegetation is mostly grass and light brush on the upstream side and oak treres along the downstream channel banks; 80% vegetative cover was observed on the banks. Upstream of San Bernabe Drive, accumulated sediment was observed along the channel bottom and ivy is blocking the inlet to the culvert beneath the road (Photo B). Within the limit of work, there were no significant fallen trees or tree limbs. The 24” diameter culvert beneath San Bernabe is known to be undersized and likely the source of occasional flooding over the road. Erosion was observed in the downstream channel and along a fenceline at the top of the drownstream channel (Photo C).

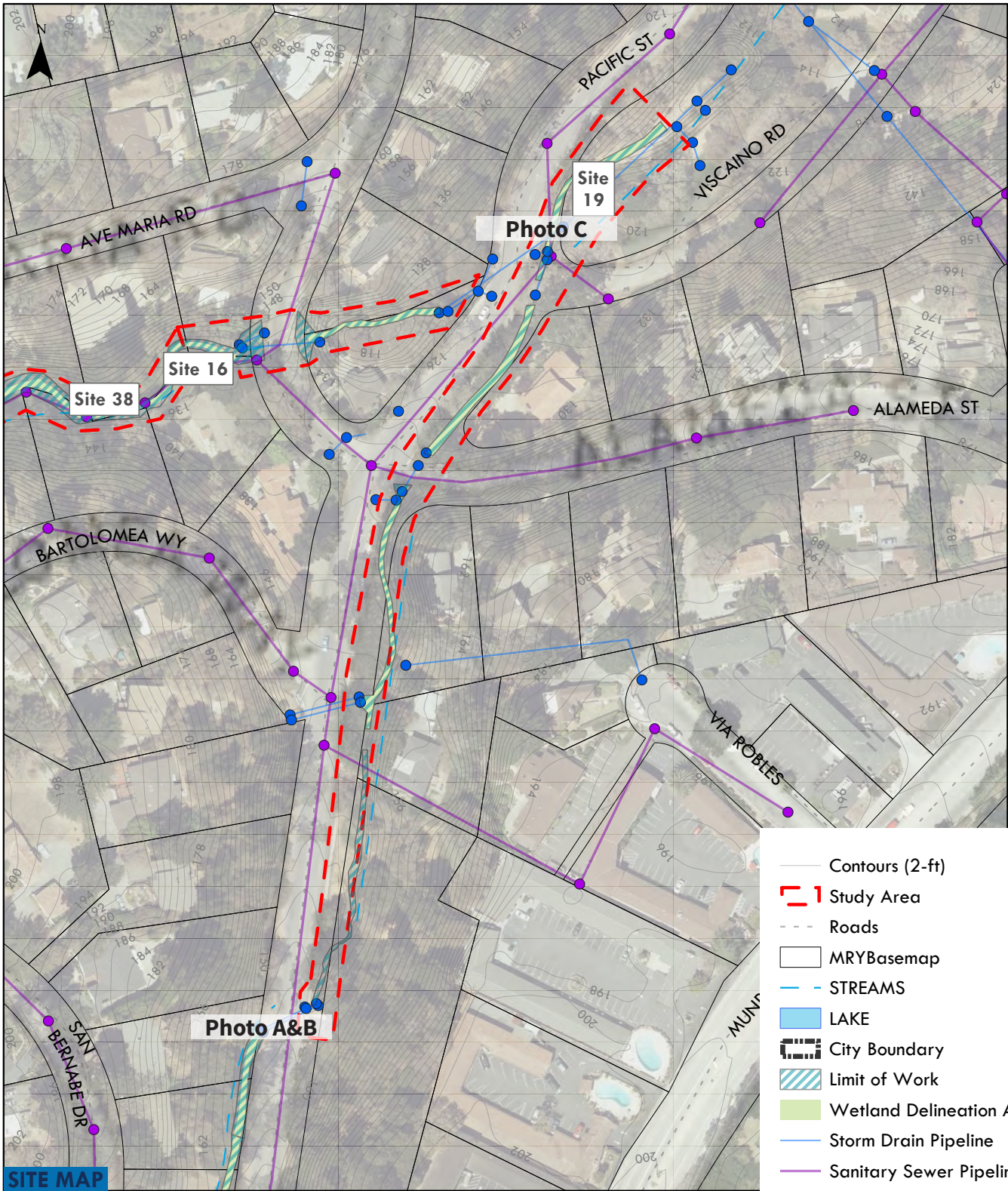
ENGINEERING ANALYSIS

Flooding is a risk and has occurred in the past at this sight likely due to an undersized culvert and vegetation and sediment restricting inlet flow. Sediment and debris accumulation and vegetation growth in the channel and near the culvert inlet are maintenance concerns. A sewer main is crossing the channel approximately 3 feet upstream of the culvert inlet (Photo B).

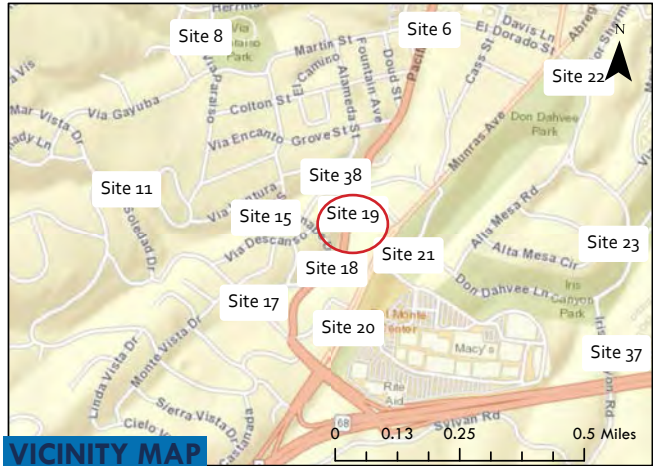
PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom and at the culvert inlet will be removed annually. The site will be accessed from Pacific Street and San Bernabe Drive. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 1-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Pacific Street
CITY DRAINAGE BASIN: Hartnell Drainage



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 11, 2017. Site includes amostly straight earthen channel flowing south to north between homes in a residential neighborhood and Pacific Street. The channel is approximately 1-2-ft wide at its base, extending up to an open channel width of approximately 5-ft. Vegetation is mostly dense brush with some trees and 90% vegetative cover on banks. Some rock and accumulated sediment, along with vegetation growth, was observed along the channel bottom. There were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. The growth of vegetation in the channel is reducing conveyance capacity and has resulted in channel overtopping and flood conditions along Pacific Street.

ENGINEERING ANALYSIS

The growth of vegetation within the channel bankfull width is reducing the capacity of the system. Sediment, rock, and vegetation accumulation in the channel are maintenance concerns.

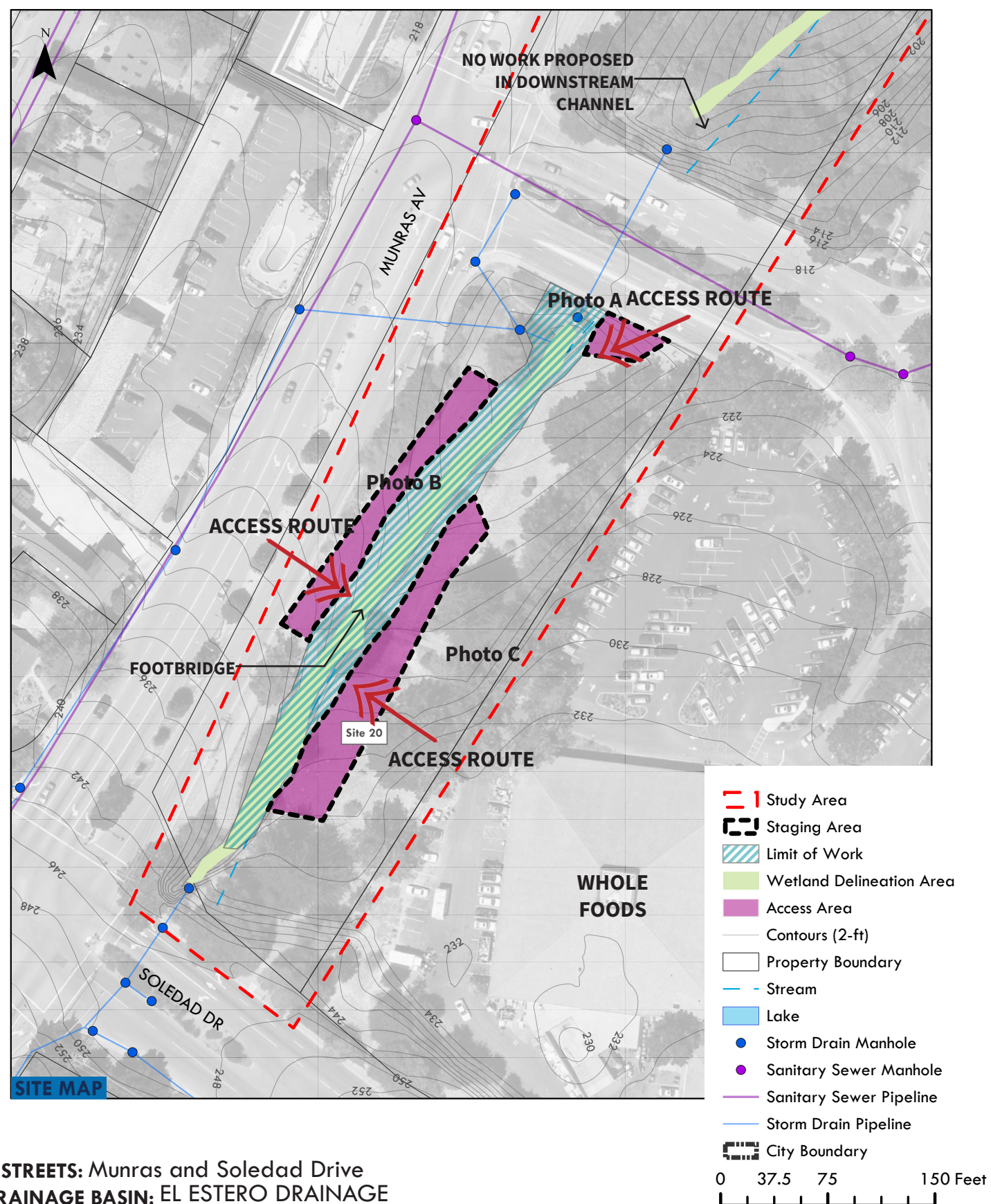
PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom will be removed annually. The site will be accessed from Pacific Street. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 1-2-ft bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

SITE NAME: **Majors Creek - Soledad Dr. & Del Monte Center Entrance**

SITE NAME: **Majors Creek - Soledad Dr. & Del Monte Center Entrance**

LOCATION & SITE DESCRIPTION



CROSS STREETS: Munras and Soledad Drive
CITY DRAINAGE BASIN: EL ESTERO DRAINAGE



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. The adjacent land use includes the Del Monte Shopping Center and roadways. Vegetation is 6-8-ft tall with approximately 70% vegetation cover within the channel. The open channel width is approximately 10-ft, the banks are 4-ft high and near vertical. Some erosion was observed on the channel banks associated with channel incision. A pedestrian bridge crosses the channel between the Shopping Center and Munras Avenue. None of the existing infrastructure is known to be undersized and water has never been reported above the channel banks. The Shopping Center regularly mows the grass on the channel floodplain.

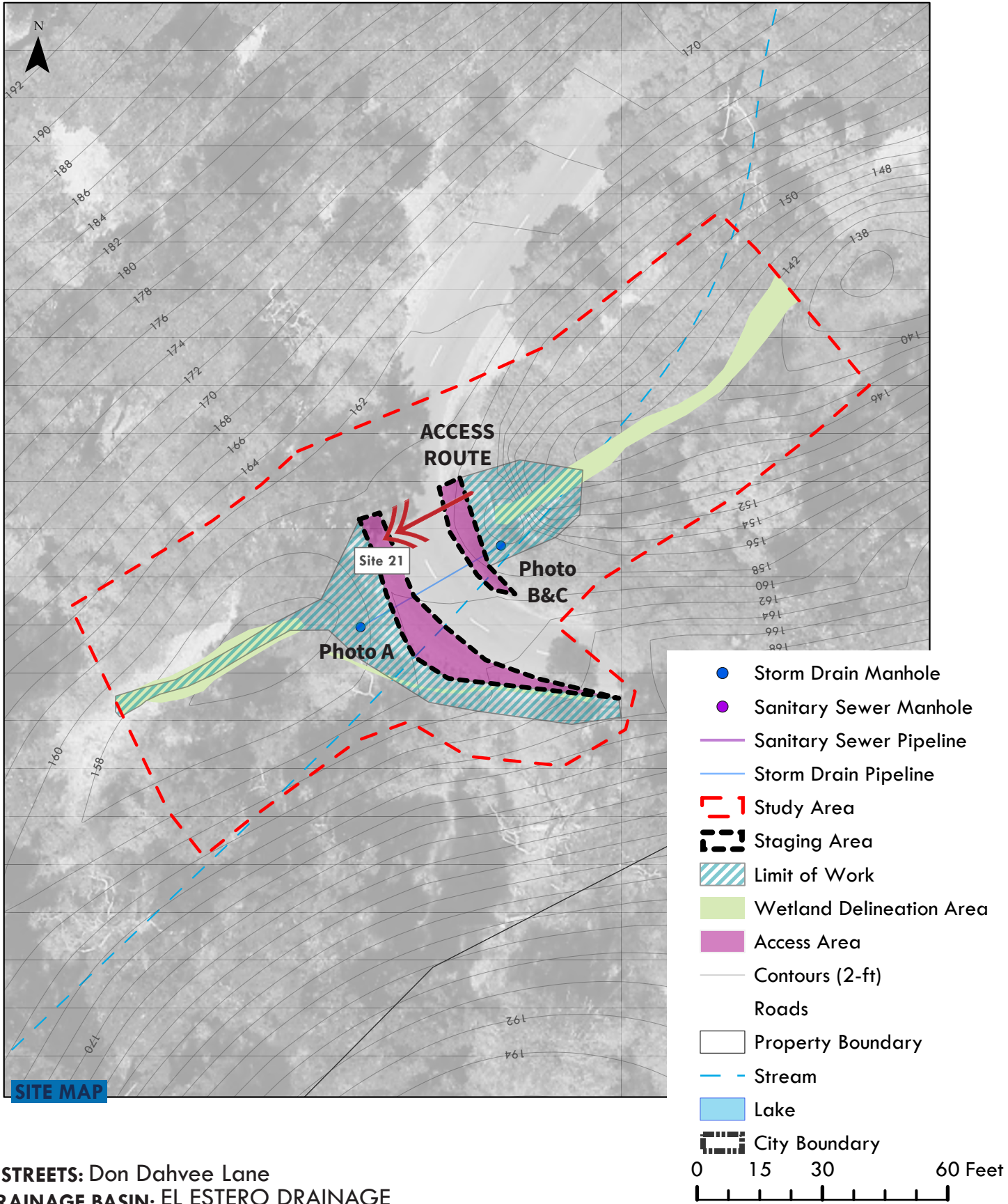
ENGINEERING ANALYSIS

The growth of vegetation, primarily dense tules, in the channel and in the vicinity of the culvert inlet is compromising the outflow capacity. Sediment accumulation does not appear to be as significant a maintenance concern compared to overgrown vegetation. The primary City maintenance objectives are to protect the pedestrian bridge and prevent the downstream culvert (beneath the Shopping Center entrance road) from clogging.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity, trees within the limit of work will be limbed to maintain access to the channel corridor. Accumulated sediment and debris within the bankfull channel will be removed. To maintain inlet function and capacity, vegetation along the inlet channels and adjacent banks will be removed annually. Access would occur from the pathway leading from the Whole Foods parking lot, Munras Avenue, and from the Shopping Center entrance roadway. Equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. The adjacent land use includes open space (Don Dahvee Park), roadways, and single family residences. Vegetation is 3-6-ft tall with approximately 90% vegetation cover on the banks. The dense brush on the upstream side especially, prevented inspection of existing infrastructure. There was a 24" diameter tree down across the upstream channel. None of the existing infrastructure is known to be undersized. No flood or erosion threats were observed though vegetation on the northern site obscured an evaluation of the facility condition. The downstream channel has a steep drop from the culvert outlet and roadway into a rock spillway (Photo C).

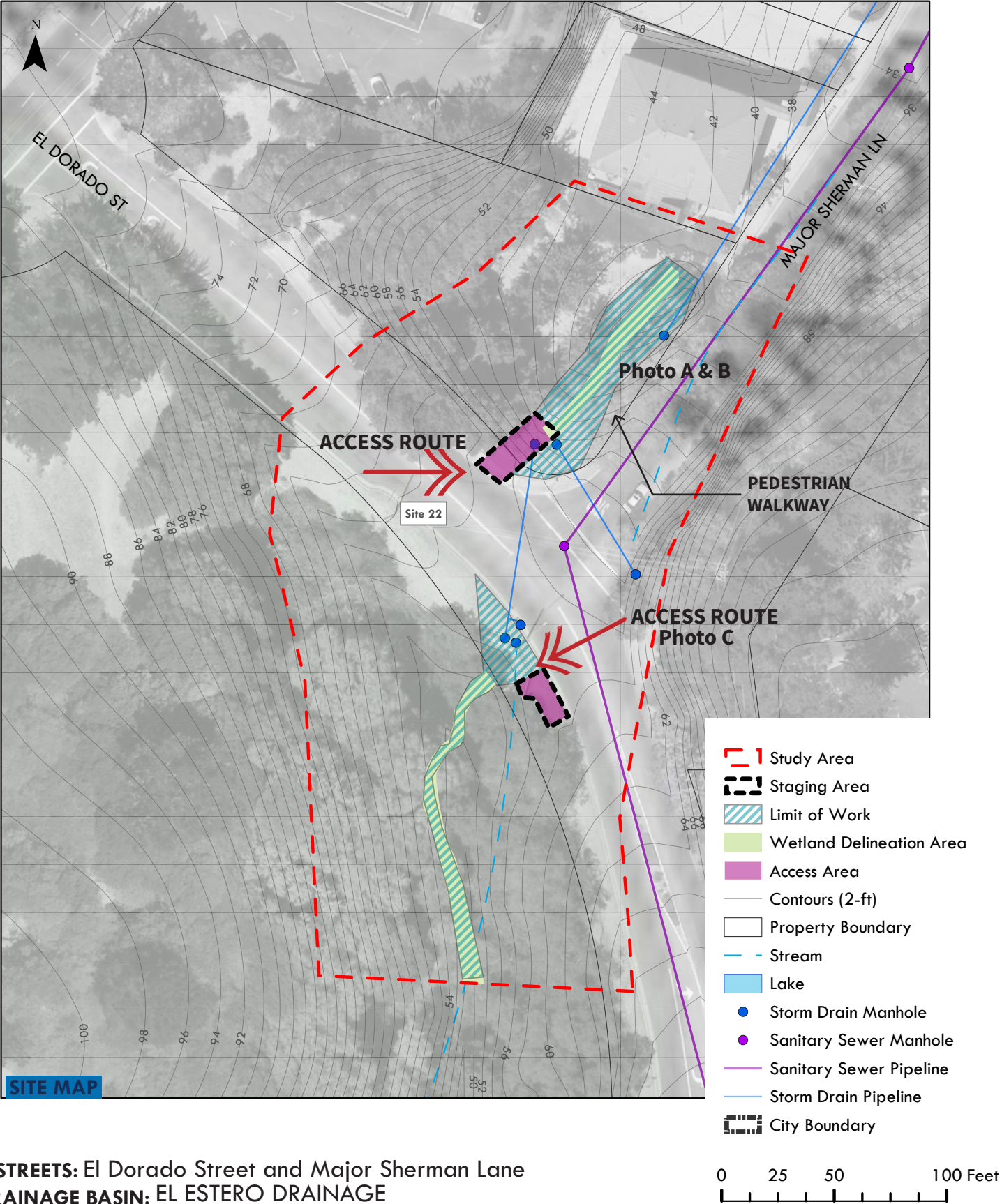
ENGINEERING ANALYSIS

The growth of vegetation in the vicinity of the culvert inlet is preventing access to evaluate condition and maintain facilities. Sediment accumulation does not appear to be as significant of a maintenance concern compared to overgrown vegetation.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity, trees within the limit of work will be limbed to maintain access to the channel corridor. Accumulated sediment and debris within the bankfull channel will be removed. To maintain inlet function and capacity, vegetation along the inlet channels and adjacent banks will be removed annually. Access would occur from Don Dahvee Lane. Equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 13, 2017. The channel bankfull width is approximately 12-ft upstream of El Dorado Street and a trash rack on the upstream culvert inlet was clear of debris though an 8-ft long 18-inch diameter downed tree was crossing the channel upstream of the trash rack. The downstream channel section has incised approximately 5-ft below the invert of the culvert outlet and bank erosion was observed. Dense brush and trees were established along the channel banks in both the upstream and downstream sections. The adjacent land use includes professional buildings, Don Dahvee Park, single family residences, and roadways. None of the existing infrastructure is known to be undersized and no flood threats were observed. Vegetation around the culvert inlet was short, allowing adequate access and visibility, though on the downstream side overgrown vegetation limited visibility of the culvert outlets.

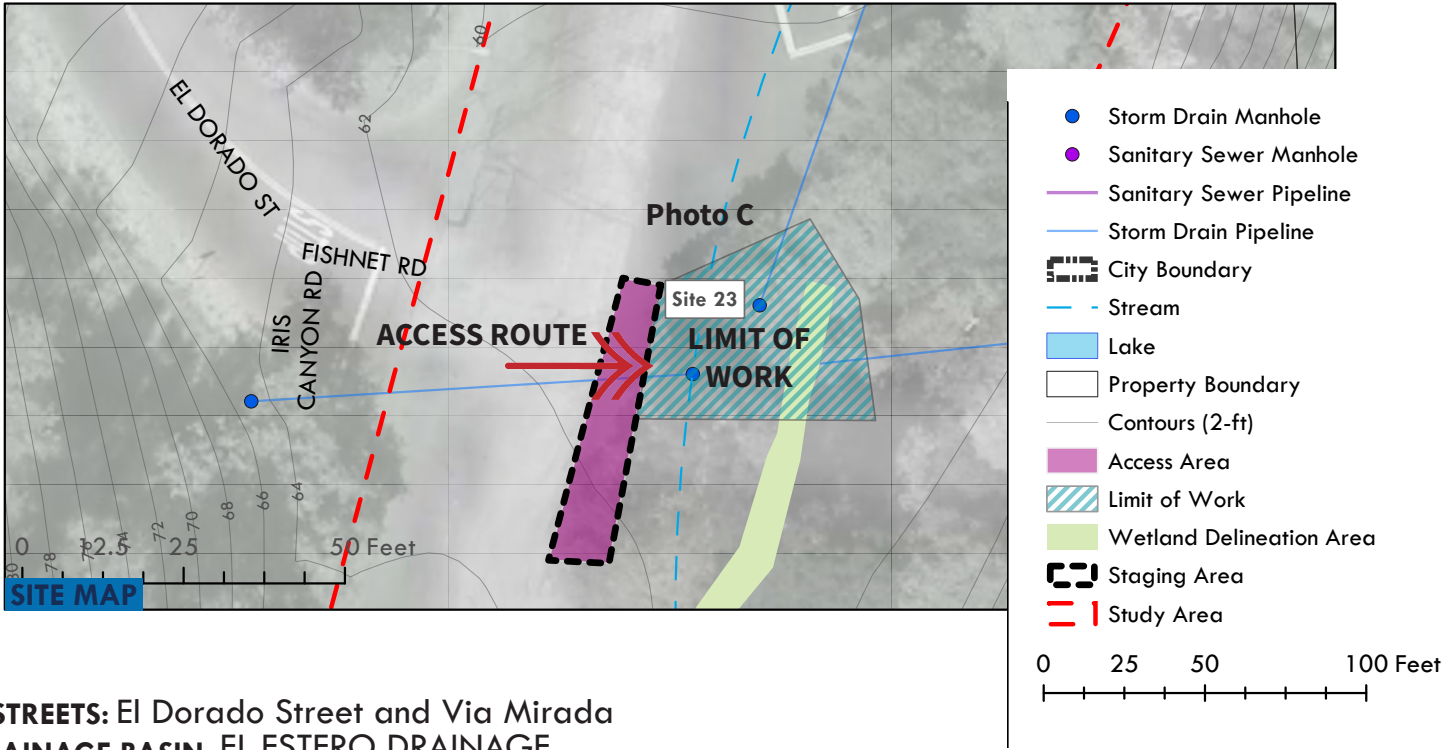
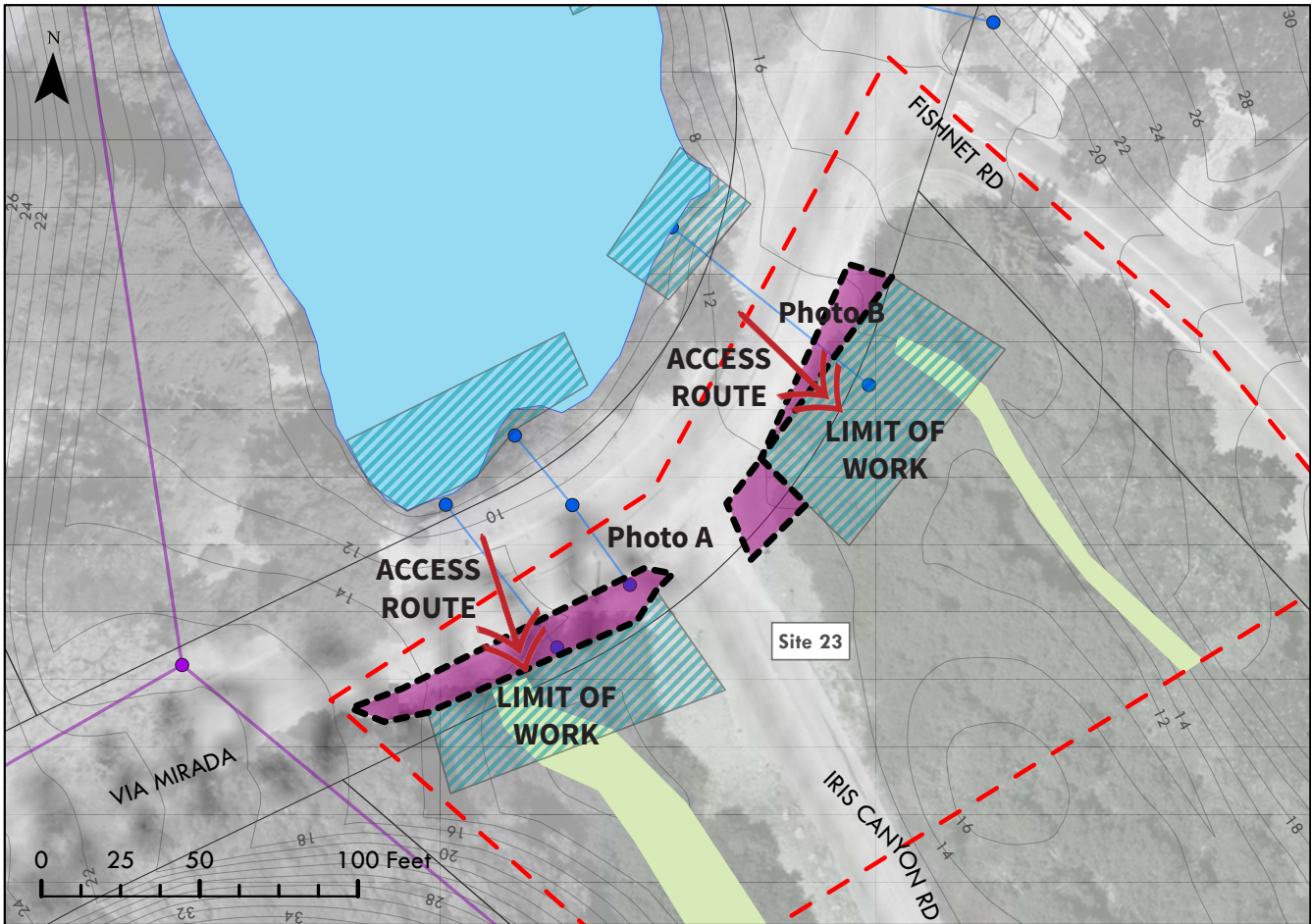
ENGINEERING ANALYSIS

Bank erosion on the downstream channel could potentially jeopardize the stability of the wooded pedestrian walkway located on the channel's right bank. To maintain stormwater conveyance and capacity, trees within the limit of work will be limbed to maintain access to the trash rack, channel corridor, and accumulated sediment and debris within the bankfull channel will be removed. A longer term bank stabilization project should be considered to protect the pedestrian walkway.

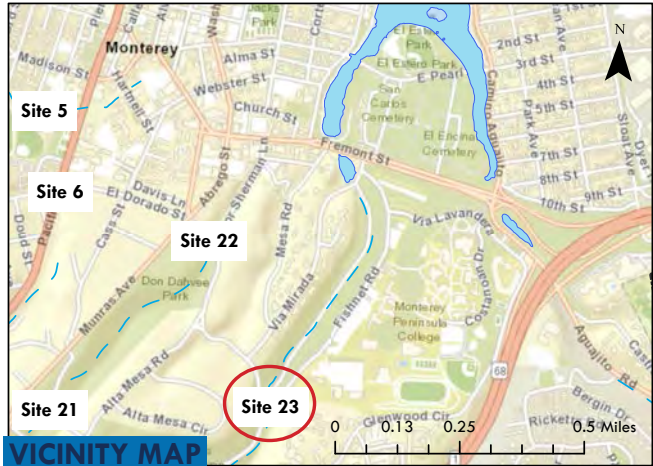
PROJECT DESCRIPTION

On the upstream side, the site will be accessed via an existing gate off of El Dorado Street (Photo C). On the downstream side, access will need to occur from El Dorado Street or the northern side of the adjacent private property or for work with hand tools, down the banks next to the pedestrian walkway parallel to Major Sherman Lane. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel bankfull width. A backhoe and dump truck would be used to clear overgrown vegetation and accumulated material in the trash rack vicinity. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: El Dorado Street and Via Mirada
CITY DRAINAGE BASIN: EL ESTERO DRAINAGE



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Site consists of a northern and southern portion; the southern begins at Iris Canyon Road and El Dorado/Fishnet Road and the northern portion drains into Lagunita Mirada (Site 24). The adjacent land use includes open space (Iris Greenbelt), Monterey Peninsula College, and single family residences. Vegetation is 10-12-ft tall on the banks and 6-8-ft tall in the channel with approximately 90% vegetation cover on the banks. At the southern site the vegetation includes mature trees and low lying brush with approximately 90% vegetation cover on the banks. At both sites, there were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. No flood or erosion threats were observed though vegetation on the northern site obscured an evaluation of the facility condition.

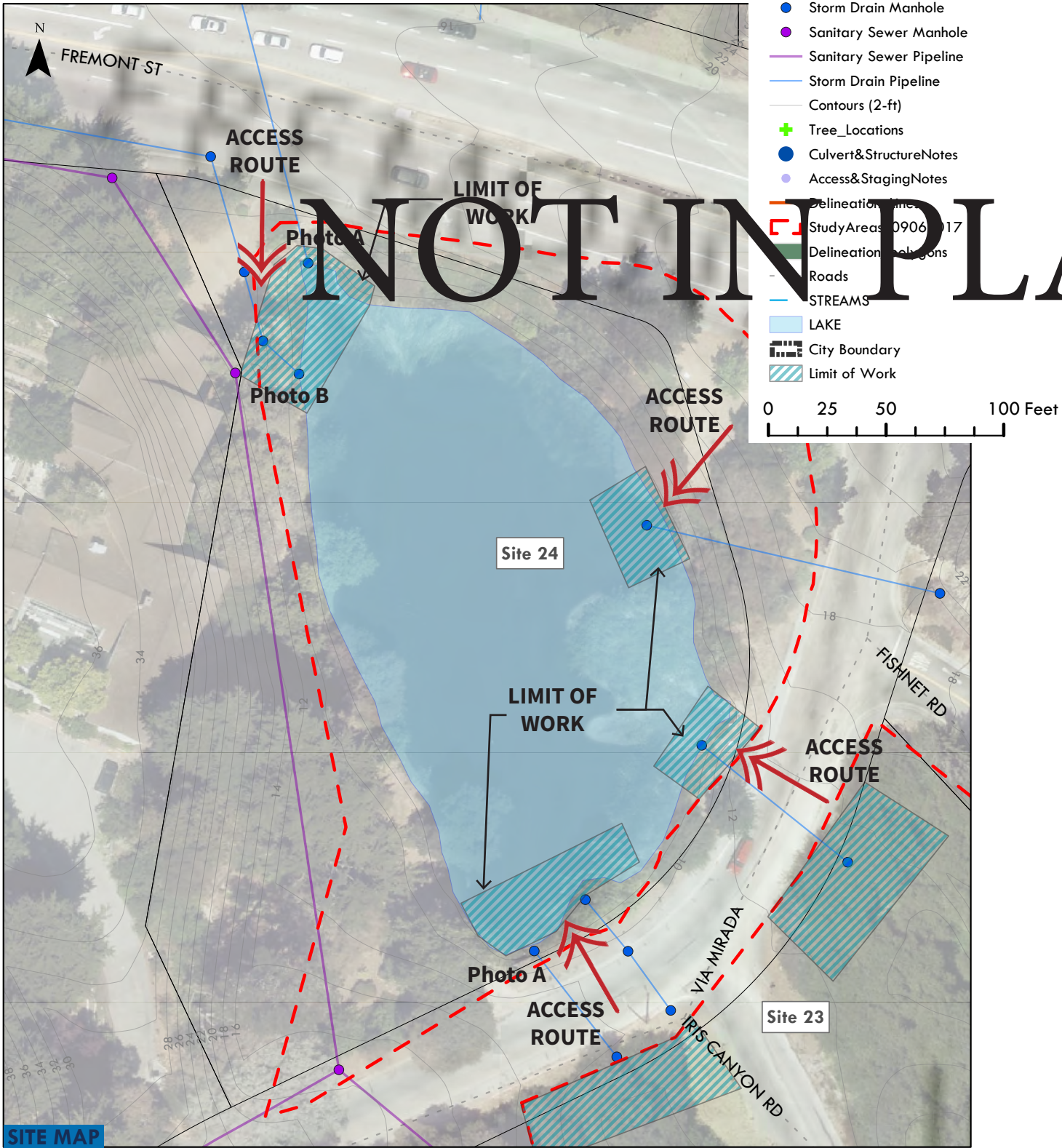
ENGINEERING ANALYSIS

At the northern site there are two culvert crossings at Iris Canyon Road and Via Mirada that require annual maintenance. At the southern site, a culvert inlet on the upstream side of El Dorado/Fishnet Road requires annual maintenance. The growth of vegetation in the vicinity of the culvert inlets is preventing access to evaluate condition and maintain facilities and is reducing the capacity of the system. Sediment accumulation does not appear to be as significant of a maintenance concern at either location, compared to overgrown vegetation.

PROJECT DESCRIPTION

To maintain inlet function and capacity, vegetation along the inlet channels and adjacent banks will be removed annually. The northern site would be accessed from Via Mirada and the southern site from El Dorado/Fishnet Road. Equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Fremont Street and Fishnet Road
CITY DRAINAGE BASIN: EL ESTERO DRAINAGE



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Dense vegetation, 8-12-ft in height, extends from the pond perimeter towards the center of the pond, becoming less dense towards with distance from the pond bank. Light brush and weeds provides 90% coverage along the pond banks. The adjacent land use is predominantly roadways, park land, and a museum (Monterey Museum of Art - La Mirada). Accumulated woody debris and significant sediment build-up were observed along the western pond bank. The existing infrastructure is not known to be undersized, though localized flooding has occurred adjacent to the culvert inlets that are blocked with sediment. No erosion threats were observed, though visibility was limited due to the extent and density of vegetation. Vegetation around the pond inlets and outlet was dense and overgrown, preventing adequate access and visibility to maintain the structure.

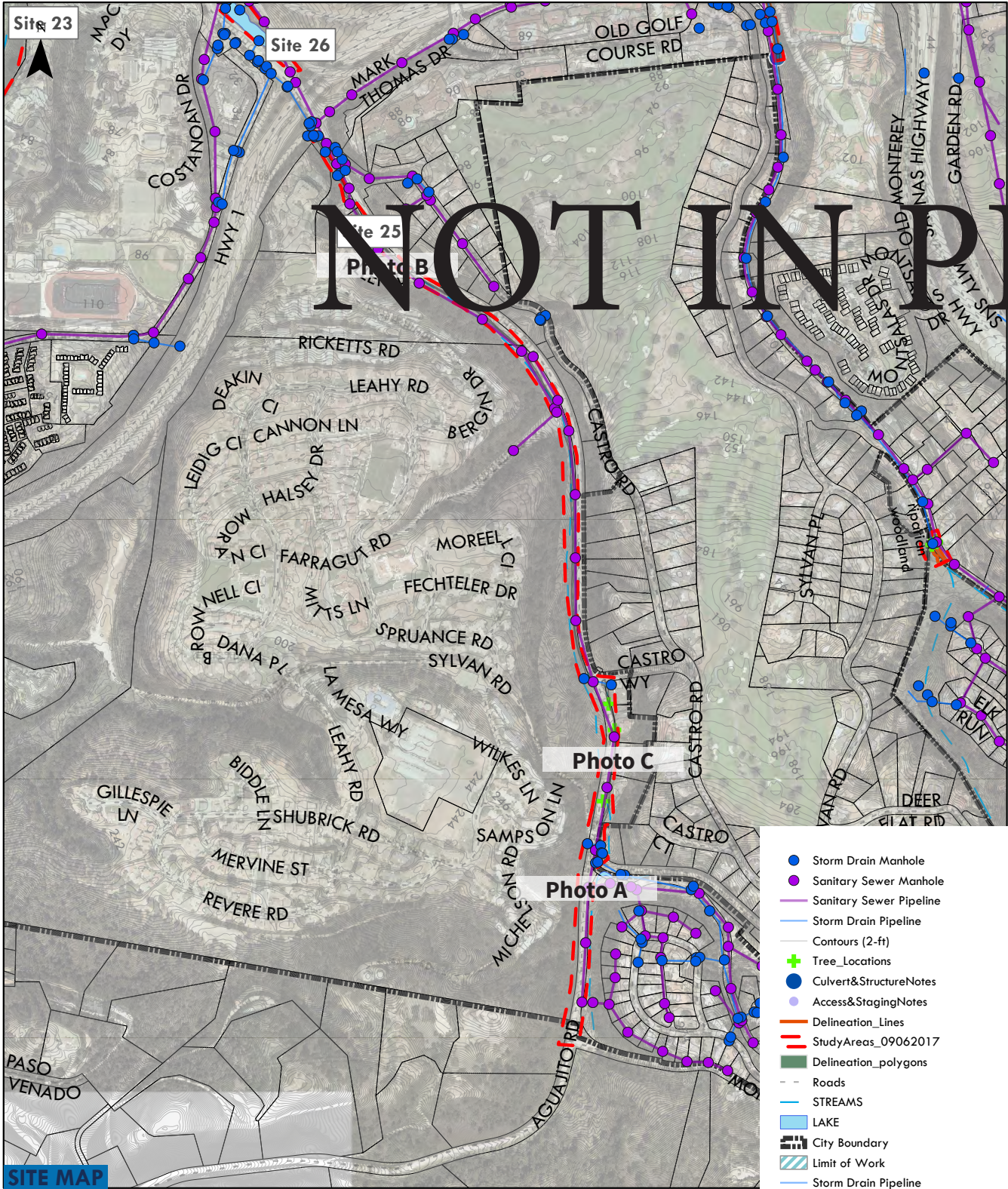
ENGINEERING ANALYSIS

Sediment accumulation and vegetation growth around the pond inlets and outlet are a maintenance concern. Annual clearing of vegetation and accumulated sediments in the vicinity of the four inlets and the outlet (with weir system) is proposed. The proposed limit of work would extend a minimum of 10-15-ft from the bank.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the pond, accumulated sediment and vegetation in the vicinity of the inlets and outlet will be removed annually. The site will be accessed from four locations; two from Via Mirado and two from Fremont Street. Equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Via Esperanza and Via Arcerol Drive
CITY DRAINAGE BASIN: Hartnell Drainage

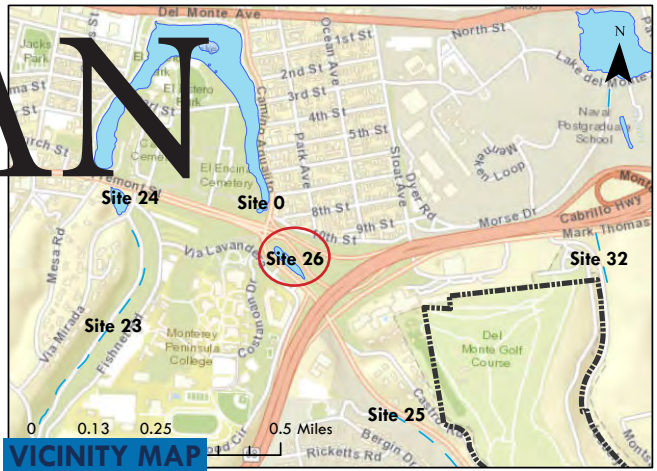
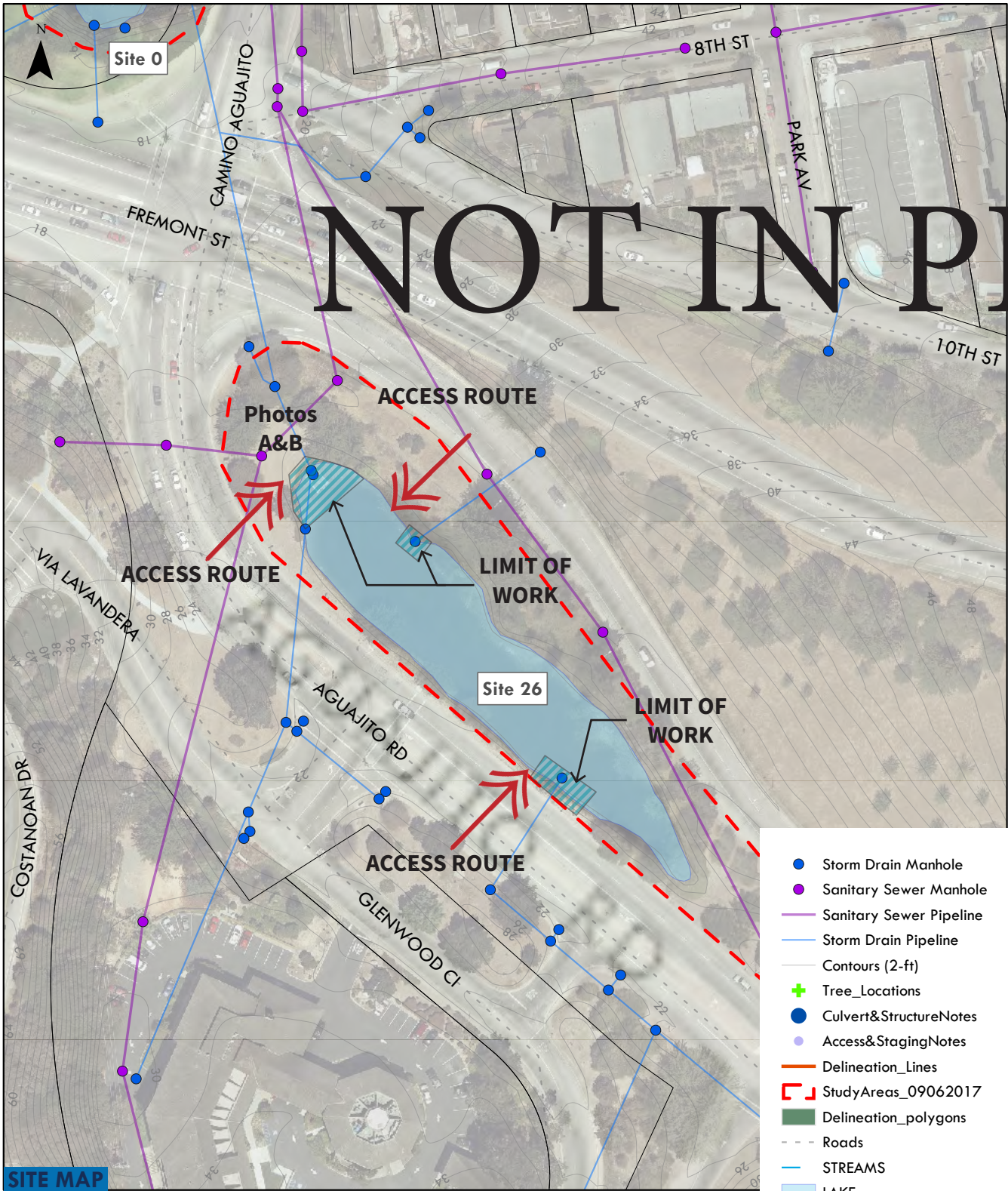


SETTING: ENVIRONMENTAL CONDITIONS

ENGINEERING ANALYSIS

PROJECT DESCRIPTION

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Dense vegetation, 10-12-ft in height, extends from the pond perimeter towards the center of the pond, becoming less dense towards with distance from the pond bank. Light brush and weeds provides 100% coverage along the pond banks. The adjacent land use is predominantly roadways and medians. No significant fallen trees or tree limbs were observed and none of the existing infrastructure is known to be undersized. No flood or erosion threats were observed, though visibility was limited due to the extent and density of vegetation. Vegetation around the pond outlet and trash rack was dense and overgrown, preventing adequate access and visibility to maintain the structure.

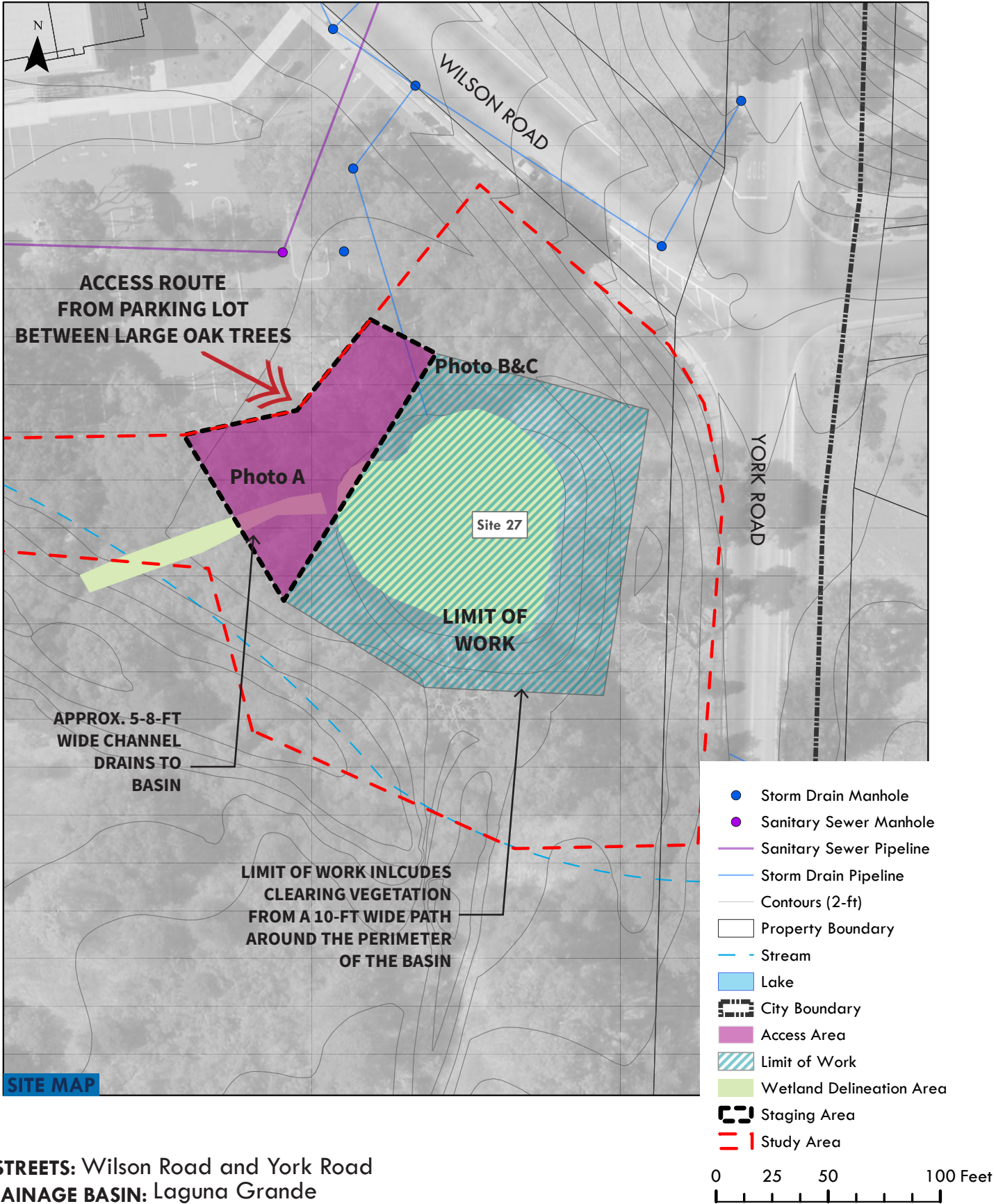
ENGINEERING ANALYSIS

Sediment accumulation and vegetation growth around the pond inlets and outlet are a maintenance concern. Annual clearing of vegetation and accumulated sediments in the vicinity of two inlets and the outlet (with trash rack) is proposed. The proposed limit of work would extend a minimum of 10-ft from the bank.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the pond, accumulated sediment and vegetation in the vicinity of the inlets and outlet will be removed annually. The site will be accessed from three locations; two from Aguajito Road and a third from Fremont Street. Equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Site vegetation is light density brush and weeds with 3-4 ft tall shrub and grasses (french broom) in the basin bottom and banks with approximately 60% vegetation cover on the banks. The adjacent land use includes Highway 68 and the Ryan Ranch Industrial Park and the area is zoned as Industrial in the City's General Plan. The area in the immediate vicinity of the detention basin is a parking lot for medical offices. There were no significant fallen trees or tree limbs and none of the existing basin infrastructure is known to be undersized. No flood or erosion threats were observed. A 5 to 8-ft wide channel drains to the basin from the west.

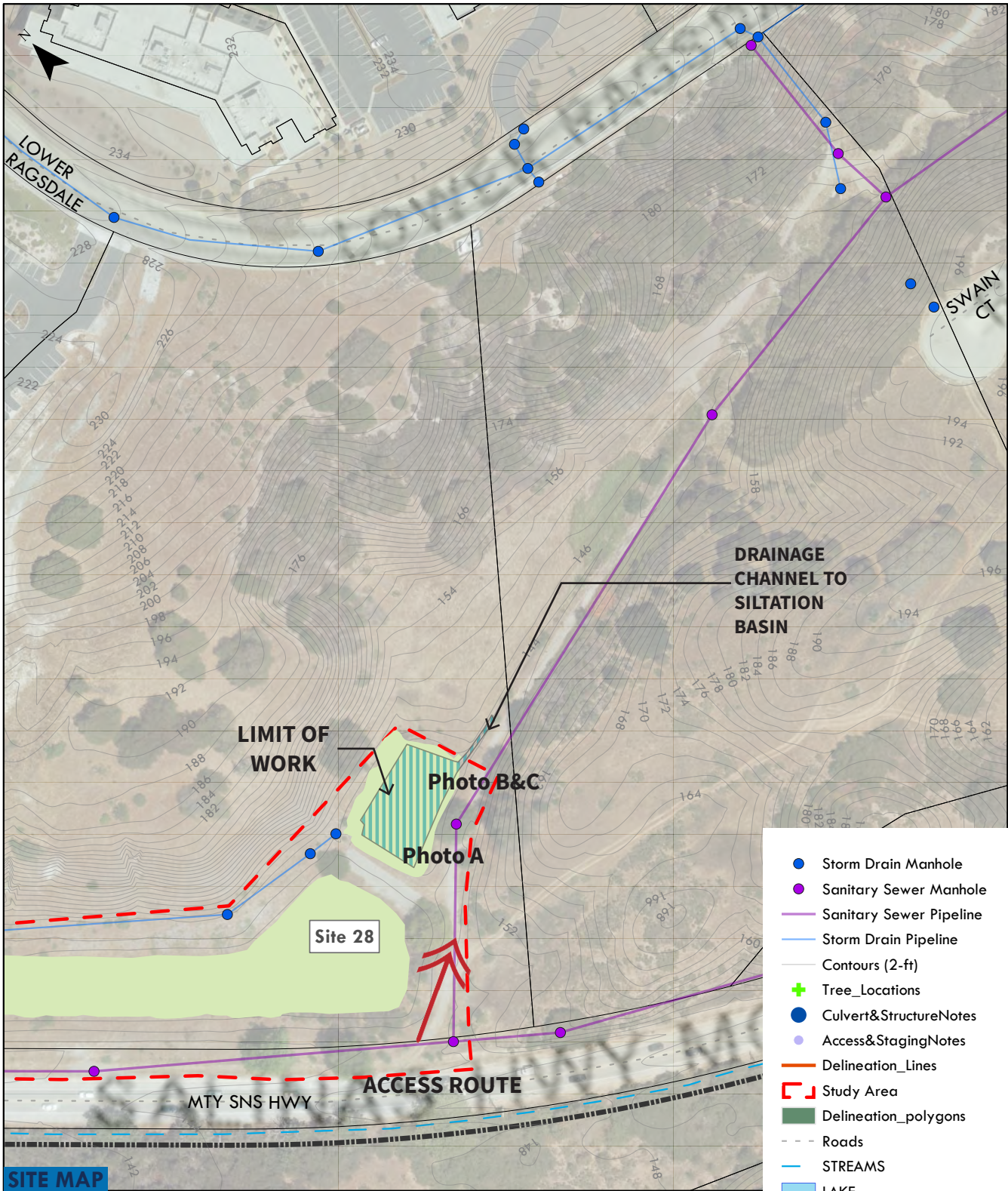
ENGINEERING ANALYSIS

Capacity and function of the basin is reduced by the presence of vegetation and accrual of sediment. Access to the basin is limited due to vegetation that has grown up on the banks and within the 10-ft perimeter path that was previously used to access the basin. An existing overflow standpipe in the basin was not located due to overgrowth. Vegetation is generally obscuring visibility to determine facility condition.

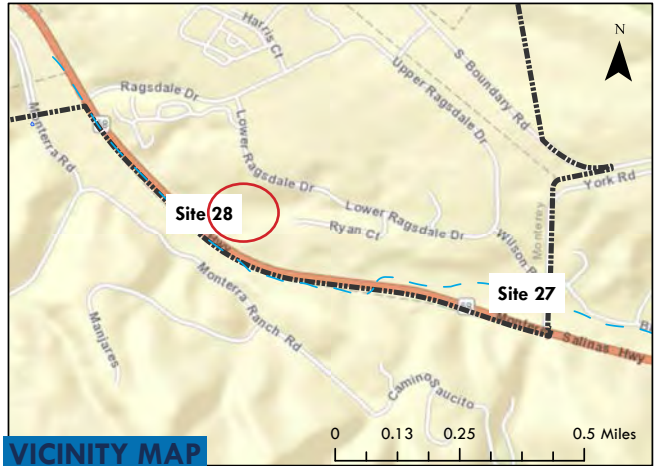
PROJECT DESCRIPTION

To maintain the function and capacity of the siltation/detention basin the City proposes to remove accumulated sediment and vegetation from within the bottom of the detention basin and along a 10-foot wide path around the perimeter of the basin, 1-2 times per year. The site would be accessed from the adjacent parking lot between the mature oak trees. Equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Monterey Salinas Highway (Highway 68)
CITY DRAINAGE BASIN: Laguna Grande



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Site vegetation is light density brush and weeds with 10-12 ft tall willows with approximately 60% vegetation cover on the banks. The adjacent land use includes Highway 68 and the Ryan Ranch Industrial Park and the area is zoned as Industrial in the City’s General Plan. The area in the immediate vicinity of basin is open space. There were no significant fallen trees or tree limbs and none of the existing basin infrastructure is known to be undersized. Areas of sedimentation and erosion were observed related to a slope failure/landslide on the north/north-east slope above the Basin.

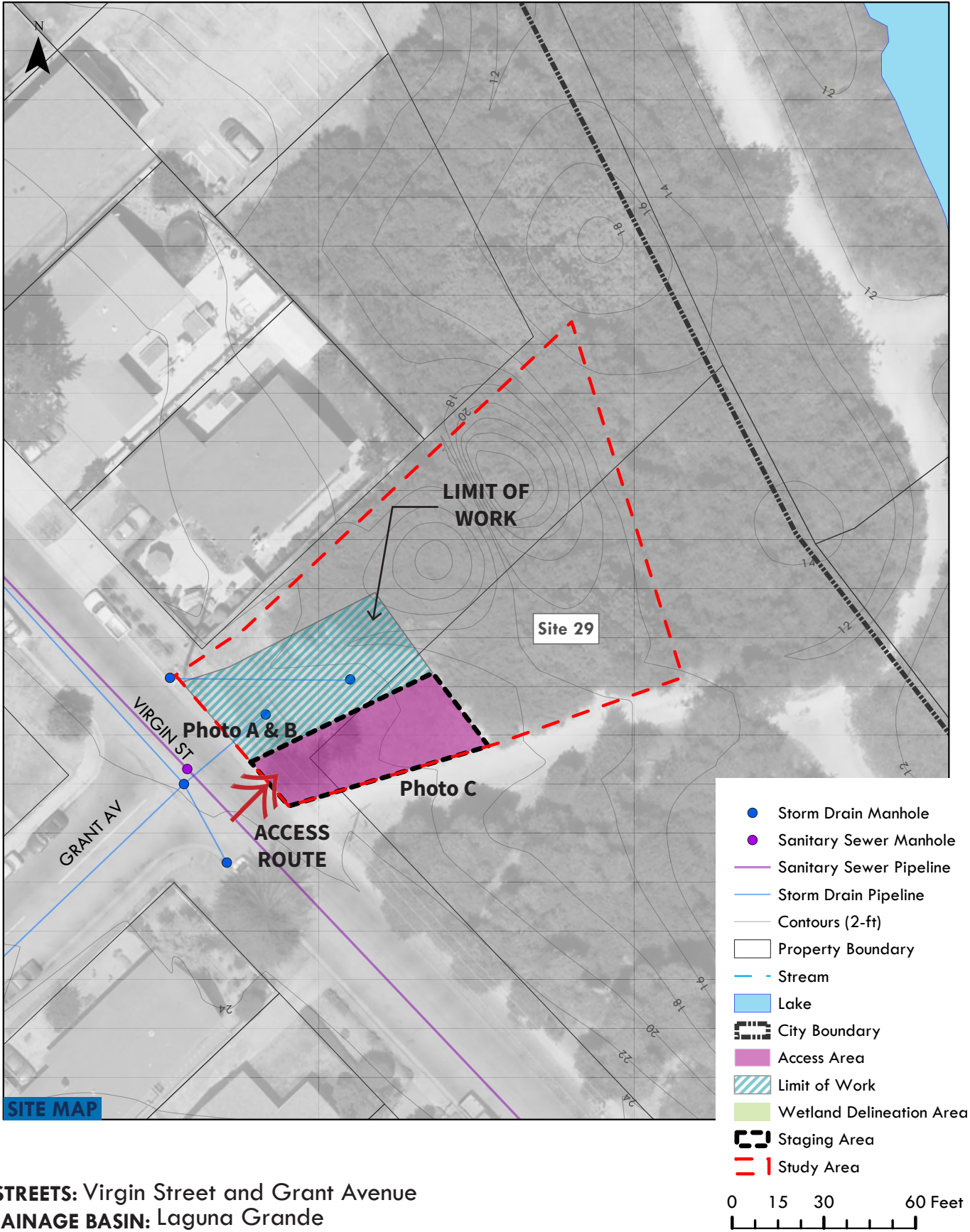
ENGINEERING ANALYSIS

Capacity and function of the basin is reduced by the presence of vegetation and accrual of sediment. The sediment and debris from the slope failure has overwhelmed the Basin and the incoming drainage channel that enters from the east. As a result of the channel being choked with sediment from the slope failure, storm flows will be forced into the adjacent sewer easement road; potentially causing erosion along the roadway and risking exposure of the sewer line. The Study Area does not include the extents of the slope failure, and the proposed maintenance activities described in the project description do not include restoration of the flow path/drainage channel into the siltation basin.

PROJECT DESCRIPTION

To maintain the function and capacity of the siltation basin the City proposes to remove accumulated sediment and vegetation from within the bottom of the detention basin and in the drainage channel entering from the east, 1-2 times per year. The site would be accessed from Highway 68 onto an access road that parallels a sewer easement. Equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Site includes a low density stormwater swale that drains from east to west towards dense riparian vegetation extending around the border of Laguna Grande. Vegetation in the stormwater swale is approximately 2-ft tall, whereas the riparian vegation is 8-10-ft tall willow. In both cases approximately 60% vegetation cover on the banks was observed. The adjacent land use includes single family residences and public park land. There were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. No flood or erosion threats were observed. Vegetation around the inlet to the stormwater swale was short, allowing access and visibility to the storm water inlet and channel.

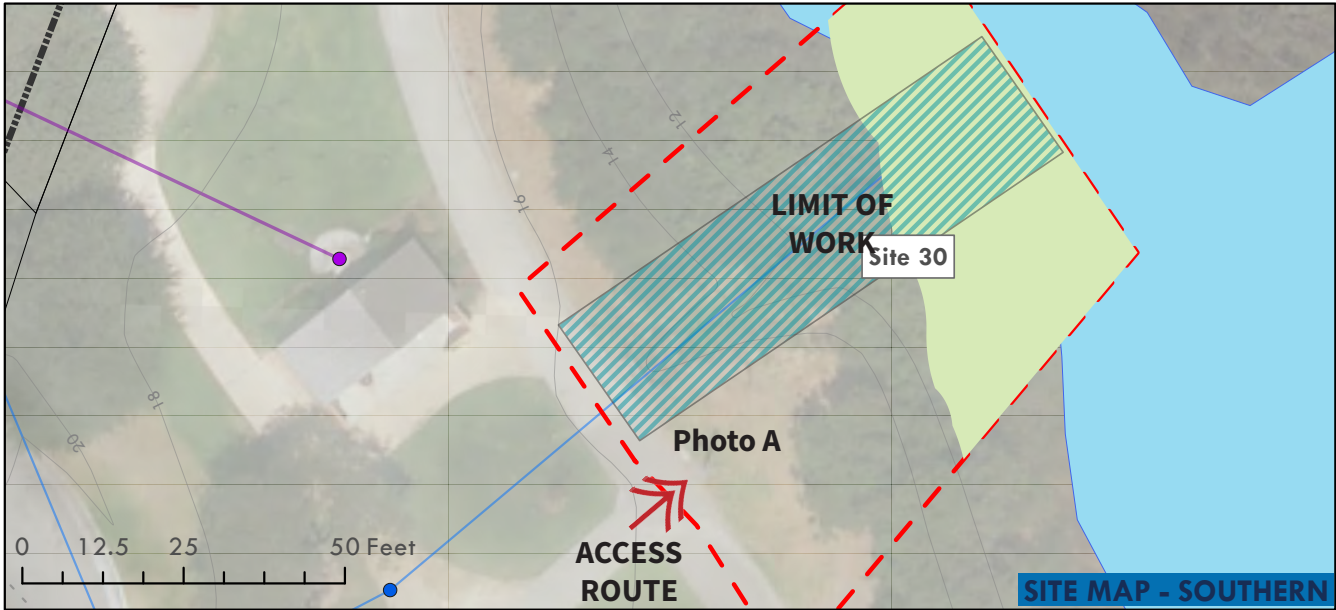
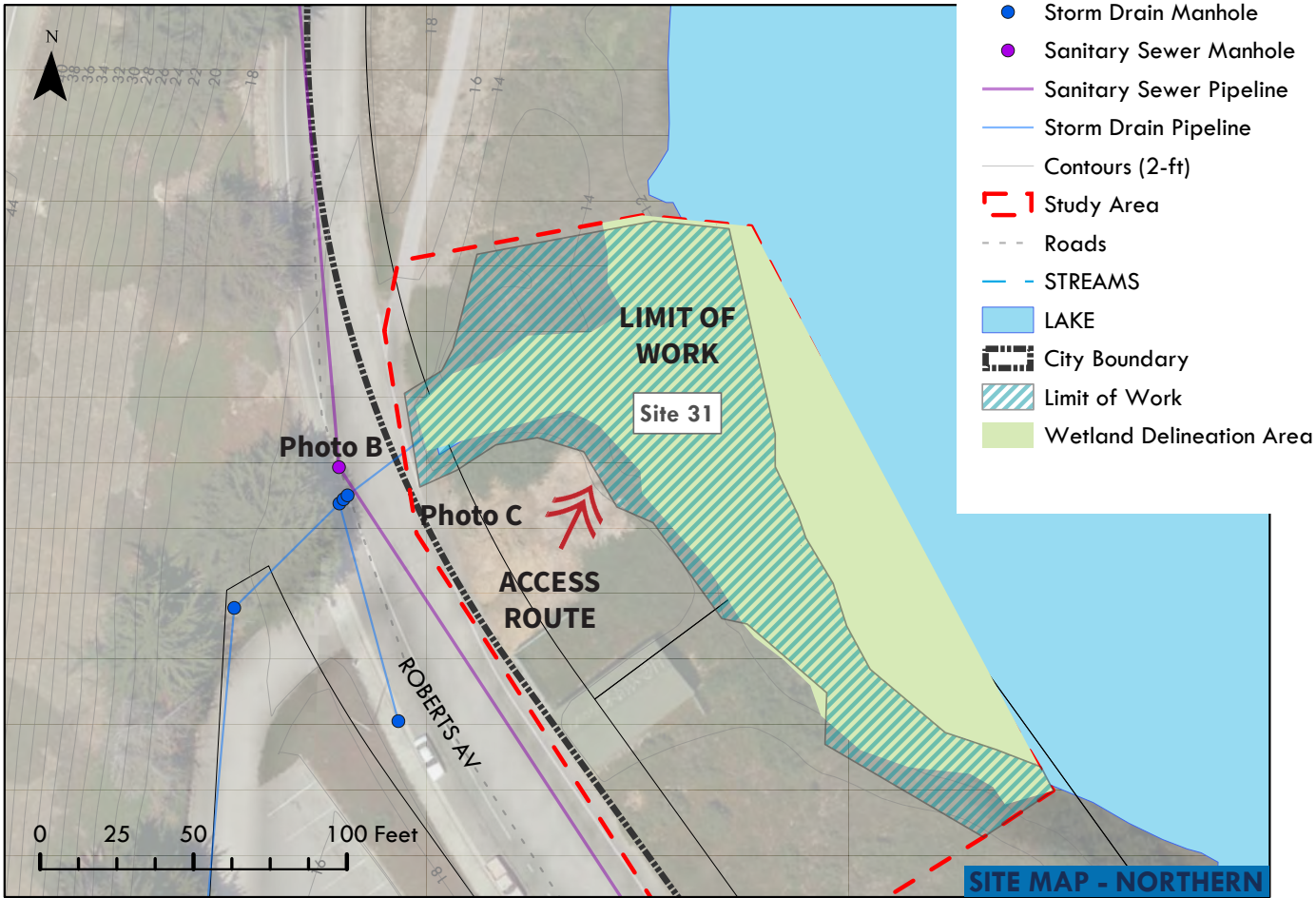
ENGINEERING ANALYSIS

The growth of vegetation in the inlet channel was not preventing access to evaluate condition and maintain facilities nor is it currently reducing the capacity of the system. Sediment accumulation does not appear to be as significant of a maintenance concern compared to overgrown vegetation. The observed condition is how the City proposes to maintain the swale in future as part of the annual maintenance practices.

PROJECT DESCRIPTION

To maintain stormwater swale function and capacity, vegetation along the inlet channel and adjacent banks will be removed annually. The site will be accessed from Virgin Street, along the southern bank of the swale. Work will not extend east of the existing taller riparian vegetation. Equipment that will be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Roberts Avenue and Del Monte Avenue
CITY DRAINAGE BASIN: Laguna Grande



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Site consists of a northern and southern portion; the southern portion drains into Laguna Grande and the northern portion drains into Roberts Lake. At the northern site vegetation is dense along the perimeter of the basin, with 6-8 ft tall wetland plants with approximately 100% vegetation cover on the banks. The adjacent land use includes highway, roaway, and a hotel. At the southern site the vegetation is dense, with 6-8 feet tall willows and ivy at the inlet with approximately 100% vegetation cover on the banks. The adjacent land use includes single family residences and public park land. At both sites, there were no significant fallen trees or tree limbs and none of the existing basin infrastructure is known to be undersized. No flood or erosion threats were observed. The pond inlet and channel are overgrown with vegetation which obscured an evaluation of the facility condition.

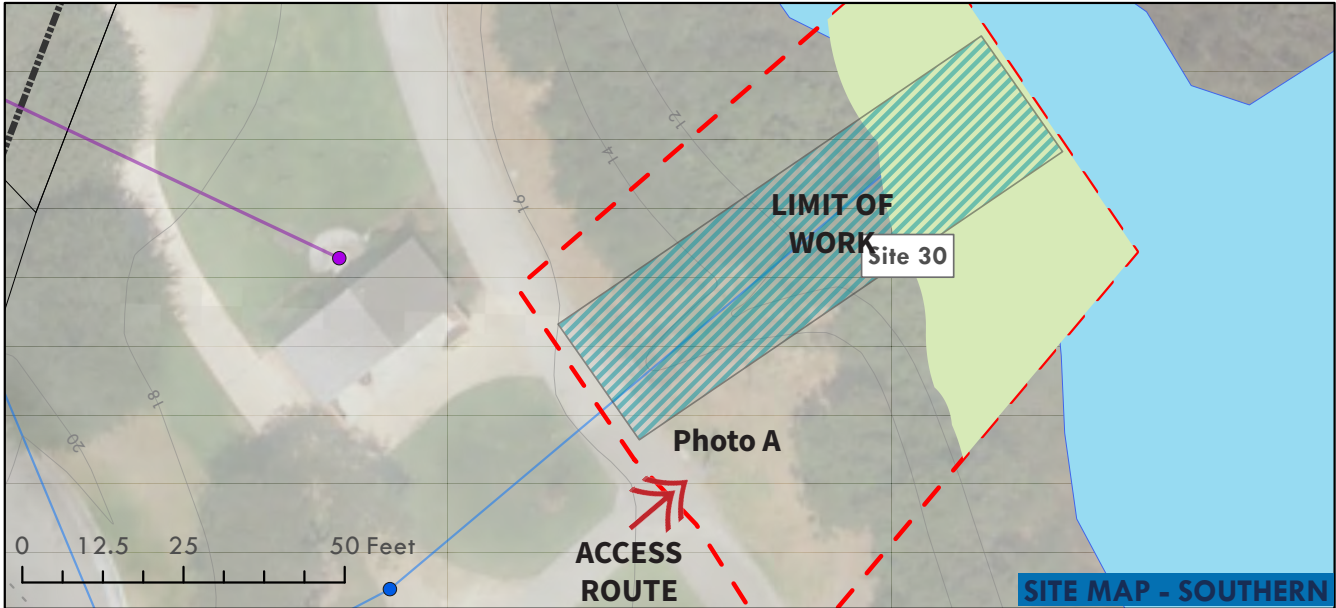
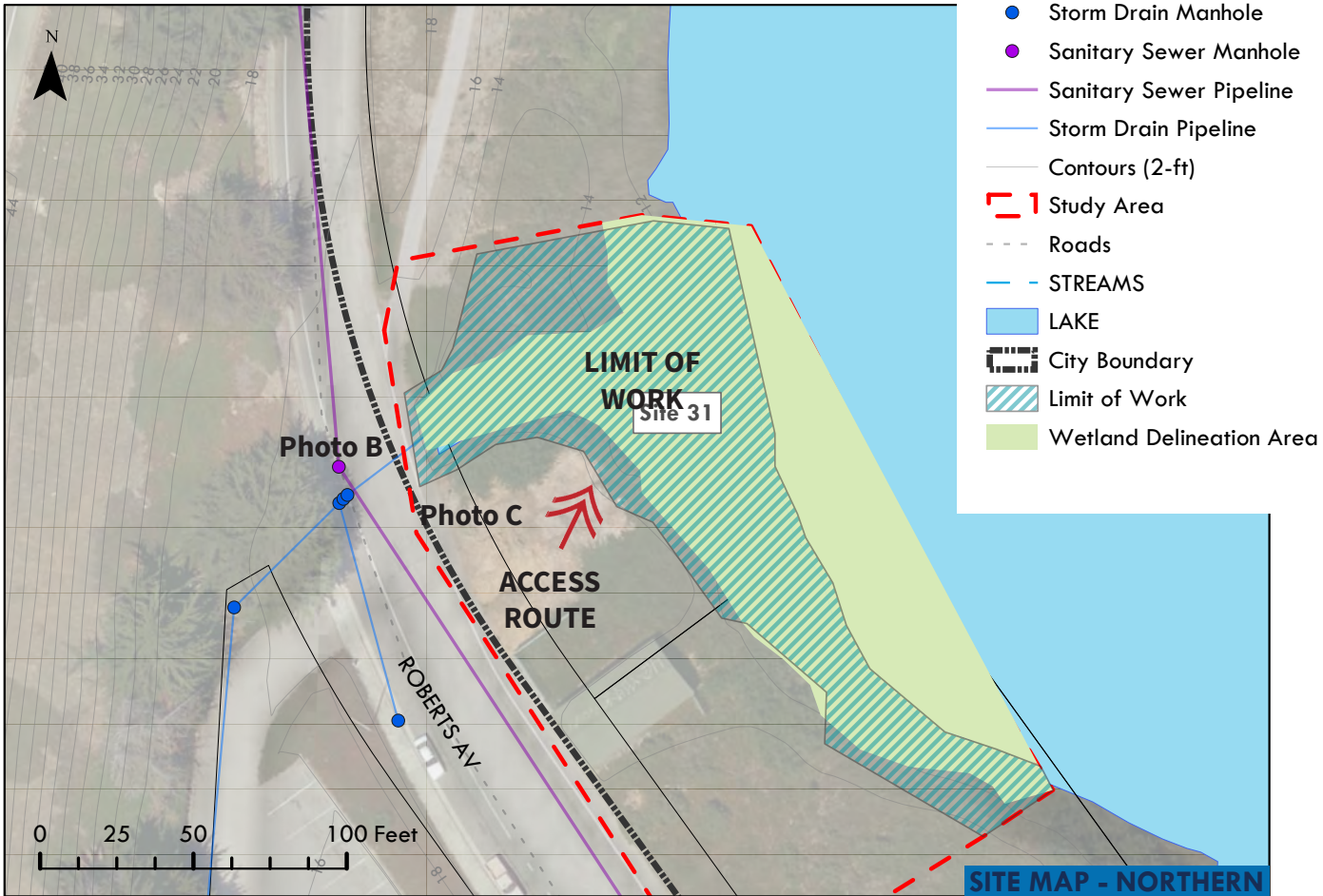
ENGINEERING ANALYSIS

The growth of vegetation in the inlet channels is preventing access to evaluate condition and maintain facilities and is reducing the capacity of the system. Sediment accumulation does not appear to be as significant of a maintenance concern at either location, compared to overgrown vegetation.

PROJECT DESCRIPTION

To maintain inlet function and capacity, vegetation along the inlet channel and adjacent banks will be removed annually. The northern site would be accessed from Roberts Avenue and the southern site from Virgin Avenue. At the northern site, work would extend from the top of bank to the edge of open water and equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). At the southern site hand tools and chain saws would be used to limb trees and increase visibility to the existing infrastructure. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Roberts Avenue and Del Monte Avenue
CITY DRAINAGE BASIN: Laguna Grande



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Site consists of a northern and southern portion; the southern portion drains into Laguna Grande and the northern portion drains into Roberts Lake. At the northern site vegetation is dense along the perimeter of the basin, with 6-8 ft tall wetland plants with approximately 100% vegetation cover on the banks. The adjacent land use includes highway, roadway, and a hotel. At the southern site the vegetation is dense, with 6-8 feet tall willows and ivy at the inlet with approximately 100% vegetation cover on the banks. The adjacent land use includes single family residences and public park land. At both sites, there were no significant fallen trees or tree limbs and none of the existing basin infrastructure is known to be undersized. No flood or erosion threats were observed. The pond inlet and channel are overgrown with vegetation which obscured an evaluation of the facility condition.

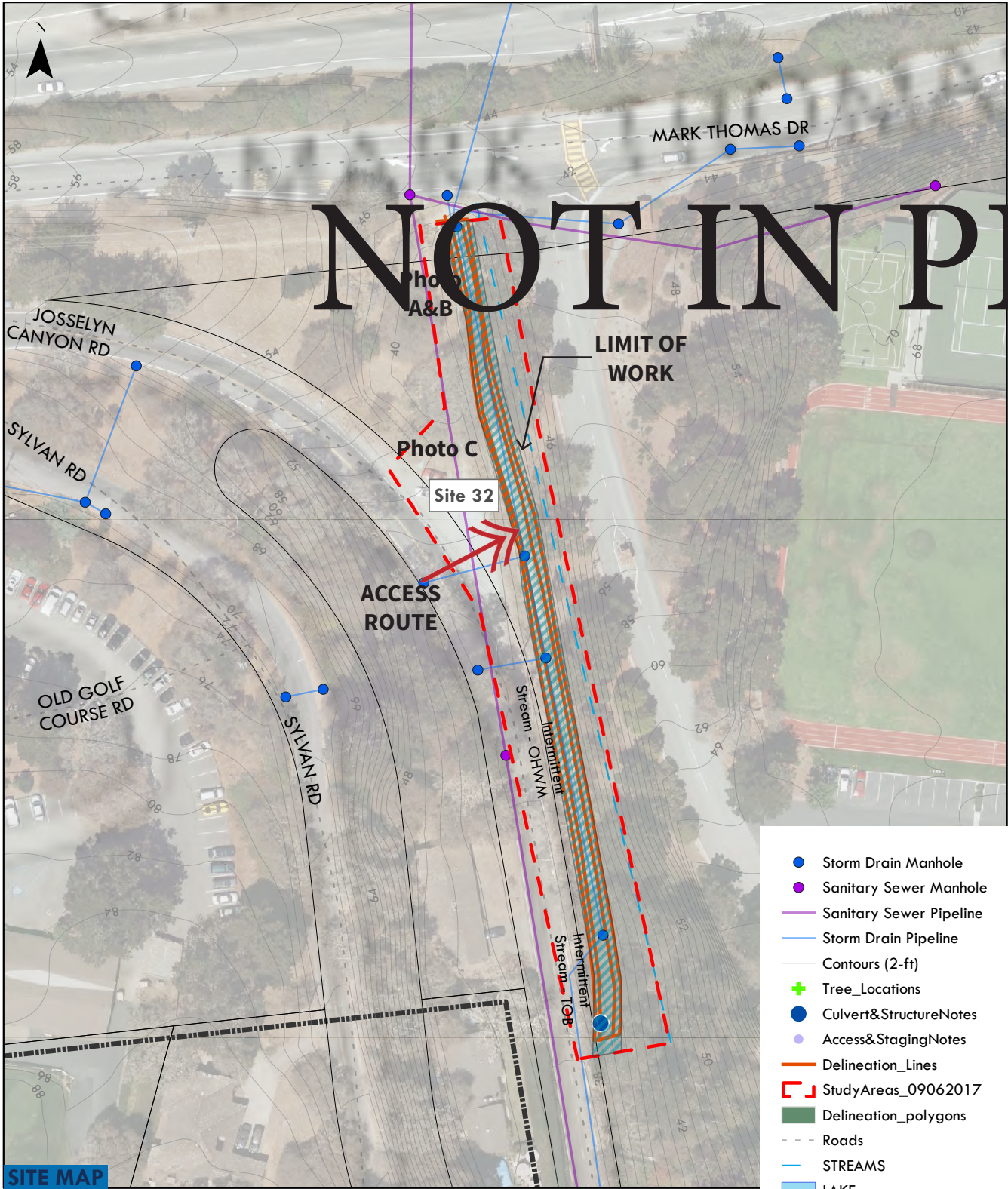
ENGINEERING ANALYSIS

The growth of vegetation in the inlet channels is preventing access to evaluate condition and maintain facilities and is reducing the capacity of the system. Sediment accumulation does not appear to be as significant of a maintenance concern at either location, compared to overgrown vegetation.

PROJECT DESCRIPTION

To maintain inlet function and capacity, vegetation along the inlet channel and adjacent banks will be removed annually. The northern site would be accessed from Roberts Avenue and the southern site from Virgin Avenue. At the northern site, work would extend from the top of bank to the edge of open water and equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). At the southern site hand tools and chain saws would be used to limb trees and increase visibility to the existing infrastructure. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Oak Crest Drive and Sylvan Drive
CITY DRAINAGE BASIN: DEL MONTE LAKE (NPS)



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 12, 2017. Site includes a concrete lined conveyance channel approximately 2-ft wide at its base, extending up to an open channel width of approximately 8-ft, with outlet through a 60-inch RCP culvert beneath Mark Thomas Drive. Low lying aquatic vegetation had established in accumulated sediment along the channel bottom. The concrete sides slopes were generally bare of vegetation. The adjacent land use includes a private school (Santa Catalina School), single family residences, golf course (Del Monte Golf Course), and roadways. There were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. No flood or erosion threats were observed. Vegetation around the culvert inlet was short, allowing adequate access and visibility.

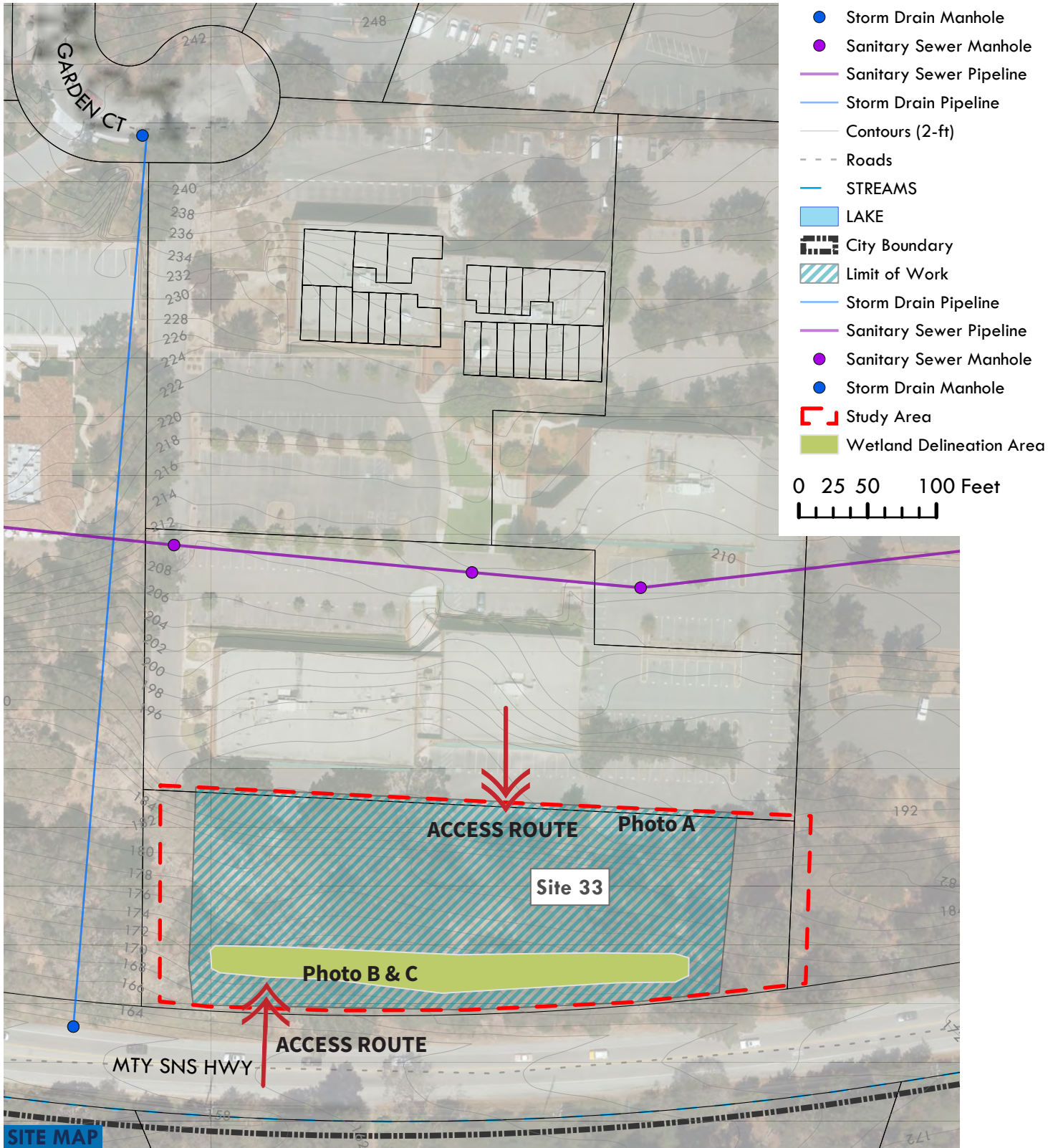
ENGINEERING ANALYSIS

The growth of vegetation in the inlet channels was not preventing access to evaluate condition and maintain facilities nor is it currently reducing the capacity of the system. Sediment accumulation in the channel is a maintenance concern.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the concrete channel, accumulated sediment along the channel bottom will be removed annually. The site will be accessed from Josselyn Canyon Road, along the western channel bank. Work will be focused within the limits of the concrete channel banks. A bobcat within the channel will push channel sediment and vegetation to a single location where it can be accessed and removed by a backhoe and placed in a dump truck. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the 4-ft bankfull width. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Garden Court and Highway 68
CITY DRAINAGE BASIN: DEL MONTE LAKE



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on November 7, 2017. The basin is located to the south of a commercial building complex and receives drainage from the developed areas. Overflow from the basin is to a drainage swale parallel to Highway 68 directly south and parallel to the basin. The basin berm and bottom are covered in dense brush and trees with approximately 90% coverage, and vegetation ranges in height from 10-20 feet tall. Fallen tree trunks and limbs were identified throughout the proposed maintenance area. An 8" CMP outflow to Highway 68 was identified, along with a 4" PVC inlet to a catchbasin box. Visibility to existing inlets and outlets was obstructed by overgrown vegetation. Vegetation around the culvert inlet was short, allowing adequate access and visibility, though on the downstream side overgrown vegetation limited visibility of the culvert outlets.

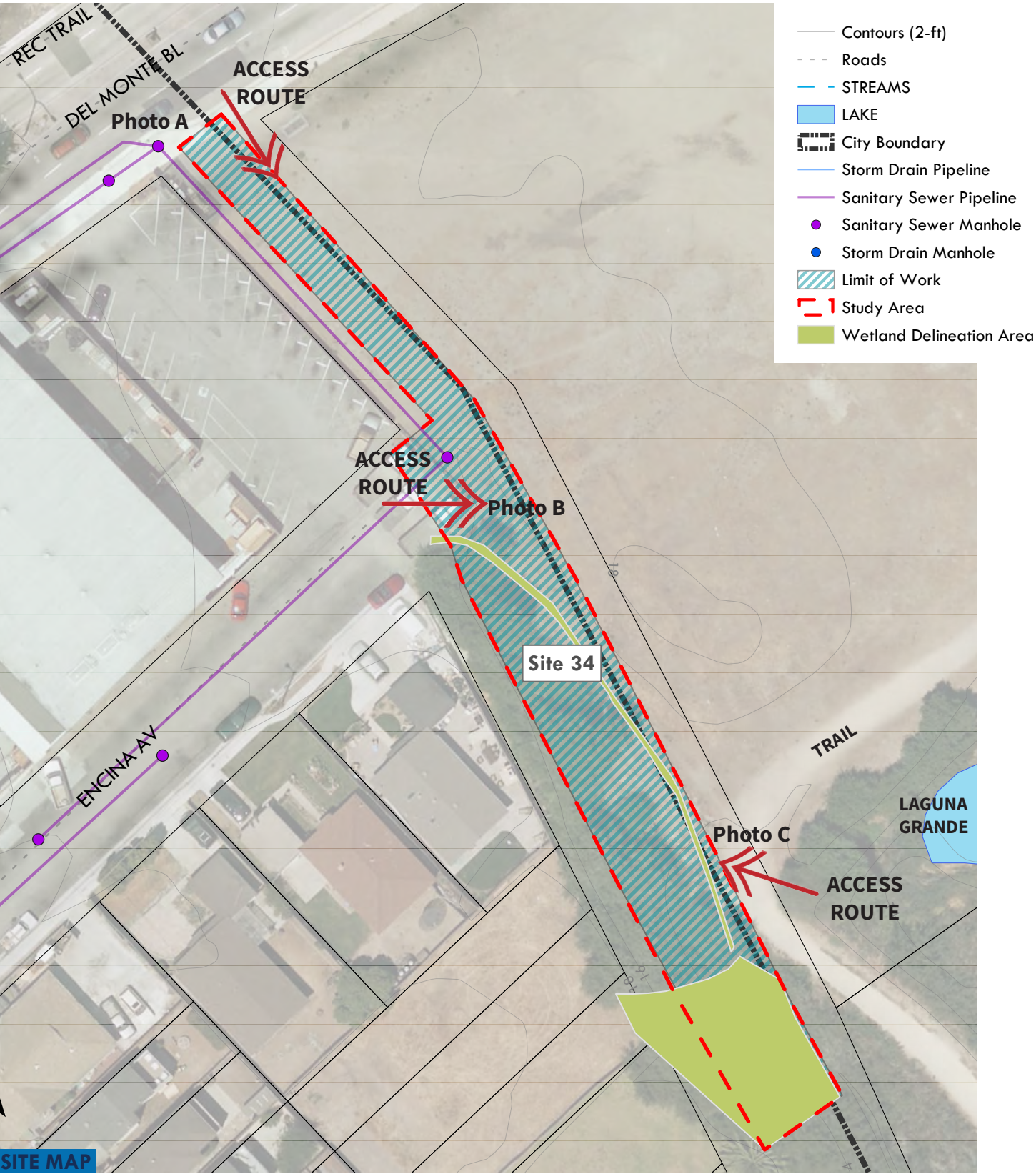
ENGINEERING ANALYSIS

Erosion was observed in the vicinity of the basin overflow structure. To maintain stormwater conveyance and capacity, fallen limbs and trees will be removed and trees within the limit of work will be selectively limbed to maintain access and return the feature to design capacity. Failure of the concrete around an inlet catchbasin in the parking lot (Photo A) was observed and should be repaired in coordination with the neighboring property owner of the commercial complex.

PROJECT DESCRIPTION

To the north, the site will be accessed via the commercial building complex, and from the south from Highway 68. Work will be focused within the limits of the basin. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into or crossing the basin. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Del Monte Boulevard and Encina Avenue
CITY DRAINAGE BASIN: LAGUNA GRANDE



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on November 7, 2017. The proposed maintenance area includes a grass swale that drains northwest to southeast between commercial and residential properties toward a trail and eventual outlet into Laguna Grande Lake. Vegetation in the stormwater swale is mowed grass, whereas the riparian vegetation includes mature trees and shrubs. In both cases approximately 60% vegetation cover on the banks was observed. The adjacent land use includes single family residences and public park land. There were no significant fallen trees or tree limbs and none of the existing infrastructure is known to be undersized. No flood or erosion threats were observed.

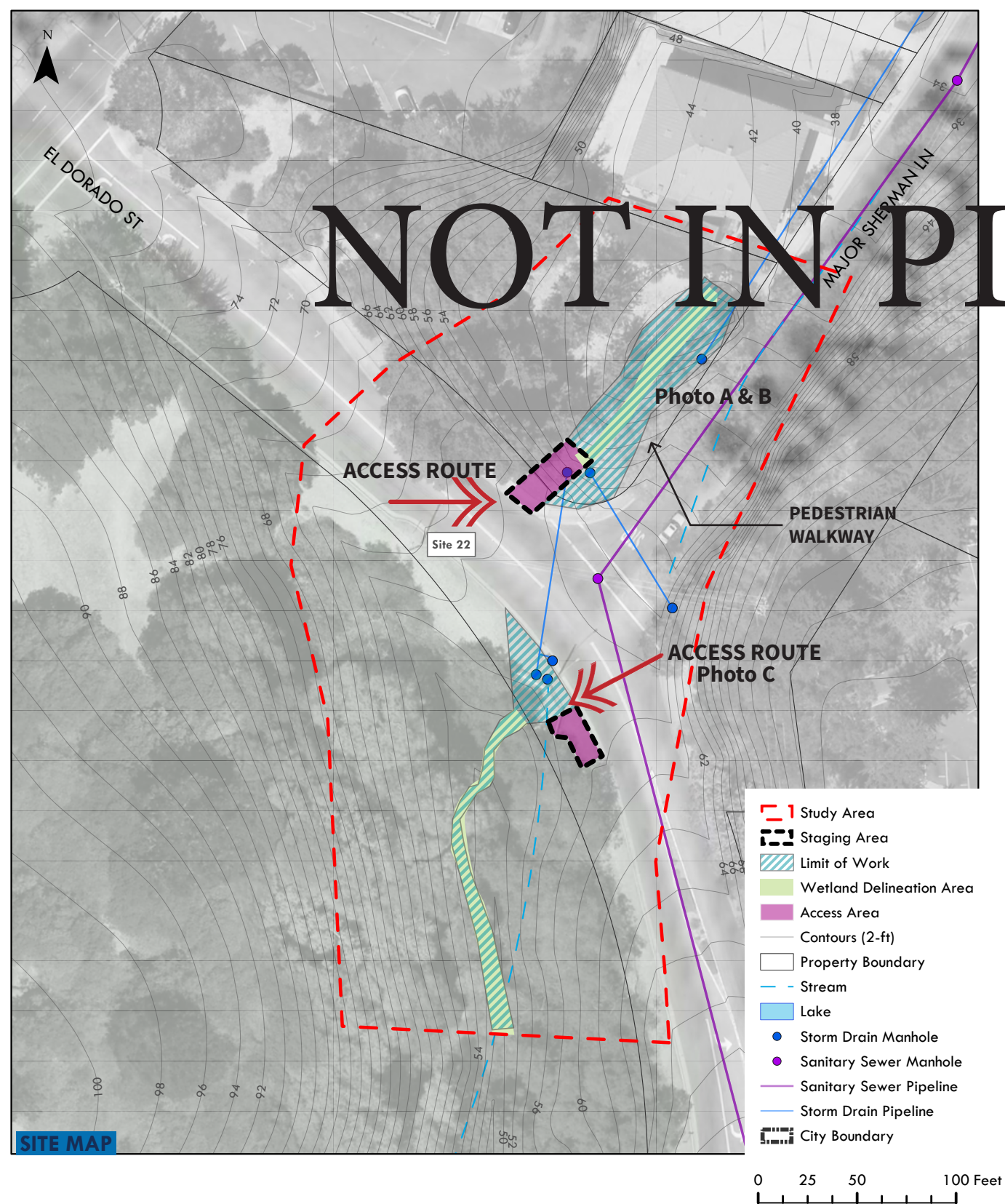
ENGINEERING ANALYSIS

The growth of vegetation in the inlet channel was not preventing access to evaluate condition and maintain facilities nor is it currently reducing the capacity of the system. Sediment accumulation does not appear to be as significant of a maintenance concern compared to overgrown vegetation. The observed condition is how the City proposes to maintain the swale in future as part of the annual maintenance practices.

PROJECT DESCRIPTION

To maintain stormwater swale function and capacity, vegetation along the inlet channel and adjacent banks will be mowed annually. The site will be accessed from Encina Avenue, Del Monte Boulevard, or the Laguna Grande trail. Equipment that will be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: El Dorado Street and Major Sherman Lane
CITY DRAINAGE BASIN: HARTNELL DRAINAGE



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 13, 2017. The channel bankfull width is approximately 12-ft upstream of El Dorado Street and a trash rack on the upstream culvert inlet was clear of debris though an 8-ft long 18-inch diameter downed tree was crossing the channel upstream of the trash rack. The downstream channel section has incised approximately 5-ft below the invert of the culvert outlet and bank erosion was observed. Dense brush and trees were established along the channel banks in both the upstream and downstream sections. The adjacent land use includes professional buildings, Don Dahvee Park, single family residences, and roadways. None of the existing infrastructure is known to be undersized and no flood threats were observed. Vegetation around the culvert inlet was short, allowing adequate access and visibility, though on the downstream side overgrown vegetation limited visibility of the culvert outlets.

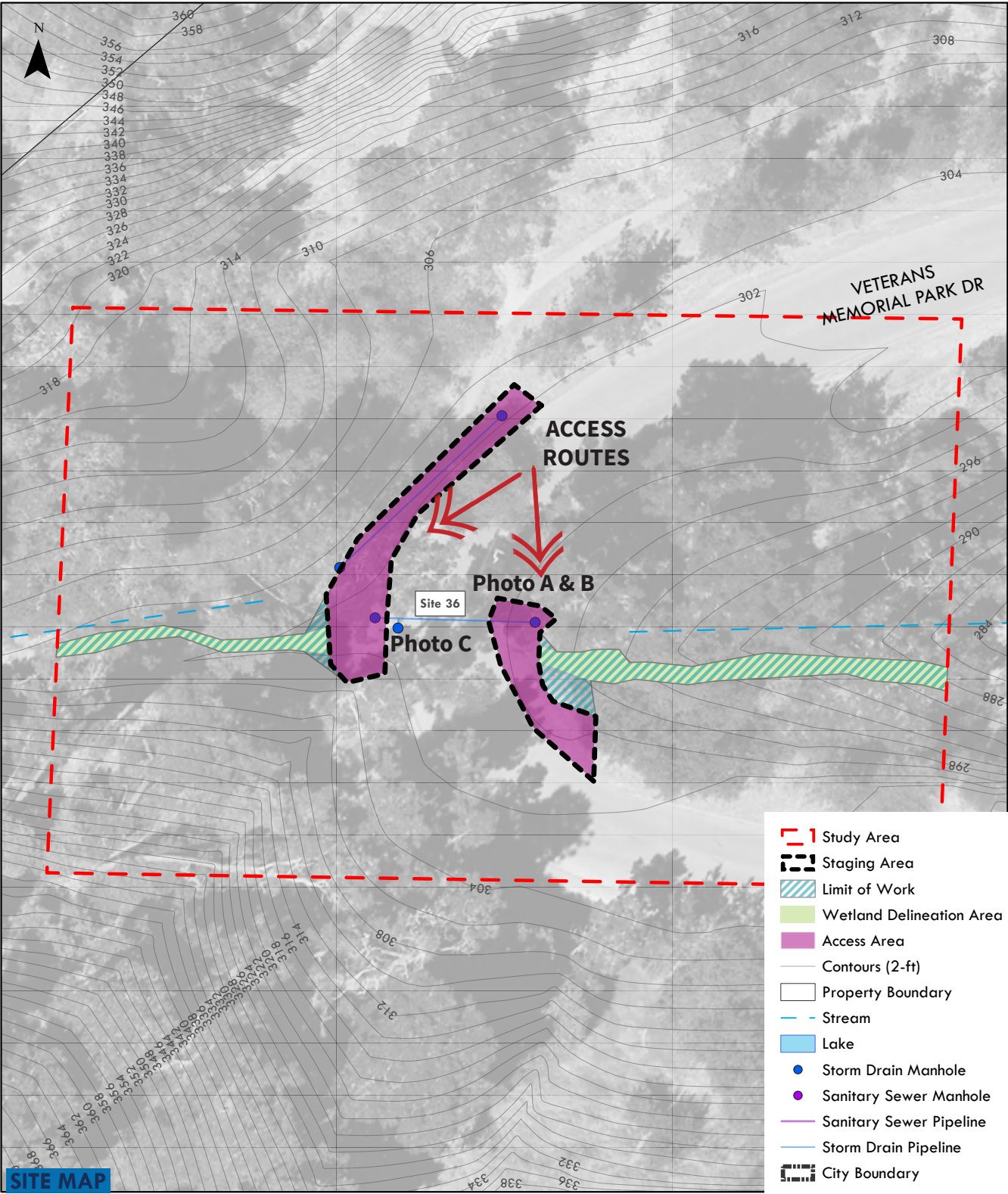
ENGINEERING ANALYSIS

Bank erosion on the downstream channel could potentially jeopardize the stability of the wooded pedestrian walkway located on the channel's right bank. To maintain stormwater conveyance and capacity, trees within the limit of work will be limbed to maintain access to the trash rack, channel corridor, and accumulated sediment and debris within the bankfull channel will be removed. A longer term bank stabilization project should be considered to protect the pedestrian walkway.

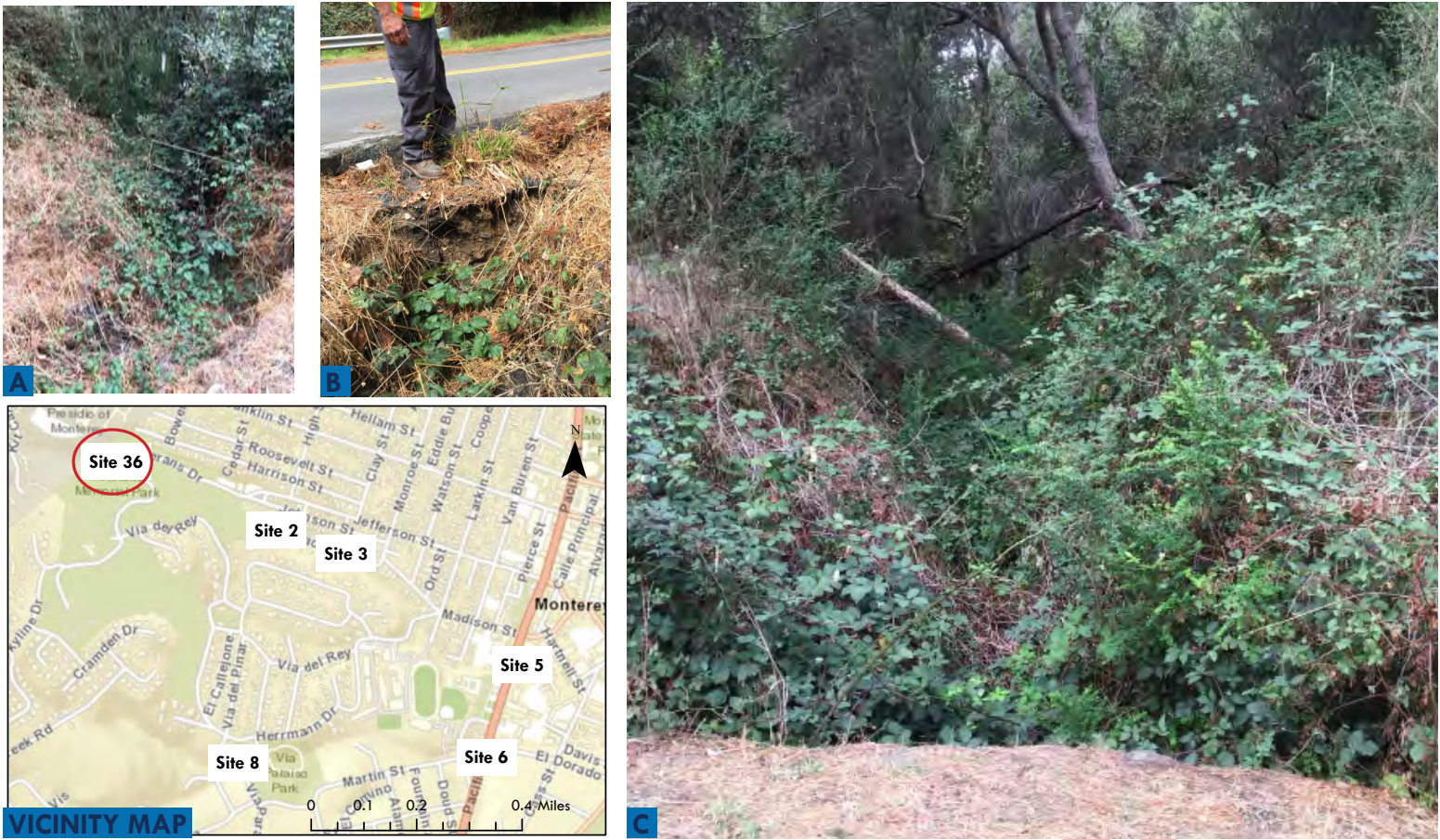
PROJECT DESCRIPTION

On the upstream side, the site will be accessed via an existing gate off of El Dorado Street (Photo C). On the downstream side, access will need to occur from El Dorado Street or the northern side of the adjacent private property or for work with hand tools, down the banks next to the pedestrian walkway parallel to Major Sherman Lane. Work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel bankfull width. A backhoe and dump truck would be used to clear overgrown vegetation and accumulated material in the trash rack vicinity. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: Veterans Memorial Park Drive in Memorial Park
CITY DRAINAGE BASIN: HARTNELL DRAINAGE



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 13, 2017. The adjacent land use includes open space (Veterans Memorial Park), roadways, and the Presidio of Monterey. Vegetation is 10-ft tall with approximately 90% vegetation cover on the banks. The dense brush on the upstream (Photo C) and downstream side (Photo A) prevented inspection of existing infrastructure. There were two approximately 24” diameter trees down across the upstream channel. None of the existing infrastructure is known to be undersized. Erosion was observed where surface runoff from Veterans Memorial Park Drive enters the downstream channel (Photo B).

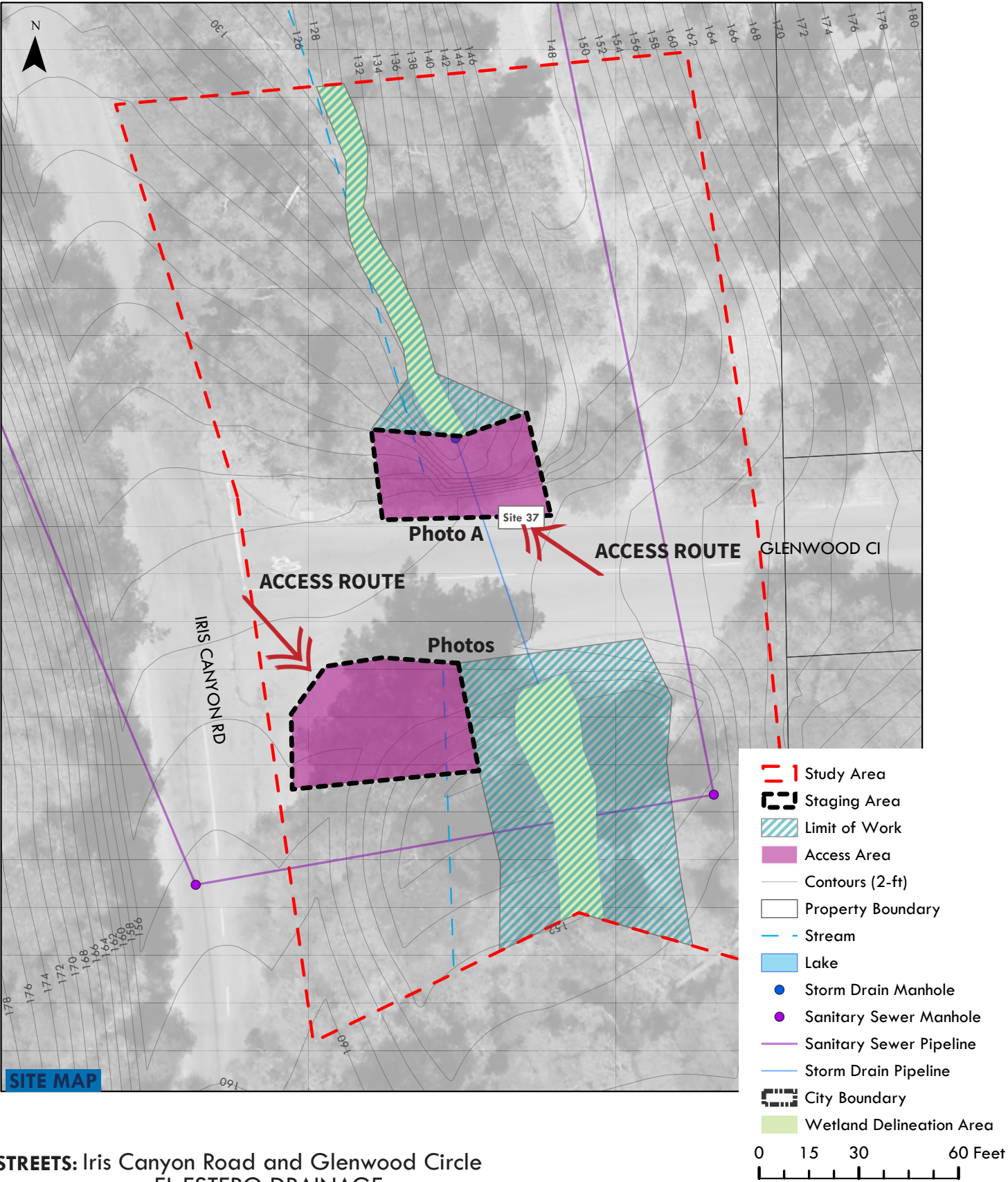
ENGINEERING ANALYSIS

The growth of vegetation in the vicinity of the culvert inlet and outlet are preventing access to evaluate condition and maintain facilities. Sediment accumulation does not appear to be as significant of a maintenance concern compared to overgrown vegetation.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity, trees within the limit of work will be limbed to maintain access to the channel corridor. Accumulated sediment and debris within the bankfull channel will be removed. To maintain inlet function and capacity, vegetation along the inlet channels and adjacent banks will be removed annually. Access would occur from Veterans Memorial Park Drive. Equipment that would be used to maintain the site include a backhoe, dump trucks, chain saws, and hand tools (i.e., picks, shovels, rakes, loppers, etc.). Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on September 13, 2017. Site includes an earthen channel flowing between open space, roadways, and multi-family apartments. Vegetation and accumulated sediment prevented access and evaluation of the channel and associated conveyance infrastructure. Vegetation is berries, pampas grass, and poison oak with 90% vegetative cover observed on banks. No significant fallen trees or tree limbs were observed and none of the existing infrastructure is known to be undersized. Vegetation in the vicinity of Glenwood Circle was dense and overgrown, preventing adequate access and visibility to maintain the structures.

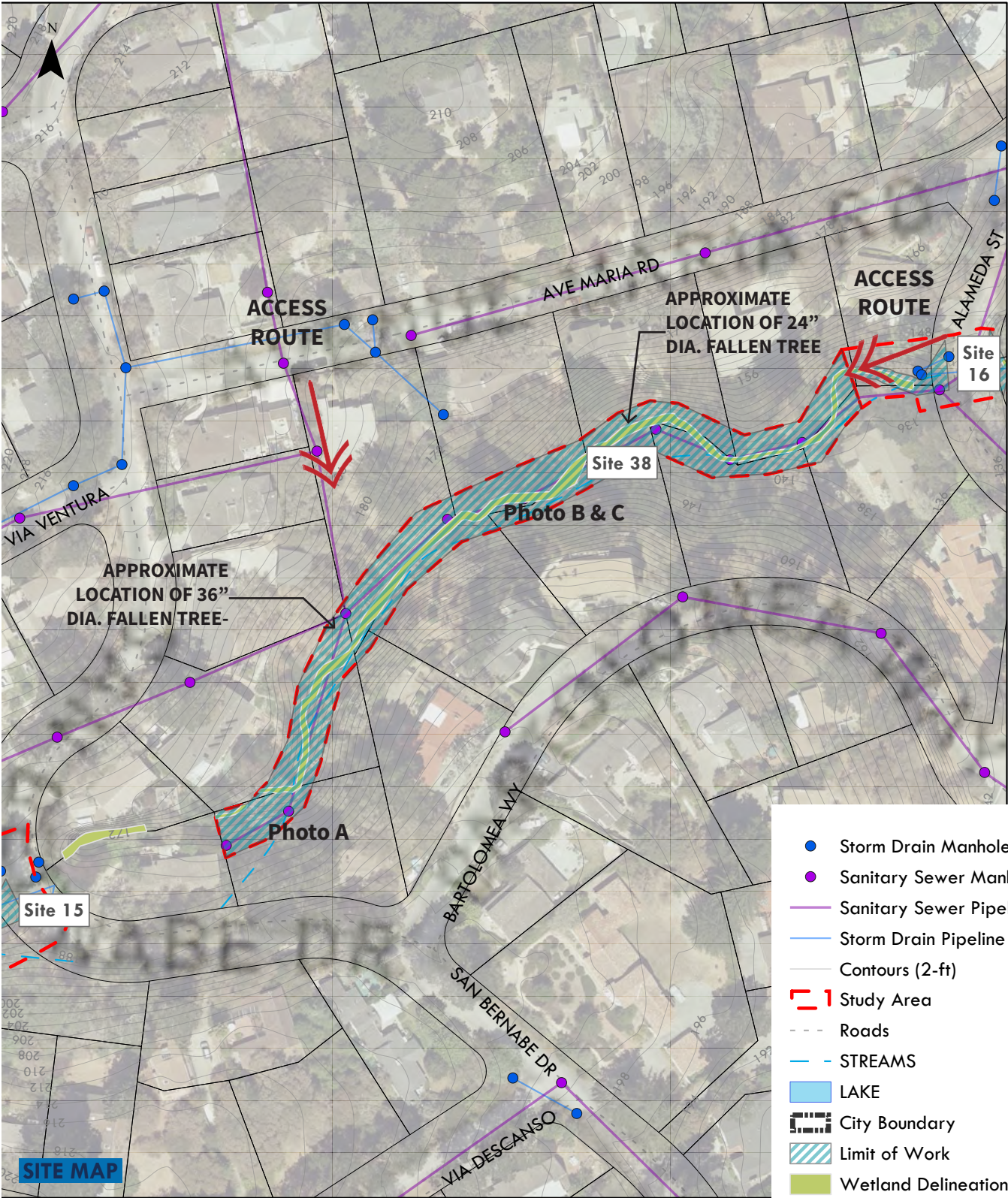
ENGINEERING ANALYSIS

Visibility was limited due to the extent and density of vegetation and flooding is possible upstream of Glenwood Circle due to reduced conveyance capacity. Sediment accumulation and vegetation growth around the Glenwood Circle culvert are a maintenance concern. Annual clearing of vegetation and accumulated sediments within the identified limit of work is proposed.

PROJECT DESCRIPTION

To maintain stormwater conveyance and capacity in the channel, accumulated sediment and vegetation along the channel bottom will be removed annually. The site will be accessed from Glenwood Circle and work will be focused within the limits of the channel banks. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina.

LOCATION & SITE DESCRIPTION



CROSS STREETS: San Bernabe Drive to Alameda Avenue
CITY DRAINAGE BASIN: HARTNELL DRAINAGE



SETTING: ENVIRONMENTAL CONDITIONS

Inspected on November 7, 2017. Site includes an earthen channel flowing between residential properties along a sewer easement (photo A) from San Bernabe Drive northeast towards Alameda Street. The channel is approximately 2-3-ft wide at its base, extending up to an open channel width of approximately 7-ft, with outlet through a box culvert beneath Alameda Street (see Site 16 description). Vegetation is mostly ivy and brambles, with some trees and 90% vegetative cover on banks. Some rock and accumulated sediment was observed along the channel bottom. There were two fallen trees identified at the time of survey (24" and 36" DBH, photo B) crossing the stream channel. Locations were observed where erosion was occurring, bank material was loose, and vegetation loss had occurred.

ENGINEERING ANALYSIS

Accumulated rocks and sediments from bank erosion were observed within the channel. Existing facilities were not noticeable damaged. Access to the sewer assessment was possible only by foot, which presents a maintenance and emergency response concern. Landscape material, including large tree stumps (as shown in Photo C), had been dumped along the right channel bank and along the sewer easement.

PROJECT DESCRIPTION

To maintain stormwater conveyance and access to the sewer easement, accumulated sediment and vegetation along the channel bottom will be removed annually. Dumped tree stumps will be removed and exposed or eroded stream banks will be stabilized and re-vegetated. The site will be accessed from either Alameda Street or Ave Maria Road. Work will be focused within the limits of the channel banks and along the access route. Chain saws and hand tools (i.e., picks, shovels, rakes, loppers, etc.) will be used to clear and/or limb vegetation overhanging into the channel within the bankfull width. A backhoe will be used if big material is identified in the channel or in the event of an emergency. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in

DRAFT FINAL

Appendix B

Maintenance Activity Report Form

INDIVIDUAL MAINTENANCE ACTIVITY REPORT

Site Name/Facility: _____
Master Program _____
Map No: _____
Dates: START _____ COMPLETION _____ REPORT _____
Preparer Name: _____

Instructions: This form must be completed following any work done at a storm water facility. Attach additional sheets if needed.

Description of Work (e.g., routine, re-occurring; also note general frequency maintenance at this site):	
Street Name: _____ Latitude: _____ Longitude: _____	Work Orientation from Street (N, S, E, W): _____ Location Between Street _____ and Street _____
Maintenance Facility Type: <input type="checkbox"/> Stream <input type="checkbox"/> Roadside Ditch <input type="checkbox"/> Spillway <input type="checkbox"/> Culvert <input type="checkbox"/> Detention Basin <input type="checkbox"/> Other: _____	Additional Description:
Work within drainage/creek: Length: _____ (How many linear feet were cleared)	Name of drainage/creek: _____ Width (FT): _____ Area (SQ FT): _____ Depth (FT): _____
Is the creek lined: Yes <input type="checkbox"/> No <input type="checkbox"/> Notes:	Lining Type: <input type="checkbox"/> Concrete lined both sides, bottom <input type="checkbox"/> Earthen, both sides, bottom <input type="checkbox"/> Riprap sides, earth bottom <input type="checkbox"/> Concrete sides, earth bottom <input type="checkbox"/> Other type: _____
Silt/Sand Removal: Length: _____ (How many linear feet were cleared of silt/sand)	Describe cause of silt/sand:
Debris Removal: Length: _____ (How many linear feet were cleared of debris)	Describe debris and cause:
Were any toxic materials found: Yes <input type="checkbox"/> No <input type="checkbox"/> List toxics: _____ Hazardous Material Manifest: _____	Were more than 9 tires recovered? Yes <input type="checkbox"/> No <input type="checkbox"/> CTL Number: _____
Access via previously disturbed area: Yes <input type="checkbox"/> No <input type="checkbox"/>	Access route: _____ Maintenance Equipment Used:
Vegetation Removal: Length: _____ (How many linear feet were cleared of vegetation)	Types of Vegetation Removed: (Indicate bush, trees, plants, grasses, list diameter of trunk at 4' height)

Ground Disturbing Activities: Length: _____ (How many linear feet were disturbed by activity)	Upland Vegetation Removed - Types & Area:
Were erosion controls necessary? Yes <input type="checkbox"/> No <input type="checkbox"/>	Describe interim erosion control measures:
Did work occur within nesting breeding season (January 15 – August 31)? Yes <input type="checkbox"/> No <input type="checkbox"/>	Biologist/Monitor/Archaeologist present: Yes <input type="checkbox"/> No <input type="checkbox"/> Names: _____
Was any water quality sampling required? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Additional Maintenance Description: 	
Describe surrounding land use within work area (assume 500-foot buffer area): 	
Identify temporary/permanent impacts to habitat by area (acres/square footage) as determined by Biologist: 	
Additional Comments (Describe any unusual conditions, situations or special requirements needed to do the work such as diversion of water, construction of staging area, replacement of bank material, presence of utilities, etc.): <div style="text-align: center;"> LIST QUANTITIES REMOVED </div>	

SITE PHOTOS

<p>Attach 1st of 2 pictures BEFORE work, include upstream and downstream views.</p> <p>Note: if resources at site are flagged or staked to limit impacts to sensitive areas, also include pictures showing the measures that were installed.</p>	<p>Attach 2nd of 2 pictures BEFORE work, include upstream and downstream views.</p>
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PHOTO NOTES:

<p>Attach 1st of 2 pictures AFTER work, include upstream and downstream views.</p>	<p>Attach 2nd of 2 pictures AFTER work, include upstream and downstream views.</p>
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PHOTO NOTES:
