

APPENDIX C4

Environmentally Sensitive Habitat Areas Memorandum



Memorandum

To: Julia Acker, Mendocino County, Planning and Building Services
From: Rich Walter, ICF
Date: February 11, 2019
Re: ESHA Delineated in the Biological Survey Area of the RTI Infrastructure, Inc.
Manchester Subsea Cables Project

Summary

This memo discusses the environmentally sensitive habitat areas (ESHAs) delineated by ICF biologists in the terrestrial biological survey area (BSA) of the Manchester Subsea Cables Project (Project) proposed by RTI Infrastructure, Inc. The Project proposes to install fiber optic cables and associated facilities near Manchester, in Mendocino County. Entirely within the Coastal Zone, the BSA parallels State Route 1 (SR 1) for approximately 5 miles. The BSA includes a cable landing parcel (CLP) west of SR 1, the SR 1 right-of-way, Kinney Road, and three locations (existing facilities) for possible cable landing stations (Figure 1).

The proposed terrestrial portion of the Project consists of constructing a landing manhole, an access road, and a temporary staging area on the CLP (Page 1, Appendix A) (Photo 1, Appendix B). From the landing manhole, heading south toward the town of Manchester, two underground conduit systems would be constructed on either side of SR 1 for approximately 5 miles and be connected to one of three potential cable landing stations (Figure 1). Conduit would be installed within the managed portion of the right-of-way (an area mowed annually by the California Department of Transportation) immediately adjacent to SR 1 and Kinney Road. Along Kinney Road, conduit would be installed on the south side of the road (Photo 8, Appendix B). Directional boring will require temporary entry exit pits spaced approximately every 400 feet and permanent manholes spaced approximately every 800 feet.

ICF has classified areas in the BSA that meet the definition of *environmentally sensitive habitat area* (ESHA) as defined by the California Coastal Act and the Mendocino County Local Coastal Plan. ESHAs delineated in the BSA consist of streams for anadromous fishes, wetlands, riparian areas, occupied special-status wildlife habitat, special-status plant habitat, and sensitive natural communities as defined by the California Department of Fish and Wildlife (2018a). ESHAs delineated in the BSA are depicted on aerial maps in Appendix A.

Agency Consultation

On January 15, 2019, ICF botanist/wetland ecologist Devin Jokerst contacted the Mendocino County Department of Planning & Building Services (Planning Department) to discuss coastal zone wetlands and ESHA. Mr. Jokerst was informed that the Planning Department would reference maps produced by The National Wetland Inventory (U.S. Fish and Wildlife Service 2019) when assessing ESHA and coastal zone wetlands during the permitting phase of this project.



Figure 1
Terrestrial Components

Brian Bergfalk of RTI Infrastructure, Inc. contacted the Planning Department to discuss the status of roadside ditches as wetlands and ESHA. The Planning Department provided Mr. Bergfalk the *Wetland Exception – Ditches Memorandum*, dated August 7, 2006, which specifies that roadside ditches can be excluded from coastal zone wetland determination when they “only convey stormwater runoff,” and it can be proven that the ditches are “excavated from upland areas” (County of Mendocino Planning & Building Services 2006).

On November 7, 2018, ICF wildlife biologist Steve Yonge met with U.S. Fish and Wildlife Service (USFWS) biologists, Greg Schmidt and Shannon Brinkmen, and Mr. Bergfalk of RTI Infrastructure, Inc. at the Project site to discuss the federally endangered and State species of special concern, Point Arena mountain beaver (PAMB). Given the disturbed nature of the SR 1 right-of-way, USFWS discussed the benefit of placing the new cable within the mowed shoulder of SR 1. They also discussed equipment noise, ground vibration, timing of construction, and measures to avoid or reduce direct and indirect effects on PAMB.

Definitions of ESHA and Regulatory Setting

When identifying and mapping ESHA in the BSA, and when considering potential direct and indirect impacts of the Project on ESHA, ICF biologists used the following criteria:

California Coastal Act ESHA Definition (Section 30107.5)

Any areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

Mendocino County ESHA Definition (County of Mendocino Planning & Building Services 1991)

Environmentally Sensitive Habitat Areas (ESHA's) include: anadromous fish streams, sand dunes, rookeries and marine mammal haul-out areas, wetlands, riparian areas, areas of pygmy vegetation which contain species of rare or endangered plants and habitats of rare and endangered plants and animals.

Mendocino County ESHA Buffer – Chapter 20.496 Environmentally Sensitive Habitat and Other Resource Areas

Development Criteria (Section 20.496.020)

Buffer Areas. *A buffer area shall be established adjacent to all environmentally sensitive habitat areas. The purpose of this buffer area shall be to provide for a sufficient area to protect the environmentally sensitive habitat from degradation resulting from future developments and shall be compatible with the continuance of such habitat areas....*

Width. *The width of the buffer area shall be a minimum of one hundred (100) feet, unless an applicant can demonstrate, after consultation and agreement with the California Department of Fish and Game, and County Planning staff, that one hundred (100) feet is not necessary to protect the resources of that particular habitat area from possible significant disruption caused by the proposed development. The buffer area shall be*

measured from the outside edge of the Environmentally Sensitive Habitat Areas and shall not be less than fifty (50) feet in width....

Permitted Development. *Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel.*

Other Resource Areas (Section 20496.050)

Other designated resource areas as identified on Pages 39, 40 and 41 of the Coastal Element dated November 5, 1985 include: State parks and reserves, underwater parks and reserves, areas of special biological significance, natural areas, special treatment areas, fishing access points, areas of special biological importance, significant California ecosystems and coastal marine ecosystems.

ESHA in the Biological Study Area

ESHAs delineated in the BSA consist of streams for anadromous fishes, wetlands, riparian areas, occupied special-status wildlife habitat, special-status plant habitat, and sensitive natural communities as defined by the California Department of Fish and Wildlife (2018a). ESHAs delineated in the BSA are depicted on aerial maps in Appendix A.

Anadromous Fish Streams

Fresh water stream used as migration corridor or spawning or nursery habitat by fish, such as salmon and steelhead trout, that live most of their adult lives in saltwater (Mendocino County 1991).

- Classified as ESHA, Alder and Brush Creeks are known to support federally threatened northern California coast steelhead, federally endangered and State threatened central California coast Coho salmon, and State species of concern Pacific lamprey (Photos 3 and 4, Appendix B) (National Marine Fisheries Service 2000; California Department of Fish and Game 2003, 2005).
- **Avoidance** – Alder and Brush Creeks and the four unnamed streams within the BSA will be bored beneath, with a buffer exceeding 200 feet between the creeks and work areas.

Wetlands

Lands which may be covered periodically or permanently with shallow water, including saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens. Wetlands are extremely fertile and productive environments. Tidal flushing from the ocean and/or nutrient-rich freshwater runoff mix to form a delicate balance responsible for their productivity. They function as nurseries for many aquatic species and serve as feeding and nesting areas for waterfowl, shorebirds and wading birds, as well as a few rare and endangered species. The edge or upland limit of wetlands is designated by the California Coastal Commission guidelines on wetlands as: (a) the boundary between land with predominantly hydrophytic (adapted to wet conditions) cover and land with predominantly mesophytic (adapted to average conditions) or xerophytic (adapted to dry conditions) cover; (b) the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or, in the case of wetlands without vegetation or soils; (c) the boundary between land that is flooded or saturated at some

time during years of normal precipitation and land that is not. Areas with drained hydric soils that are no longer capable of supporting hydrophytes (species adapted to wet conditions) are not considered wetlands (Mendocino County 1991).

- With the exception of two roadside ditches that have been excavated from upland areas and carry only stormwater runoff (County of Mendocino Planning & Building Services 2006), all other aquatic resources delineated in the BSA are classified as ESHA; aquatic features consist of U.S. Army Corps of Engineers jurisdictional features (three-parameter wetlands and non-wetland waters) and California Coastal Zone wetlands (wetlands with at least evidence of wetland hydrology and one other parameter) under the jurisdiction of the California Coastal Commission.
 - **Avoidance** – Directional boring will be used to avoid wetlands in the BSA (Photo 2, Appendix B).

Riparian Areas

This vegetation is an association of plant species which grows adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other bodies of fresh water (Mendocino County 1991).

- Riparian habitats classified as ESHA consist of six streams that cross the BSA: Alder Creek, Brush Creek, and Unnamed Creeks 1 through 4 (Pages 1, 6, 8, 12, 23, and 24, Appendix A) (Photos 3 through 6, Appendix B). The riparian habitat includes a relatively continuous woody canopy dominated by willows (*Salix* spp.) and red alder (*Alnus rubra*).
 - **Avoidance** – As described above for anadromous fish streams, the six creeks will be avoided using directional boring techniques.

Special-Status Wildlife Habitat

The approximate location of animal species considered to be threatened, rare, endangered, or protected by the California Department of Fish and Game, or the U.S. Fish and Wildlife Service are shown on the land use maps. A rare and endangered species is an animal whose existence is threatened by one or more of the following conditions: the mortality rate exceeds the birth rate; the species is not capable of adapting to environmental change; the species habitat is threatened by destruction or serious disturbance; survival is threatened by the introduction of other species through predation, competition, or disease; or environmental pollution threatens the species survival. A protected species is an animal which cannot be taken or possessed under any permit or license, except when authorized by the Department of Fish and Game for scientific research. Threatened species are defined as those species contained on the lists identified as such by the U.S. Fish and Wildlife Service and the California Department of Fish and Game, as is the case with rare species and endangered Species (Mendocino County 1991).

ICF considered special-status wildlife habitat to consist of areas occupied or assumed occupied by wildlife species regarded as threatened, endangered, candidates for listing, proposed as threatened or endangered, State fully protected, and State species of special concern.

- **Point Arena Mountain Beaver (PAMB)**. Well documented within the Project vicinity, PAMB have been recorded within the riparian habitat associated with Brush and Alder

Creeks (California Department of Fish and Wildlife 2018b). In 2011, they were documented in the riparian and coastal scrub habitat immediately south and southwest of the proposed CLP (Bio Consultants, LLC 2011). They also are known from Manchester State Park (California Department of Parks and Recreation 2005). It was assumed that PAMB are present in the riparian habitat associated with the four unnamed streams that bisect the BSA as well as the unmanaged coastal scrub, riparian scrub, and coastal prairie/grasslands habitats adjacent to the BSA.

With guidance from USFWS, ICF biologists mapped and surveyed the entire BSA (the mowed portion of the SR 1 right-of-way) and have not found any active PAMB burrows. The managed sections of the BSA are not currently occupied by PAMB and are not considered ESHA.

- **Avoidance** – Because ESHA for PAMB is present within 5–15 feet of the BSA, RTI Infrastructures, Inc. in consultation with USFWS—will implement resource protection measures to minimize or eliminate the effects of the Project on PAMB. Protection measures may include, but are not limited to, seasonal construction restrictions, noise-dampening measures, avoidance buffers around areas known to support PAMB, environmental awareness training, and the presence of a biological monitor during construction.
- **Riparian Habitat.** The riparian habitat associated with Alder and Brush Creeks and the four unnamed streams in the BSA provide suitable habitat for the State species of concern yellow warbler and yellow-breasted chat, the federally threatened and State species of concern California red-legged frog, the State species of concern northern red-legged frog, and the State candidate for listing foothill yellow-legged frog. Riparian habitat also provides nesting and foraging habitat for a suite of bird species.
 - **Avoidance** – As described above, directional boring will be used to avoid riparian areas that provide foraging, nesting, and aquatic habitat for special-status species. In addition, construction will occur during late summer and early fall when the majority of bird nesting activity has concluded.
- **Behren’s Silverspot Butterfly.** Western dog violet (*Viola adunca*) is the known host plant for the federally endangered Behren’s silverspot butterfly. Other species of violet (*Viola* spp.) also may be used by Behren’s silverspot butterfly. Violet species were not found during 2018 botanical surveys. Additional floristic surveys will be conducted in 2019, and any species of violet found will be mapped.
 - **Avoidance** – Should violet species be documented in the BSA, the plants will be flagged and avoided.

Special-Status Plant Habitat

The approximate location of rare, or endangered or threatened plant species identified by the California Department of Fish and Game, the U. S. Fish and Wildlife Service or as designated by the California Native Plant Society is found in the Inventory of Rare and Endangered Vascular Plants of California (1984). “Rare” is defined to mean a plant that is of limited distribution; or that occurs in such small numbers that it is seldom reported; or that occurs only in very few

highly restricted populations. "Endangered" is defined to mean a plant threatened with extinction and not likely to survive unless some protective measures are taken (Mendocino County 1991).

- Mendocino Coast paintbrush (*Castilleja mendocinensis*; California rare plant rank 1B.2) was documented immediately southwest area of the CLP. Ten individual plants were recorded (Page 1, Appendix A). These plants and the coastal bluff habitat will be avoided.
- Harlequin lotus (*Hosackia gracilis*; California rare plant rank 4.2) was documented in the emergent wetland complex of the CLP (Page 2, Appendix A) (Photo 2, Appendix B). Three individual plants were documented. These plants and the wetland complex will be avoided.
- **Avoidance** – Additional plant surveys are scheduled for spring and summer 2019. Should other special-status plant species be recorded in the BSA, they will be flagged and avoided.

Other Resource Areas

Other resource areas within the BSA that are classified as ESHA consist of sensitive natural communities as defined by the California Department of Fish and Wildlife (2018a).

Environmentally sensitive habitats documented in the BSA include:

- Coastal dune willow thickets (*Salix hookeriana*) (Photo 7, Appendix B)
- Sitka willow thickets (*Salix sitchensis*)
- Shining willow groves (*Salix lasiandra*)
- Arroyo willow thickets (*Salix lasiolepis*)
- Coastal brambles (*Rubus ursinus*, *R. parviflorus*)
- Pacific reed grass meadow (*Calamagrostis nutkaensis*)
- Slough sedge sward (*Carex obnupta*)
- Water-parsley marsh (*Oenanthe sarmentosa*)

Several potential sensitive natural communities identified in the right-of-way in the BSA, consisting of several degraded coastal bramble patches, one common monkey flower seep (*Erythranthe guttata*), one arroyo willow thicket, and one small-fruited bulrush marsh (*Scirpus microcarpus*), were not considered sensitive because they are of small size, are discontinuous with natural habitats, and/or are annually disturbed by vegetation maintenance activities conducted by the California Department of Transportation.

ESHA Impact Analysis

The least damaging route for the proposed fiber cable is within the managed SR 1 right-of-way. The entire project alignment is within the 50-foot ESHA buffer width; however, by installing the fiber cable in the mowed road shoulder—in areas with compacted fill material—and adhering to reduced avoidance buffer distances from ESHA, no effect on ESHA will occur. Although the Project would occur close to ESHAs, it has been designed to directly avoid all on-site ESHAs.

Projects that propose construction within a buffer of less than 100 feet from an ESHA are required to provide information indicating that a lesser buffer distance will not have a significant adverse impact on ESHA. The buffer zone analysis based on Mendocino Local Coastal Plan Zoning Ordinance 20.496.020 (A) [(1) through (4) (k)] is described below (Table 1).

Table 1. ESHA Impact Analysis (Mendocino County Coastal Zoning Code Section 20.496.020)

<p>(A) Buffer Area – A buffer area shall be established adjacent to all ESHA. The purpose of this buffer area shall be to provide for a sufficient area to protect the environmentally sensitive habitat areas from degradation resulting from future developments and shall be compatible with the continuance of such habitat areas.</p>	
<p>Mendocino County Coastal Zoning Code Section 20.496.020</p>	<p>ESHA Impact Analysis</p>
<p>1. Width - The width of the buffer area shall be a minimum of 100 feet, unless an applicant can demonstrate, after consultation and agreement with the CDFW, and County Planning staff, that 100 feet is not necessary to protect the resources of that particular habitat area from possible significant disruption caused by the proposed development. The buffer area shall be measured from the outside edge of the ESHA and shall not be less than 50 feet in width. New land divisions shall not be allowed which will create new parcels entirely within a buffer area. Developments permitted within a buffer area shall generally be the same as those permitted in the adjacent ESHA.</p>	<p>The entire project alignment is within the 100-foot buffer of the on-site ESHA and well within 50 feet of ESHA mapped in the biological study area (BSA) (Appendix A).</p> <p>No new land division is proposed.</p>
<p>1 (a). Biological Significance of Adjacent Lands - The degree of significance depends on the habitat requirements of the species in the habitat area. Where a significant functional relationship exists, the land supporting this relationship shall also be considered to be part of the ESHA, and the buffer zone shall be measured from the edge of these lands and be sufficiently wide to protect these functional relationships.</p>	<p>The majority of the BSA is annually disturbed by road maintenance and experiences a moderate to high degree of human disturbance from vehicular traffic and rural residential occupancy.</p> <p>ESHA is well documented in and adjacent to the BSA. Because the project has been designed to avoid ESHA, the alignment will not affect a functional relationship with adjacent ESHA.</p>

<p>1 (b). Sensitivity of Species to Disturbance - The width of the buffer zone shall be based, in part, on the distance necessary to ensure that the most sensitive species of plants and animals will not be disturbed significantly by the permitted development. Such a determination shall be based on the following after consultation with CDFW or others with similar expertise;</p> <p>(i). Nesting, feeding, breeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;</p> <p>(ii). An assessment of the short-term and long-term adaptability of various species to human disturbance;</p> <p>(iii). An assessment of the impact and activity levels of the proposed development on the resource.</p>	<p>(i) Botanical surveys found harlequin lotus and Mendocino paintbrush within the cable landing parcel. Coastal scrub and northern riparian habitat immediately adjacent to State Route 1 and along Kinney Road is assumed occupied by the Point Arena mountain beaver. Brush and Alder Creeks are known to support anadromous fish; and the mature riparian habitat these two creeks support provides nesting habitat for a variety of bird species. Wetlands and sensitive natural communities also occur in the BSA. Locating the project on the shoulder of SR 1 and the proposed project design will avoid substantial disturbance of special-status plants, wildlife, and fish, and sensitive natural communities.</p> <p>(ii) The project is proposed in an area already modified by human use. Wildlife species have habituated to some degree to SR 1 traffic and human activity along Kinney Road, in the town of Manchester, at rural residential properties, and at the beach access to Manchester State Park. Use of the BSA by special-status wildlife and plants is expected to continue after the fiber cable has been installed. Plants in ESHAs within the BSA also will continue to persist following installation of the new fiber cable.</p> <p>(iii) Based on the project design and implementation and adherence to identified mitigation measures, the project will not negatively affect ESHAs in the BSA.</p>
<p>1(c) Susceptibility of Parcel to Erosion – The width of the buffer zone shall be based, in part, on the assessment of the slope, soil, impervious surface coverage, runoff characteristics, and vegetative cover of the parcel and to what degree the development will change the potential for erosion. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.</p>	<p>The project is relatively flat and is not susceptible to erosion. The six waterbodies that bisect the BSA are the features most susceptible to erosion, but they will be completely avoided by directional boring beneath the creek bed. To further reduce the potential for erosion, all areas temporarily disturbed will be reseeded with a native grass seed mix.</p>

<p>1(d). Use of Natural Topographic Features to Locate Development – Hills and bluffs adjacent to ESHA’s shall be used, where feasible, to buffer habitat areas. Where otherwise permitted, development should be located on the sides of hills away from ESHA’s. Similarly, bluff faces should not be developed, but shall be included in the buffer zone.</p>	<p>The project is located on relatively flat ground with little topographic relief. Because the project is taking advantage of the disturbed condition of the SR 1 right-of-way, there is no other alternate location. The coastal bluff at the north end of the project (on the cable landing parcel) will be buffered by ≥ 100 feet. The coastal bluff supports special-status plants and is not conducive to development.</p>
<p>1(e). Use of Existing Cultural Features to Locate Buffer Zones – Cultural features shall be used, where feasible, to buffer habitat areas. Where feasible, development shall be located on the sides or roads, dikes, irrigation canals, flood control channels, etc., away from ESHA.</p>	<p>The fiber cable will be installed in the shoulder of SR 1 and, in some sections, beneath the asphalt within the road prism.</p>
<p>1(f). Lot Configuration and Location of Existing Development – Where an existing subdivision or other development is largely built-out and the buildings are a uniform distance from a habitat area, at least that same distance shall be required as a buffer zone for any new development permitted. However, if that distance is less than 100 feet, additional mitigation measures shall be provided to ensure additional protection. Where development is proposed in an area that is largely undeveloped, the widest and most protection buffer zone feasible shall be required.</p>	<p>The proposed project is not associated with a proposed subdivision but is associated with the built-out right-of-way of SR 1. The fiber cable will be installed within a few feet of the edge of asphalt in vegetation that has been affected by road construction and maintenance. In some areas, the fiber cable will be installed beneath the asphalt in the road prism. ESHA at the cable landing parcel (Appendix A; sheets 1 and 2) will be buffered by 100 feet and completely avoided. ESHA in the overall BSA also will be avoided, but with reduced buffer distances based on the design of the project.</p>
<p>1(g). Type and Scale of Development Proposed – The type and scale of the proposed development will, to a large degree, determine the size and buffer zone necessary to protect the ESHA. Such evaluations shall be made on a case-by-case basis depending upon the resources involved, the degree to which adjacent lands are already developed, and the type of development already existing in the area.</p>	<p>The proposed fiber cable project is similar to other underground utility projects that have been constructed in the project vicinity.</p>
<p>(2) Configuration – The buffer area shall be measured from the nearest outside edge of the ESHA.</p>	<p>Buffer distances will be measured from the delineated outermost extent of the ESHA identified in the BSA. ESHA includes anadromous fish streams, wetlands, special-status plant occurrences, special-status wildlife habitat, sensitive natural communities, and riparian habitat.</p>
<p>(3) Land Division – New subdivisions or boundary line adjustments shall not be allowed which will create or provide for new parcels entirely within a buffer area.</p>	<p>New subdivision or boundary line adjustments are not proposed. The project will occur within existing rights-of-ways and on private property within existing property and parcel boundary lines.</p>

<p>(4) Permitted Development – Development permitted within the buffer area shall comply at a minimum with the following standards:</p>	<p>See responses 4a through 4k below.</p>
<p>4 (a and d). Development shall be compatible with the continuance of the adjacent habitat area by maintaining the functional capacity, their ability to be self-sustaining and maintain natural species diversity.</p>	<p>To avoid affecting adjacent habitat that is of higher quality and assumed occupied by special-status species (i.e., Point Arena mountain beaver), the fiber cable will be installed in the right-of-way of SR 1. Habitats in the right-of-way have been previously affected by highway construction and are annually disturbed by road maintenance.</p>
<p>4 (b). Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel.</p>	<p>The managed SR 1 right-of-way is the best route for installing the new fiber cable. During a field meeting with the U.S. Fish and Wildlife Service (USFWS) to review the project and its potential to affect the Point Arena mountain beaver, USFWS decided that the road shoulder was the best available location for the alignment.</p>
<p>4 (c). Development shall be sited and designed to prevent impacts which would degrade adjacent habitat areas. The determination of the best site shall include consideration of drainage, access, soil type, vegetation, hydrological characteristics, elevation, topography, and distance from natural stream channels.</p>	<p>ESHAs adjacent to the BSA will be protected by adherence to the identified mitigation measures in addition to the project design. All work will occur in the shoulder of SR 1 and on existing sections of asphalt. Staging areas and entry and exit pits required for directional drilling will be installed away from ESHA. Mitigation measures will be implemented to avoid impacts on adjacent ESHA.</p>
<p>4 (e). Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel. Mitigation measures, such as planting riparian vegetation, shall be required to replace the protective values of the buffer area on the parcel, at a minimum ratio of 1:1, which are lost as a result of development under this solution.</p>	<p>The proposed fiber cable alignment is located in the least environmentally damaging area of the BSA. A Site Restoration Plan will be developed and used to guide revegetation efforts in areas temporarily disturbed.</p>

<p>4 (f). Development shall minimize the following: impervious surfaces, removal of vegetation, amount of bare soil, noise, dust, artificial light, nutrient runoff, air pollution, and human intrusion into the wetland and minimize alteration or natural landforms.</p>	<p>Manhole covers are the only impervious surface that will be introduced into the environment. Manholes approximately 4 square feet in size will be installed at or below the soil surface. Removal of vegetation will be minimal and temporary; all areas temporarily disturbed will be reseeded with a native grass seed mix. Noise from the directional drilling machine will be minimized and directed away from ESHAs. Work will occur during daylight hours and will not introduce artificial light to the BSA; the project will not generate nutrient runoff, nor will air quality or natural landforms be affected by construction. All wetlands, sensitive natural communities, and other ESHA will be flagged and avoided by human traffic.</p>
<p>4 (g). Where riparian vegetation is lost due to development, such vegetation shall be replaced at a minimum ratio of 1:1 to restore the protective values of the buffer area.</p>	<p>Riparian vegetation will be avoided by directional drilling beneath the six waterbodies that bisect the BSA, establishing the staging areas \geq 100 feet from riparian habitat, and working in the mowed road shoulder of SR 1.</p>
<p>4 (h). Aboveground structures shall allow peak surface water flows from a 100 year flood to pass with no significant impediment.</p>	<p>The only aboveground structures that will be constructed include manholes used to access and maintain the fiber cable. The manholes will be installed at roughly surface level or just below the surface and will not impede the flow of water, including a 100-year flood event.</p>
<p>4 (i). Hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes, either terrestrial or aquatic, shall be protected.</p>	<p>The proposed project will not affect hydraulic capacity, subsurface flow, biological diversity, or the biological/hydrological processes of the area. Temporarily disturbed areas will be revegetated with a native seed mix prepared by a qualified restoration specialist.</p>
<p>4 (j). Priority for drainage conveyance from a development site shall be through the natural stream environment zones, if any exist, in the development area. In the drainage system design report or development plan, the capacity of the natural stream environment zones to convey runoff from the completed development shall be evaluated and integrated with the drainage system wherever possible. No structure shall interrupt the flow of groundwater within a buffer strip. Foundations shall be situated with the long axis of interrupted impermeable vertical surfaces oriented parallel to the groundwater flow direction.</p>	<p>Installation of the fiber cable will not increase the flow of surface runoff and, if necessary, existing drainage ditches and conveyance systems in the project will be restored to pre-project conditions. The flow of groundwater will not be altered, and foundations/footings will not be installed.</p>

<p>4 (k). If findings are made that the effects of developing an ESHA buffer area may result in significant adverse impacts to the ESHA, mitigation measures will be required as a condition of project approval. Noise barriers, buffer areas in permanent open space, land dedication for erosion control, and wetland restoration, including off-site drainage improvements, may be required as mitigation measures for developments adjacent to environmentally sensitive habitats.</p>	<p>Although work will occur near ESHA, direct impacts on ESHA will be avoided. With implementation of the mitigation measures briefly described below, the degraded condition of the habitat within the SR 1 right-of-way, and proposed construction techniques, no long-term negative effects on ESHA will occur.</p>
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ESHA Avoidance

Direct impacts on ESHA will be avoided by directional boring and by positioning staging areas, access roads, permanent manholes, and temporary work areas away from ESHA. Indirect impacts on ESHA will be avoided through implementation of the mitigation measures detailed below. Although segments of the Project will be well within the recommended 50-foot ESHA avoidance buffer required by Mendocino County, the SR 1 right-of-way provides the best route for avoiding impacts on ESHA.

The Project will implement the following mitigation measures to prevent direct and indirect impacts on ESHA:

- Provide Environmental Awareness Training
- Conduct Biological Surveying and Monitoring
- Delineate Work Limits and Install Temporary Construction Barrier Fencing to Protect Sensitive Biological Resources
- Identify and Avoid Sensitive Biological Resources through Use of Directional Boring
- Implement Best Management Practices for Directional Boring Activities
- Prepare and Implement an Inadvertent Return Contingency Plan
- Prepare and Implement a Site Restoration Plan
- Install Escape Ramps in Open Trenches
- Conduct Surveys for Point Arena Mountain Beaver
- Limit Construction Period to Minimize Impacts on Point Arena Mountain Beaver
- Avoid Point Arena Mountain Beaver Populations and Burrows
- Implement Noise Reduction Measures
- Survey for and Avoid Behren's Silverspot Butterfly Habitat
- Conduct Pre-Construction Nesting Bird Surveys and Implement Avoidance Measures
- Conduct Appropriately Timed Floristic Surveys of Remaining Areas
- Boring Beneath Environmentally Sensitive Habitat Areas
- Locate Work and Staging Areas for the Cable Landing Site and Associated Facilities outside Wetland Habitat
- Hazardous Materials Management and Contingency Plan
- Contaminated Materials Management Plan

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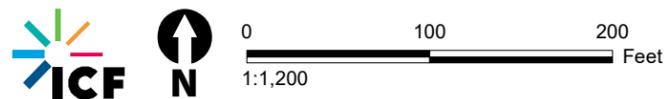
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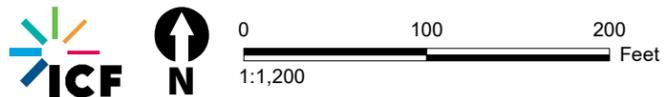
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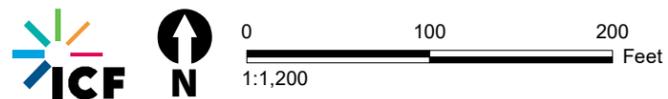
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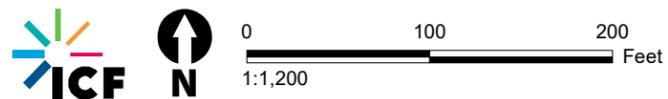
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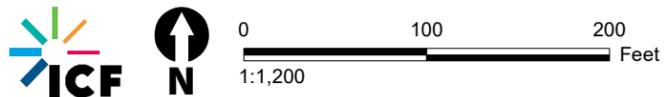


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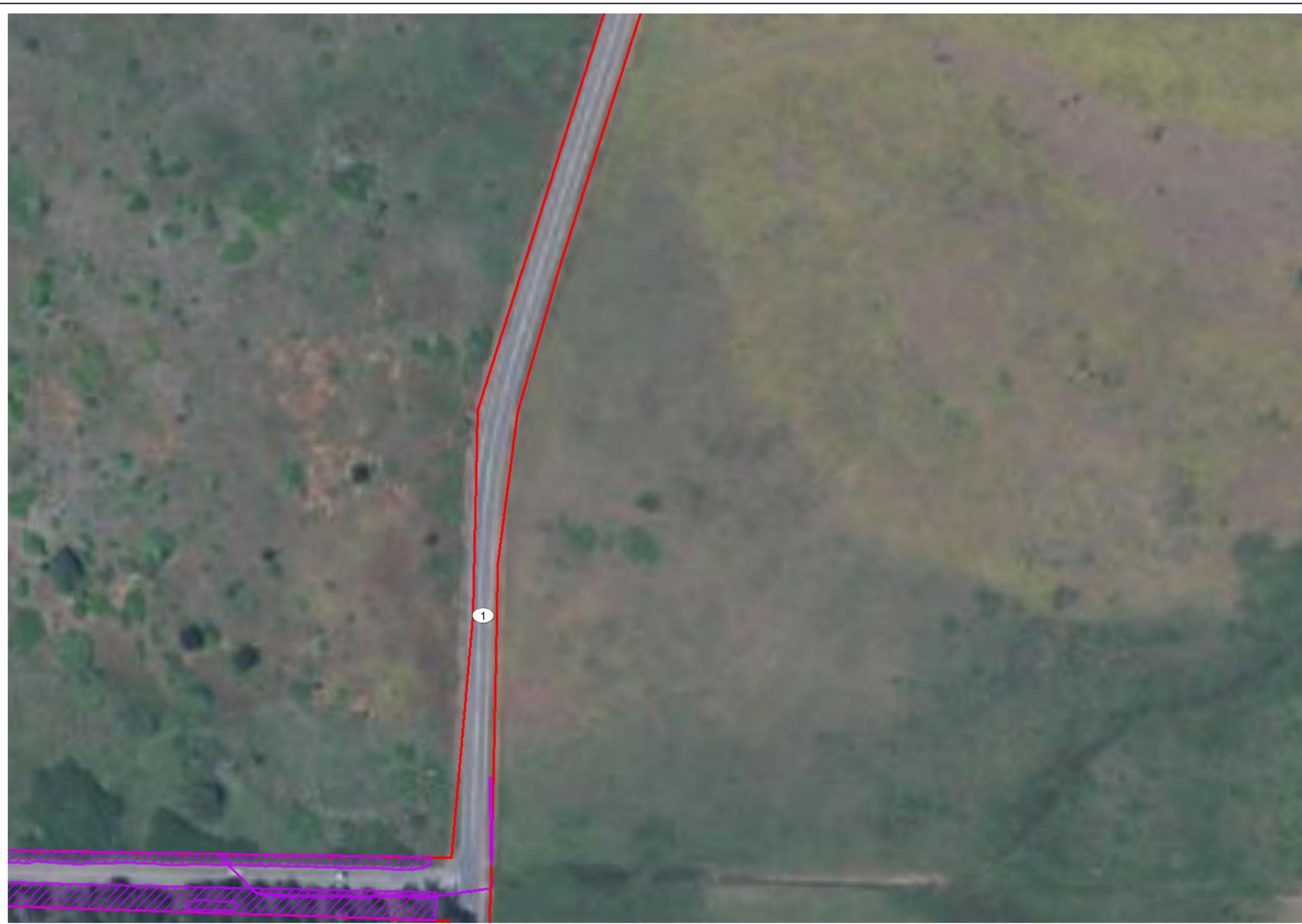
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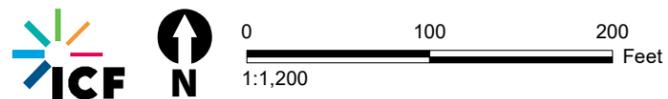
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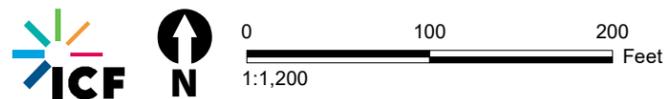
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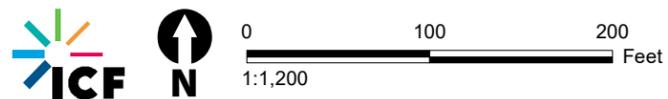
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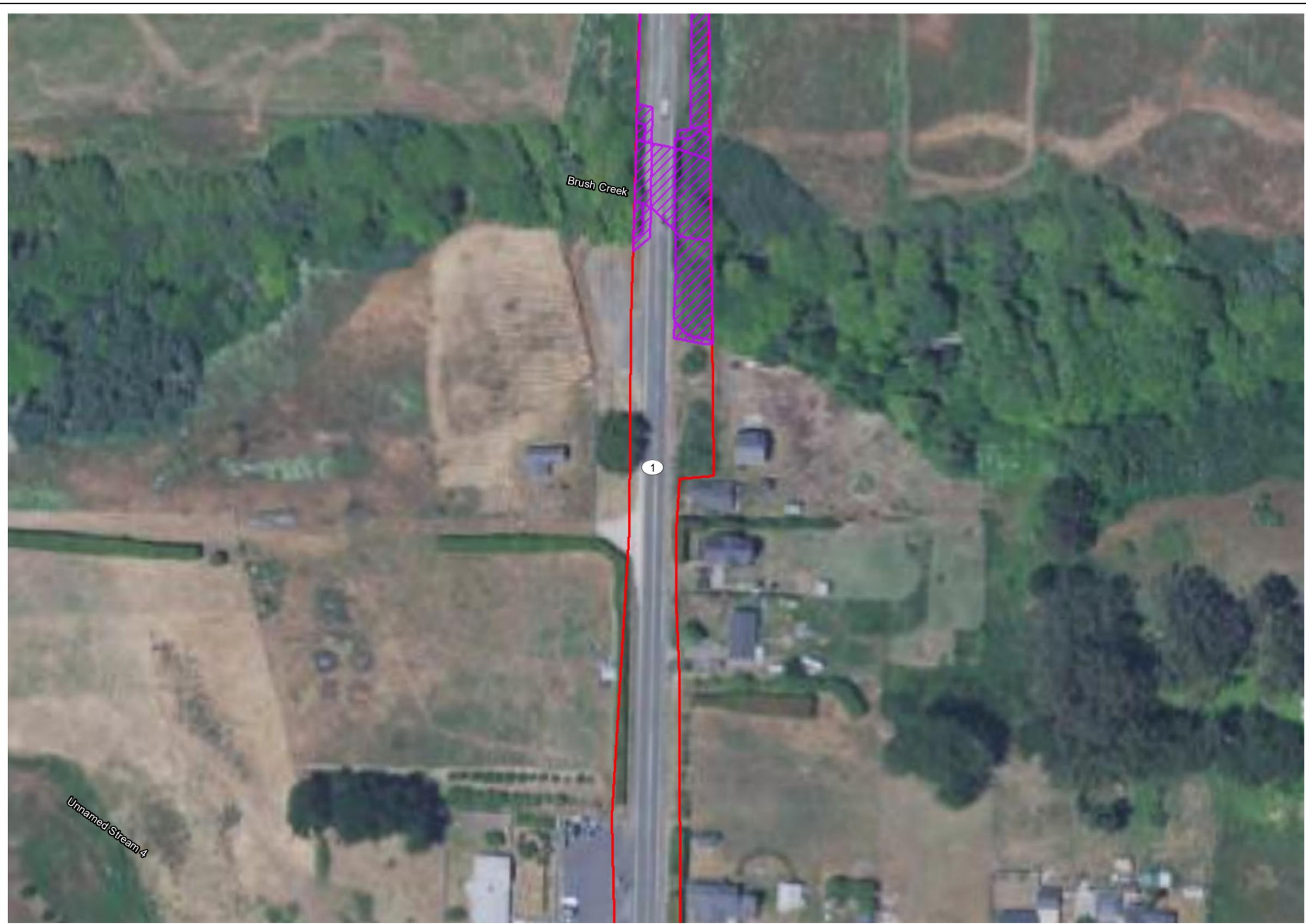
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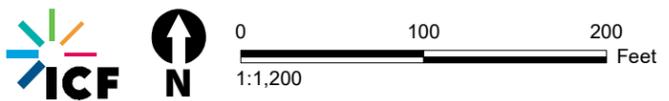


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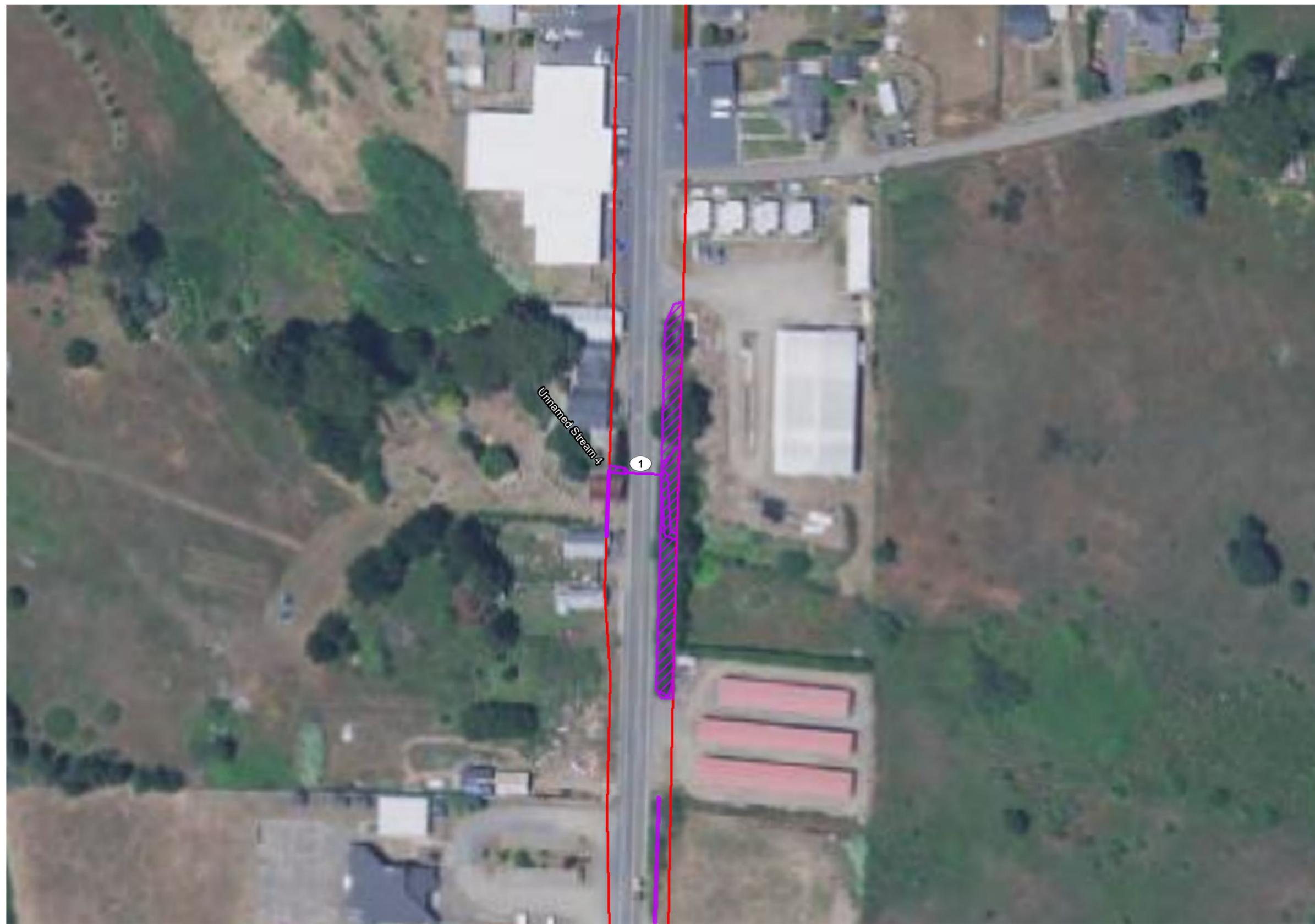


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Appendix B Representative Photographs



Photo 1. Looking west, view of the cable landing parcel.



Photo 2. Facing southwest from the State Route 1 fence line, view of a wetland complex in the cable landing parcel.



Photo 3. Looking southeast, view of perennial stream, Brush Creek.



Photo 4. View of perennial stream, Alder Creek.



Photo 5. Facing south, representative view of riparian habitat associated with Unnamed Stream 3.



Photo 6. Facing north toward Alder Creek, view of State Route 1 segment where fiber cable may be installed within the roadway.



Photo 7. Facing south, representative view of the non-native annual grass adjacent to State Route 1 where underground conduit installation would occur. Classified as an environmentally sensitive habitat area, the sensitive natural community coastal dune willow thicket is adjacent to the non-native annual grassland.



Photo 8. South side of Kinney Road where the fiber cable would be installed.