AT&T PROJECT A020LET

BIOLOGICAL SURVEY REPORT

August 2022

Location:	Lake Tahoe, CA 96150
Prepared for:	Torrey Denoo AT&T Area Manager Construction and Engineering
Prepared by:	R3X Group, Inc. 9800 El Camino Real #2586 Atascadero, CA 93423

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 PROJECT LOCATION AND DESCRIPTION 1

3.2 The California Endangered Species Act (CESA) 4
3.3 California Environmental Quality Act (CEQA) 4
3.5 Special Status Species 5

4.0 CRITICAL HABITAT AND SENSITIVE BIOLOGICAL COMMUNITIES 5

4.1 Critical Habitat 5
4.2 Sensitive Biological Communities 5
4.3 TRPA Designated Fish Habitat 6
4.3 Waters of the United States 6
4.4 Waters of the State 7
4.5 CDFW Sections 1600-1616 of California Fish and Wildlife Code 7
4.6 Other Sensitive Biological Communities 8

5.0 METHODS 8

6.0 EXISTING CONDITIONS 9

6.1 Biotic Habitats 9
6.1.1 Wet Meadow 9
6.1.2 Barren 10
6.1.3 Montane Chaparral 10
6.1.4 Sierran Mixed Conifer 10
6.1.5 Jeffrey Pine 11
6.1.6 Lake Tahoe and Tallac Creek/Marsh 11

7.0 RESULTS 11

7.1 Special Status Species 11
7.2 Plants 12
7.3 Animals 16
7.4 Lake, Creek, and Terrestrial Habitats 20
7.5 Terrestrial Work Areas 22

8.0 POTENTIAL IMPACTS - SUGGESTED AVOIDANCE AND MINIMIZATION MEASURES 32

8.1 Overview and Assumptions 32
8.2 Wetland and Riparian Habitat 32
8.4 Critical Habitat and Sensitive Biological Communities 34
8.5 Special Status Plants and Animals 34
8.5.1 Tahoe Yellow Cress 34
8.5.2 Passerines and Raptors 35
8.5.3 Native Fish 36
8.5.4 Aquatic Invertebrates 37
8.5.5 Flying mammals 37
8.5.6 Terrestrial mammals 38
8.5.7 Western Bumble Bee 38

9.0 SUMMARY 38

10.0 LITERATURE CITED 39

Figures

Figure 1. Project location. 3
Figure 2. Special status species in the vicinity of the Project location 15
Figure 3. Sandy habitat at Tallac Creek. 20
Figure 4. Cobble habitat. 21
Figure 5. Cable partially buried beneath sand. 21
Figure 6. Sandy habitat with cable resting on top of sand. 22
Figure 7. Cut Location #1. Baldwin Beach work area. 23
Figure 8. Cut Location #1. Work area to lake edge of Tallac Creek. 23
Figure 9. Cut Location #1. Hand digging and cut location on inland edge of Tallac Creek. 24
Figure 10. Cut Location #2 25
Figure 11. Cut Location Emerald Bay 26
Figure 12. Cut Location #3 27
Figure 13. Cut Location #4 29
Figure 14. Cut Location #5 30
Figure 15. Cut Location #6 31
Figure 16. Wetlands along the project route. 33

Tables

Table 1Special status animal species known to occur within 5-km of the project. 13
Table 2. Special status animal species known to occur within 5 km of the project. 16

Appendices

Appendix 1. Work Plans
Appendix 2. CNDDB Records
Appendix 3. Tahoe Yellow Cress July 2022 Survey Report

1.0 INTRODUCTION

This report describes the biological resources within, and in the vicinity of, the proposed AT&T cable removal project in Lake Tahoe (Project) in El Dorado County, CA (Figure 1). It includes a description of existing biological conditions, assessment of special status species, and suggested avoidance measures to reduce the likelihood of impacts to sensitive species and habitat. Specifically, it 1) summarizes information collected during biological surveys conducted in March, June, July, and August 2022, 2) compiles information about existing biological resources known to occur in the Project area, 3) makes inferences about biological resources that could occur within the Project area, 4) identifies and discusses potential impacts the Project could have on biological resources, and 5) identifies avoidance measures to reduce the likelihood of such impacts. The intent of this report is to provide information that can be used to evaluate how the Project implementation could potentially disturb biological resources, and to identify safeguards that can be put in place to avoid these disturbances. Importantly, though the findings in this report provide information about biological resources in the Project area, they do not interpret specific laws or ordinances.

2.0 PROJECT LOCATION AND DESCRIPTION

AT&T California proposes the removal of two lengths of submarine telecommunications cable in Lake Tahoe and Emerald Bay in California (Appendix 1). The longer cable is approximately 6 miles long and runs along the Southwestern shore of Lake Tahoe. The cable stretches from Baldwin Beach past Rubicon Point near Lester Beach. Most of the cable resides in the Emerald Bay and DL Bliss Underwater State Parks. This 6-mile cable surfaces on shore a total of 6 times. The second cable rests at the mouth of Emerald Bay and spans approximately 1,000 feet. This shorter cable extends between the shores of Emerald Point and Eagles Point and lies in the Emerald Bay Underwater Park. The project area for both cables lies within the Lake Tahoe Basin Management Unit of the USDA Forest Service. The cables largely rest on the lakebed, not within the substrate. They weigh 9-lbs/foot and their outside diameter measures approximately 3 inches. Each is constructed of a core of communication cables surrounded by a lead sheath, which is bound by a layer of wire armor and secured by an outer jute layer for additional waterproofing. The Project calls for 7 cut locations, 6 along the 6-mile cable and 1 on the

Emerald Bay cable. The Emerald Bay cable has been previously severed on the South side of Emerald bay. If the cable end lies within the high water mark, one additional cut location would be required to remove the cable from the water.

AT&T plans to remove the cable in the Fall, during the recreational off-season, no earlier than October. They anticipate using three staging areas: the lake entry point for barge launch, the cut locations where cable comes up on shore, and the mobile barge. The cable will be removed using a 30-feet by 60-feet modular barge suitable for shallow water use. An outboard skiff, comparable in size to a recreational boat, will be used to maneuver the barge. These maritime vessels will be delivered by semi-trucks with estimated dimensions of 70 feet long and 10 feet wide.

Portions of the cable on land will be accessed by barge, from which a technician will approach the cut location on foot. Cable segments on shore are buried approximately 4-6-inches. Sections of the cable may lie beneath large boulders; in these instances, a mini excavator staged on the barge will be used to temporarily reposition the boulders. To remove the cable, it will be exposed at the high-water line at 6,229.1 feet with hand tools or an excavator that will access the location by ramp from the barge. The cable will be cut with a reciprocating saw. A container will be used to collect particulates generated from the cable cutting operations. To minimize airborne cable particles, the cable will be kept wet during cutting operations. The cut end of the cable will be tied onto a steel cable and winched onto the barge, then spooled into segments. The portion above the high water line will be covered by a 3M shrink cap and reburied with hand tools. A touchdown monitor will observe the operation underwater and collect cable fragments that fall to the lake bed. A technician on the barge will skim fragments from the surface. Collected cable fragments will then be disposed into a container onboard. A technician will be responsible for monitoring plume events through visual observation and a turbidity meter.

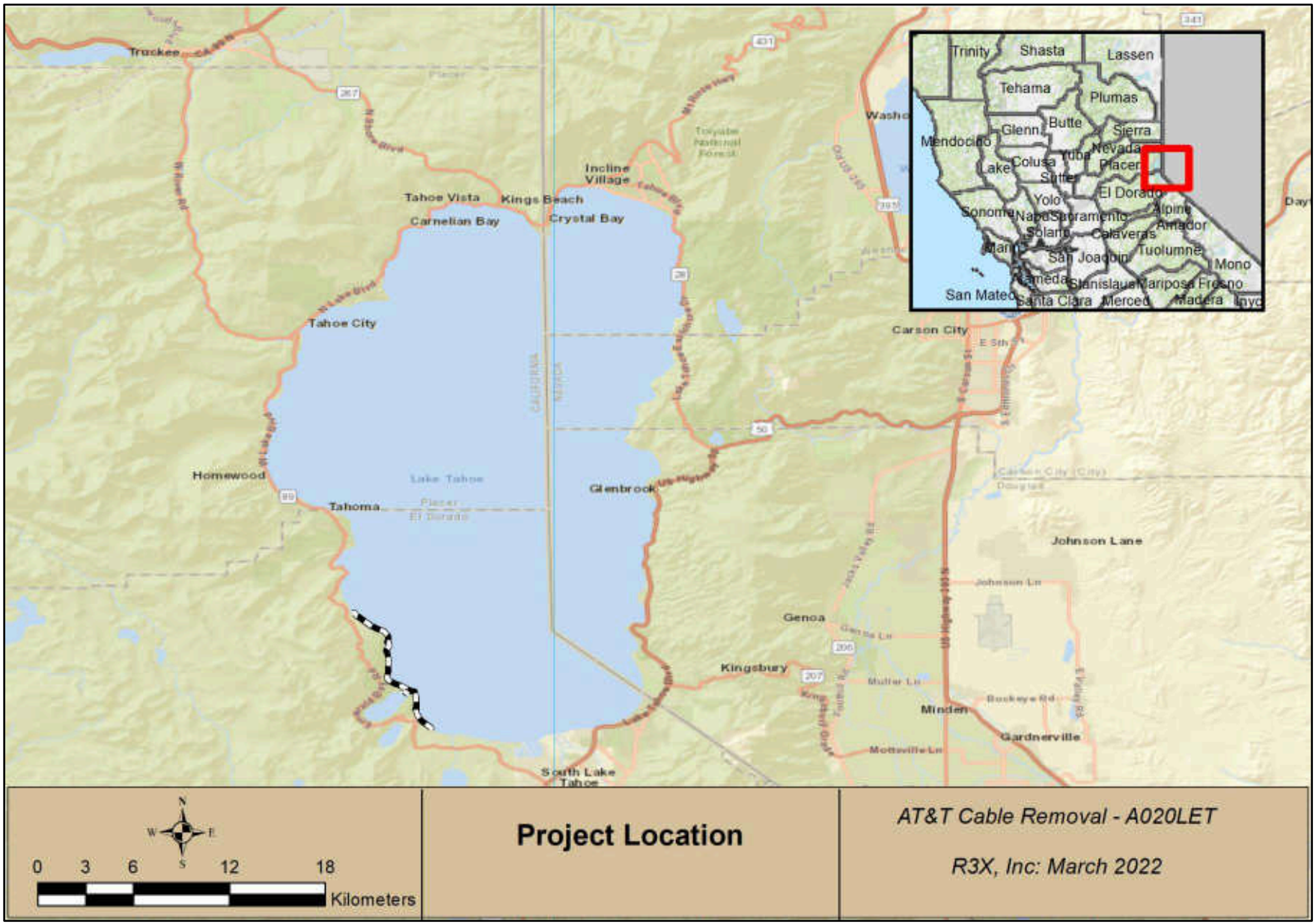


Figure 1. Project location.

3.0 REGULATORY BACKGROUND

This section explains the regulatory context that applies to environmental protection and to projects being conducted in California and, specifically, Lake Tahoe.

3.1 Federal Endangered Species Act (ESA)

The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife, such as whales and anadromous fish. Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. The law requires federal agencies, in consultation with the U.S. Fish and Wildlife Service and/or the NMFS NOAA Fisheries Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a "take" (i.e., harm, harassment, or kill) of any listed species of fish or wildlife.

3.2 The California Endangered Species Act (CESA)

CESA protects plants and animals listed, or proposed for listing, as rare (plants only), threatened, or endangered. The California Department of Fish and Wildlife has jurisdiction over state-listed species. A permit is required for any take of state-listed species. The Lead Agency reviewing a proposed project within its jurisdiction has to determine whether any state-listed or proposed endangered or threatened species are present and determine whether the project could result in a significant impact to those species.

3.3 California Environmental Quality Act (CEQA)

CEQA guidelines state that species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet specified criteria. CEQA criteria have been modeled after Federal and State Endangered Species language of the California Fish and Wildlife Code that pertains to rare or endangered plants or animals. The goal is to include guidelines to deal with

situations in which a public agency is reviewing a project that may have a significant effect on a species that has been deemed to be rare or have special status. Thus, CEQA provides an agency with the ability to protect a species from potential impacts associated with a project if it deems that the species meet the criteria of a threatened or endangered species.

3.5 Special Status Species

In this report, special status species consist of plants and animals that are legally protected or considered sensitive by state, federal, and/or local agencies and conservation organizations. CDFW maintains lists of "species of special concern," which are defined as species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats. U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, California Native Plant Society (CNPS) list 1 and 2 species, and CDFW special status species are considered "special status species." Although this group of species generally has no legal status, they are given special consideration under CEQA and a project must consider potential impacts to them during the planning phase. Additionally, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act – making the destruction of active nests, eggs, and young illegal. Other listings include species designated as sensitive by the USFS Regional Forester in Region 5 and species designated as sensitive, special interest, or threshold species by TRPA.

4.0 CRITICAL HABITAT AND SENSITIVE BIOLOGICAL COMMUNITIES

4.1 Critical Habitat

The Federal Endangered Species Act defines Critical Habitat as a specific region that contains features essential for the conservation of a threatened or endangered species. This requires federal agencies to consult with USFWS for projects that they fund or authorize on their lands to ensure they will not jeopardize the survival of a threatened or endangered species. This is also true for projects occurring in federally designated Critical Habitat.

4.2 Sensitive Biological Communities

Sensitive biological communities provide values and functions that are important for a suite of species (e.g., riparian and wetland habitat). These habitats are protected by a variety of

federal and state regulations, including CDFW Streambed Alteration Program, federal Clean Water Act, Tahoe Regional Planning Agency (TRPA) designations, the California Coastal Commission in coastal regions and others. In addition to federal and state measures, many counties and cities have local ordinances or policies such as tree ordinances and General Plan measures in place to protect environmental resources. Sensitive habitats in the proposed Project area include wetland communities such as marsh habitat and lake edges. Wetland/riparian habitats in the Tahoe Basin are also designated as Stream Environment Zones (SEZ), which encompass perennial and ephemeral streams, wet meadows, marshes, and riparian areas.

4.3 TRPA Designated Fish Habitat

Fish habitat within the Tahoe Basin has been classified by TRPA. Specific habitat categories consist of spawning, feed, and cover habitat. Spawning habitat consists of of gravel and is used by fish for spawning and rearing fry. Feed and cover habitat consists of cobble and boulder and are used by native and non-native species as refugia from predators and as foraging habitat.

4.3 Waters of the United States

"Waters of the United States" are regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. They are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies and wetlands), and their tributaries. Potential wetland areas, according to the three criteria method used to delineate wetlands stated in the U.S. "Army Corps of Engineers Wetlands Delineation Manual" and the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region," are identified by the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark. Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into "Waters of the U.S." (including wetlands) typically requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

4.4 Waters of the State

“Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program, which regulates discharges of fill and dredged material under Section 401 of the Clean Water and the Porter-Cologne Water Quality Control Acts.

4.5 CDFW Sections 1600-1616 of California Fish and Wildlife Code

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Wildlife Code. Work within or adjacent to streambeds or lakes generally requires a 1602 Lake and Streambed Alteration Agreement. A stream, which includes creeks and rivers, is defined in the California Code of Regulations as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.” In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is defined as "on, or pertaining to, the banks of a stream;" thus, riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself.” The extent of associated riparian habitat that would fall under the jurisdiction of CDFW varies, depending on the specific situation and/or the type of wildlife that could be harmed as part of a project. The minimum that CDFW claims jurisdiction over is the stream’s bed and bank. When riparian habitat is present, the outer edge of riparian vegetation is typically used as the line of demarcation between upland habitat and riparian habitat.

4.6 Other Sensitive Biological Communities

In addition to those discussed above, sensitive biological communities also include habitat that fulfill special functions or have special values. These natural communities are identified in local or regional plans, policies, regulations, or by CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in the California Natural Diversity Database (CNDDB). Sensitive plant communities are also identified by CDFW on their "List of California Natural Communities Recognized by the CNDDB." Impacts to sensitive natural communities identified in local or regional plans, policies, and regulations (or by CDFW or USFWS) must be considered and evaluated under CEQA. Additionally, specific habitats or areas may also be identified as sensitive in City or County General Plans or ordinances and have specific restrictions or requirements.

5.0 METHODS

R3X Group collected data on the known distribution of threatened, endangered, special-status, or sensitive species and habitats that could occur in the proposed Project area by querying the California Natural Diversity Database (CNDDB 2022; Figure 2), the Berkeley Museum of Vertebrate Natural History (VertNet), iNaturalist, and CNPS (CNPS 2022). CNDDB query consisted of the Project quadrangle (Meeks Bay and Emerald Bay) and the ten surrounding quadrangles (South Lake Tahoe, Freel Peak, Eho Lake, Pyramid Peak, Rockbound Valley, Homewood, Tahoe City, Kings Beach, Mariette Lake, Glenbrook). We used information from these database searches to assess the potential presence of species within the general area and in close proximity to the Project site. All species and regulated habitats that fall within these quadrangles are included in Appendix 2. Locations of known records within approximately 5 km of the Project area and more detailed information on their likelihood of occurring in the Project route are included in Tables 1 and 2. In addition to conducting database searches for sensitive species, we queried the USFWS National Wetlands Inventory TRPA databases to assess wetland habitat in the area.

These database searches provide a quick overview of known occurrences of sensitive species and habitat; however, importantly, they are not all-encompassing, and regulatory and permitting entities (e.g., United States Fish and Wildlife Service, California Department of Fish and

Wildlife, Army Corps of Engineers, and State Water Board) do not consider them as a replacement for on-the-ground surveys. They are, instead, used as a first pass at determining potential environmental resources within and near to proposed project sites in order to provide a coarse understanding of potential constraints that may pertain to environmental resources when considering implementation of a project. Thus, in addition to the database queries, we conducted on-the-ground surveys in March, June, July, and August 2022 to assess biological resources and locate the cable. In July, we completed a focused Tahoe yellow cress Survey (Appendix 3).

6.0 EXISTING CONDITIONS

The majority of the work will occur from a barge located in Lake Tahoe that will pull the cable up and place it on reels. The majority of the substrate that the cable rests on consists of sand and sand/boulder/cobble, with scattered patches of boulders (See Appendix 1 for TRPA fish habitat map units along the cable path). Habitat at the terrestrial locations where work will occur consists primarily of bare boulder areas below the Lake High-Water line, now exposed while the lake is at lower levels, (see Figures 3-15 for representative photos). Sandy habitat is the predominate habitat at the Baldwin Beach, Emerald Bay North, and northern-most sites (Figures 3, 5, 6, and 15). Above the Lake High-Water line, habitat consists of scrub and forest with a variety of perennial and annual species.

6.1 Biotic Habitats

Work will occur primarily within Lake Tahoe itself. Assessment of habitat within Lake Tahoe is based off of TRPA data layers and substrate assessments. Terrestrial work will occur in boulder and sandy areas at seven locations along the Lake Edge. Assessment of terrestrial habitat was based on the California Multi-source Vegetation Layer (CDFFP, 2022), and classified as the following habitat types: wet meadow, barren, montane chaparral, Sierran mixed conifer, and Jeffrey pine.

6.1.1 Wet Meadow

Wet meadows occur with a great abundance of plant species that vary throughout the State. Characteristic species include *Agrostis, Carex, Danthonia, Juncus, Salix*, and *Scirpus*. Grass and

grasslike species include thingrass, abruptbeak sedge, beaked sedge, Nebraska sedge, tufted hairgrass, needle spikerush, fewflowered spikerush, common spikerush, baltic rush, Nevada rush, iris-leaf rush, pullup muhly, and panicled bulrush. Common forbes include Anderson aster, Jeffrey shootingstar, trailing Saint-Johnswort, hairy pepperwort, primrose monkeyflower, western cowbane, American bistort, cows clover, and small white violet. Fewer species occur as surface water depth increases during spring runoff (Ratcliff 1988).

6.1.2 Barren

Barren habitat is defined as habitat with <2% total vegetation cover by herbaceous, desert, or non-wildland species, and <10% cover by tree or shrub species. The substrate's structure and composition is largely determined by the region of the state and surrounding environment. In marine, estuarine, and lake environments, barren habitat includes rocky outcroppings in the intertidal and subtidal zones, open sandy beaches, and mudflats. Along rivers, it includes vertical river banks and canyon walls (Parisi, 1988).

6.1.3 Montane Chaparral

Montane chaparral varies throughout California, with species composition changing along an intersectional gradient of elevational and geographical range, soil type, and aspect. One or more of the following species usually characterize montane chaparral communities: whitethorn ceanothus, snowbrush ceanothus, greenleaf manzanita, pinemat manzanita, hoary manzanita, bitter cherry, huckleberry oak, sierra chinquapin, juneberry, Fremont silktassel, Greene goldenweed, mountain mahogany, toyon, sumac, and California buckthorn. Montane chaparral provides habitat for a wide variety of wildlife (Riser and Fry 1988).

6.1.4 Sierran Mixed Conifer

Sierran mixed conifer forest consists of mixed stands with white fir, Douglas-fir, ponderosa pine, sugar pine, incense-cedar, and California black oak. White fir tends to be the most ubiquitous species (though most often a minor overstory component) because it tolerates shade and has the ability to survive long periods of suppression in brush fields. While ponderosa pine dominates at lower elevations and on south-facing slopes, Jeffrey pine commonly replaces ponderosa pine at

high elevations and cold sites. White fir, incense-cedar and sugar pine are associated with areas throughout the Tahoe Basin (Allen 1988).

6.1.5 Jeffrey Pine

Jeffrey pine usually forms pure stands, but sometimes occurs with ponderosa pine, Coulter pine, sugar pine, lodgepole pine, timber pine, white fir, red fir, incense-cedar, and black cottonwood (McBride 1988). Shrub species composition varies between geographical regions of the state. In the western slope of the Sierra Nevada, shrubs include huckleberry, oak, manzanita, and mountain misery. On the eastern slopes of the Sierra, dominant shrub layer species include squaw currant, snowbush, and greenleaf manzanita at higher elevations, and antelope bitterbrush, rabbitbrush, and sagebrush at lower elevations (McBride 1988).

6.1.6 Lake Tahoe and Tallac Creek/Marsh

Within the lake, the majority of the substrate beneath the cable consists of sand and sand/boulder/cobble (Appendix 1). A variety of aquatic species utilize these areas to forage, breed, and find refuge from predators.

7.0 RESULTS

In database searches, we found a total of 83 sensitive species and sensitive biological communities Of the species we found, six are listed as threatened or endangered under federal and/or state endangered species acts. Thirty-seven species are known to occur within 5 km of the Project route; of those, seven are listed as threatened or endangered under the federal and/or state endangered species acts.

7.1 Special Status Species

Special status species are plant and animal species protected by state, federal, or local governments that classify them as rare, endangered, or threatened. For this biological resource survey, special status species that have the potential to occur within or near the Project site are discussed below. Impacts to these species are regulated by state, federal, or local laws and ordinances aimed at protecting and conserving native plants and animals in California. Some

native plants and animals have been listed as threatened or endangered under the Federal and State Endangered Species Acts, while others have been designated as species of special concern by the California Department of Fish and Wildlife (CDFW). In addition, the California Native Plant Society (CNPS) has created its own list of native plants that are considered rare, threatened, or endangered. Combined, all of the plants and animals classified by the above mentioned entities are referred to as special status species. The potential for species to occur in the survey area can be defined as:

- **Absent:** Not present.

- **Unlikely:** No records of this species were found in the Project vicinity and no suitable habitat was observed. The species is not expected to occur.

- **Low:** Historical records exist in the general Project vicinity; however, suitable habitat is not present. This species is not expected to occur, but the rare occurrence cannot be ruled out.

- **Moderate:** Habitat elements associated with this species are present in the Project area; however, this species has not been documented in the Project vicinity. Species could occur.

- **High:** This species has been documented in close proximity to the Project area, and habitat is present within the Project area. Species are likely to occasionally use part of the Project area for dispersal, foraging, or breeding.

7.2 Plants

Forty-two special status plant species and two sensitive habitats were detected in database searches of the quadrangles; one species is federally or state listed as threatened or endangered, or are candidates for listing (Appendix 2); however, only eleven records of special status species

were found within 5 km of the Project site and one of those (Tahoe yellow cress) is federally or state listed as endangered or threatened (Figure 2 and Table 1).

Table 1. Special status animal species known to occur within 5-km of the project (data from CNDDB).

Species	Status	Habitat	Potential to occur in project area
Austin's astragalus (*Astragalus austiniae*)	S2S3 1B.3	Rocky soil in subalpine coniferous forest and alpine boulder and rock fields. Elevation: 8,005–9,745 feet. Blooming period (May) July–September	**Unlikely.** No quality habitat within work area.
Marsh skullcap (*Scutellaria galericulata*)	S2 2B.2	Occurs primarily in wet meadows. Blooming period: June - September	**Low.** No quality habitat within work area. Not observed in surveys.
Mingan moonwort (*Botrychium minganense*)	CNPS 2B.2	Typically occurs in wet forest meadow and bog habitat. Fertile period: July-September	**Unlikely.** No suitable habitat within work areas.
Mud sedge (*Carex limosa*)	S2 2B.2	Bogs, fens, meadows, seeps, marshes, swamps, and montane coniferous forests. Elevation: 3,935–8,860 feet. Blooming period: June–August	**Unlikely.** No suitable habitat within work areas.
Northern slender-leaved pondweed (*Stuckenia filiformis ssp. alpina*)	S2S3 2B.2	Shallow freshwater marshes and swamps. Elevation: 980–7,055 feet. Blooming period: May–July	**Unlikely.** No quality habitat within work area. Not observed in surveys.
Scalloped moonwort (*Botrychium crenulatum*)	S3 2B.2	Bogs and fens, meadows and seeps, upper montane coniferous forest, lower montane coniferous forest, marshes and swamps; moist meadows, freshwater marsh, and near creeks; 1185-3110 m. Fertile Period: June - September	**Unlikely.** No quality habitat within work area. Not observed in surveys.
Stebbins' phacelia (*Phacelia stebbinsii*)	S3 1B.2	Cismontane woodland, lower montane coniferous forest, meadows and seeps. Elevation: 2,000–6,595 feet. Blooming period: May–July	**Unlikely.** No quality habitat within work area. Not observed in surveys.

Species	Status	Habitat	Potential to occur in project area
Tahoe yellow cress (*Rorippa subumbellata*)	CNPS 1.B TRPA Sensitive	Endemic to the shore of Lake Tahoe. Almost always occurs in the back beach areas around the lake. Blooming period: May - September	**Present.** This species was identified at two locations within the work areas.
Tulare rockcress (*Boechera tularensis*)	S3 1B.3	Subalpine coniferous forest, upper montane coniferous forest, rocky slopes; 1800 - 3400 m. Blooming period: May–August	**Unlikely.** No quality habitat within work area. Not observed in surveys.
Upswept moonwort (*Botrychium ascendens*)	S2 2b.3	*Botrychium* species occur in wet or moist soils such (e.g. meadows, and along the edges of lakes and streams) at elevations between 4,500 and 9,000 ft. Typically occur with riparian vegetation. Fertile from July - September	**Unlikely.** No quality habitat within work area. Not observed in surveys.
Watershield (*Brasenia schreberi*)	S3 2B.3	Freshwater marshes and swamps. Elevation: 95–7,220 feet. Blooming period: June–September	**Unlikely.** No quality habitat within work area. Not observed in surveys.
Western goblin (*Botrychium montanum*)	S2 2B1	Coniferous forests in moist soils along edges of lakes and streams. Elevation range from approximately 5,000 ft – 7,000 ft. Blooming period: July - September	**Unlikely.** No quality habitat within work area. Not observed in surveys.

STATUS CODES

CNPS 1B – Considered by CNPS to be Rare, Threatened, or Endangered in CA and elsewhere (1-3 is level of threats with 1 being the greatest and 3 being the least)

CNPS 4.2 – Plants with known limited distributions; on a watch list.

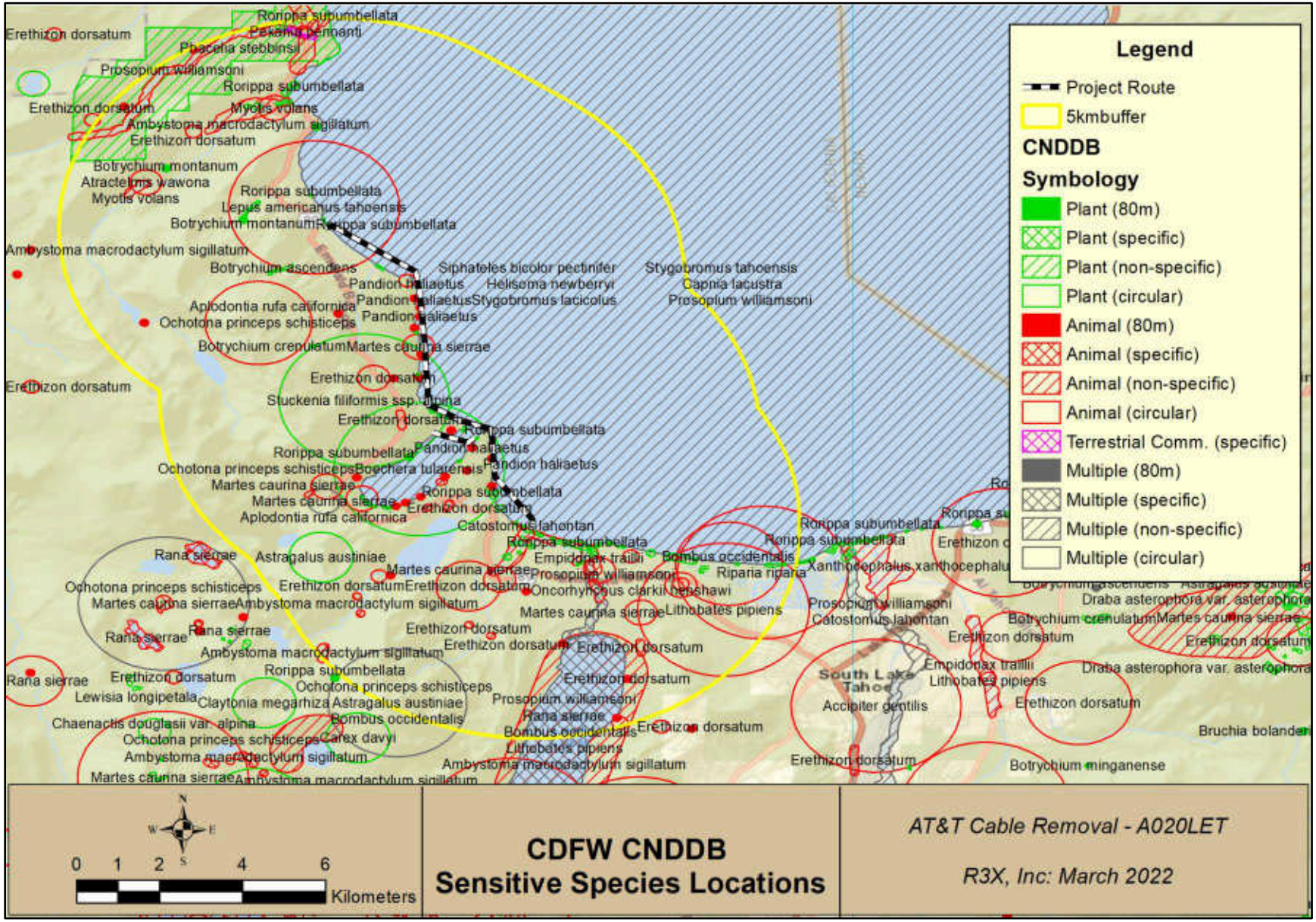


Figure 2. Special status species in the vicinity of the Project location (data from CNDDB)

7.3 Animals

Thirty special status animal species were detected in database searches of the quadrangles; six species are either federally or state listed as threatened or endangered, or are candidates for listing (Appendix 3); however, only 20 records of special status species were found within 5 km of the Project site and of those six are either listed as endangered, threatened, or a candidate for listing (Figure 2 and Table 2).

Table 2. Special status animal species known to occur within 5 km of the project (data from CNDDB).

Species	Status	Habitat	Occurrence in the Study Area and nearest known occurrence
Bald Eagle (*Haliaeetus leucocephalus*)	SE	Nest primarily in large trees in forested areas within close proximity to lakes or rivers where they forage for fish. Winters near open water (USDI 1986).	**High.** Bald eagles occur in the area and could use the general site for foraging and or dispersal.
Bank Swallow (*Riparia riparia*)	S2	For nesting, bank swallows require vertical or nearly vertical bluffs or unvegetated banks with soft sand and sandy loam soil, are usually immediately adjacent to still or running water, and are almost always influenced by a source of erosion	**Unlikely.** No suitable nesting habitat present at work areas. Could use the area for dispersal and or foraging if they are in the area.
Black-backed Woodpecker (*Picoides arcticus*)	S2	Typically occurring in post-burned coniferous forests.	**Moderate.** This species is known to occur in the Project vicinity. Although there are no recent fires within the Project work areas, areas within 1 km of some of the Project area have burned recently.
California Wolverine (*Gulo gulo*)	FP, ST	Utilize a variety of forest/mountain habitats; however, typically in alpine and subalpine areas above tree line. Can have home ranges of greater than 3000 ha.	**Unlikely**. There are observations of this species within the general area; however, it is believed that there is one or maybe a few individuals in the greater region.
Fisher (*Pekania pennanti*)	CT, PT, SSC	Mixed conifer forests often along riparian corridors. Den in log and tree cavities as well as caves and large crevices.	**Low:** This species has a large home range and could move through the area if present.

Species	Status	Habitat	Occurrence in the Study Area and nearest known occurrence
Golden Eagle (*Aquila chrysaetos*)	FP, SSC	Foothills and mountains throughout California. Nesting may occur on cliff ledges, riverbanks, trees, and human-made structures (e.g. windmills, platforms, and transmission towers) Kochert et al. 2002. Forages in open grassland, chaparral and oak woodlands.	**High.** Several records from the general project area. No nesting habitat will be disturbed.
Gray-headed Pika (*Ochotonoa princeps schisticeps*)	S2S4	Rocky outcrops and granite areas in the Sierra Nevada.	**Low:** Quality habitat is absent within the work areas.
Great Basin rams-horn (*Helisona newberryi*)	FSS S1S2	Larger lakes and slow rivers including larger spring-fed sources. Snail burrows in soft mud.	**High.** Occurs in Lake Tahoe
Lahontan cutthroat trout (*Oncorhynchus clarkia henshawi*)	FT S1	Historical range of this species included cold waters throughout the Lahontan Basin. Needs gravel riffles in streams for spawning habitat. Occurs in Lake Tahoe.	**High.** Occurs in Lake Tahoe
Lahontan Lake tui chub (*Spiphateles bicolr pectinifer*)	FSS SSC	Cold water streams and rivers. Flowing water with vegetation along the banks and in riffles and runs.	**Moderate.** Known to occur in Lake Tahoe.
Lahontan mountain sucker (*Castostomus lahontan*)	S2 SSC	Creeks and rivers	**High.** This species has been found in Tallac Creek near the mouth at Lake Tahoe.
Lake Tahoe amphipod (*Stygorbromus lacicolus*)	G1 S1	Deep subterranean areas within Lake Tahoe.	**Low.** This species tends to occur at depths greater than 200 ft.
Lake Tahoe benthic stonefly (*Capnia lacustra*)	G1 S1	Occurs only in Lake Tahoe. Found at depths of 95-400 ft. Associated with deep water algae, moss, and liverworts.	**Moderate.** Most of the area where the cable rests is below 95ft; however, there are areas where the cable rests within suitable depths.
Lake Tahoe stygobromid (*Stygobromus tahoensis*)	G1 S1	Within Lake Tahoe. Typically at depths of over 200 ft (Holsinger 1974)	**Low.** This species tends to occur at depths greater than 200 ft.
Long-eared Owl *(Asio otus)*	S3, SSC	Dense vegetation and forest close to grasslands. Nests in coniferous trees.	**High.** There are records of long-eared owls in the project vicinity.

Species	Status	Habitat	Occurrence in the Study Area and nearest known occurrence
Long-legged myotis (*Myotis volans*)	S3	Woodland forest typically above 4000 ft. Caves and mines are night roosts. Trees are important day roosts.	**Moderate.** This species could use some of the Project area for foraging; however, no potentially suitable roosting habitat will be disturbed.
Mountain whitefish (*Prosopium williamsoni*)	S3 SSC	Typically occur in clear, cold streams with pools greater than 1 m in depth. Spawn in riffles or wave-washed areas on lakeshores in gravel, cobble, and smaller rocks. Lay eggs in the fall, which develop through the winter.	**Moderate:** Occur in Lake Tahoe. Could use the general work areas.
North American porcupine (*Erethizon dorsatum*)	SSC	Utilize rocky areas or trees for dens and open space for foraging.	**Moderate.** There are records of this species throughout Lake Tahoe region. This species could use the Project area.
Northern Goshawk (*Accipiter gentilis*)	SSC	In the region where the Project will occur, this species is typically associated with large older stands of coniferous forests with snags. Forages in open areas beneath dense canopy cover, in scrub habitat, along riparian corridors, and meadow edges. The species prefers moderate to closed canopy (>60%) with at least 2 canopy layers (Beier and Drennan 1997; Hayward and Escano 1989)	**High.** This species could use the general Project area for foraging and is known to occur in the vicinity of the Project. No trees will be removed.
Northern Leopard Frog (*Lithobates pipiens*)	SCC	Utilizes quiet permanent or long-lived aquatic habitats with emergent vegetation.	**Low.** No suitable habitat present within the work area.
Osprey (*Pandion haliaetus*)	WL	Nests in a variety of structures include trees, utility poles, etc. Typically within approximately 10 miles of water bodies.	**Present:** There are records of this species near the Project route. They are known to nest in close proximity to work areas.
Sharp-shinned hawk (*Accipter gentilis*)	S3 WL	Wide range of habitats.	**High.** This species could use the area for dispersal and foraging.
Sierra Marten (*Martes caurina sierra*)	S3	Late successional stage coniferous forest with snags and dead trees. Den in cavities in trees as well as crevices within rock outcrops.	**High.** There are records of this species along the edge of Lake Tahoe, along the cable route.

Species	Status	Habitat	Occurrence in the Study Area and nearest known occurrence
Sierra Nevada Mountain Beaver (*Aplodontia rufa californica*)	SCC	Found along riparian corridors in areas with thick vegetation.	**Low.** This species could occur along riparian areas near the Project; however, no quality habitat exists within the project work areas.
Sierra Nevada Snowshoe Hare (*Lepus americanus tahoensis*)	SSC	Occurs in dense thickets of coniferous forest, scrub, and riparian vegetation in mountain areas.	**Moderate.** This species could utilize upland areas where work will occur.
Sierra Nevada Yellow-legged Frog (*Rana sierra*)	FE, ST	Occurs in lakes, ponds, and slow-moving streams in the Sierra Nevada Mountains above 6,000 ft. Habitat consists of mountain lakes, meadows, and stream (Knapp et al., 2003; Brown et al, 2019). Typical depth needed for successful metamorphosis of tadpoles is greater than 2 m, as tadpoles overwinter and cannot freeze.	**Unlikely.** No quality habitat present.
Southern Long-toed Salamander (*Ambystoma macrodactylum sigillatum*)	SCC	Breed in high mountain pools and lakes in the Tahoe area. Utilize surrounding upland habitat for foraging and dispersal. Tend to occur near breeding sites, taking refuge under rotting logs and in animal burrows.	**Unlikely.** No breeding ponds will be impacted.
Wawona riffle beetle (*Atractelmis wawona*)	G3 S1S2	Aquatic; found in riffles of rapid, small to medium clear mountain streams; 2000-5000 ft elev.	**Unlikely.** No suitable habitat.
Western Bumble Bee (*Bombus occidentalis*)	S1	Once widespread throughout much of central and northern California, this species has declined significantly. Pollinates a variety of native plants.	**High:** There are records of this species near the Project route. If present, they likely forage on flowering plants in the Project route.
Willow flycatcher (*Empidonax traillii*)	SE S1S2	Associated with thick stands of willows typically on the edge of wet meadows, ponds, lakes, or other bodies of water.	**Moderate.** This species has been observed at Tallac Marsh. No suitable nesting habitat will be impacted.
Yellow Warbler (*Dendroica petechial brewsteri*)	SSC	Wide range of habitats.	**High.** This species could use the area for dispersal and foraging.
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	S3 SSC	Typically nest in tall emergent vegetation in or near marsh habitat adjacent to deep water.	**Moderate.** This species has been observed along Lake Tahoe. No suitable nesting habitat will be impacted.

STATUS CODES

FE	Federally Endangered	FT	Federally Threatened	S1-S5	CDFW Reflects overall condition of the species with 1 being the most threatened.
SE	California Endangered	ST	California Threatened		
FP	CDFG Fully Protected	SSC	CDFG Species of Concern		
FSS	Forest Service Sensitive				

7.4 Lake, Creek, and Terrestrial Habitats

Two types of aquatic habitat occur in the Plan area: lake (Lake Tahoe) and creek (Tallac Creek). Riparian and wetland vegetation associated with these two sites provide aquatic habitat for a variety of species. The majority of the substrate beneath the cable, within the lake, consists of sand and sand/boulder/cobble (Appendix 1). Representative photos of lake and marsh habitat are included in Figures 3-9). Substrate at the Tallac Creek/Marsh mouth consists of sandy bottom habitat (Figure 3).



Figure 3. Sandy habitat at Tallac Creek.



Figure 4. Cobble habitat.

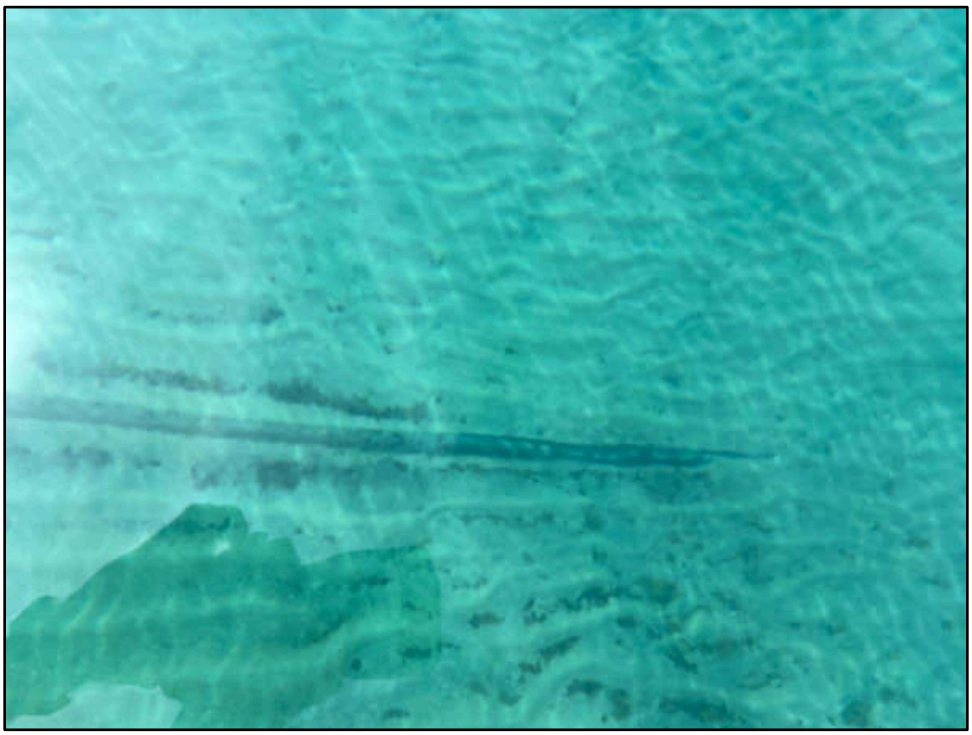


Figure 5. Cable partially buried beneath sand.



Figure 6. Sandy habitat with cable resting on top of sand.

7.5 Terrestrial Work Areas

Vegetation and habitat characteristics for terrestrial work locations are included below. Each section includes a general description of the habitat, a species list, and details pertaining to work activities for each specific work location.

Cut location #1

Work will occur from the edge of Lake Tahoe upslope to the inland edge of Tallac Creek. Equipment access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the beach for the excavator to enter and exit the work site. The cable will be exposed using an excavator proceeding from the lake edge to the top of the beach (Figure 7) and then down to the lake edge of Tallac Creek (Figure 8). At the inland edge of Tallac Creek, the cable will be hand-excavated at the fence line and then cut and capped (Figure 9). Once cut, the cable will be removed by pulling it onto the barge. Silt fencing will be installed along both edges of the creek to minimize the amount of sediment that enters the creek. The excavated areas will be filled with native soil and the topography returned to original grade.

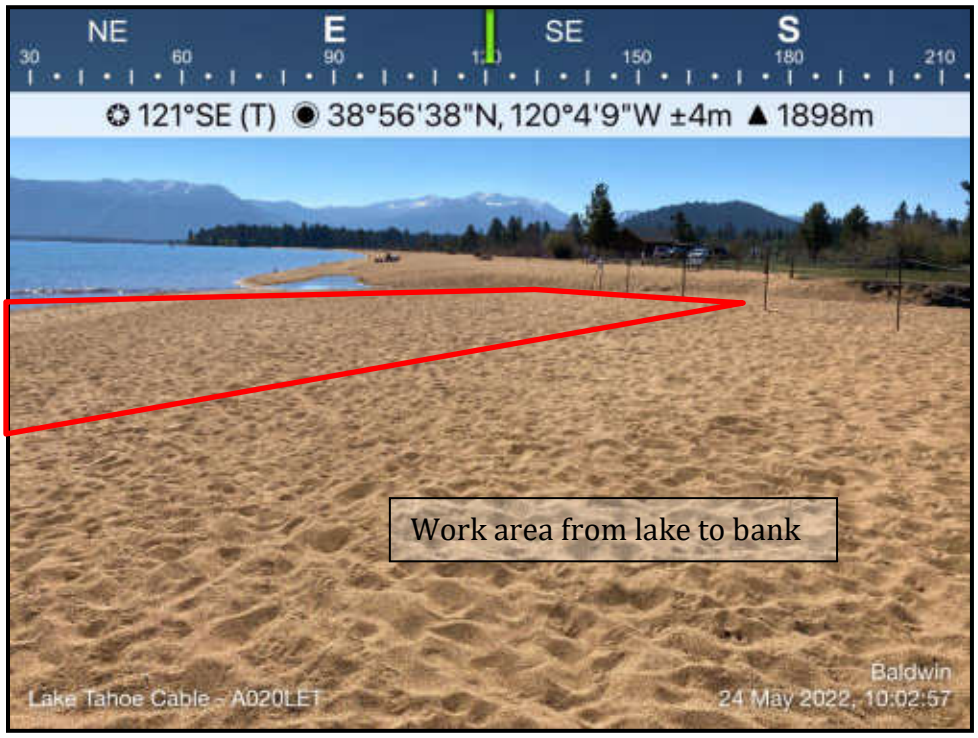


Figure 7. Cut Location #1. Baldwin Beach work area.

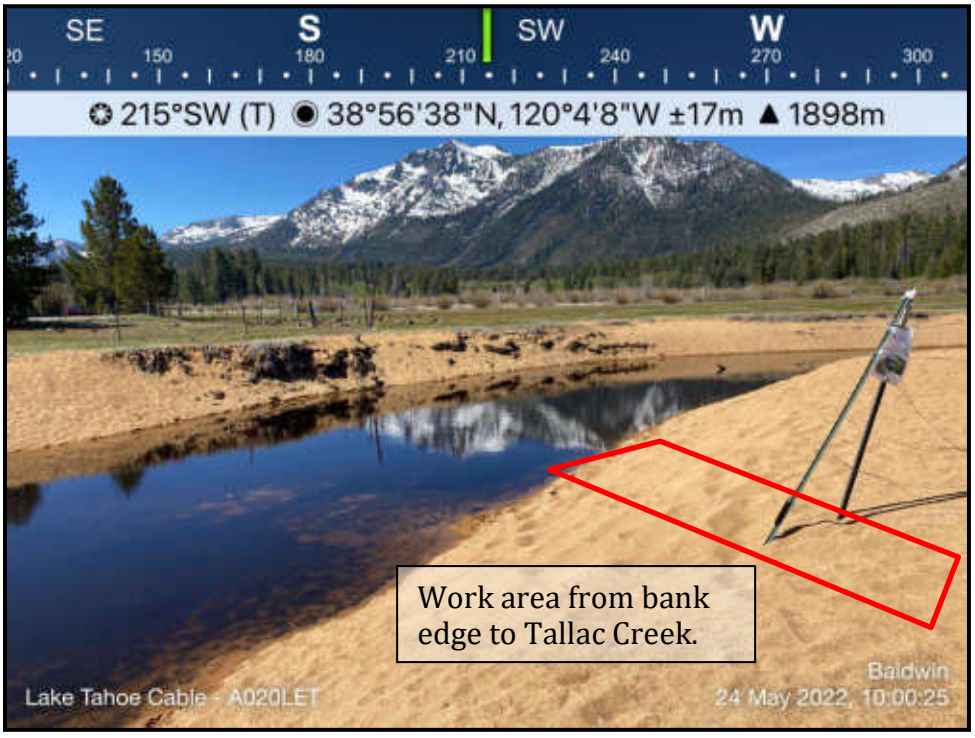


Figure 8. Cut Location #1. Work area to lake edge of Tallac Creek.



Figure 9. Cut Location #1. Hand digging and cut location on inland edge of Tallac Creek.

Vegetation in and around the site consists of mullein, sedge species, lupine, and Tahoe yellow cress. Eight individual plants were found a few feet down stream of the removal location.

Scientific Name	**Common Name**
Carex nebrascensis	Nebraska sedge
Lupinus polyphyllus	Large leaved lupine
Rorippa subumbellata	Tahoe yellow cress
Verbascum thapsus	Woolly mullein

Cut location #2

Location 2 is on a rocky shore 0.75 mile south of the mouth of Emerald Bay. Work will occur from the edge of Lake Tahoe to the high-water mark (Figure 10). The cable will be exposed using an excavator (to move boulders off of the cable) and shovels (to dig in sandy areas near splice point). Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore, allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the

excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable, pole and anchors will be removed.

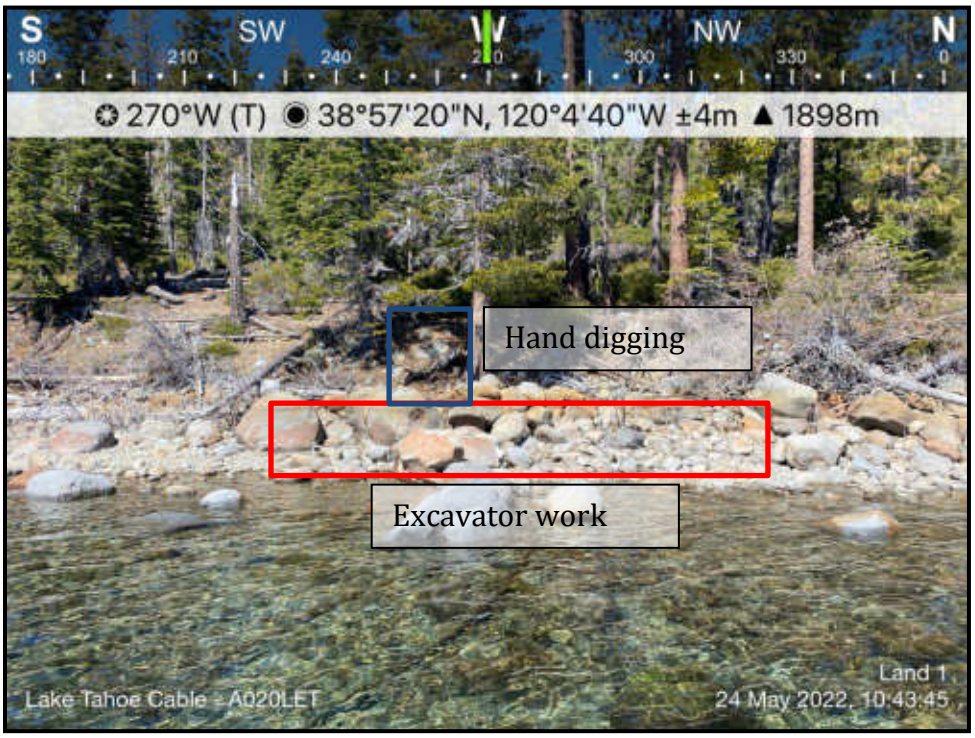


Figure 10. Cut Location #2

The vegetation in and around the site consists of various wetland plants such as willow, aspen, and alder.

Scientific Name	**Common Name**
Alnus incana	Alder
Galium ssp.	Bedstraw
Pinus contorta	Lodgepole pine
Populus tremuloides	Quaking aspen
Populus trichocarpa	Black cottonwood
Potentilla gracilis	(Cinquefoil)
Rorippa curvisiliqua	Curved yellow cress
Salix lasiolepis	Arroyo willow

Cut Location at Emerald Bay

Work will occur from the edge of Lake Tahoe to the high-water mark (Figure 11). An excavator will not be used at this site. Personnel will access the site via barge or by foot. Once on shore, the cable will be exposed to the high-water line using shovels and then cut and capped. Excavated soil will be placed back in the excavated area. The cable will be removed.

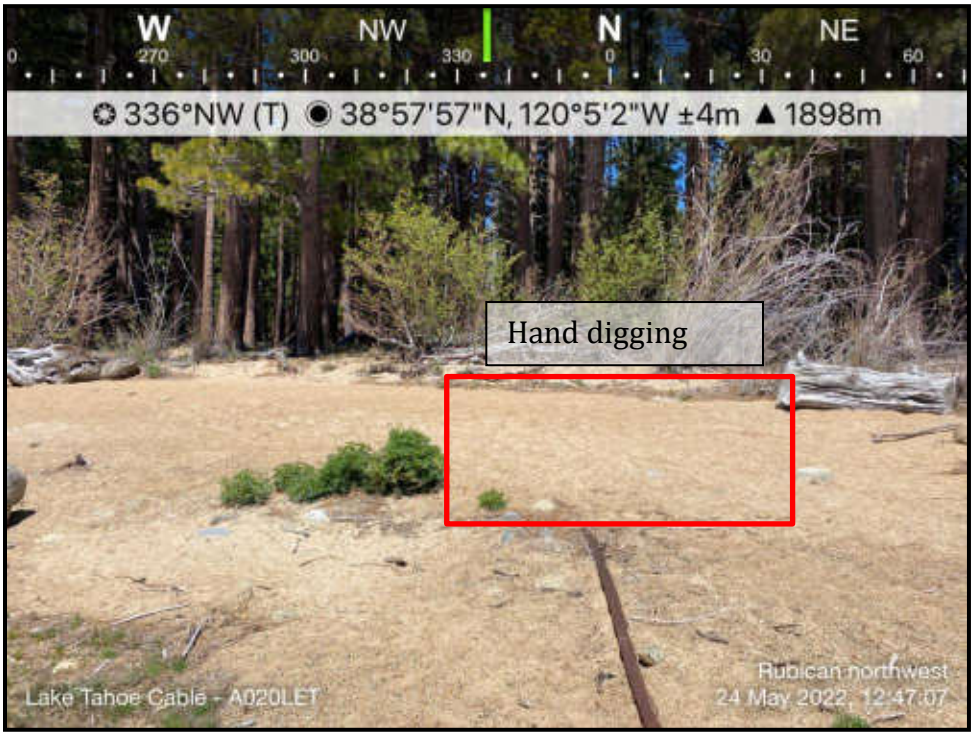


Figure 11. Cut Location Emerald Bay

This site cuts across the low-lying peninsula on the north side of the mouth of Emerald Bay. The cable removal area is on a well-vegetated rocky shore. The vegetation above the ordinary high-water mark (OHWM) is dominated by over story trees consisting of sugar pine, Jeffrey pine, ponderosa pine, white fir, and black cottonwood.

Scientific name	**Common name**
Abies concolor	White fir
Calocedrus decurrens	Incense cedar
Deschampsia cespitosa	Tufted harigrass
Galium ssp.	Bedstraw

Hieracium albiflorum	White flowered hawkweed
Pinus jeffreyii	Jeffrey pine
Pinus lambertiana	Sugar pine
Pinus ponderosa	Ponderosa pine
Populus trichocarpa	Black cottonwood
Potentilla gracilis	Cinquefoil
Quercus vacciniifolia	Huckleberry oak

Cut location #3

Work will occur from the edge of Lake Tahoe to the high-water mark (Figure 12). The cable will be exposed using an excavator (to move boulders off of the cable) and shovels (to dig in sandy areas near splice point). Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore, allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable will be removed.

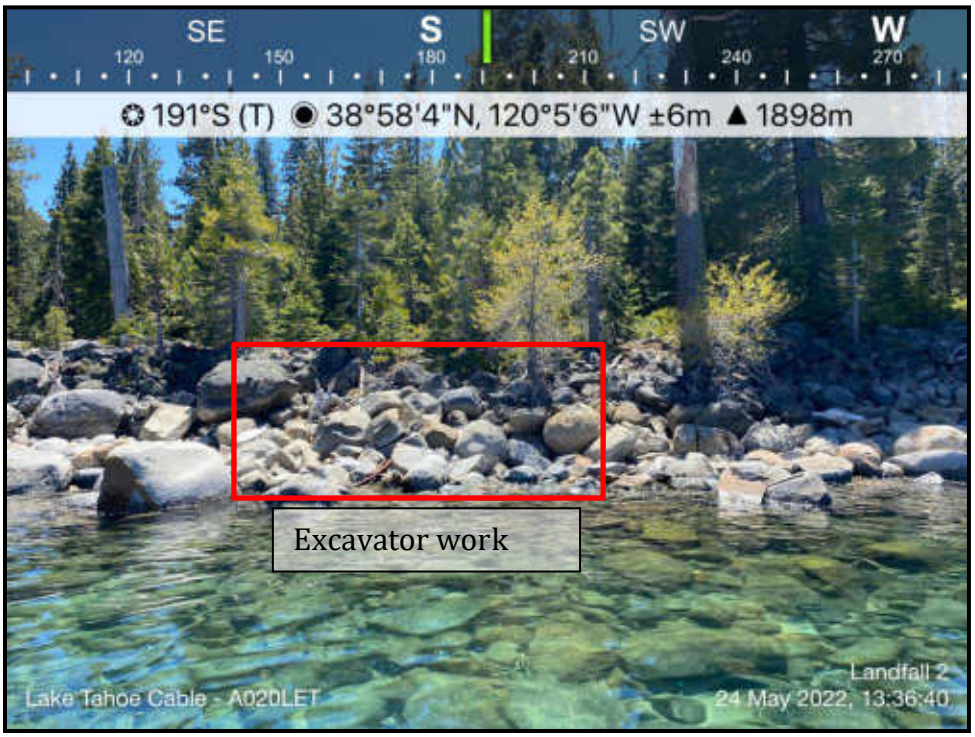


Figure 12. Cut Location #3

The north side of the mouth of Emerald Bay where the cable removal is proposed is a heavily vegetated sandy shoreline consisting mostly of lupine and cinquefoil.

Scientific name	**Common name**
Acmispon nevadensis	Sierra lotus
Hieracium albiflorum	White flowered hawkweed
Hieracium albiflorum	White flowered hawkweed
Hosackia pinnata	Pinate lotus
Lupinus polyphyllus	Large leaved lupine
Mentha canadensis	Wild mint
Potentilla gracilis	Cinquefoil
Rumex triangulivalvis	Willow dock
Salix lasiandra	Pacific willow
Verbascum thapsus	Wooly mullein

Cut location #4

Work will occur from the edge of Lake Tahoe to the high-water mark (Figure 13). The cable will be exposed using an excavator (to move boulders off of the cable) and shovels (to dig in sandy areas near splice point). Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore, allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable, pole, and anchors will be removed.

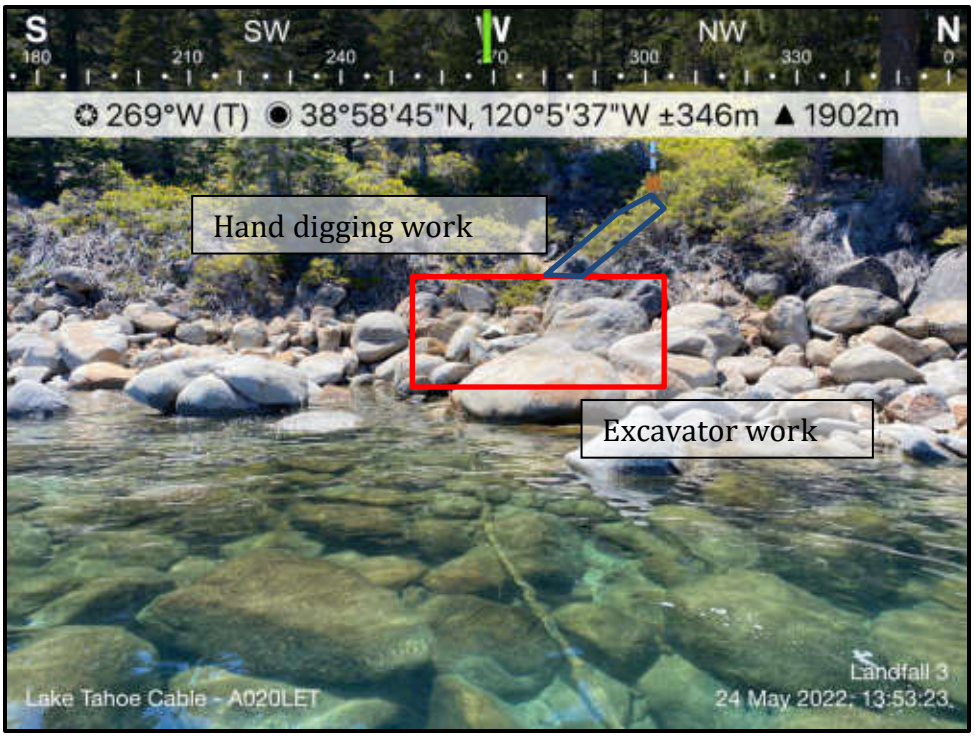


Figure 13. Cut Location #4

This cable removal area is located north of Emerald Bay on a rocky shore. The vegetation consisted of mostly huckleberry oak.

Scientific Name	**Common Name**
Abies concolor	White fir
Arctostaphylos patula	Green leaf manzanita
Carex ssp.	Sedge
Deschampsia cespitosa	Tufted harigrass
Hieracium albiflorum	White flowered hawkweed
Pinus jeffreyii	Jeffrey pine
Pinus lambertiana	Sugar pine
Potentilla gracilis	Cinquefoil)
Pseudognaphalium californicum	Ladies' tobacco
Quercus vacciniifolia	Huckleberry oak
Rorippa subumbellata	Tahoe yellow cress

Cut location #5

Work will occur from the edge of Lake Tahoe to the high-water mark (Figure 14). The cable will be exposed using an excavator (to move boulders off of the cable) and shovels (to dig in sandy areas near splice point). Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore, allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable, pole, and anchors will be removed.

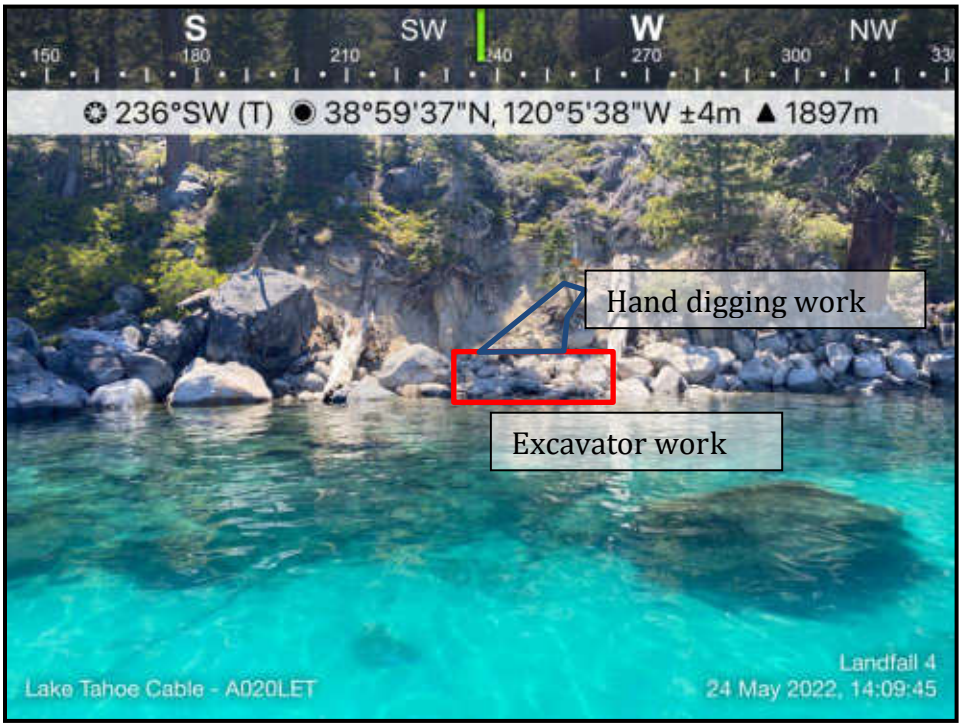


Figure 14. Cut Location #5

This site is on a steep rocky shore with little vegetation. No occurrences of TYC were found in this location.

Scientific name	**Common name**
Abies concolor	White fir
Ceanothus velutinus	Snowbrush
Deschampsia cespitosa	Tufted harigrass
Galium ssp.	Bedstraw

Cut location #6

Work will occur from the edge of Lake Tahoe to the high-water mark (Figure 15). The cable will be exposed using an excavator and shovels. Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore, allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable will be removed.

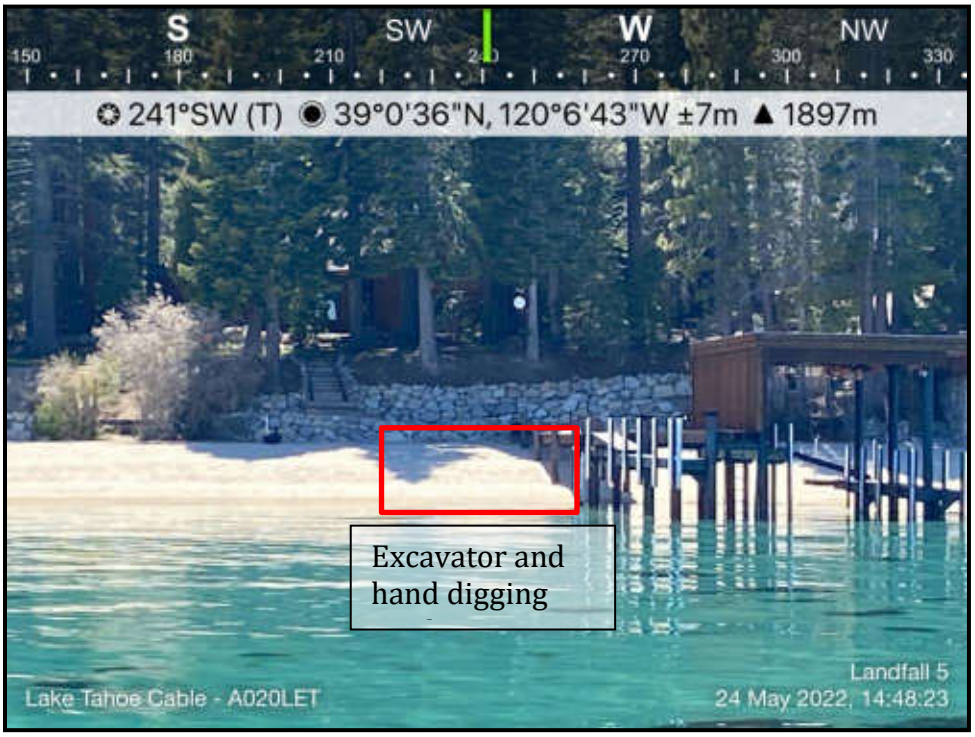


Figure 15. Cut Location #6

The site is on a sandy shore between private docks with almost no vegetation below the OHWM. No occurrences of TYC were found in this location.

Scientific name	**Common name**
Ribes spp.	Gooseberry
Salix lasiolepis	Arroyo willow

8.0 POTENTIAL IMPACTS - SUGGESTED AVOIDANCE AND MINIMIZATION MEASURES

8.1 Overview and Assumptions

This analysis is based on the Project description and plans included in Appendix 1, results from database and literature searches, and on-the-ground surveys. It is assumed that all Project staging will occur in developed areas outside of the Lake and immediate area with no additional impacts to habitat outside of the immediate area where the cable will be removed. The suggested avoidance and minimization measures are meant to reduce potential of impact to species to a less-than-significant level.

8.2 Wetland and Riparian Habitat

Work will occur within the bank of Tallac Creek and below the high-water mark of Lake Tahoe. Because these areas are classified as wetland (Figure 16), appropriate permits from State and Federal entities to work within these areas need to be obtained.

Minimization and Avoidance Measures (AMM-1): Consult with the appropriate State and Federal entities to obtain neccesary permits or waivers. Create and implement BMP and stormwater measures and plans to ensure runoff, turbidity, and soil movement is minimized and managed.

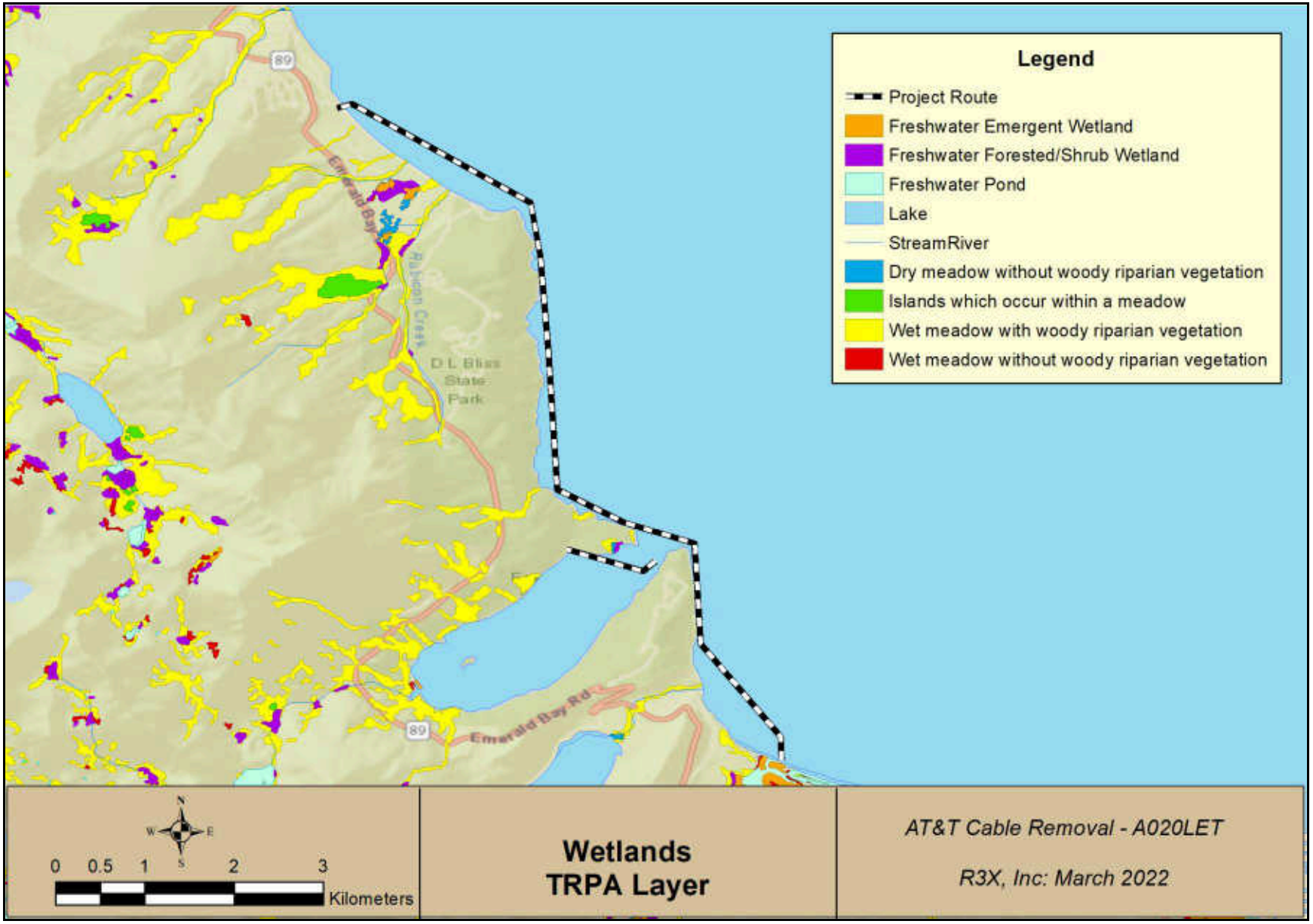


Figure 16. Wetlands along the project route.

8.4 Critical Habitat and Sensitive Biological Communities

No critical habitat or sensitive biological communities are present within the Project work areas.

Minimization and Avoidance Measures: None.

8.5 Special Status Plants and Animals

Special status species with a potential ranking of moderate, high, or present that are known to occur within or near the Project site (Tables 1 &2) are discussed in more detail here. Project construction is unlikely to result in injury or mortality of any individuals of these species, and Project implementation would not jeopardize the persistence of any these populations. Specific avoidance measures are included below to ensure no impact.

8.5.1 Tahoe Yellow Cress

Tahoe Yellow Cress (*Rorippa subumbellata*)

Tahoe yellow cress is a TRPA sensitive species, listed as endangered by the State of California, and a Forest Service Sensitive species. The distribution of this species has been significantly reduced due to development and recreation along the banks of Lake Tahoe (Stanton et al. 2015). Tahoe yellow cress was found at two of the work locations adjacent to the existing cable. Work at these locations, without avoidance measures, may result in direct effects to Tahoe yellow cress that would not occur otherwise.

Minimization and Avoidance Measures (AMM-2):

- A preconstruction survey, no more than two weeks prior to earth work taking place, will be conducted at ALL terrestrial work sites to ensure no TYC are present. If additional TYC are observed outside of work locations the avoidance measures below will be implemented. If avoidance measures cannot be implemented (e.g. TYC is directly above the cable) CDFW will be consulted and no work will occur at that location until an updated and approved plan is agreed upon.

- Sites where TYC were located during the July surveys will be clearly flagged and these areas will be avoided during all work activities.

- An onsite biological monitor will be present during all earth work at these sites.

- At Cut Location #4, a plastic tarp will be placed over known locations where plants were observed in order to prevent any soil or other material from falling onto the area and covering or burying plants and or seeds. The tarp will be removed once that work is completed.

- At the Baldwin Beach Location, a silt fence will be placed between the TYC locations and area where the cable will be hand dug in order to clearly delineate the TYC area and prevent impacts to soil where plants are located.

- Prior to any work being implemented, all individuals must attend a field worker education program that specifically outlines TYC avoidance measures.

8.5.2 Passerines and Raptors

All sites where terrestrial work will occur provide suitable habitat for a variety of passerines and raptors. CNDDB and other database searches showed that bald eagle, bank swallow, black-backed woodpecker, golden eagle, long-eared owl, northern goshawk, osprey, sharp-shinned hawk, willow flycatcher, yellow warblers, and yellow-headed blackbird have been recorded within 5 km of the Project site. Additionally, Osprey is known to nest in trees along the edge of the lake and may be disturbed by loud activities adjacent to nest sites.

Avoidance and Minimizations Measures (AMM-3): No trees are proposed to be removed. If feasible, all work should occur outside of the nesting period (February through mid-September). If work is to take place during the nesting period, surveys for active nests should be conducted by a qualified wildlife biologist no more than 10 days prior to the start of the Project. The surveys should be conducted at all terrestrial work locations. In addition to direct impacts, such as nest destruction, nests might be affected by noise, vibration, odors, and movement of workers or equipment. Identified nests should be continuously surveyed for the first 24 hours prior to any construction-related activities to establish a behavioral baseline. Once work commences, all nests should be continuously monitored to detect any behavioral changes as a result of the Project. If behavioral changes are observed, the work causing that change should cease and CDFW should be consulted for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, then a minimum no-disturbance buffer of 250 ft around active nests of non-listed bird species and a

500-ft no-disturbance buffer around the nests of non-listed raptors should be maintained until the breeding season has ended, or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no-disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when the Project area would be concealed from a nest site by topography. We advise that any variance from these buffers should be supported by a qualified wildlife biologist, and we recommend that CDFW be notified in advance of implementing a no-disturbance buffer variance.

Tree nesting raptors – No trees are proposed to be removed. If feasible, all work should occur outside of the nesting period (February through mid-September). Avoidance and survey measures mentioned above will be implemented if raptors are found nesting within 500 ft of the project area during pre-construction surveys.

Passerines – If feasible, all work should occur outside of the nesting period (February through mid-September). Avoidance and survey measures mentioned above will be implemented if passerines are found nesting within 250 ft of the project area during pre-construction surveys.

8.5.3 Native Fish

Lahontan cutthroat trout is the only native trout in the Lake Tahoe basin and is known to occur in Lake Tahoe. Lahontan cutthroat trout was extirpated in the Tahoe Basin in the 1930s due to over fishing, habitat degradation, and the introduction of nonnative fishes. As a result, the species was listed as endangered under the federal endangered species act, and later downgraded as threatened (40 Federal Register 29864, July 16, 1975). The downgrade to threatened was partially made to allow for angling. Since listing, several attempts have been made to reintroduce Lahontan cutthroat trout populations in streams and small lakes around the region (including Lake Tahoe). These restoration efforts have been hampered, as the presence of non-native trout species is believed to have had a negative impact on Lahontan cutthroat (California State Parks, et al. 2010). Lahontan cutthroat spawn April – July in tributaries of lakes and rivers. Eggs hatch in 6 – 8 weeks before moving into the water column.

Other sensitive fish species known to occur in Lake Tahoe and Tallac Creek include Lahontan mountain sucker (*Catostomus platyrhynchus*), which lay eggs in gravelly riffles of small streams in June and July, Lahontan lake tui chub (*Gila bicolor pectinifer*), which spawn in May and June in near-shore shallows over beds of aquatic vegetation (Moyle et al. 2015), and mountain whitefish (*Prosopium williamsoni*), which spawn in fall and early winter in tributaries with fry moving into the deeper lake waters shortly after hatching (Moyle et al. 2015). The cable rests largely on top of gravel, cobble, and sand (See Appendix 1), removal will not significantly modify the lake bottom habitat, and fish will be able to swim away as the cable is lifted. When the cable is removed, water quality adjacent to the cable will increase in turbidity; however, these impacts will be relatively short-lived, and fish can move into clear oxygenated water. There is potential for whitefish eggs to be disturbed during cable removal; however, the scale of these impacts would not be noticeable to the Lake Tahoe Population as a whole.

Avoidance and Minimization Measures: None

8.5.4 Aquatic Invertebrates

Lake Tahoe supports several species of invertebrates that are classified as special status species (Table 2). Species that have the potential to occur within the Project area include Great Basin rams-horn, Lake Tahoe amphipod, Lake Tahoe benthic stonefly, and the Lake Tahoe stygobromid. These organisms have the potential to occur adjacent to, beneath, or in close proximity to the underwater cable and may be disturbed when the cable is removed. The relatively small area that will be disturbed, in relation to potential habitat in Lake Tahoe, and the short period of time disturbance will occur, will not have a significant impact on persistence of these species.

Avoidance and Minimization Measures: None

8.5.5 Flying mammals

Long-eared myotis are known to occur in the project region. No roosting habitat will be disturbed and no nighttime work is planned; thus, no impact to this species will occur.

Avoidance and Minimization Measures: None

8.5.6 Terrestrial mammals

Several small mammals have the potential to occur in the project vicinity: Sierra martin, North American porcupine, and Sierra Nevada snowshoe hare. These species are highly mobile and would avoid work locations during cable removal. No dens were observed during field surveys, and work is scheduled to occur in the fall months when animals are not denned up.

Avoidance and Minimization Measures: None

8.5.7 Western Bumble Bee

The Western bumble bee is known to occur in the region, and could utilize flowering plants within and adjacent to work areas for foraging. Removal of vegetation in areas where hand digging may occur could result in the loss of foraging habitat for the western bumble bee; however, the amount of altered habitat would not be enough to impact the population as whole.

Avoidance and Minimization Measures: None

9.0 SUMMARY

AT&T California proposes the removal of two lengths of submarine telecommunications cable in Lake Tahoe and Emerald Bay in California. The cable removal is expected to occur in the Fall, during the recreational off-season, no earlier than October. The longer cable is approximately 6 miles long and runs along the Southwestern shore of Lake Tahoe. The cables largely rest on the lake bed, not within the substrate. The Project calls for seven cut locations, six along the six-mile cable and one on the Emerald Bay cable. The Emerald Bay cable has been previously severed on the South side of Emerald Bay. Portions of the cable on land will be accessed by barge, from which a technician will approach the cut location on foot. Sections of the cable may lie beneath large boulders; in these instances a mini excavator staged on the barge will be used to temporarily relocate them. To remove the cable, it will be exposed at the high-

water line at 6,229.1-feet with hand tools or an excavator that will access the location by ramp from the barge.

All earth work will be temporary and no hardscape or developed areas are proposed as result of this project. Several sensitive species are known to occur in the area, and some of them could utilize the area for dispersal and breeding. Avoidance and minimization measures have been developed in order to ensure no impact to special status species. When implemented, the project will not significantly impact these species.

10.0 Literature Cited

Allen BH. 1988. Sierran mixed conifer. In A guide to wildlife habitats of California. Ed. KE Mayer and WF Laudenslayer. State of California, Resources Agency. 166 pp.

Beier P. and J.E. Drennan. 1997. Forest structure and prey abundance in foraging areas of northern goshawks. Ecological Applications. 7(2):564-571.

Best TL. 1999. *Dipodomys nitratoides*. Mammalian Species No. 381, pp. 1-7. American Society of Mammalogists.

Brown, C., L.R. Wilkinson, K.K. Wilkinson, T. Tunstall, R. Foote, B.D. Todd, V.T. Vredenburg. 2019. Demography, habitat and movements of the Sierra Nevada Yellow-legged Frog (*Rana sierra*) in streams. Copeia: 107(4):661-675.

California Department of Forestry and Fire Protection. 2022. California Multi-source Vegetation Layer Map, depicting WHR13 Types. Accessed 2022 at: https://www.arcgis.com/home/item.html?id=b7ec5d68d8114b1fb2bfbf4665989eb3

California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California. Online: http://www.rareplants.cnps.org. Accessed August 2022.

CNDDB. 2022. California Natural Diversity Database. California Department of Fish and

Wildlife; [accessed 2022 January 18].

Hayward, G.D. and R. E., Escano. 1989. Goshawk nest-site characteristics in western Montana and northern Idaho. The Condor. 91(2):476-479.

Holsinger, JR. 1974. Systematics of the Subterranean Amphipod Genus *Stygobromus* (Gammaridae), Part 1: Species of the Western United States.

Knapp, R.A, Matthews, KR, Preisler, H.K. 2003. Developing probalistic models to predict amphibian site occupancy in a patchy landscape. Ecological Applications. 13(4) pp.1069-1082.

Kochert, MN and K Steenhof. 2002. Golden eagles in the U.S. and Canada: Status, trends, and conservation challenges. Journal of Raptor Research 36(1):32-40.

McBride JR. 1988. Jeffrey Pine. In A guide to wildlife habitats of California. Ed. KE Mayer and WF Laudenslayer. State of California, Resources Agency. 166 pp.

Moyle PB, RM Quinones, JV Katz, and J Weaver. 2015. Fish Species of special concern in California. Sacramento: California Department of Fish and Wildlife.

Parisi MD. 1988. Barren. In A guide to wildlife habitats of California. Ed. KE Mayer and WF Laudenslayer. State of California, Resources Agency. 166 pp.

Ratliff RD. 1988. Wet Meadow. In A guide to wildlife habitats of California. Ed. KE Mayer and WF Laudenslayer. State of California, Resources Agency. 166 pp.

Risser RJ. ME Fry. 1988. Montane Chaparral Habitat. In A guide to wildlife habitats of California. Ed. KE Mayer and WF Laudenslayer. State of California, Resources Agency. 166 pp.

USDI Fish and Wildlife Service. 1986. Recovery Plan for the Pacific Bald Eagle. U.S. Fish and Wildlife Service, Portland, Oregon. 160pp.

Appendix 1. Work plans.

PERMIT DRAWINGS
AT&T PROJECT A020LET, EL DORADO COUNTY
LAKE TAHOE

PROJECT PURPOSE

AT&T California is dedicated to the prompt and diligent removal of the two lengths of submarine telecommunications cables resting in Lake Tahoe because they are no longer in use. AT&T California is committed to preserving one of the most scenic freshwater lakes in the Sierra Nevada by removing the cables in such a way that ensures the protection of the lake's water quality. As one of the world's largest companies, AT&T California understands the social responsibility to create a better, more environmentally sustainable future.

PROJECT DESCRIPTION

AT&T California proposes the removal of two lengths of submarine telecommunications cable in Lake Tahoe and Emerald Bay in California. The longest cable is approximately 6-miles long and runs along the Southwestern shore of Lake Tahoe. The cable stretches from Baldwin Beach past Rubicon Point near Lester Beach. Most of the cable resides in the Emerald Bay and DL Bliss Underwater State Parks. This 6-mile cable comes up on shore a total of 6 times. **Photo documentation of the cut locations in Appendix B.** The second cable rests at the mouth of Emerald Bay and spans approximately 1,000-feet. The shorter cable extends between the shores of Emerald Point and Eagles Point and lies in the Emerald Bay Underwater Park. The project area for both cables lies within the Lake Tahoe Basin Management Unit of the USDA Forest Service. The cables largely rest on the lake bed, not within the substrate. The cable's outside diameter is approximately 3-inches and weighs 9-lbs/foot. The cable construction consists of communication cables surrounded by a lead sheath which is bounded by a layer of wire armor followed by an outer jute for additional waterproofing. The lead and steel add stability to the cable and it is expected that the cable will remain intact during the spooling process. No cutting will occur within the lake. The Project calls for 7 cut locations, 6 along the 6-mile cable and 1 on the Emerald Bay cable. The Emerald Bay cable has been previously severed on the South side of Emerald bay. If the cable end lies within the high water mark, one additional cut location (Cut Location B) would be required to remove the cable from the water. **Details for Cut Location B in Appendix B.**

The cable removal is expected to occur in the Fall during the recreational off-season, no earlier than October. AT&T anticipates using three staging areas: the lake entry point for barge launch, the cut locations where cable comes up on shore, and the mobile barge. **Map of the staging area in Appendix C.** The cable will be removed using a 30-feet by 60-feet modular barge suitable for shallow water use. **Barge detail available in Appendix A.** An outboard skiff will be used to maneuver the barge and is comparably sized to a recreational boat. These maritime vessels are delivered by semi-trucks with an estimated length of 70-feet to 10-feet width.

Portions of the cable on land will be accessed from the barge from which a technician will approach the cut location on foot. Cable segments on shore are buried 4-6-inches. Sections of the cable may lie beneath large boulders, a mini excavator staged on the barge will be used to temporarily remove them. To remove the cable, it will be exposed at the high water line at 6,229.1-feet with hand tools or an excavator that will access the location by ramp from the barge, at which the cable will be severed. The cable will be cut with a reciprocating saw. A container will be used to collect particulates generated from the cable cutting operations. To minimize airborne cable particles, the cable will be kept wet during cutting operations. The cut end of the cable will be tied onto a steel cable and winched onto the barge, then spooled into segments. The portion above the high water line will be covered by a 3M shrink cap and reburied with hand tools. A touchdown monitor will observe the operation underwater and collect cable fragments that fall to the lake bed. A technician on the barge will skim fragments from the surface. Collected cable fragments will then be disposed into a container onboard. A technician will be responsible for monitoring plume events through visual observation and a turbidity meter. **Water Quality Protection Plan in Appendix D.**

Lake access is planned to be staged from the Tahoe Keys Marina. The Tahoe Keys Marina is approximately 3.5-miles East of Baldwin Beach. An invasive species inspection will occur on incoming marine craft prior to entering the lake.

It will be the responsibility of AT&T's contractor to dispose of the reclaimed cable at an approved facility in accordance with local, state, and federal regulations.

Horizontal Datum: NAD 1983 (2011) State Plane California II (US Feet) Vertical Datum: NAVD 88

VICINITY MAP



R3X GROUP

PREPARED BY: S. RODIRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

DWG 1 OF 52 DATE: 4/19/2022

CONSTRUCTION NOTES

1. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH PROVISIONS OF ALL LOCAL, STATE, AND FEDERAL PERMITS.

2. NOTIFICATION SHALL BE PROVIDED TO ALL LOCAL, STATE AND FEDERAL AGENCIES PRIOR TO COMMENCING OPERATIONS.

3. CONTRACTOR SHALL NOT ENCROACH UPON PRIVATE PROPERTY WITHOUT PERMISSION AND WILL BE RESPONSIBLE FOR ANY DAMAGE TO PRIVATE PROPERTY.

4. ALL MARINE EQUIPMENT SHALL BE INSPECTED FOR INVASIVE SPECIES BY A QUALIFIED BIOLOGIST PRIOR TO ENTERING THE LAKE.

5. A QUALIFIED BIOLOGIST SHALL MONITOR CABLE REMOVAL OPERATIONS ON LAND FOR THE PROTECTION OF BIOLOGICAL RESOURCES.

6. STAGING OF EQUIPMENT OR MATERIALS ON STATE PROPERTY SHALL BE COORDINATED WITH THE APPROPRIATE AGENCY.

7. ALL OPERATIONS MUST BE CONDUCTED IN ACCORDANCE WITH CAL/OSHA LEAD IN CONSTRUCTION STANDARD TITLE 8 CCR SECTION 1532.1 AND FEDERAL STANDARD 29 CFR 1962.62.

8. EXPOSURE TO LEAD MAY OCCUR BY INHALATION OR INGESTION.

9. MEDICAL AND/OR BIOLOGIST MONITORING MAY BE REQUIRED BY YOUR EMPLOYER.

10. APPROPRIATE RESPIRATORY PROTECTION SHALL BE EMPLOYED DURING CABLE REMOVAL OPERATIONS.

11. LEAD WORK WARNING SIGNS SHALL BE VISIBLE TO ALL INDIVIDUALS INVOLVED IN THE CABLE REMOVAL PROCESS.

12. THE RESPONSIBLE MANAGER, IN COORDINATION WITH THE TECHNICIANS, MUST ENSURE THAT A CLEAN EATING AREA IS IDENTIFIED PRIOR TO STARTING WORK.

13. PROPER PERSONAL PROTECTIVE EQUIPMENT SHALL BE WORN BY ALL INDIVIDUALS.

14. PROPER HYGIENE SHALL BE EMPLOYED. THE RESPONSIBLE MANAGER SHALL PROVIDE, FOR ALL INDIVIDUALS, ADEQUATE HAND WASHING FACILITIES, AND ASSURE THAT EMPLOYEES WASH THEIR HANDS AND FACE AT THE END OF THE WORK SHIFT.

15. THE EMPLOYER SHALL ASSURE THAT EMPLOYEES DO NOT LEAVE THE WORKPLACE WEARING ANY PROTECTIVE CLOTHING OR EQUIPMENT THAT WAS WORN DURING THE WORK SHIFT.

16. SHOWER FACILITIES, SOAP AND TOWELS SHALL BE PROVIDED, WHERE FEASIBLE, FOR EMPLOYEES, AND THE EMPLOYER SHALL ASSURE THAT THESE EMPLOYEES SHOWER AT THE END OF THE WORK SHIFT.

17. THE FOLLOWING PPE IS REQUIRED PER OSHA REGULATIONS:
    - TYVEK (DISPOSABLE)
    - SLIP-RESISTANT SHOE COVERS OR A DEDICATED PAIR OF WORK BOOTS.
    - DISPOSABLE GLOVES OR A DEDICATED PAIR OF LEATHER GLOVES.
    - HARD HAT AND SAFETY GLASSES.
    - A RESPIRATOR

20. ENGINEERING CONTROL MEASURES SHALL BE EMPLOYED TO CONTROL AND CONTAIN AIRBORNE LEAD PARTICULATES TO THE LOWEST FEASIBLE LEVEL:
    - A WATER SPRAYER SHALL BE USED TO WET THE CABLE DURING SAW CUTTING OPERATIONS.
    - A PROTECTIVE MAT, PLASTIC SHEETING, OR CONTAINER SHALL BE EMPLOYED TO CONTAIN PARTICULATES
    - WASTE CONTAINERS SHALL BE LABELED “LEAD CONTAINING WASTE” AND INCLUDE THE DATE.
      SOLID AND LIQUID WASTE SHALL BE CHARACTERIZED AND DISPOSED OF BY THE AT&T CONTRACTOR.

21. AN INDIVIDUAL TRAINED IN WATER QUALITY TESTING FOR LEAD SHALL CONDUCT WATER SAMPLING DURING CONSTRUCTION OPERATIONS. SAMPLING SHALL OCCUR AT THE FOLLOWING LOCATIONS:
    - AT AN INTERMEDIARY POINT BETWEEN THE CUT LOCATIONS.
    - AT CUT LOCATIONS NEAR WATER INTAKES (1 PRE-CONSTRUCTIONSAMPLE, 2 POST-CONSTRUCTION SAMPLES).

22. SAMPLING SHALL FOLLOW LEAD SAMPLING PROTOCOLS AND TESTING SHALL BE CONDUCTED BY AN ELAP CERTIFIED LABORATORY.

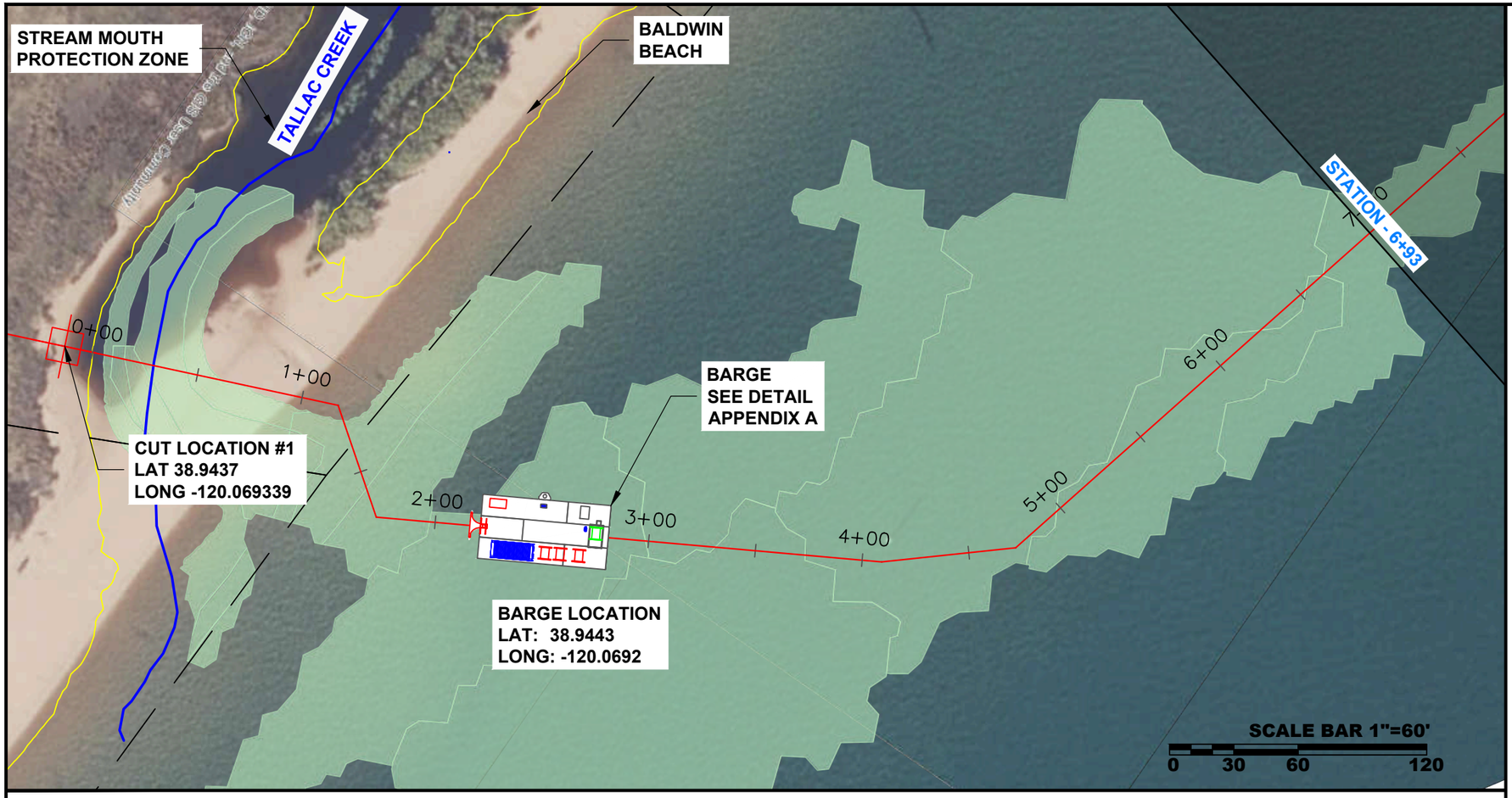
23. THE SIERRA DISTRICT WATER & SEWER PLANT SUPERVISOR SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF ACTIVITIES.

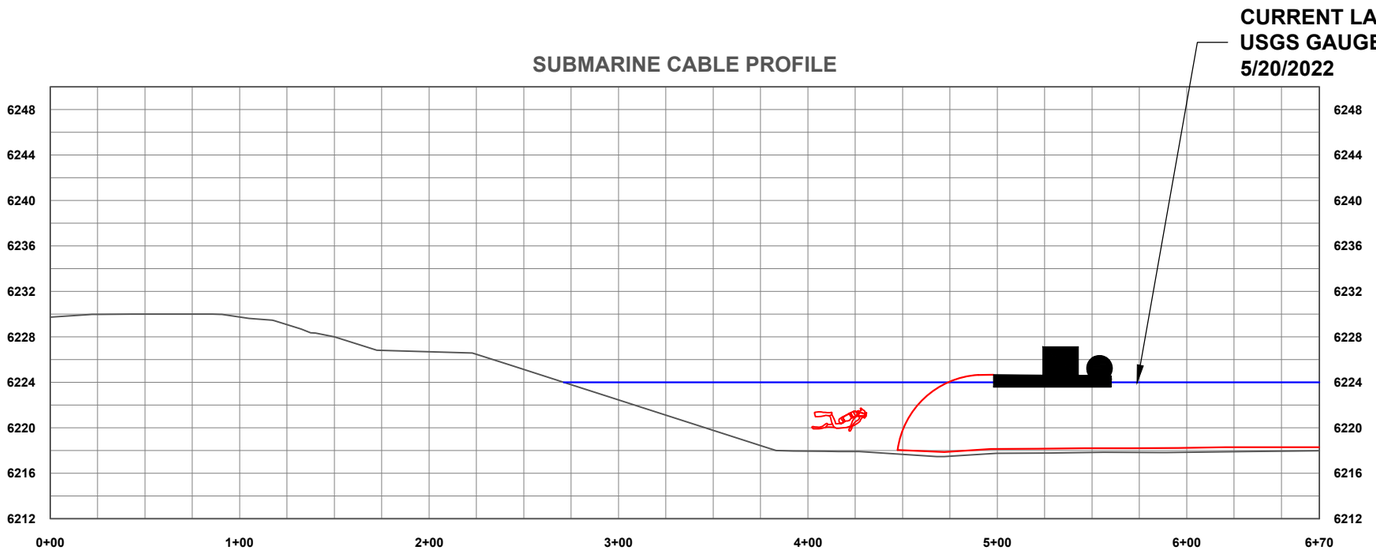
24. CONTRACTOR SHALL CAP ALL CUT ENDS PRIOR TO REELING THE CABLE TO MINIMIZE EXPOSURE OF THE INTERNAL SHEATH WITH WATER.

25. IN INSTANCES WHERE A ROCK/BOULDER MUST BE REMOVED TO ACCESS THE CABLE, CONTRACTOR MUST PERFORM A VISUAL INSPECTION OF THE OUTER LAYER OF WIRE ARMOR AND OUTER JUTE. IF THE LEAD SHEATH IS EXPOSED, CONTRACTOR MUST PROPERLY DISPOSE OF THE CONTAMINATED SOIL ACCORDING TO THE **WATER QUALITY PROTECTION PLAN IN APPENDIX D.**

R3X GROUP

ENG'R: JASON PARNHAM TEL: 775-683-5240
PREPARED BY: S. RODIRIGUEZ TEL: (254) 723-0013
TYPE OF CONST.: SUBMARINE CABLE REMOVAL
PROJECT LOCATION: EMERALD BAY, BALDIN BEACH
PROJECT NO.: A020LET
PROJECT CITY: LAKE TAHOE
DWG 2 OF 52
DATE: 4/19/2022
PROJECT COUNTY: EL DORADO





LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

at&t

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

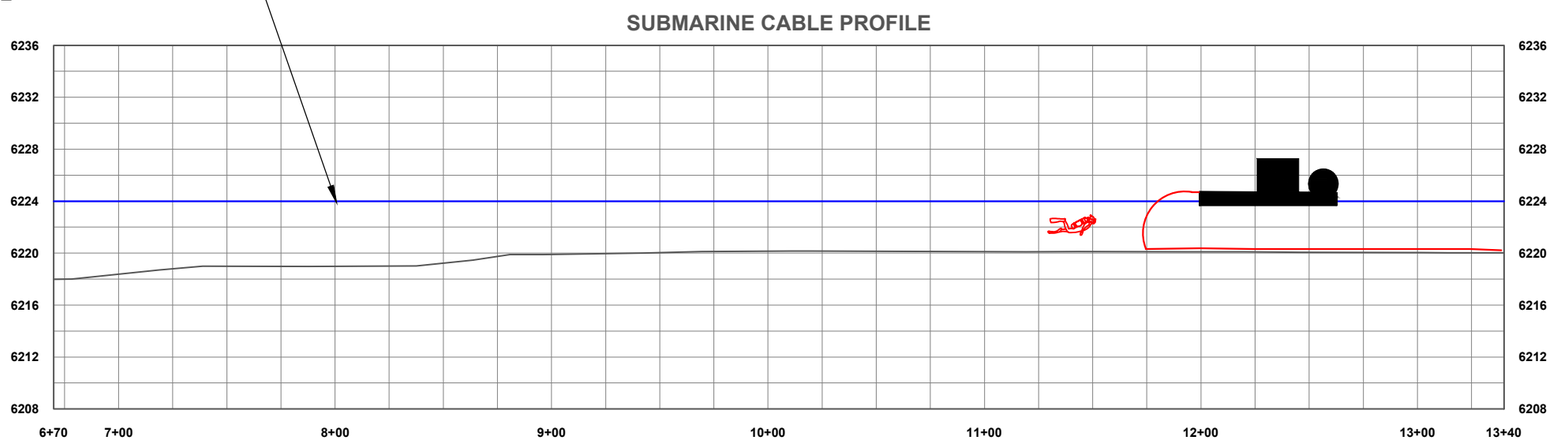
TYPE OF CONST. SUBMARINE CABLE REMOVAL

PROJECT NO. A020LET

DWG 3 OF 52 DATE: 4/19/2022



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

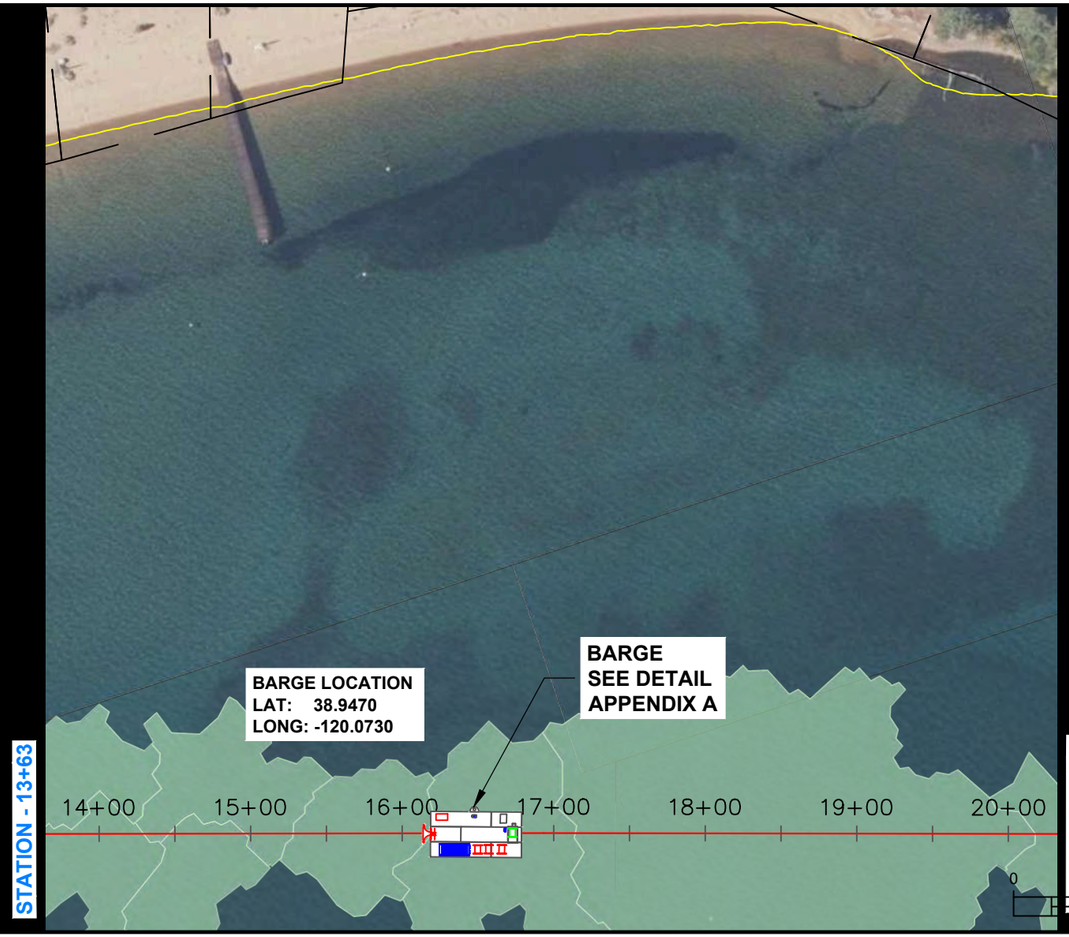
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

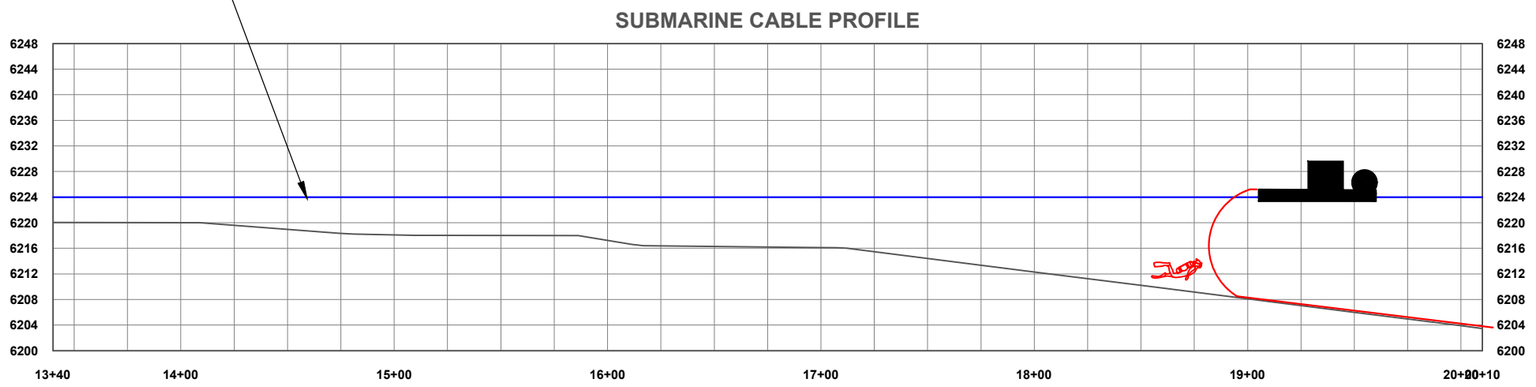
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 4 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

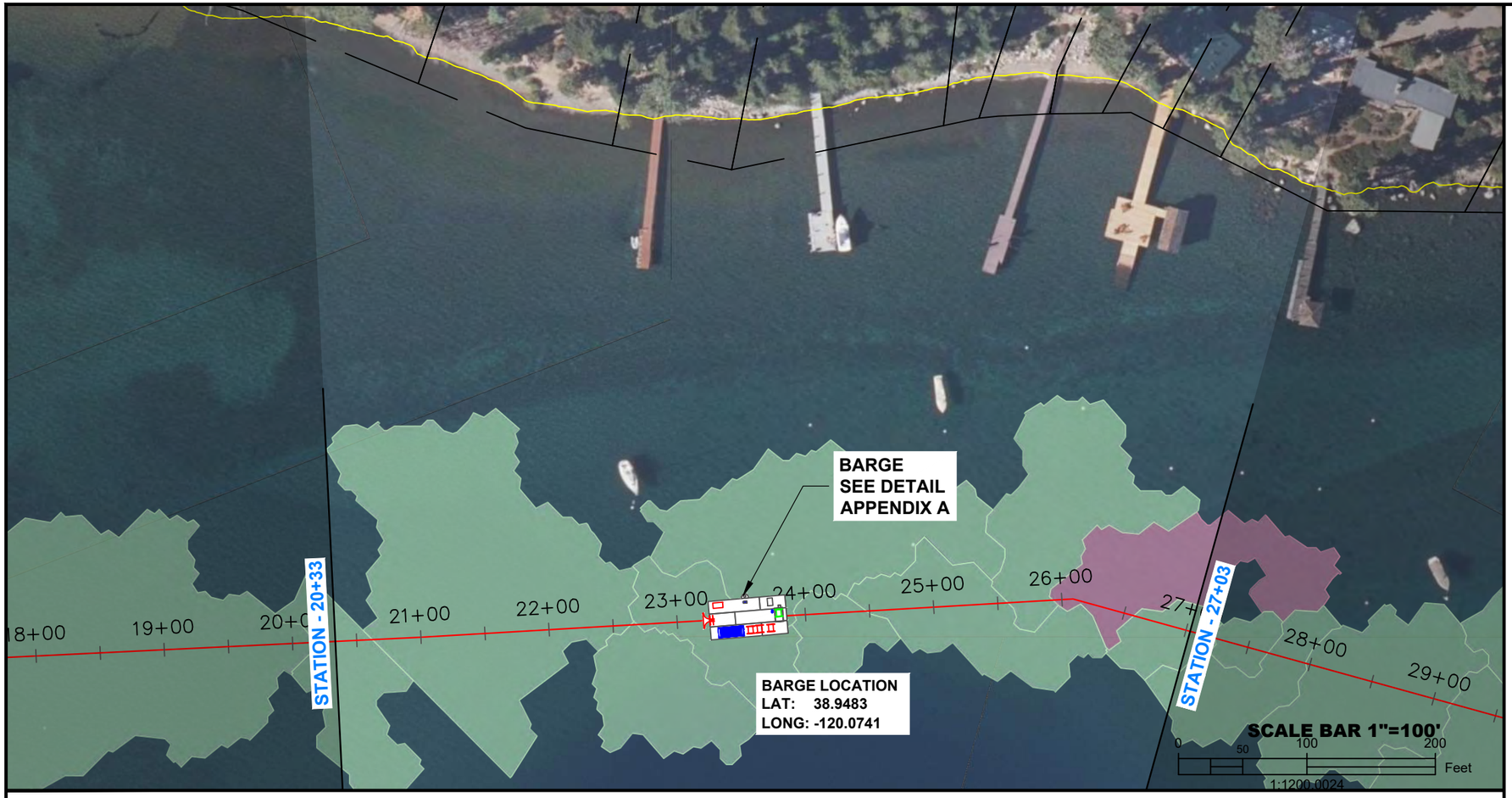
DATE: 4/19/2022

DWG 5 OF 52

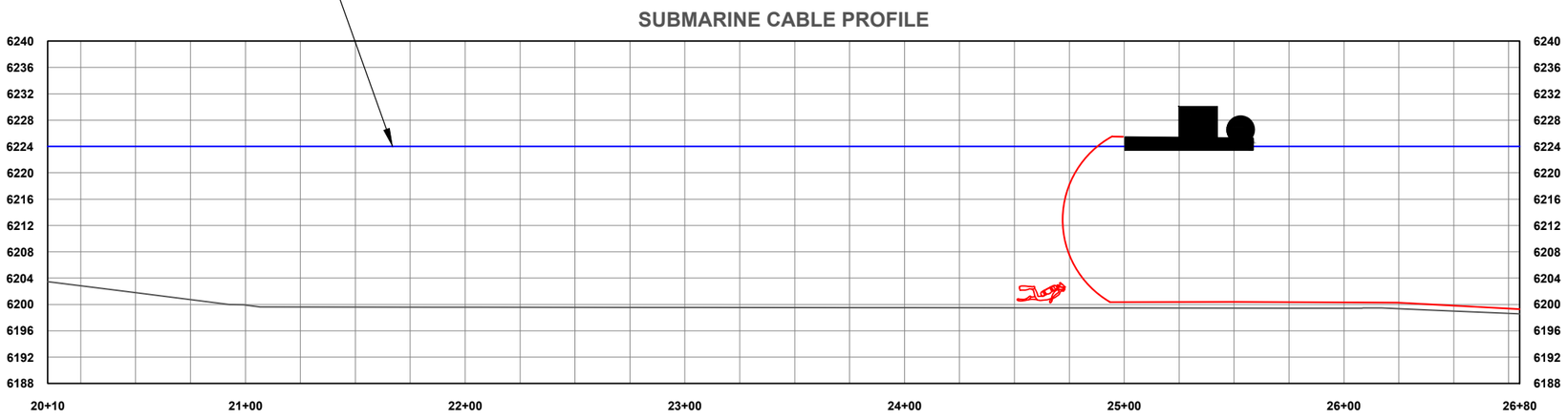
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

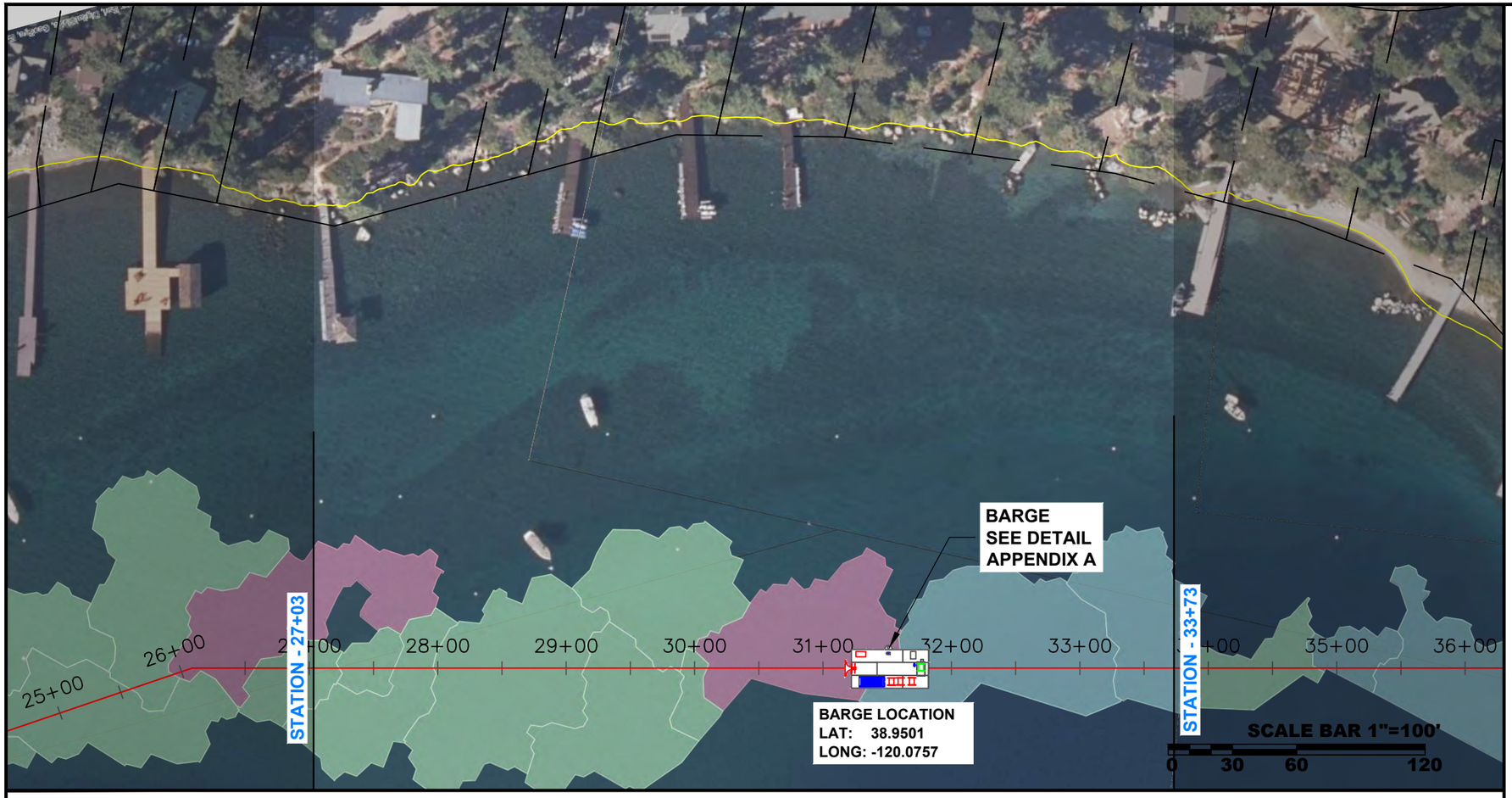
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

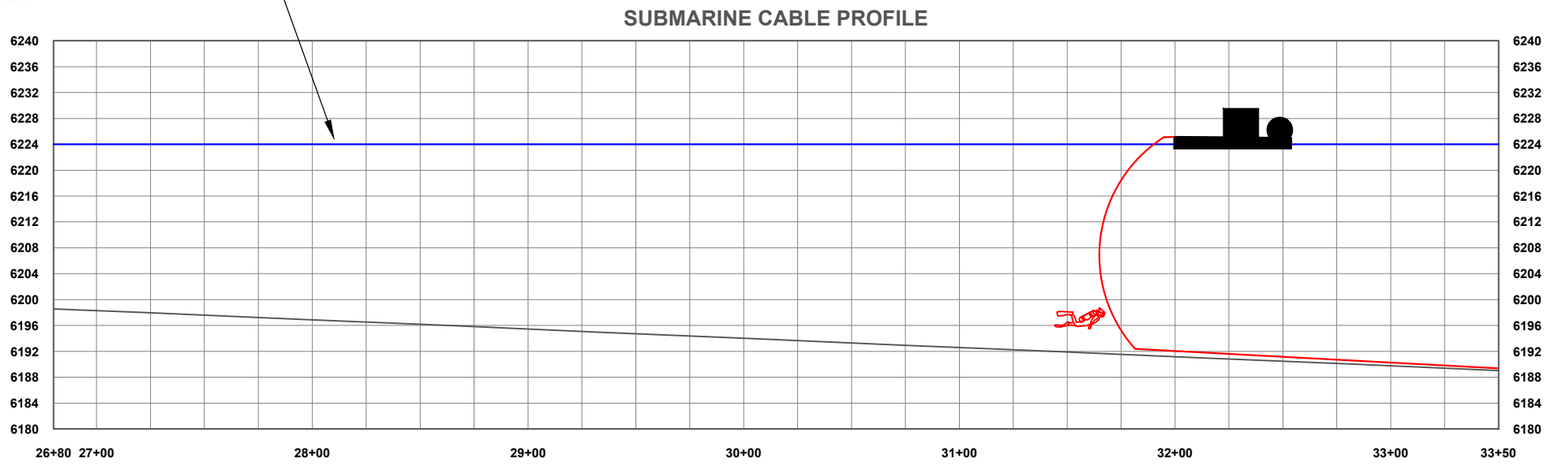
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 6 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

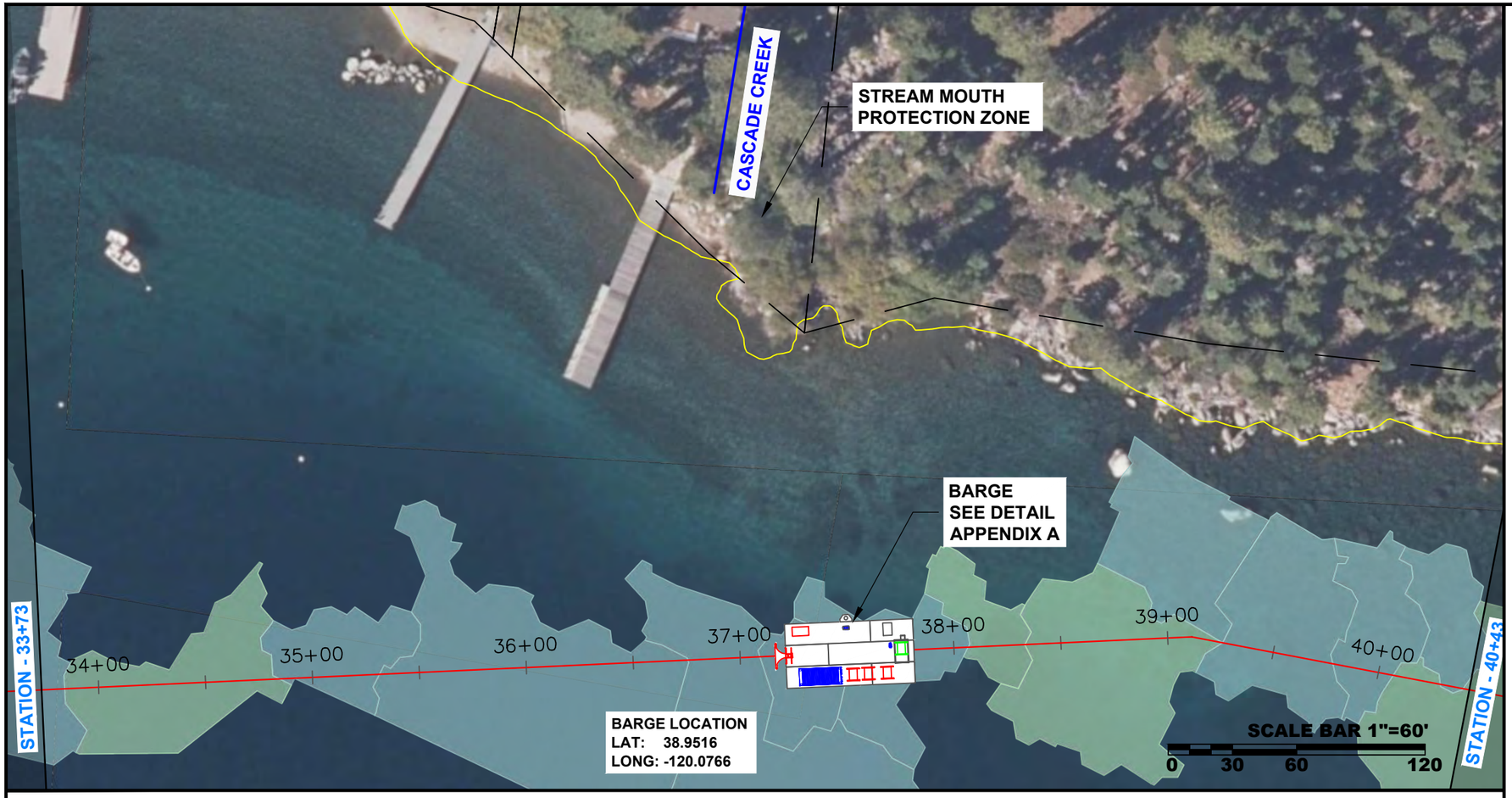
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

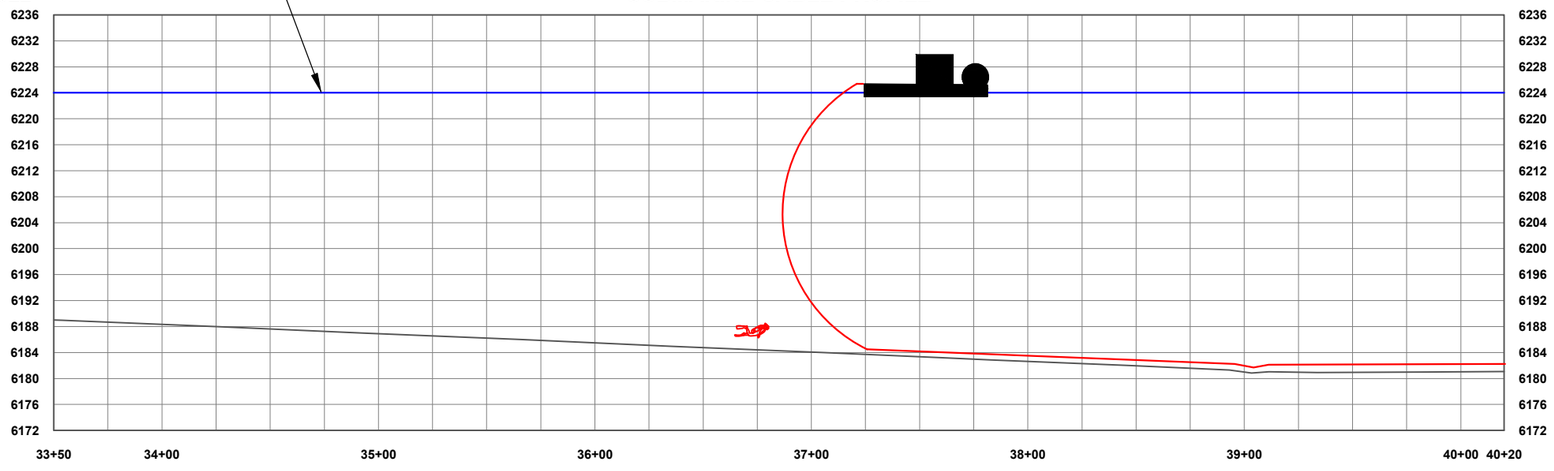
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 7 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

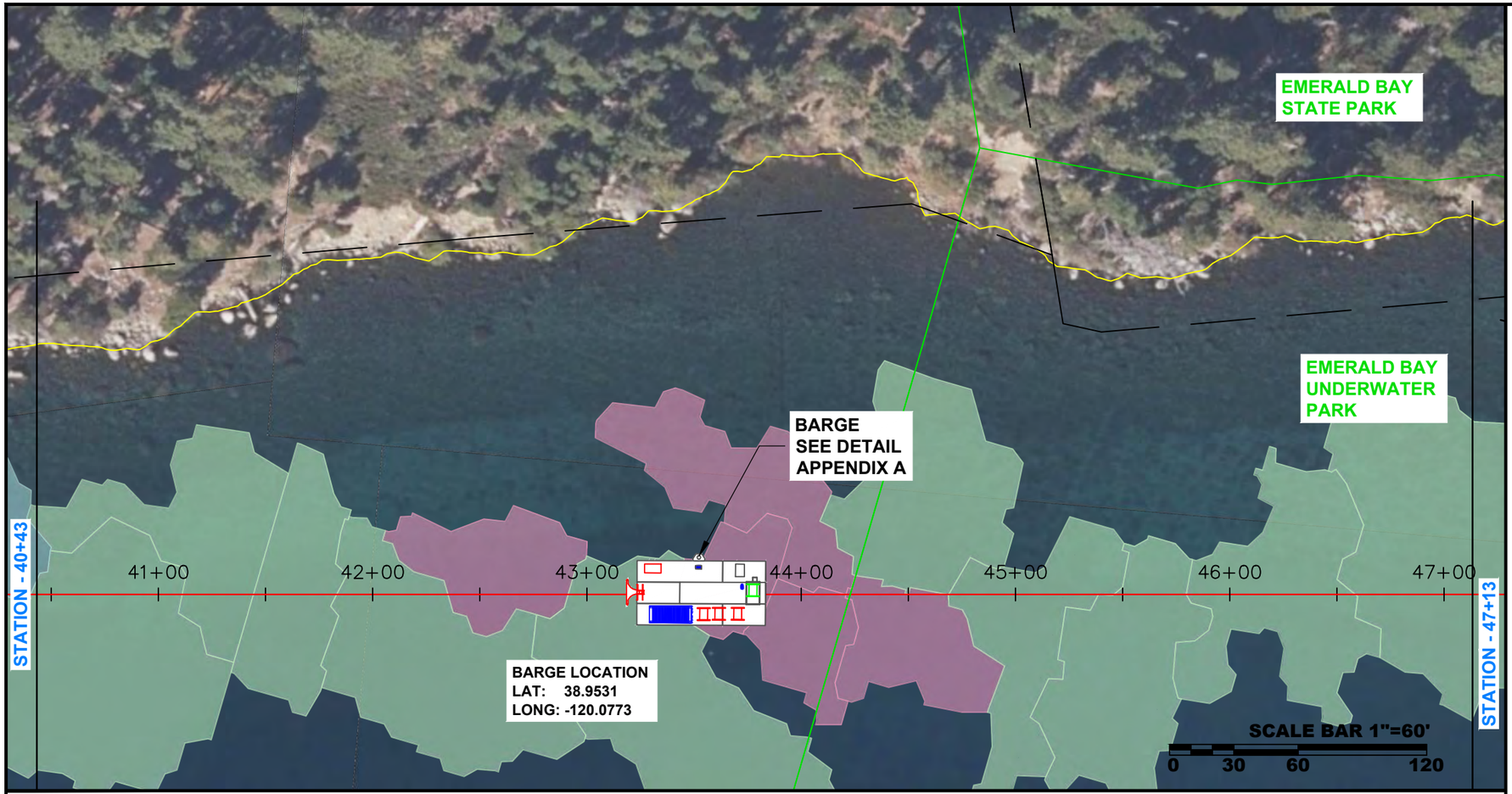
PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

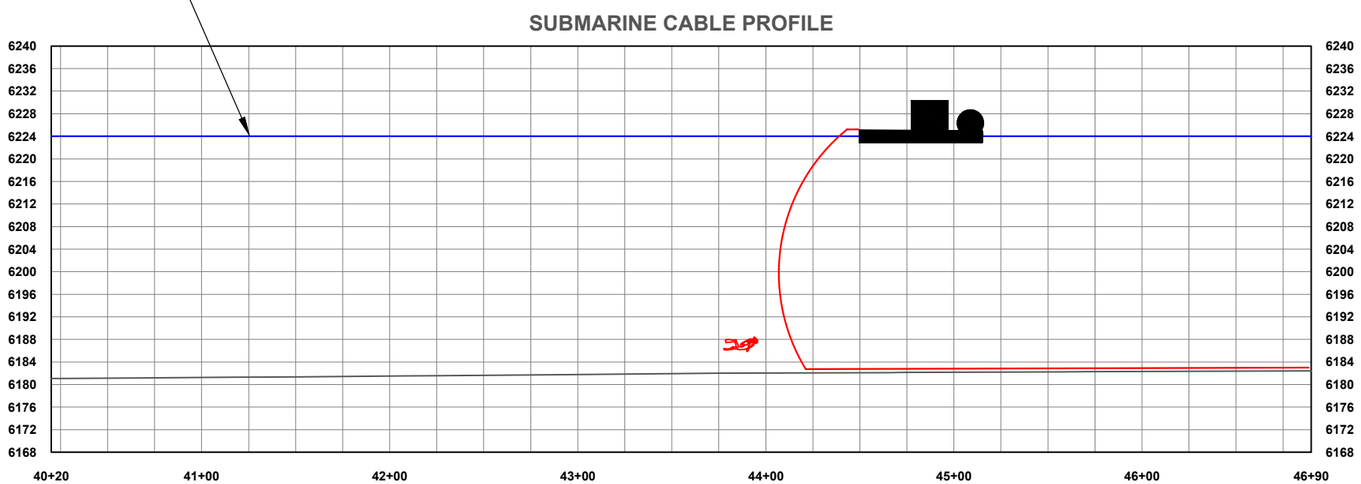
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

DWG 8 OF 52 DATE: 4/19/2022



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL.: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL.: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

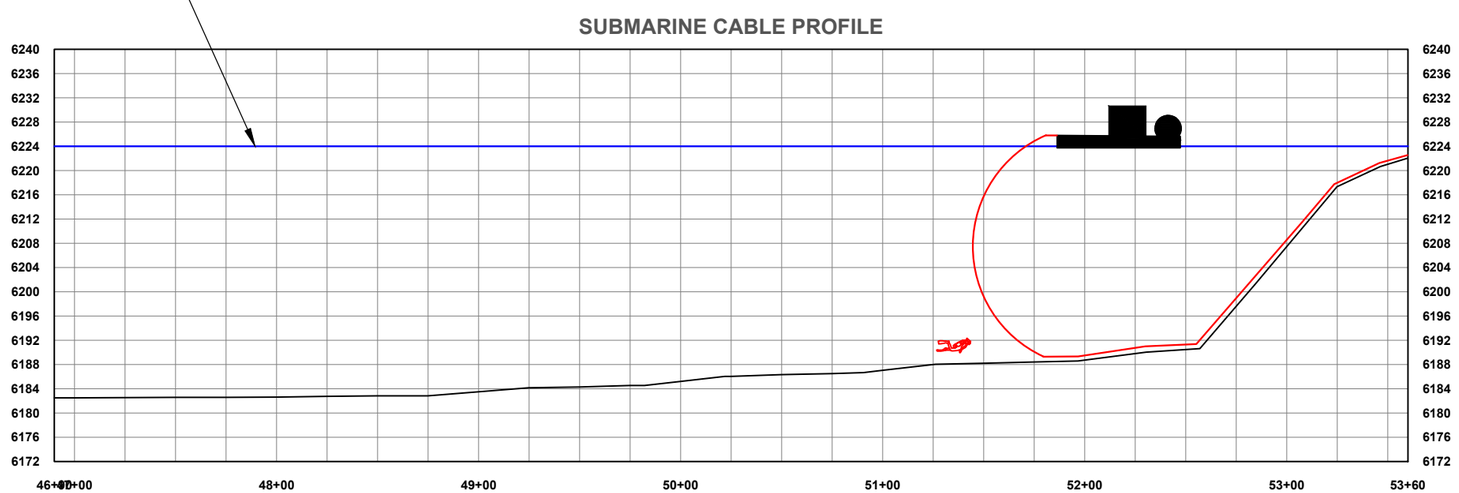
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 9 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

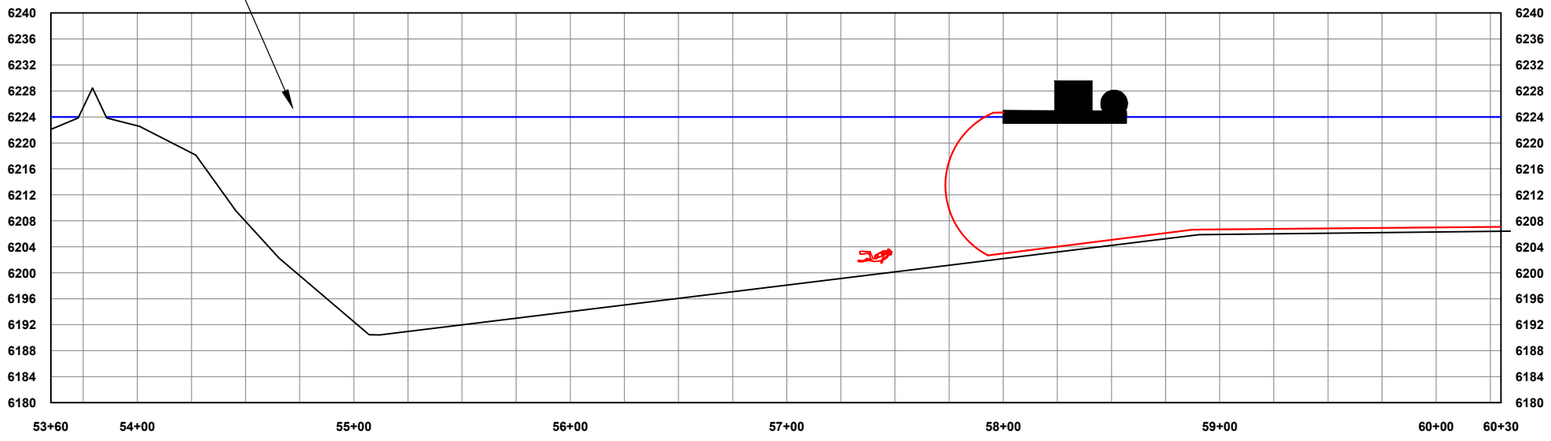
R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013
PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH
PROJECT CITY: LAKE TAHOE
PROJECT COUNTY: EL DORADO
DATE: 4/19/2022
ENG'R: JASON PARNHAM TEL: 775-683-5240
TYPE OF CONST.: SUBMARINE CABLE REMOVAL
PROJECT NO.: A020LET
DWG 10 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

W S E N

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

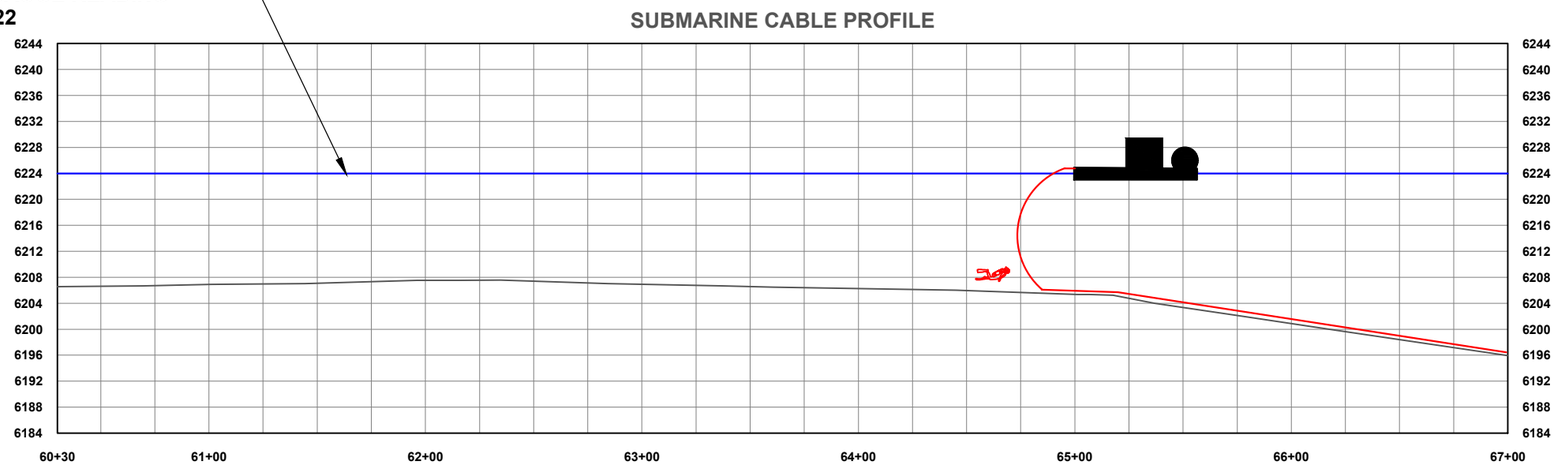
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 11 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

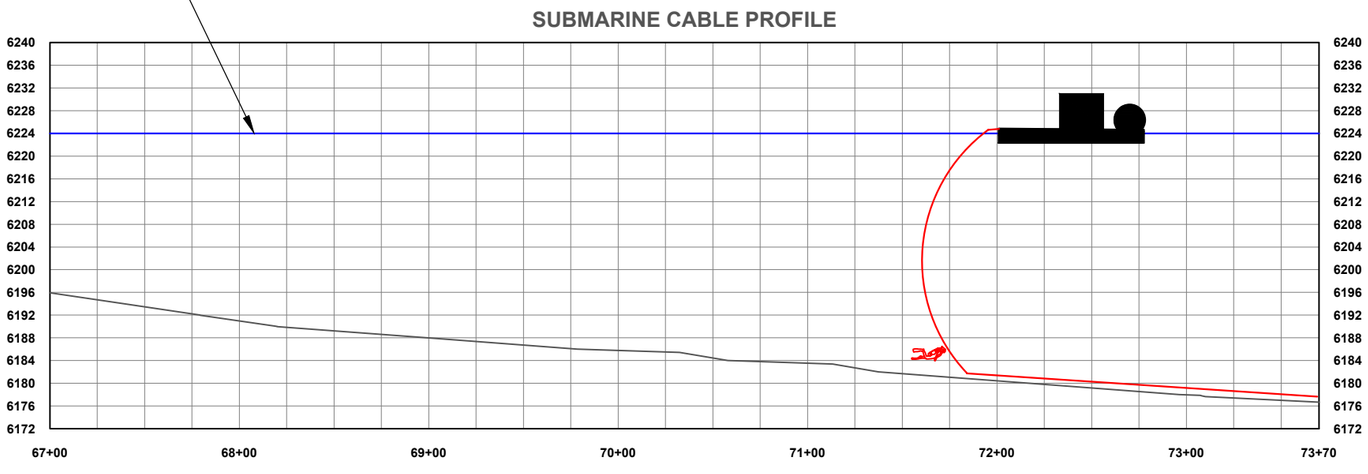
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

DWG 12 OF 52 DATE: 4/19/2022



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

W S E N

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

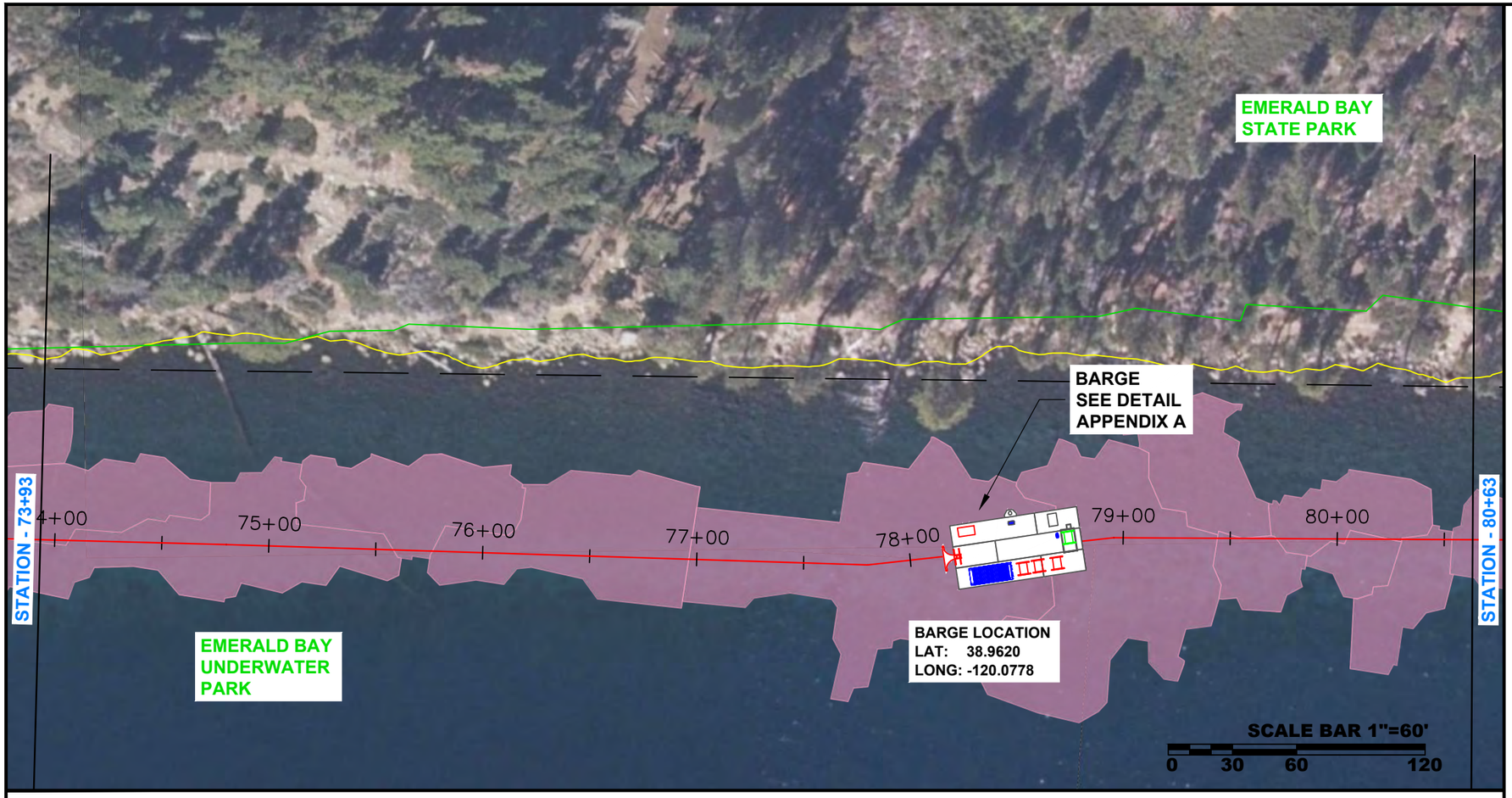
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

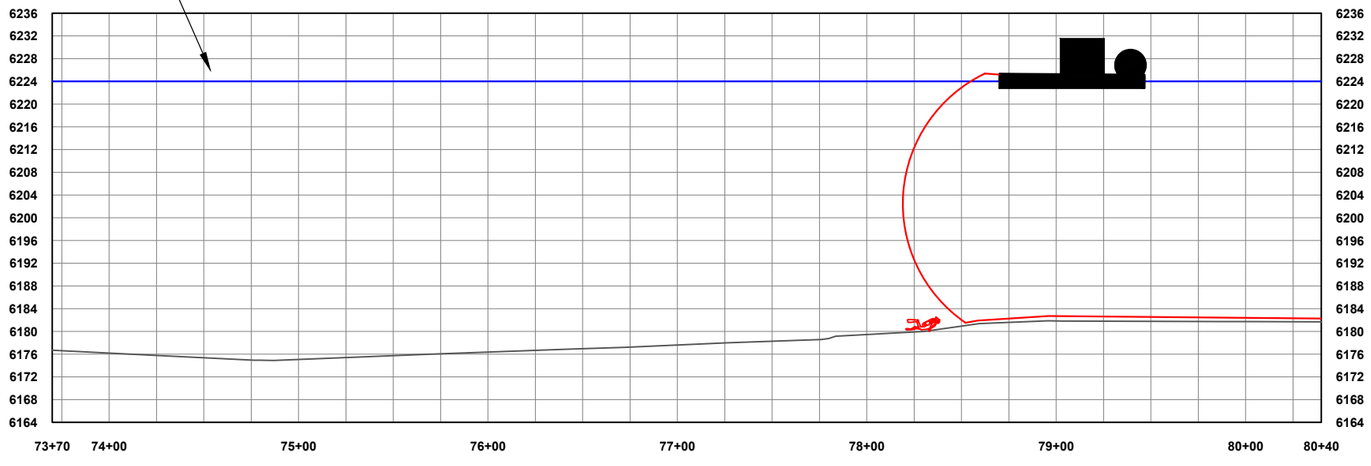
DATE: 4/19/2022

DWG 13 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

W S E N

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

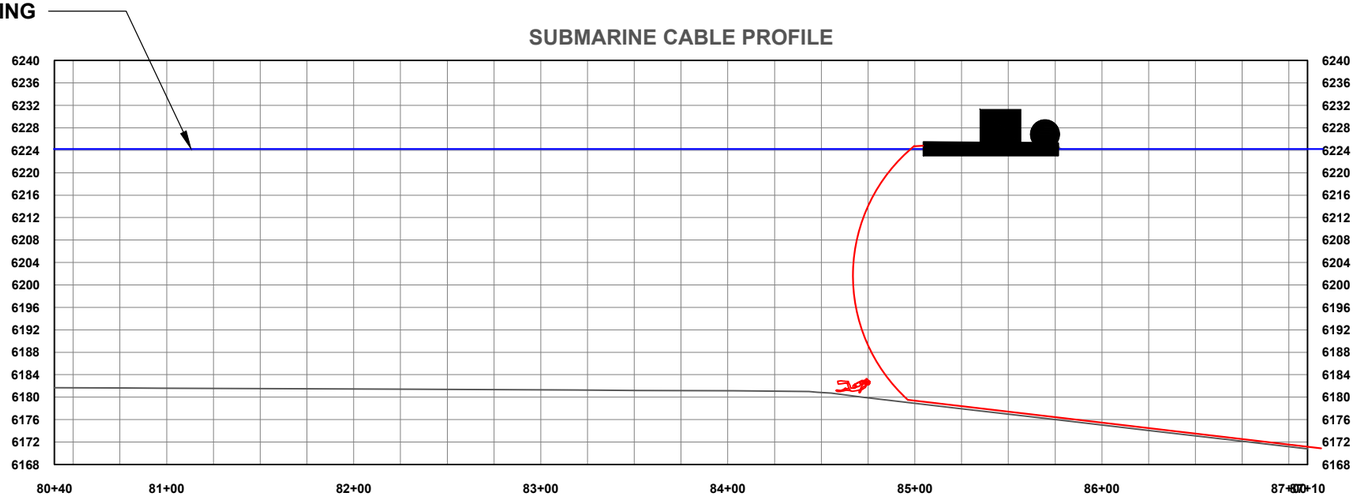
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 14 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

W S E N

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

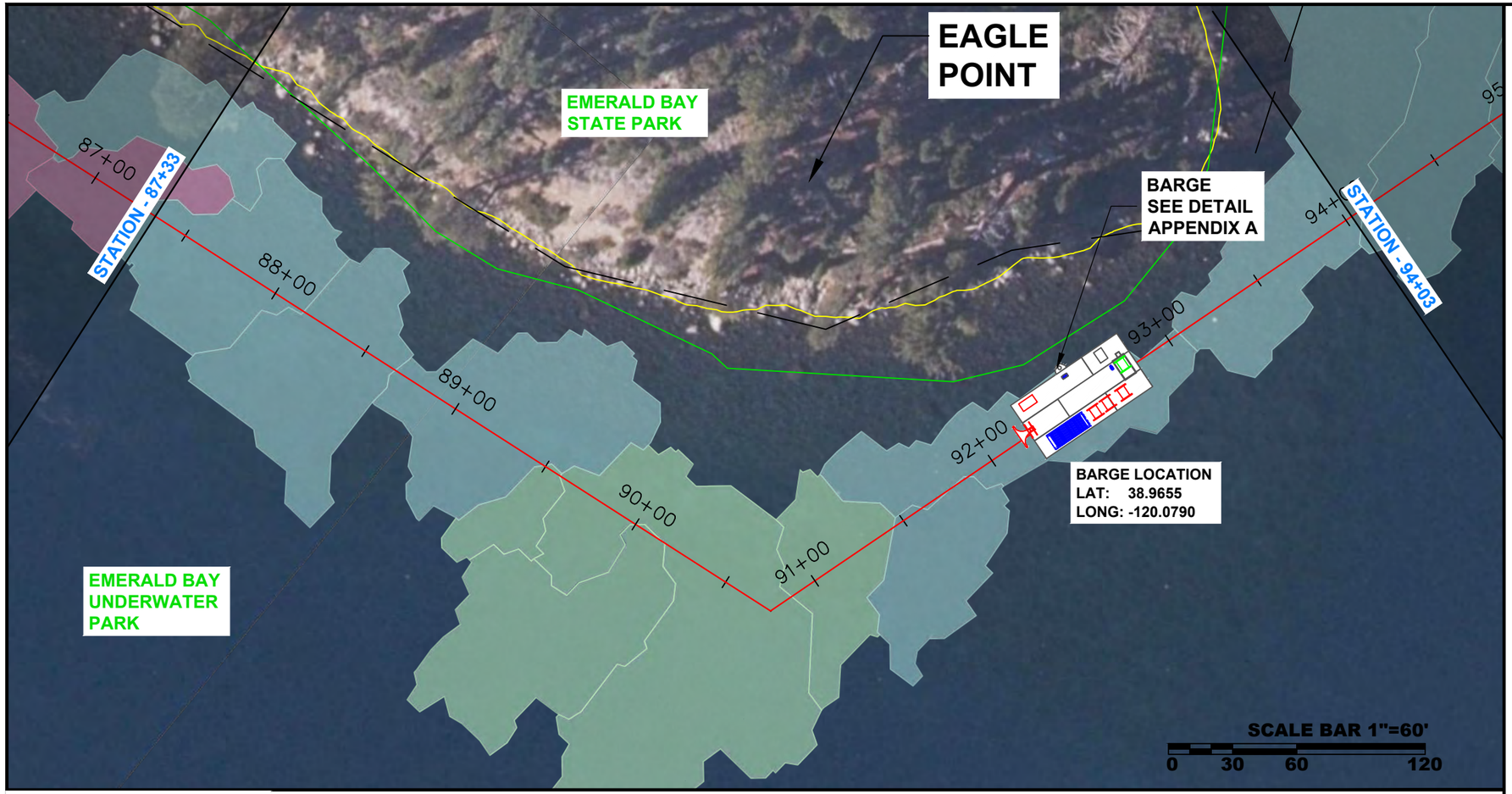
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

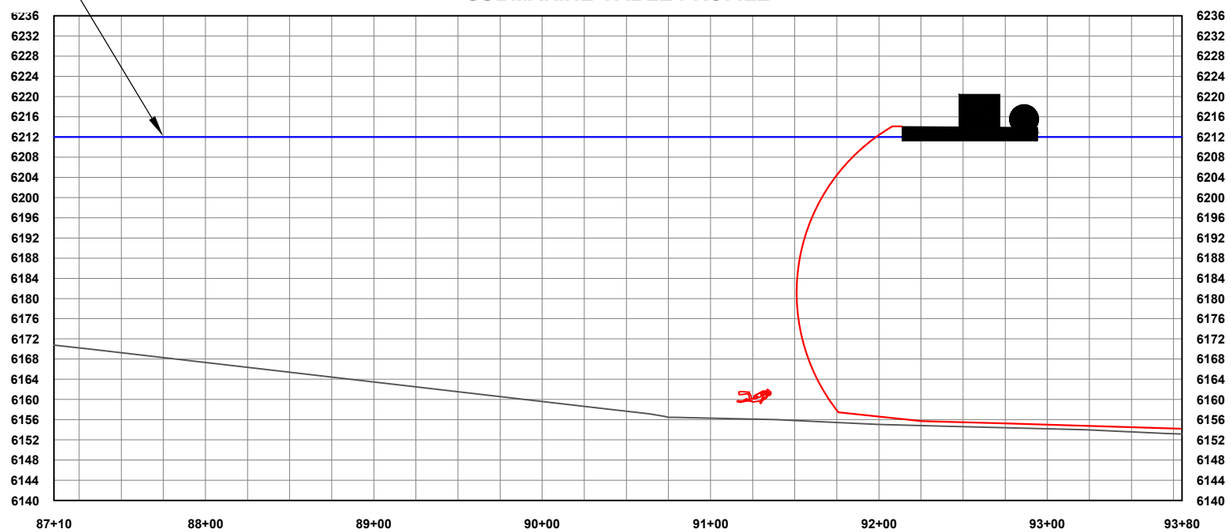
DATE: 4/19/2022

DWG 15 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST. SUBMARINE CABLE REMOVAL

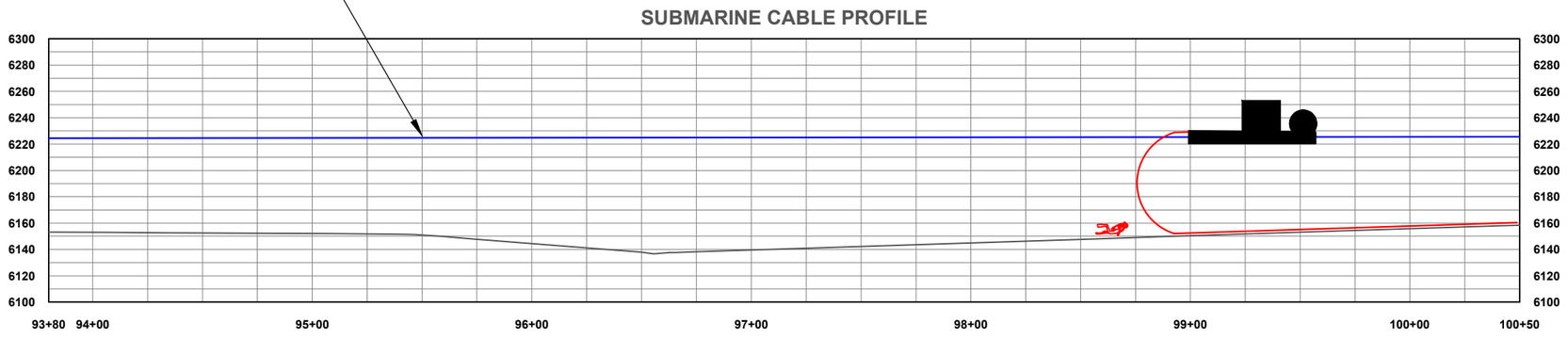
PROJECT NO. A020LET

DATE: 4/19/2022

DWG 16 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

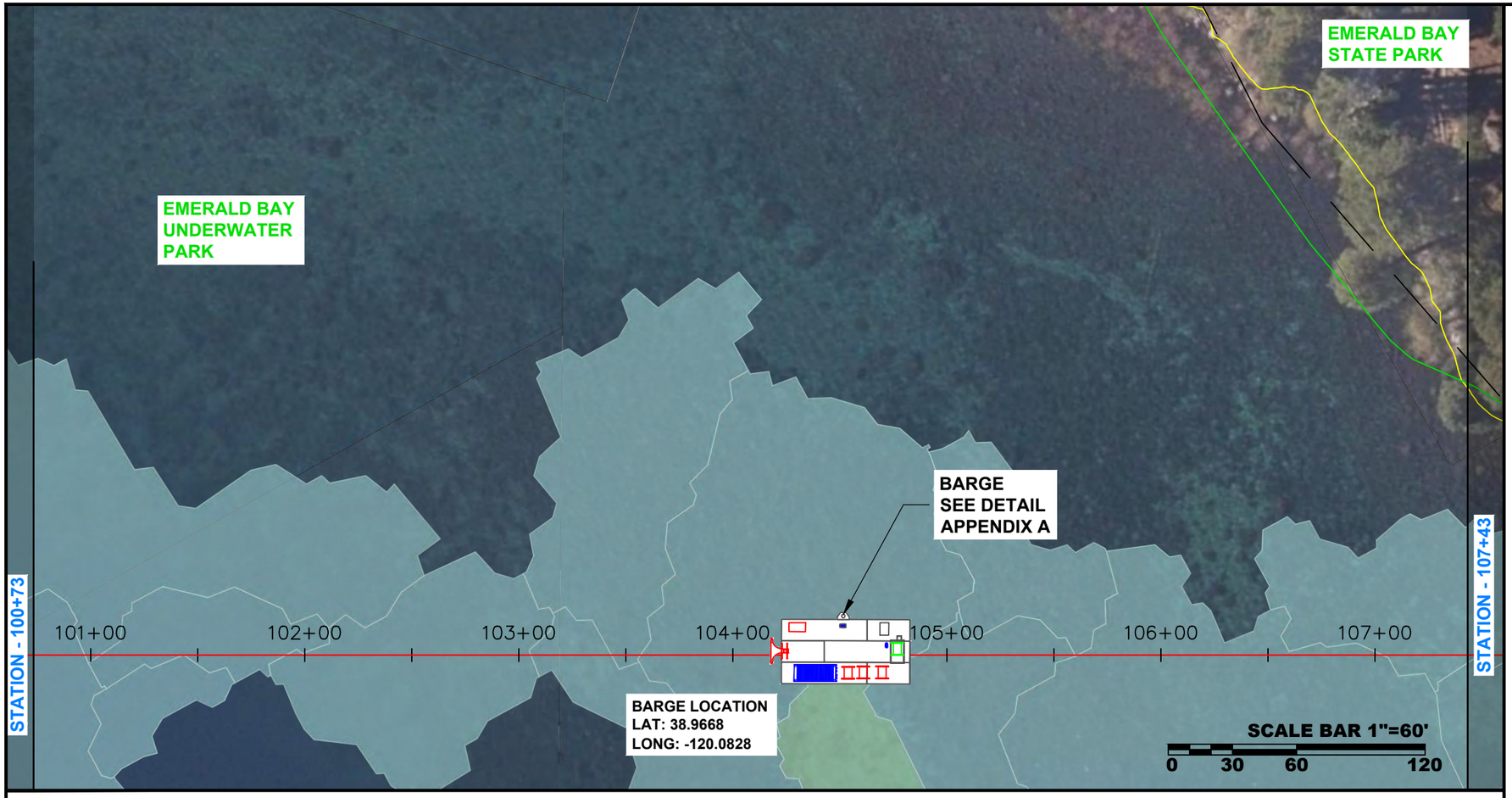
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

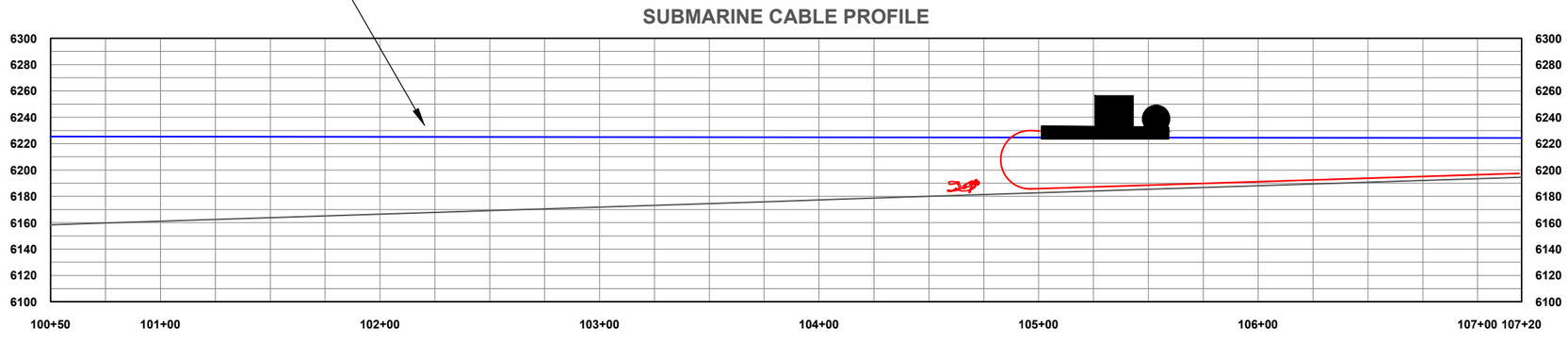
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 17 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

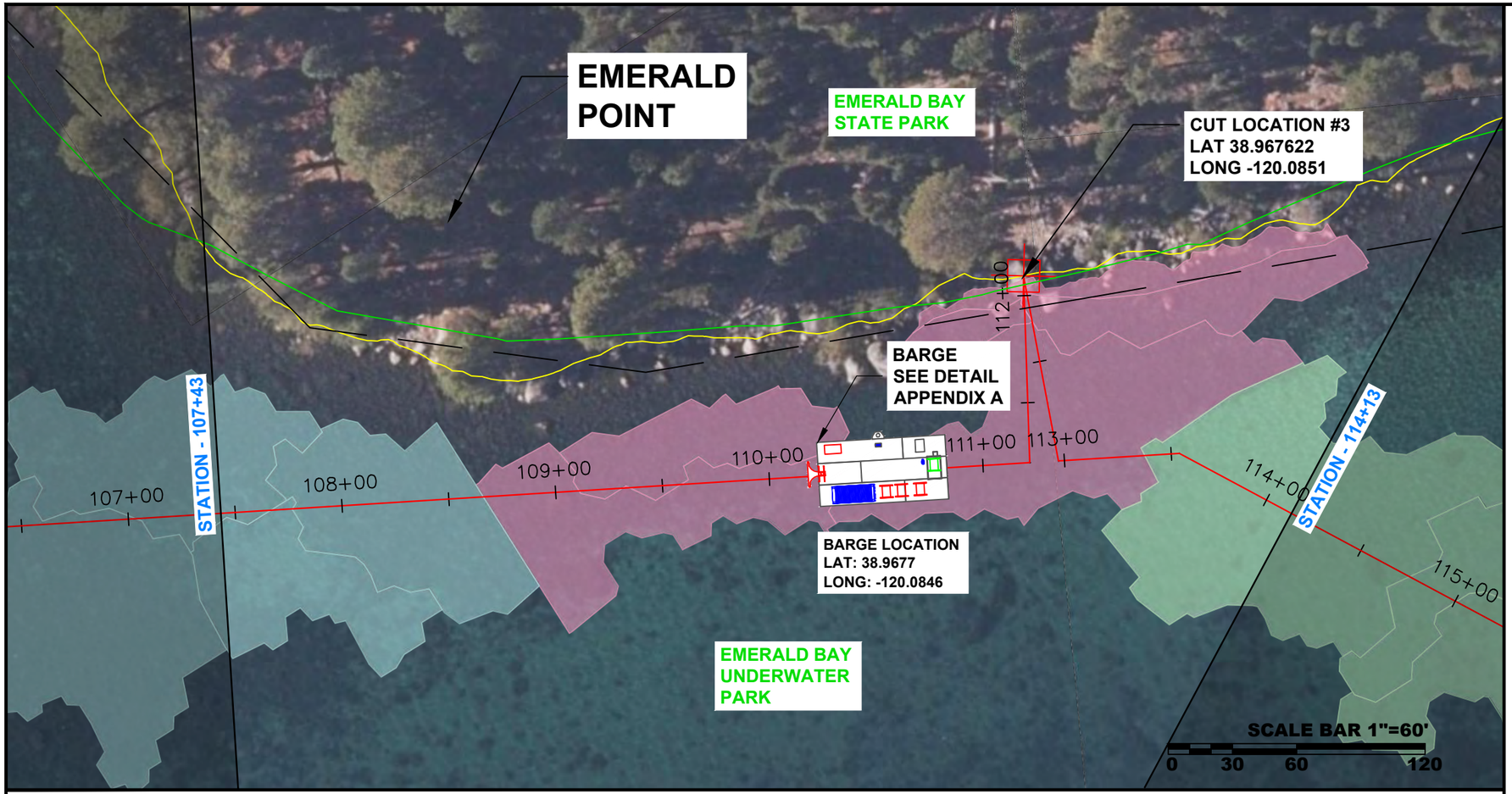
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

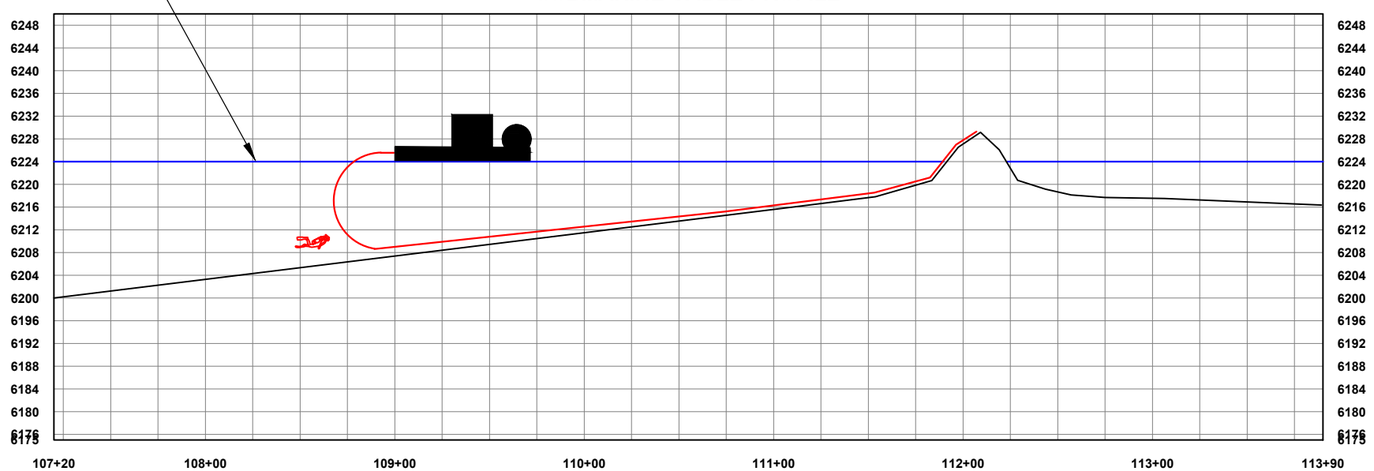
DATE: 4/19/2022

DWG 18 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL.: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

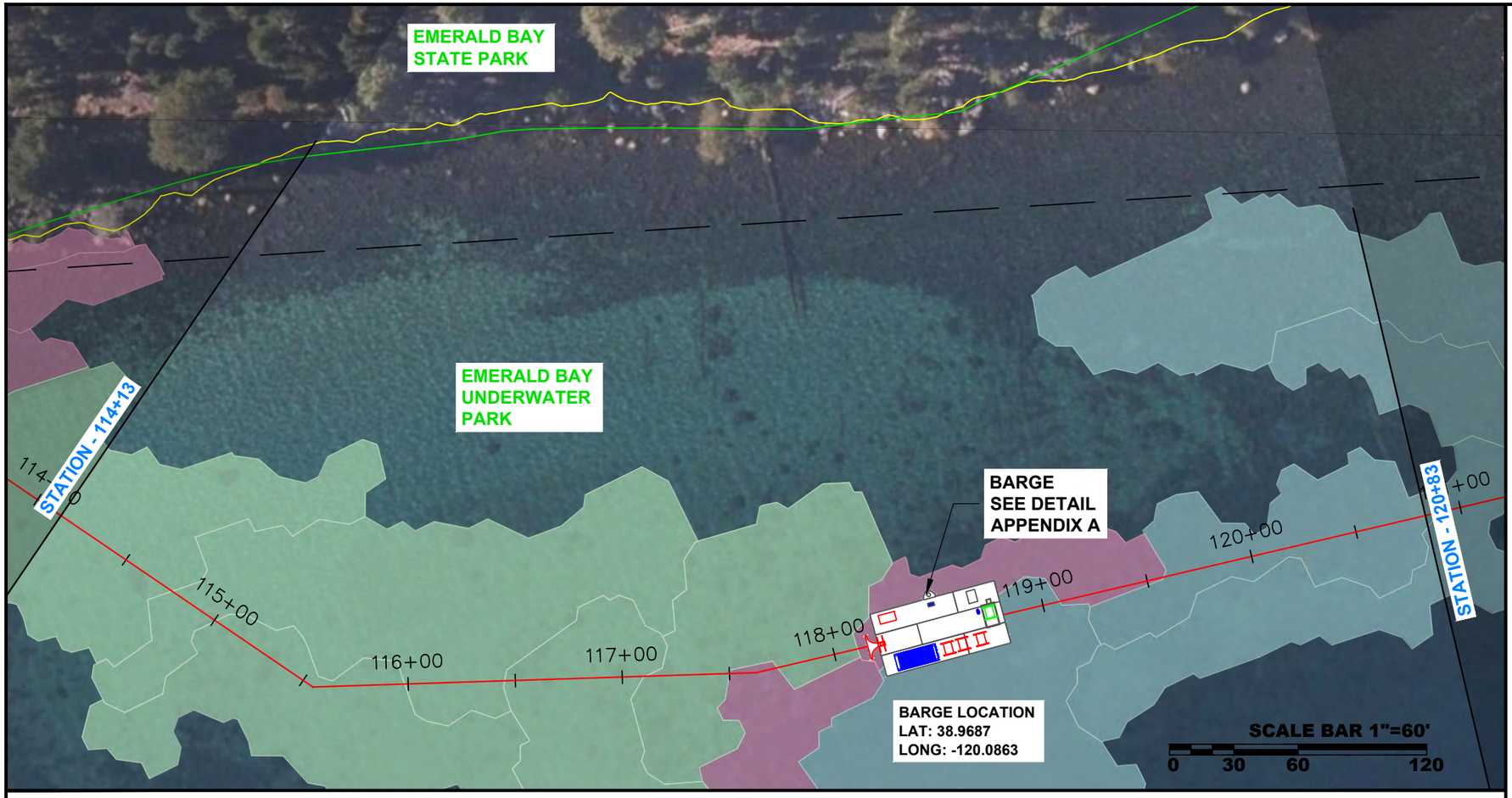
ENG'R: JASON PARNHAM TEL.: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

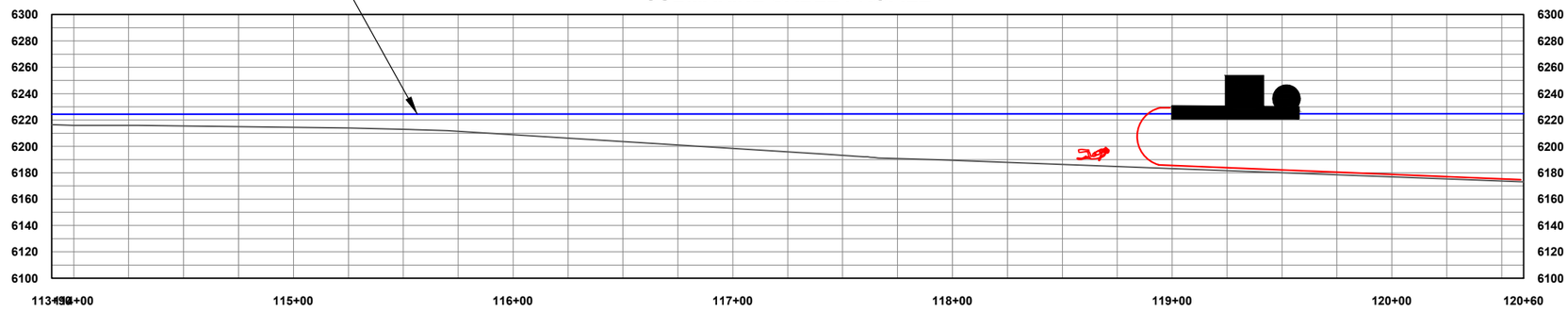
DATE: 4/19/2022

DWG 19 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

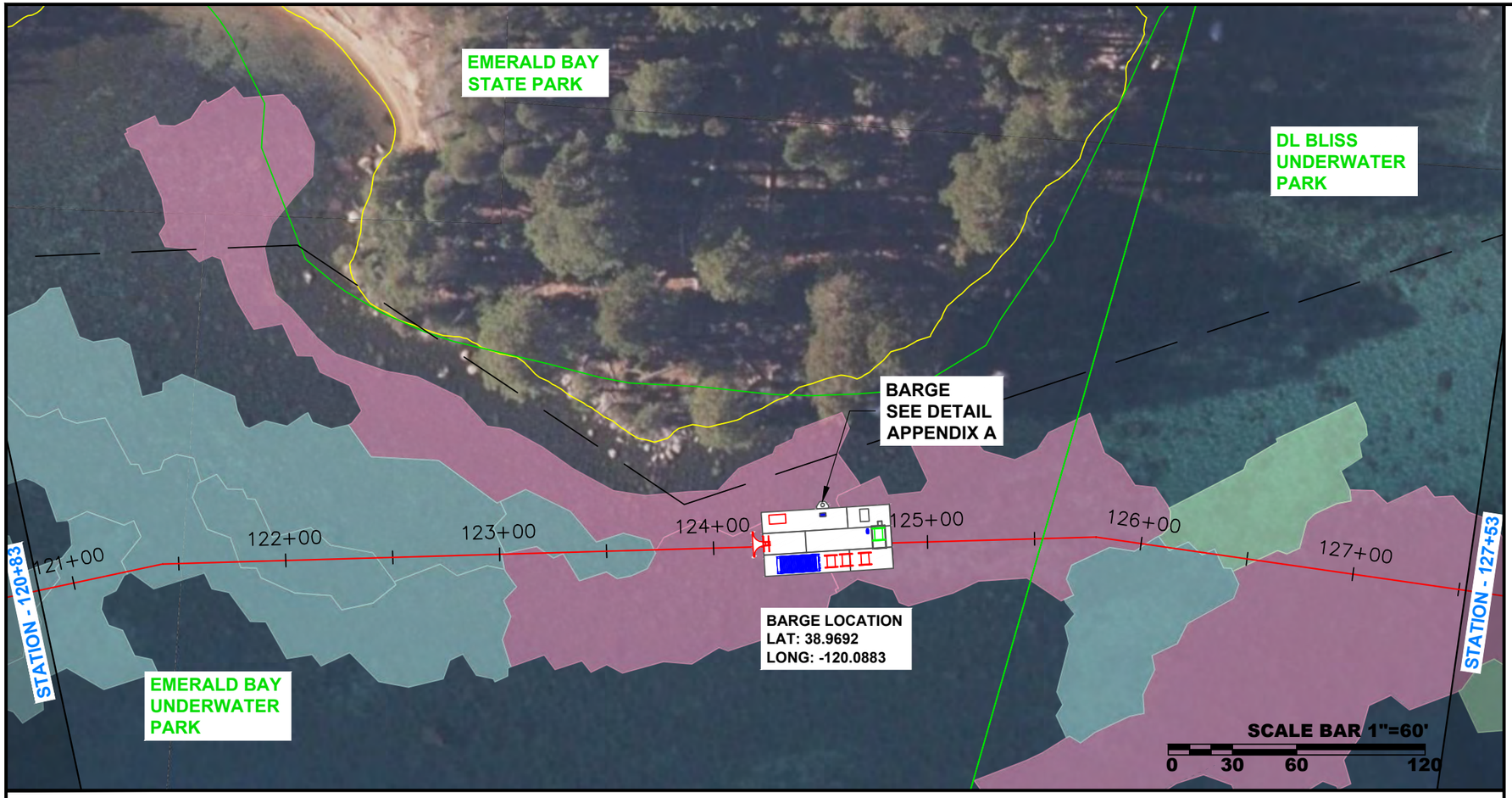
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

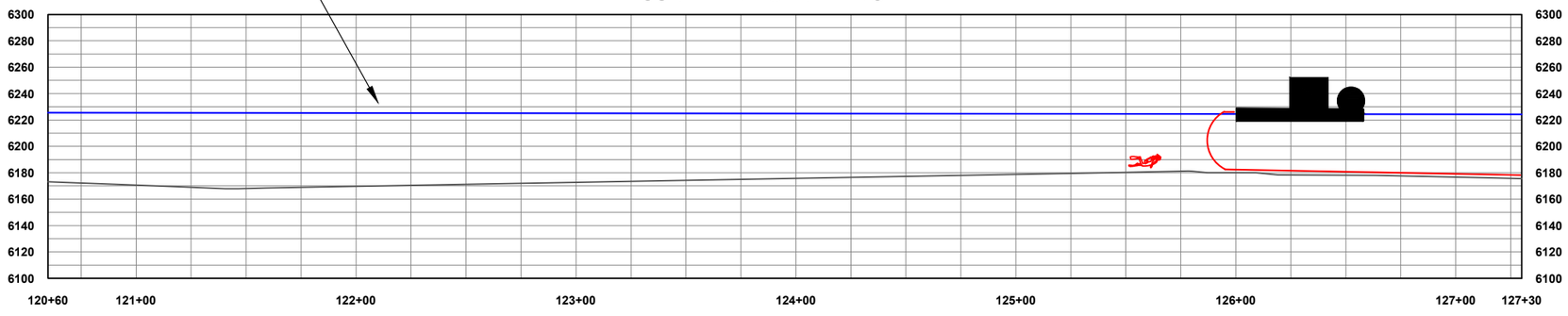
DATE: 4/19/2022

DWG 20 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

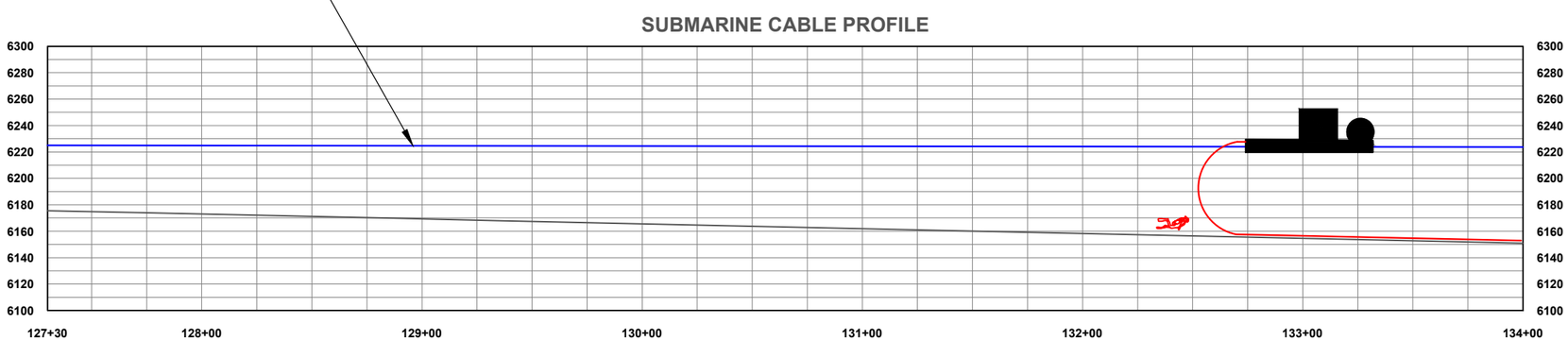
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 21 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

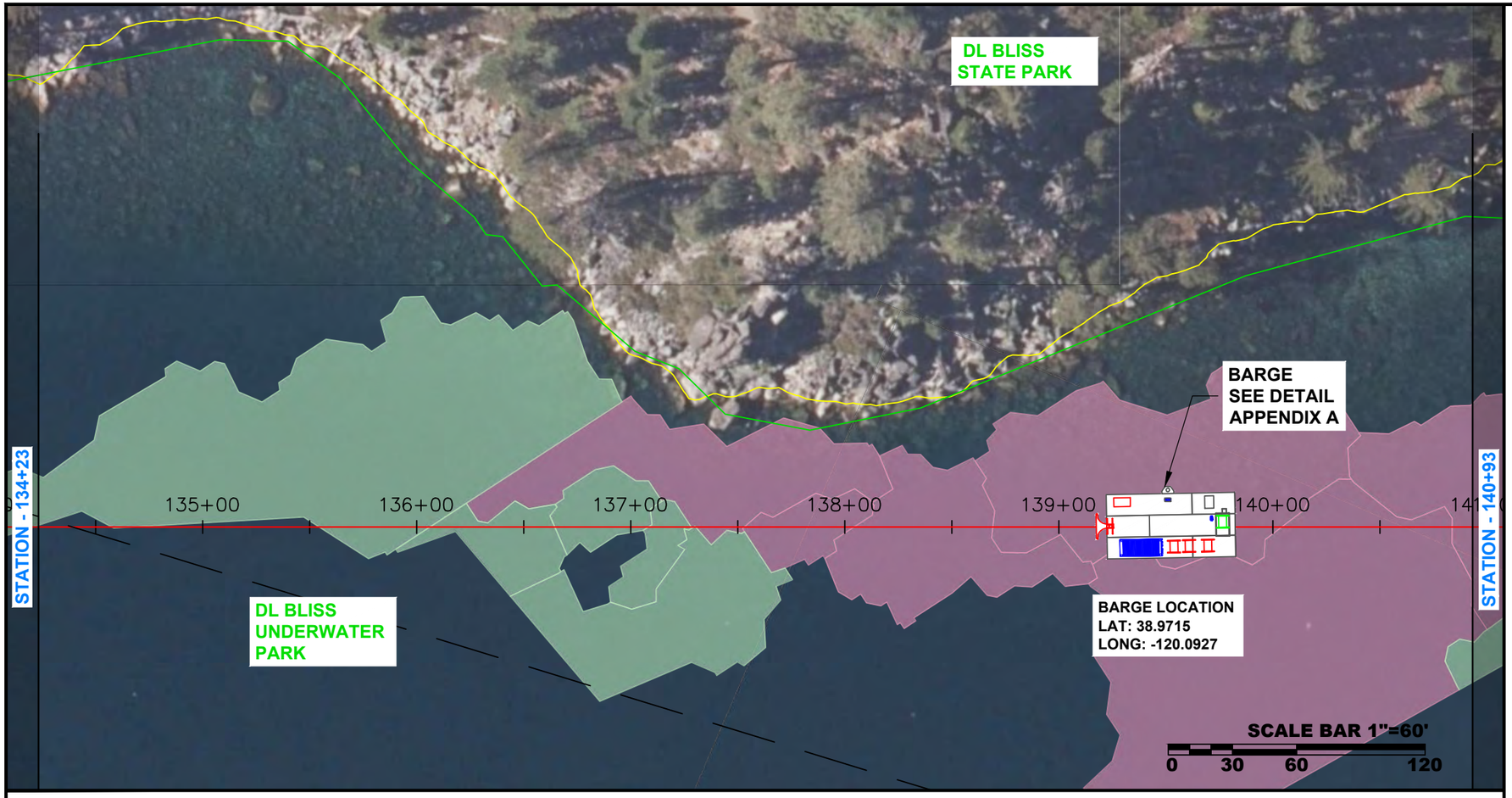
- CUT LOCATIONS
- TOUCHDOWN MONITOR
- BARGE
- SUBMARINE CABLE
- HIGH WATER LINE
- STATE PARK BOUNDARY
- PARCEL BOUNDARY
- STREAMS
- 1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

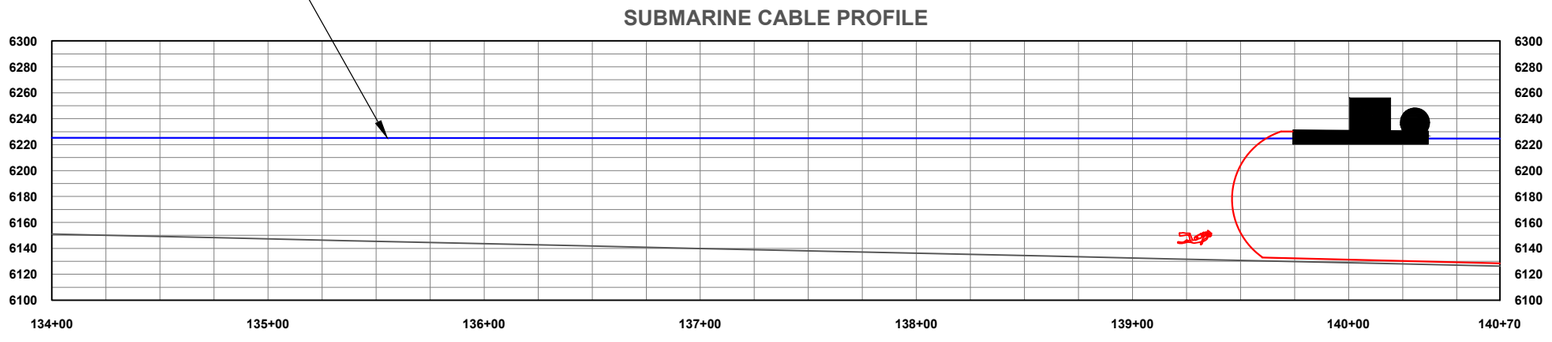
- SAND (MARGINAL)
- BOULDER (SPAWNING)
- SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013
PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH
PROJECT CITY: LAKE TAHOE
PROJECT COUNTY: EL DORADO
ENG'R: JASON PARNHAM TEL: 775-683-5240
TYPE OF CONST.: SUBMARINE CABLE REMOVAL
PROJECT NO.: A020LET
DATE: 4/19/2022
DWG 22 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

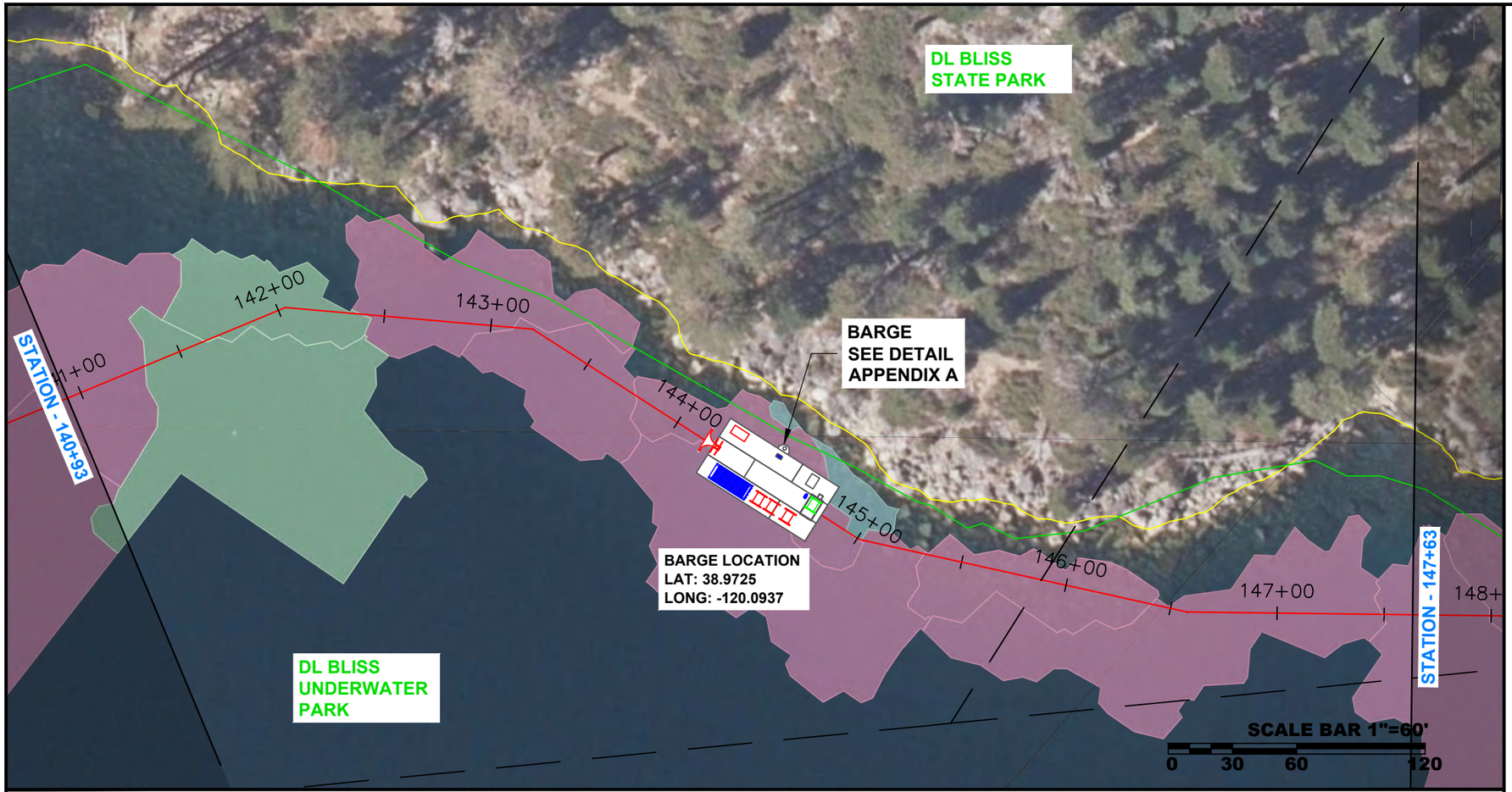
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

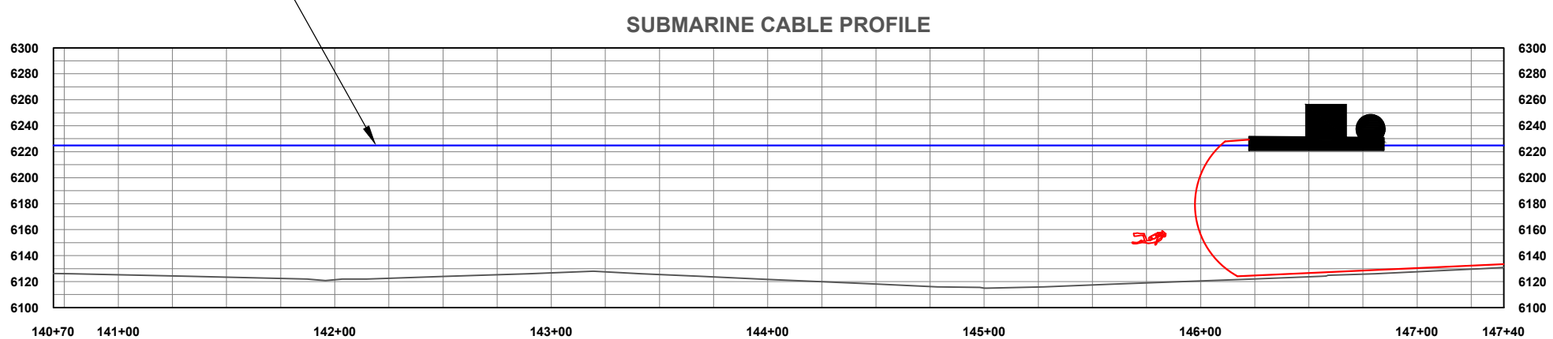
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 23 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

N
W
E
S

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

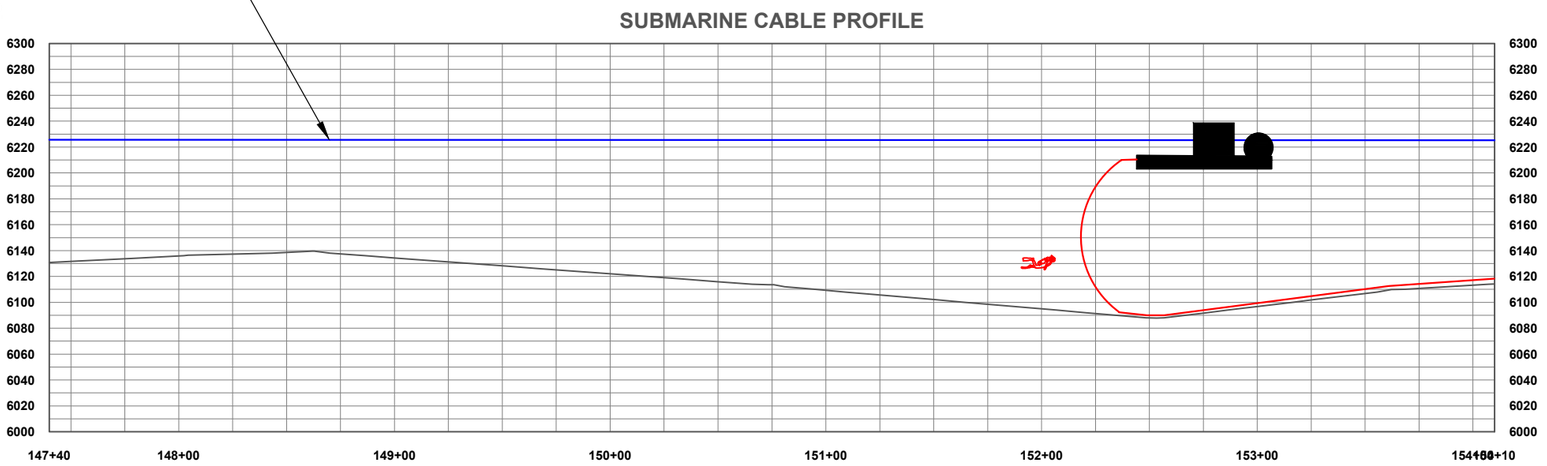
TYPE OF CONST. SUBMARINE CABLE REMOVAL

PROJECT NO. A020LET

DWG 24 OF 52 DATE: 4/19/2022



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

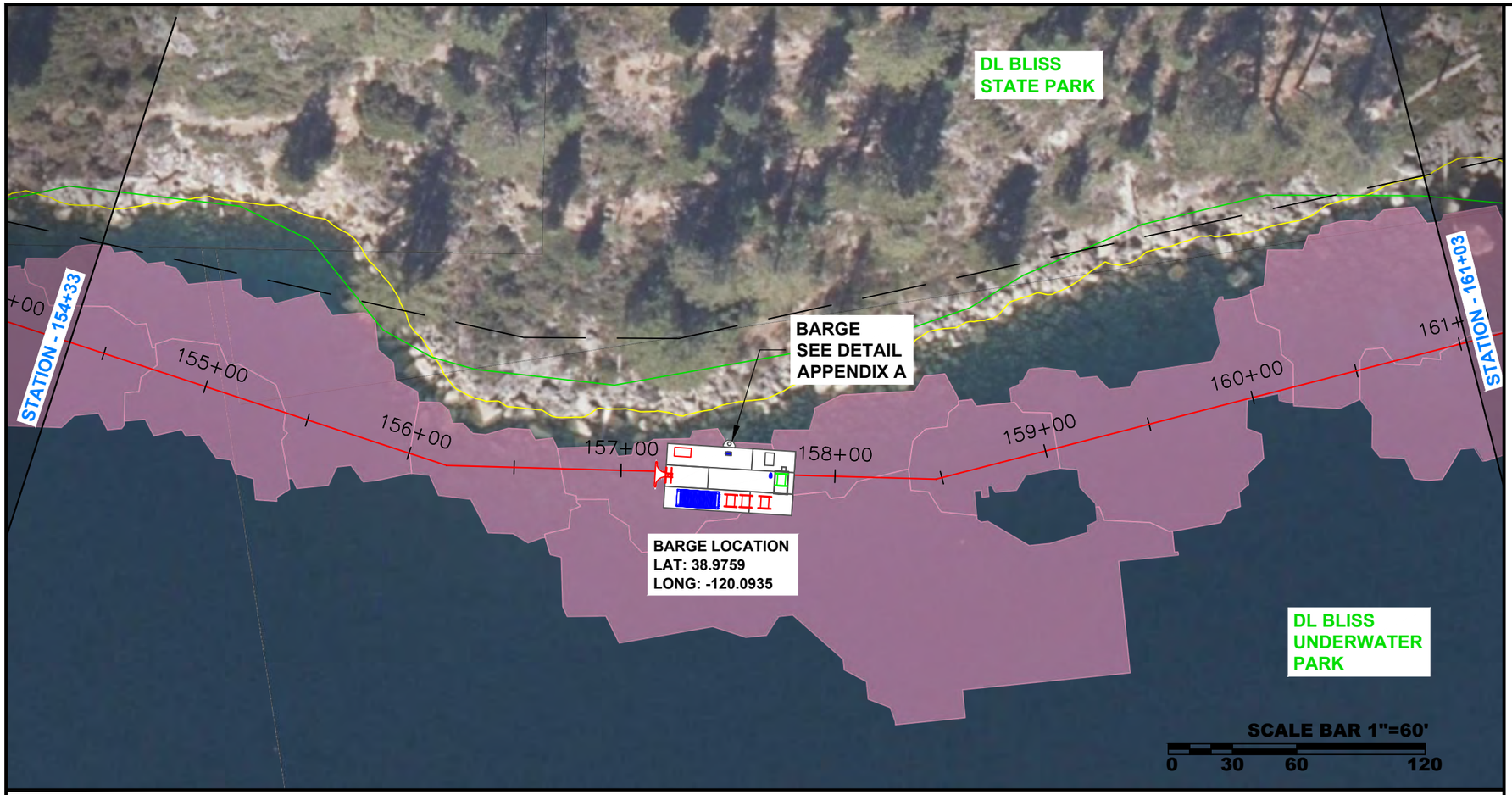
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

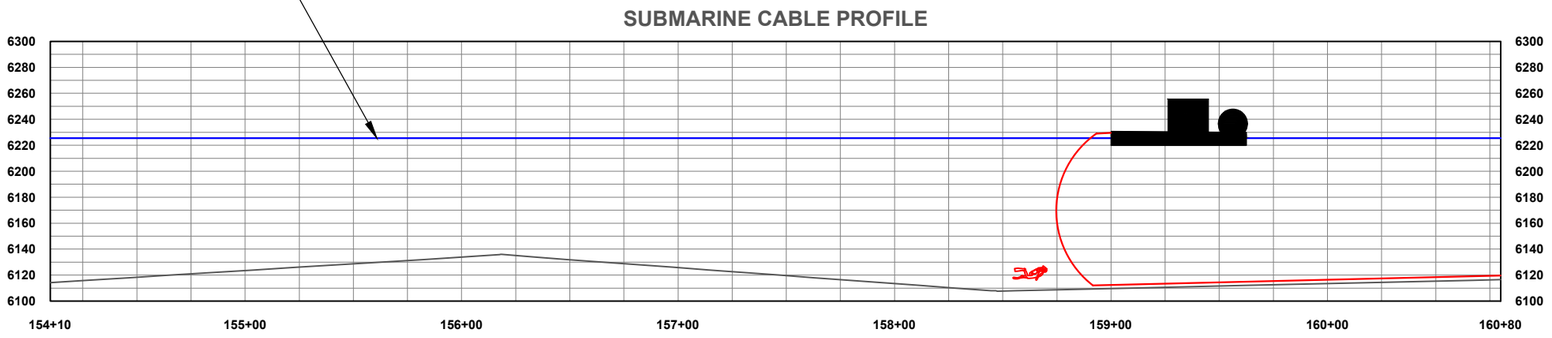
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 25 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

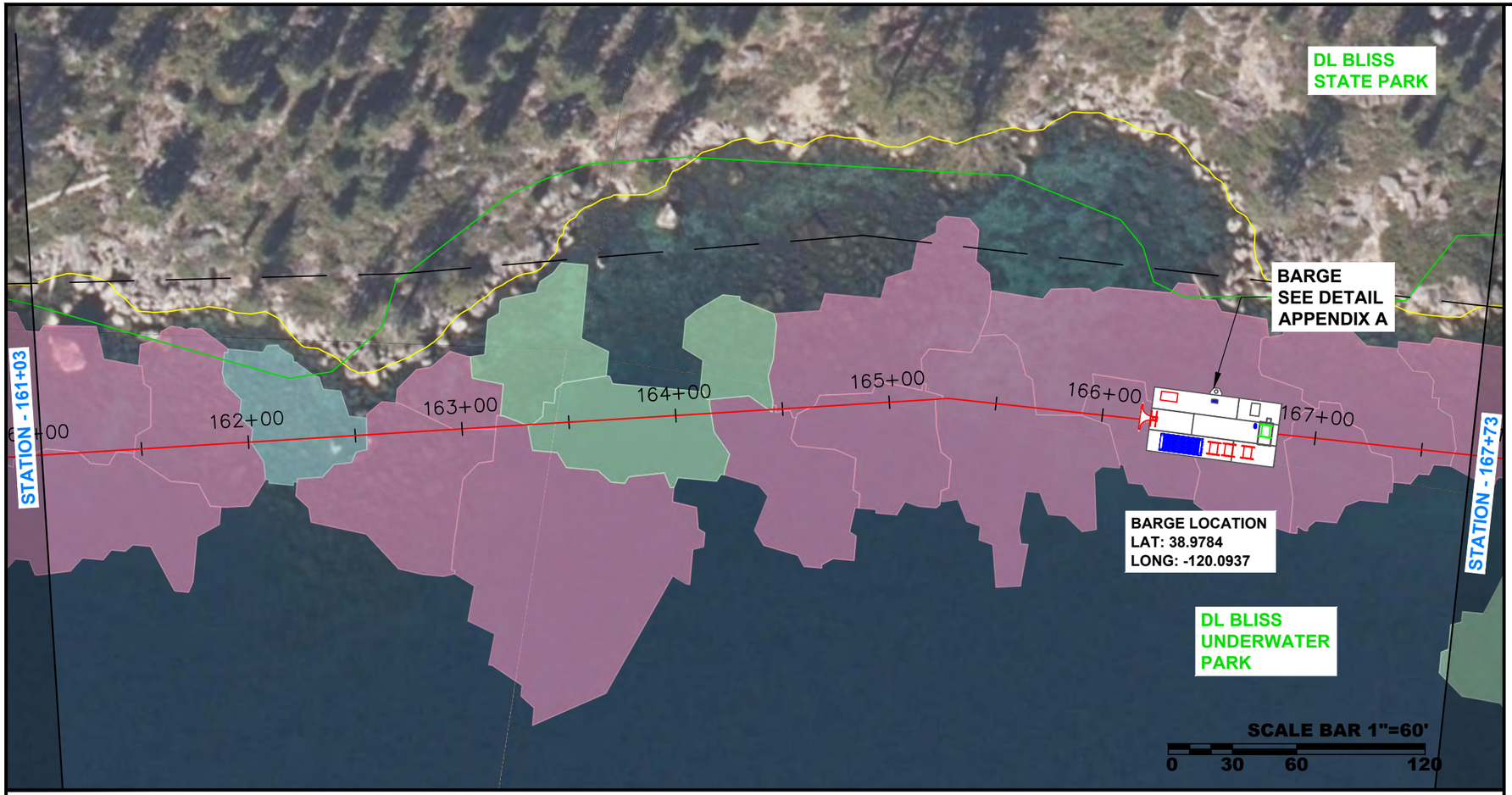
PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

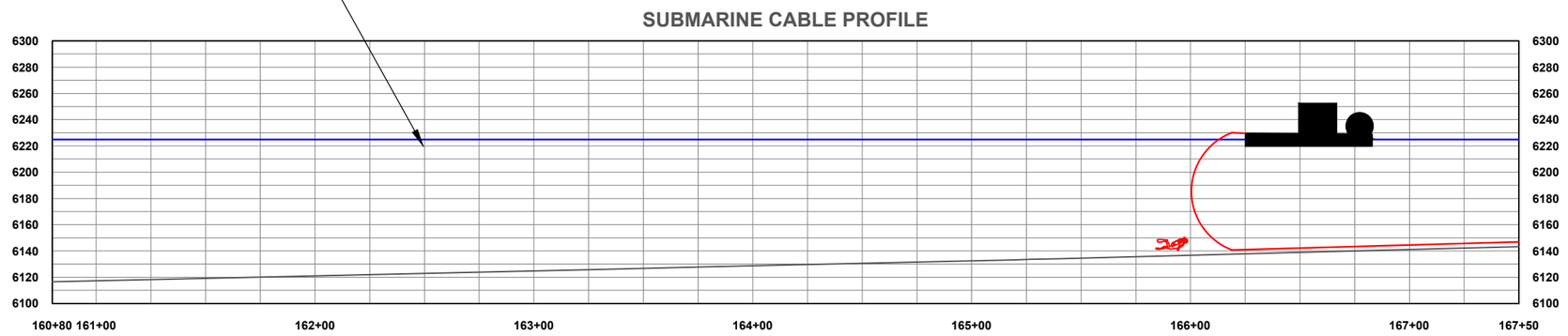
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

DWG 26 OF 52 DATE: 4/19/2022



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

W
S
E
N

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

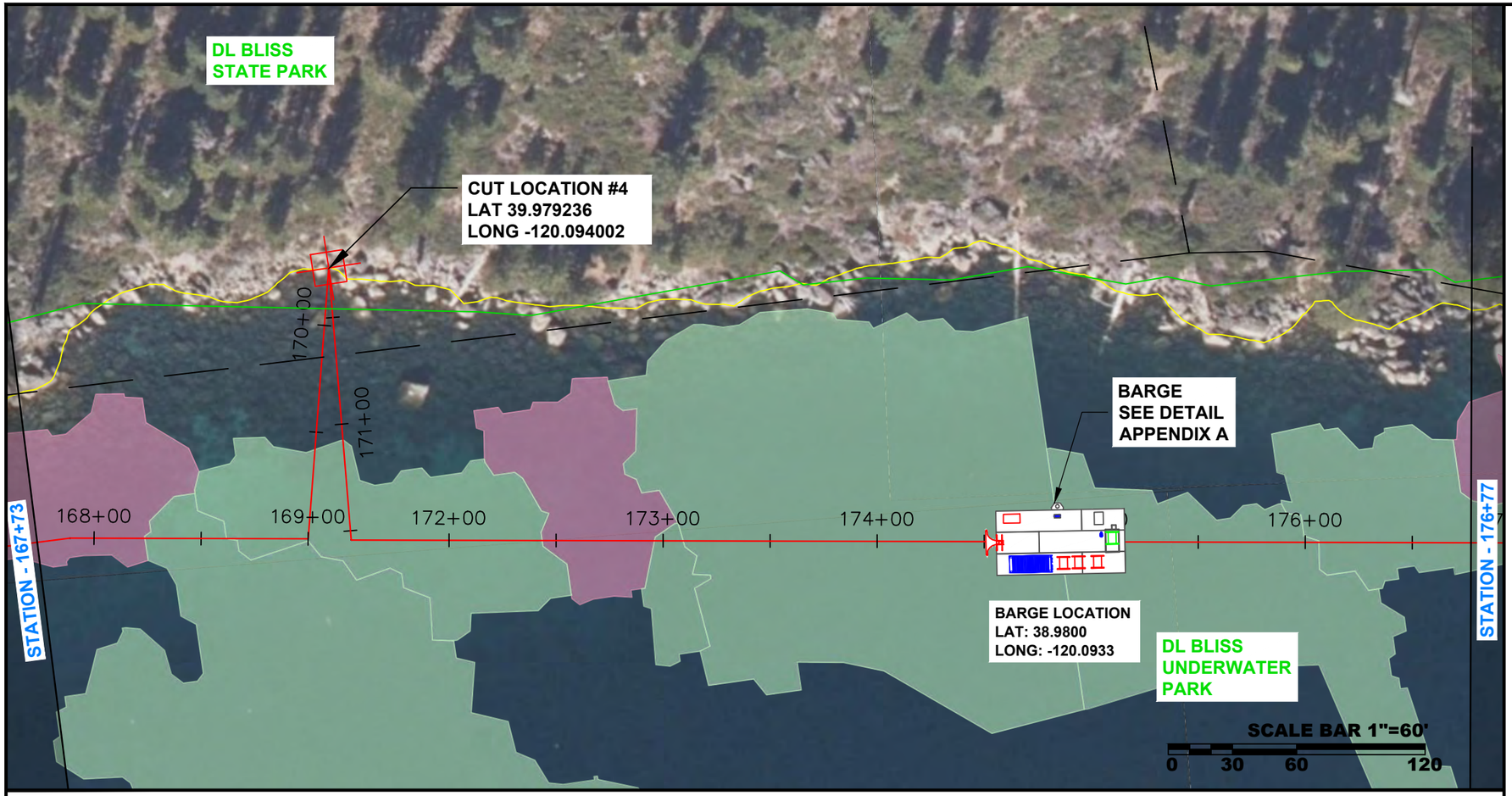
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

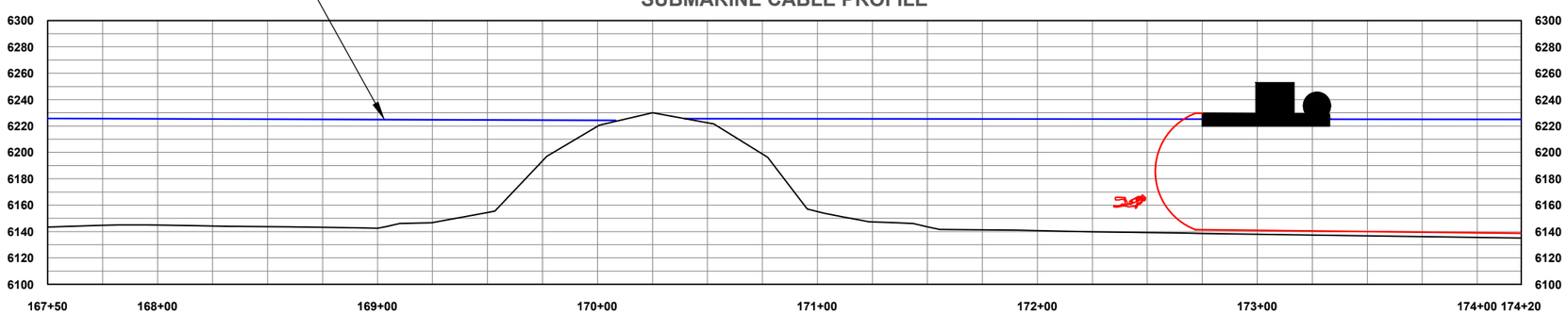
DATE: 4/19/2022

DWG 27 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

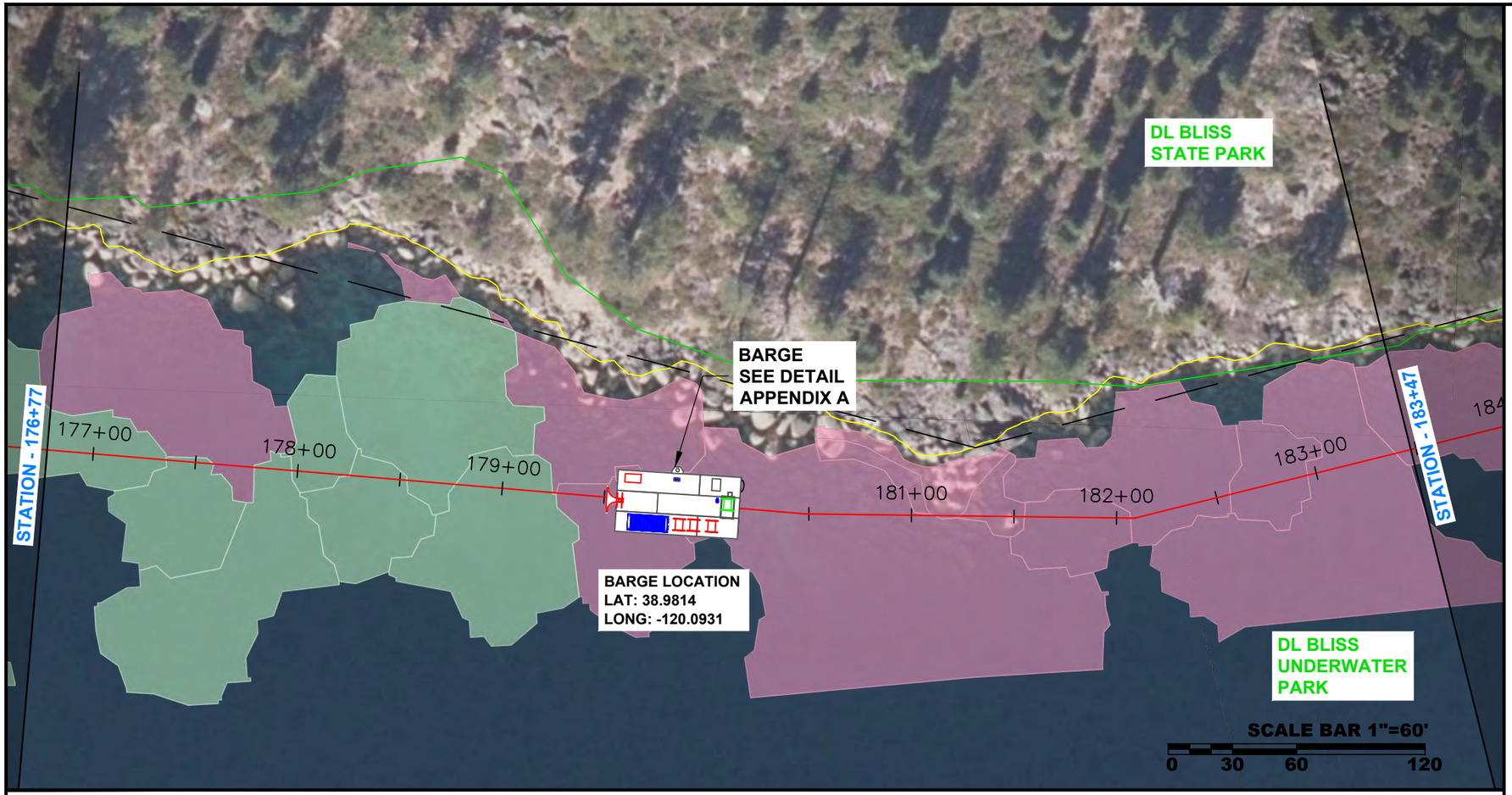
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

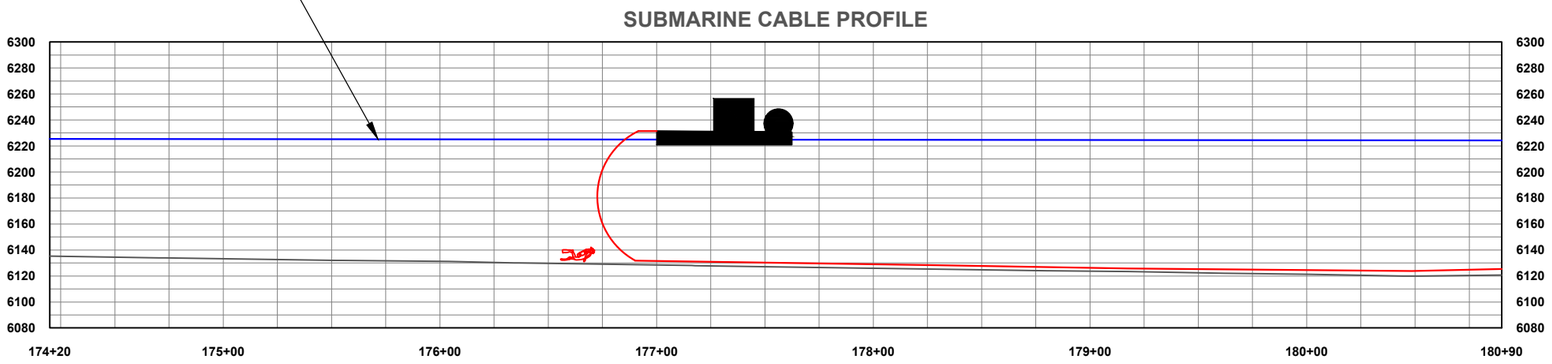
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 28 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

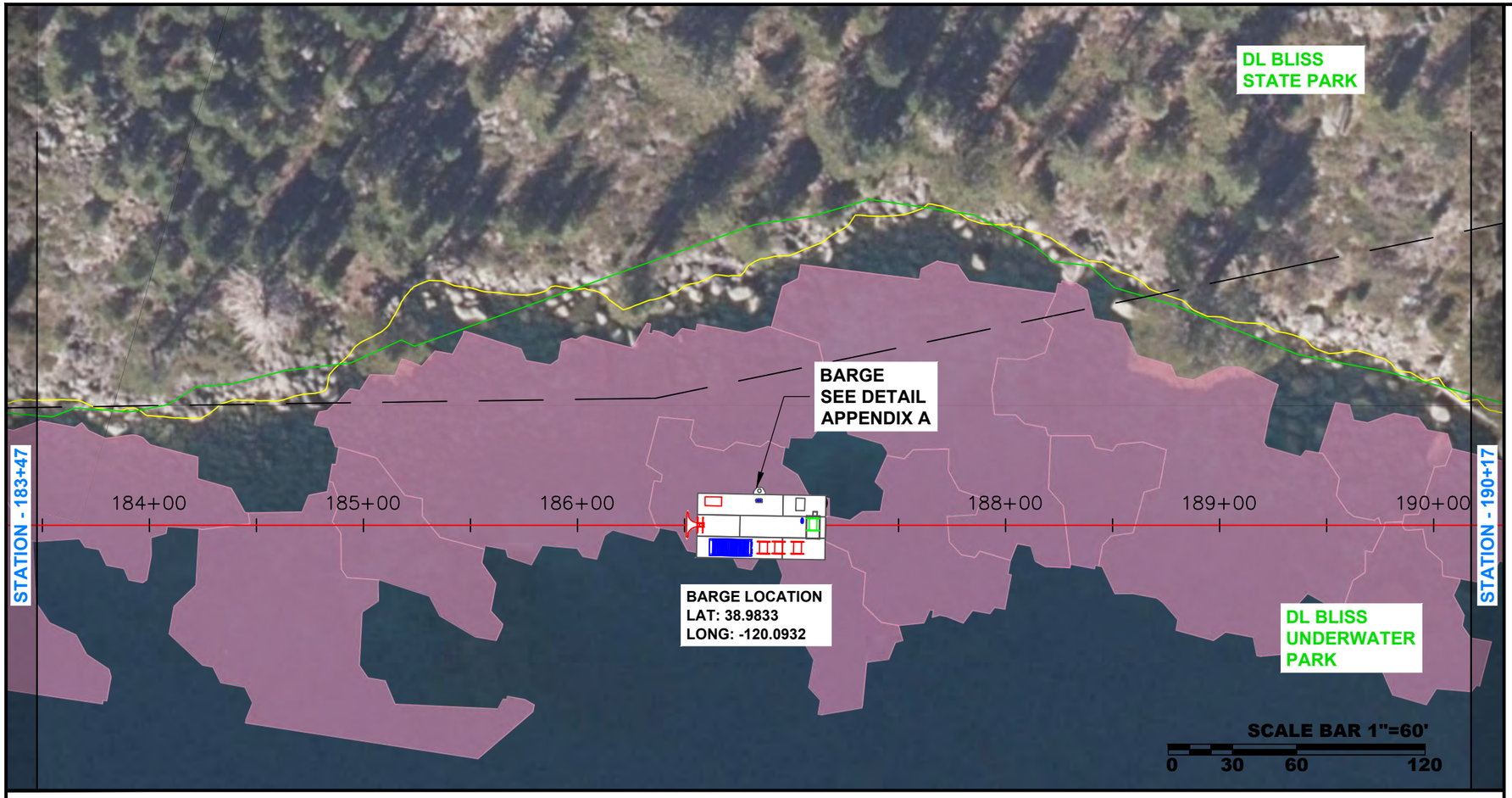
PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

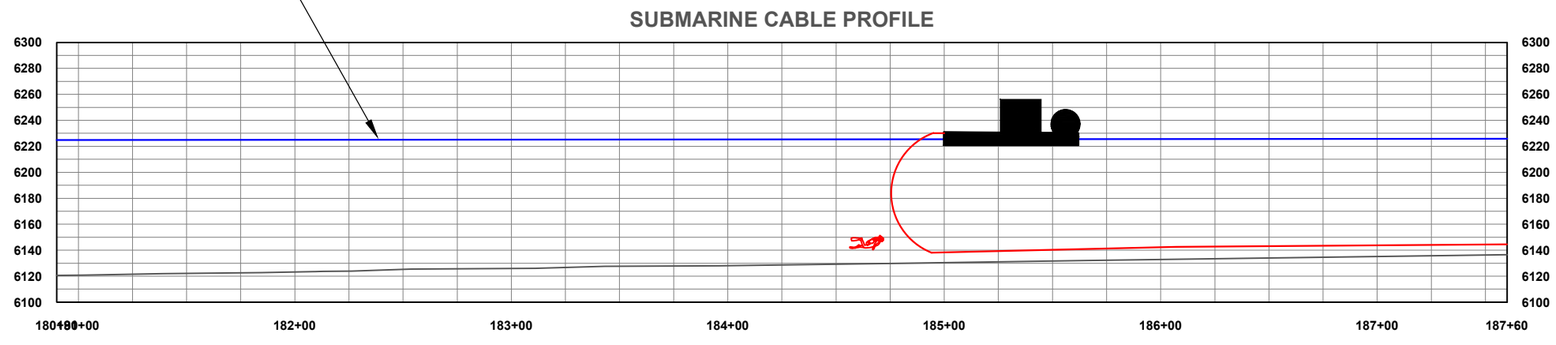
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

DWG 29 OF 52 DATE: 4/19/2022



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST. SUBMARINE CABLE REMOVAL

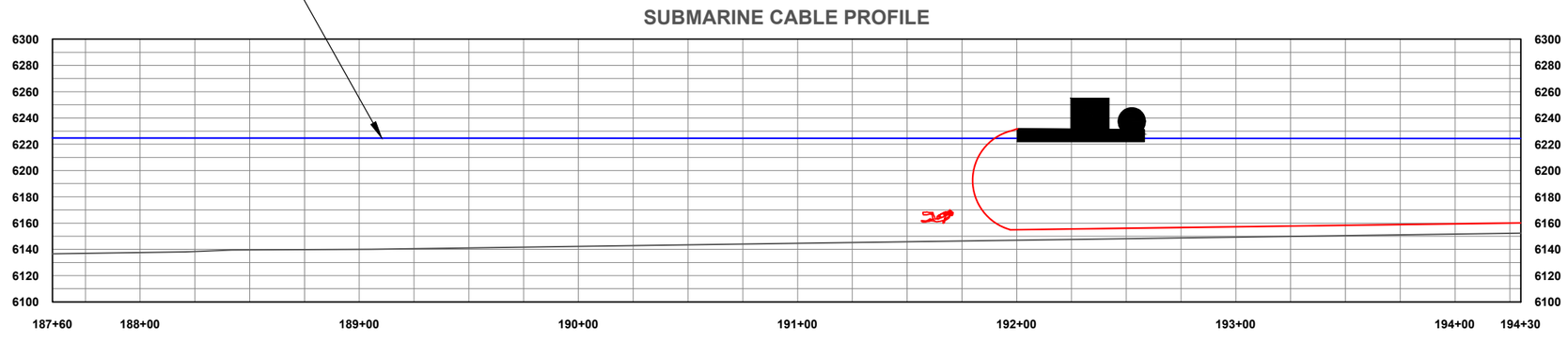
PROJECT NO. A020LET

DATE: 4/19/2022

DWG 30 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

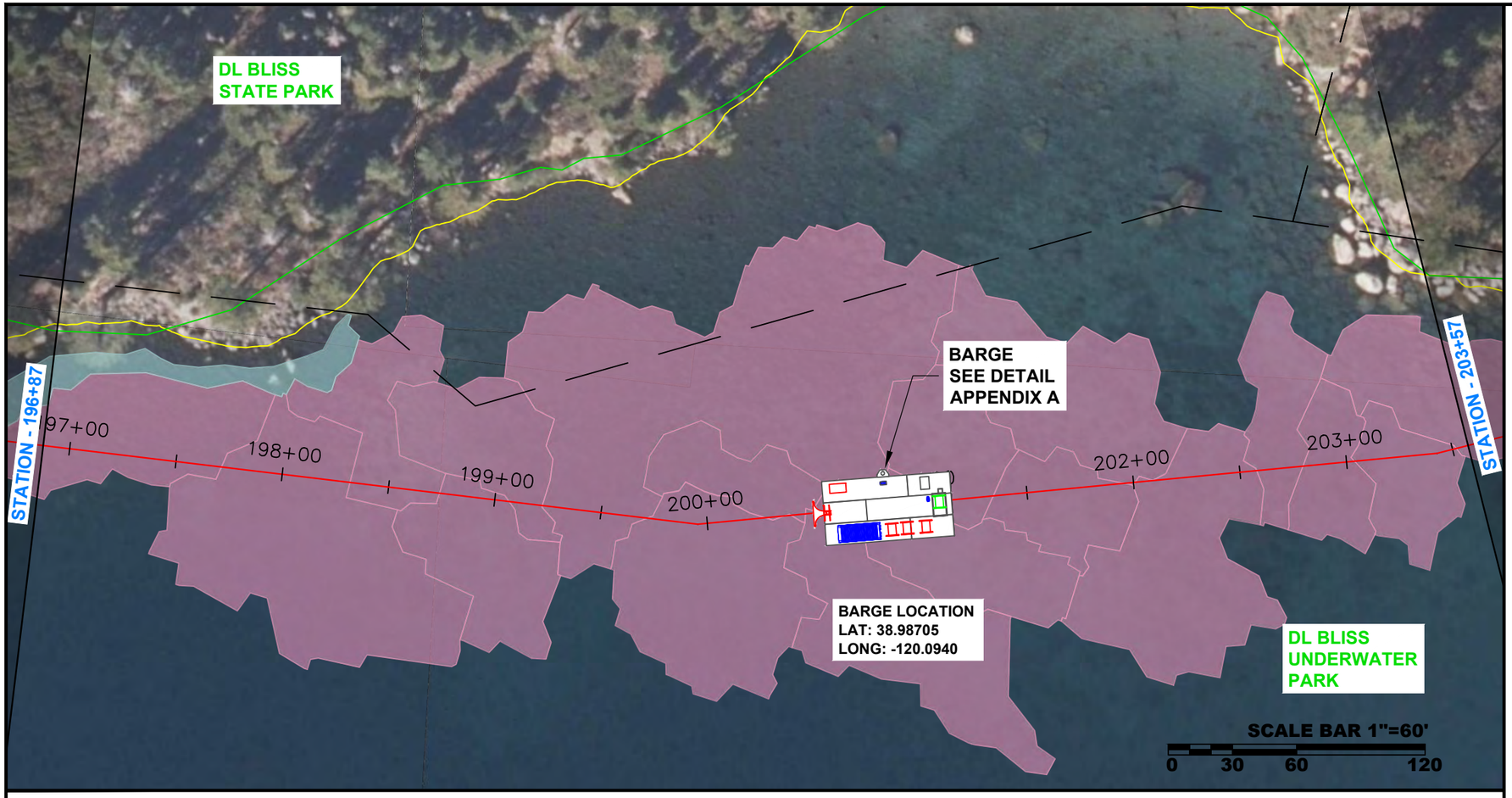
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

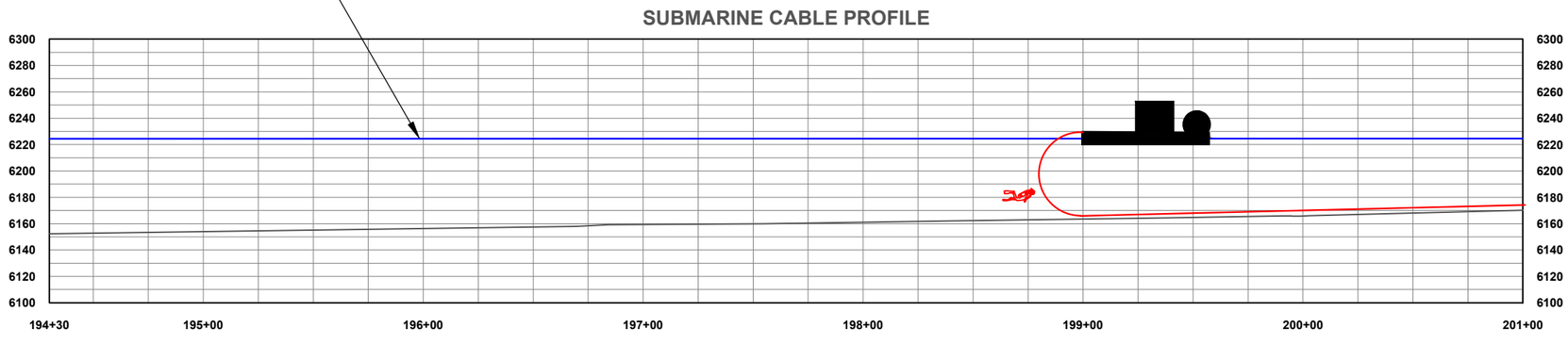
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 31 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

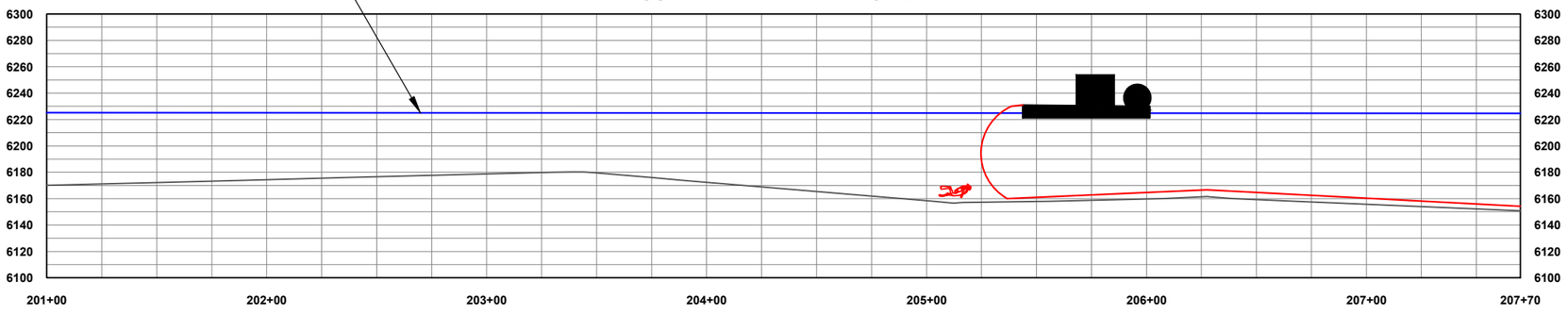
DATE: 4/19/2022

DWG 32 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

DATE: 4/19/2022

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

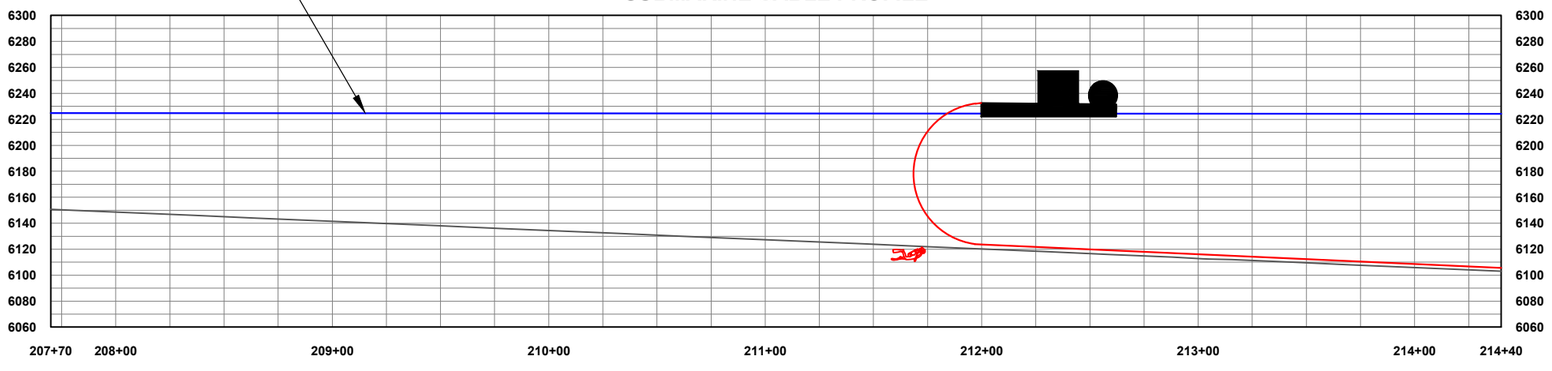
PROJECT NO.: A020LET

DWG 33 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

at&t

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

DATE: 4/19/2022

ENG'R: JASON PARNHAM TEL: 775-683-5240

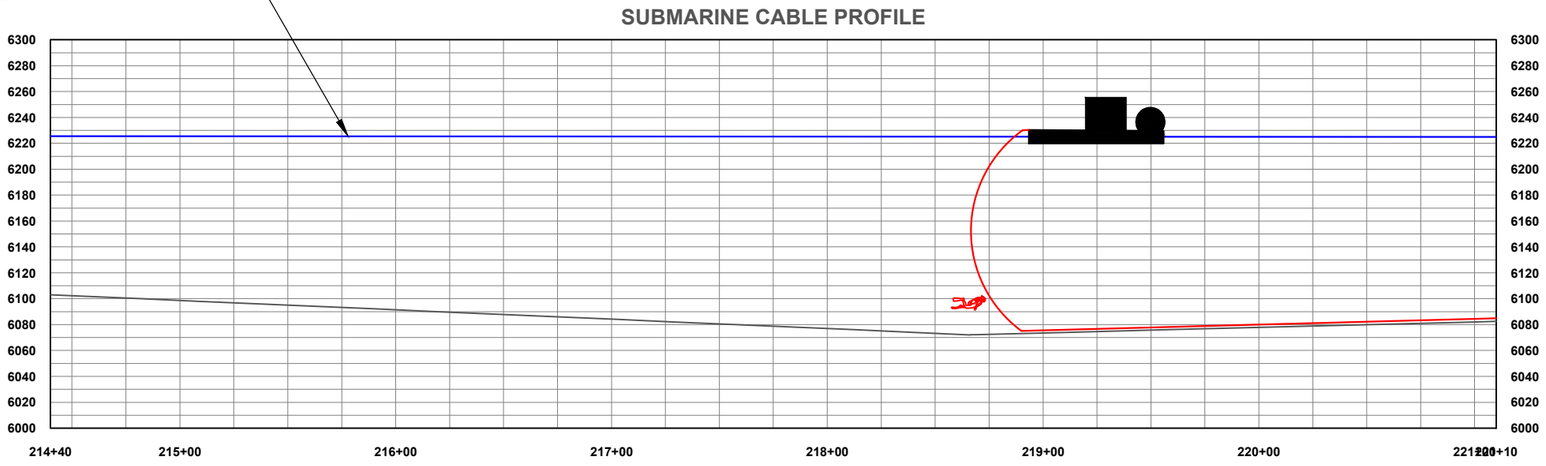
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

DWG 34 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

W
S
N
E

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

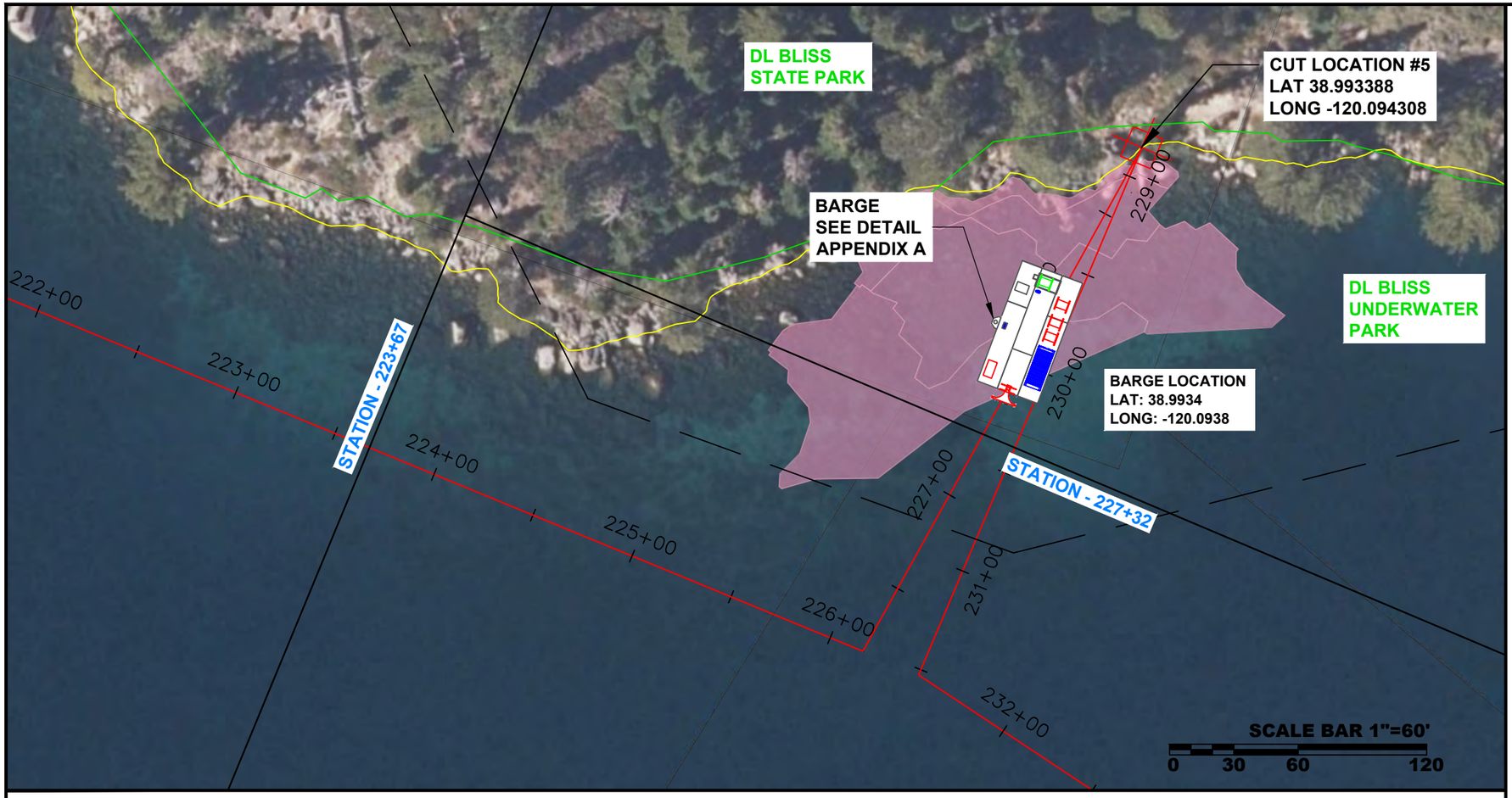
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

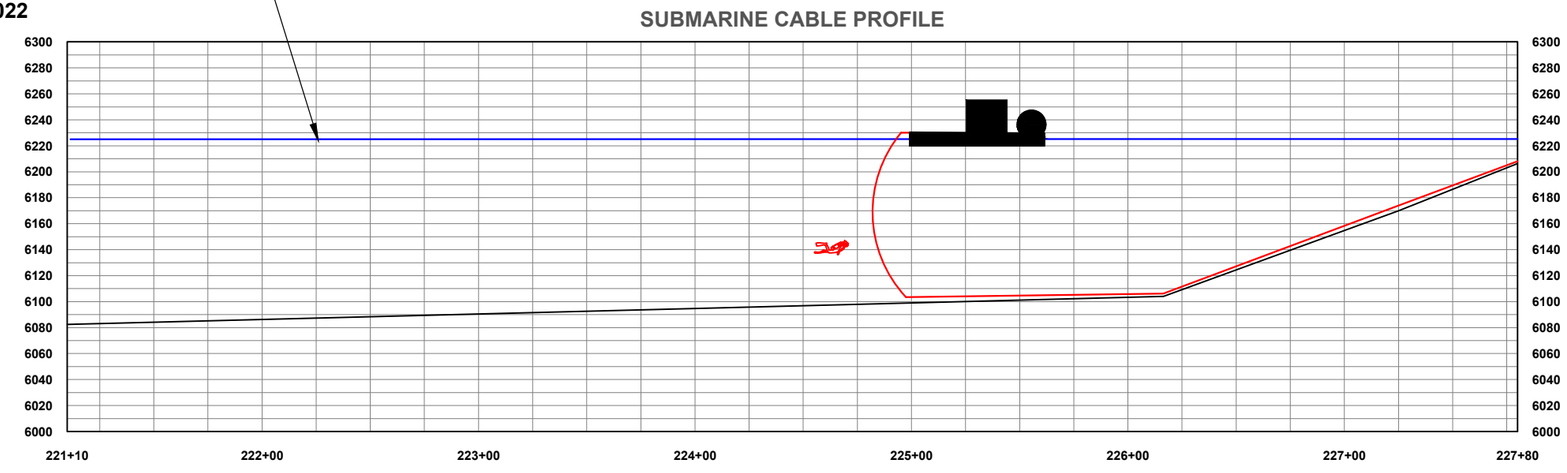
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 35 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

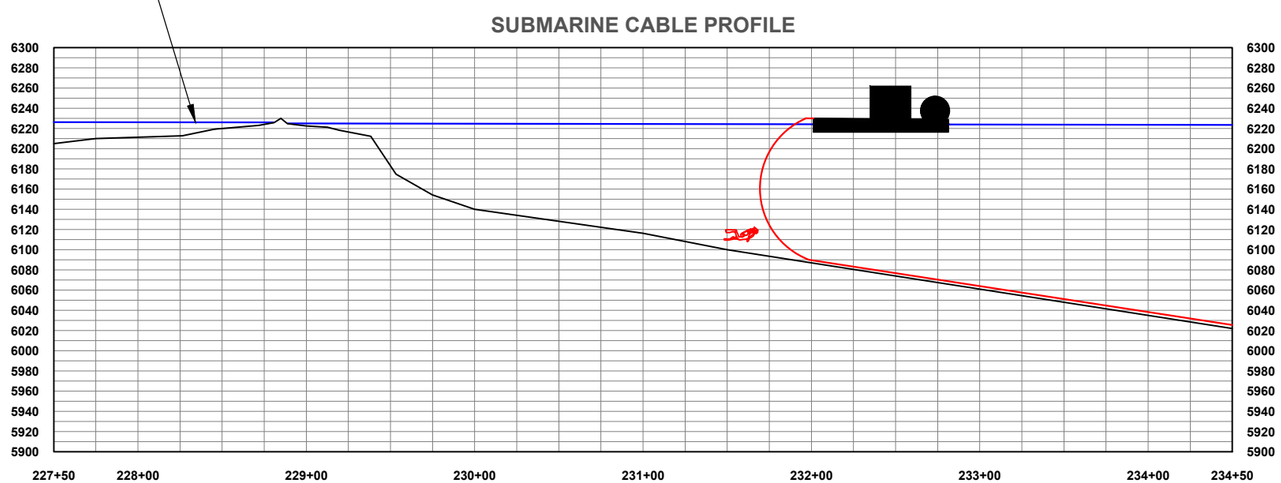
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 36 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

- CUT LOCATIONS
- TOUCHDOWN MONITOR
- BARGE
- SUBMARINE CABLE
- HIGH WATER LINE
- STATE PARK BOUNDARY
- PARCEL BOUNDARY
- STREAMS
- 1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

- SAND (MARGINAL)
- BOULDER (SPAWNING)
- SAND/COBBLE/BOULDER (SPAWNING)

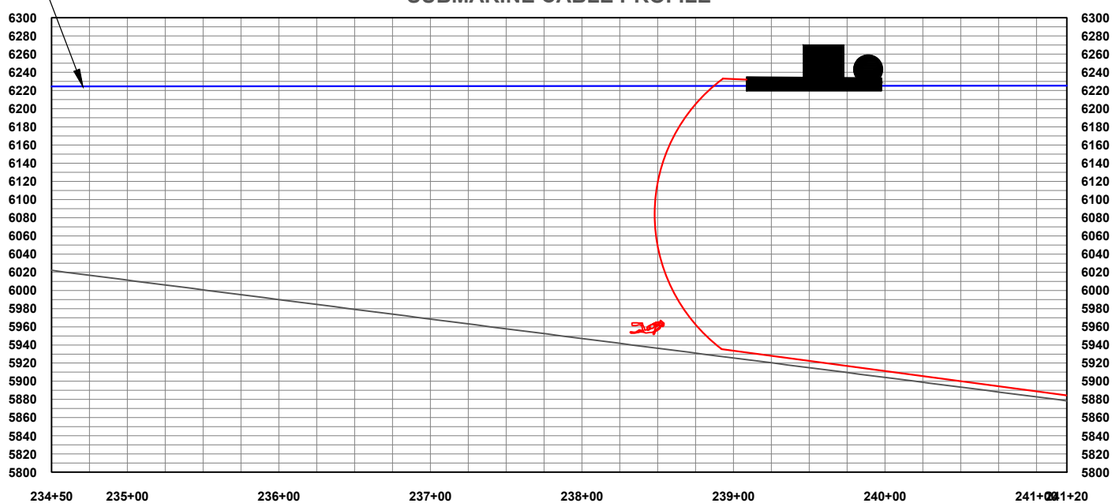
R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013
PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH
PROJECT CITY: LAKE TAHOE
PROJECT COUNTY: EL DORADO
ENG'R: JASON PARNHAM TEL: 775-683-5240
TYPE OF CONST.: SUBMARINE CABLE REMOVAL
PROJECT NO.: A020LET
DATE: 4/19/2022
DWG 37 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

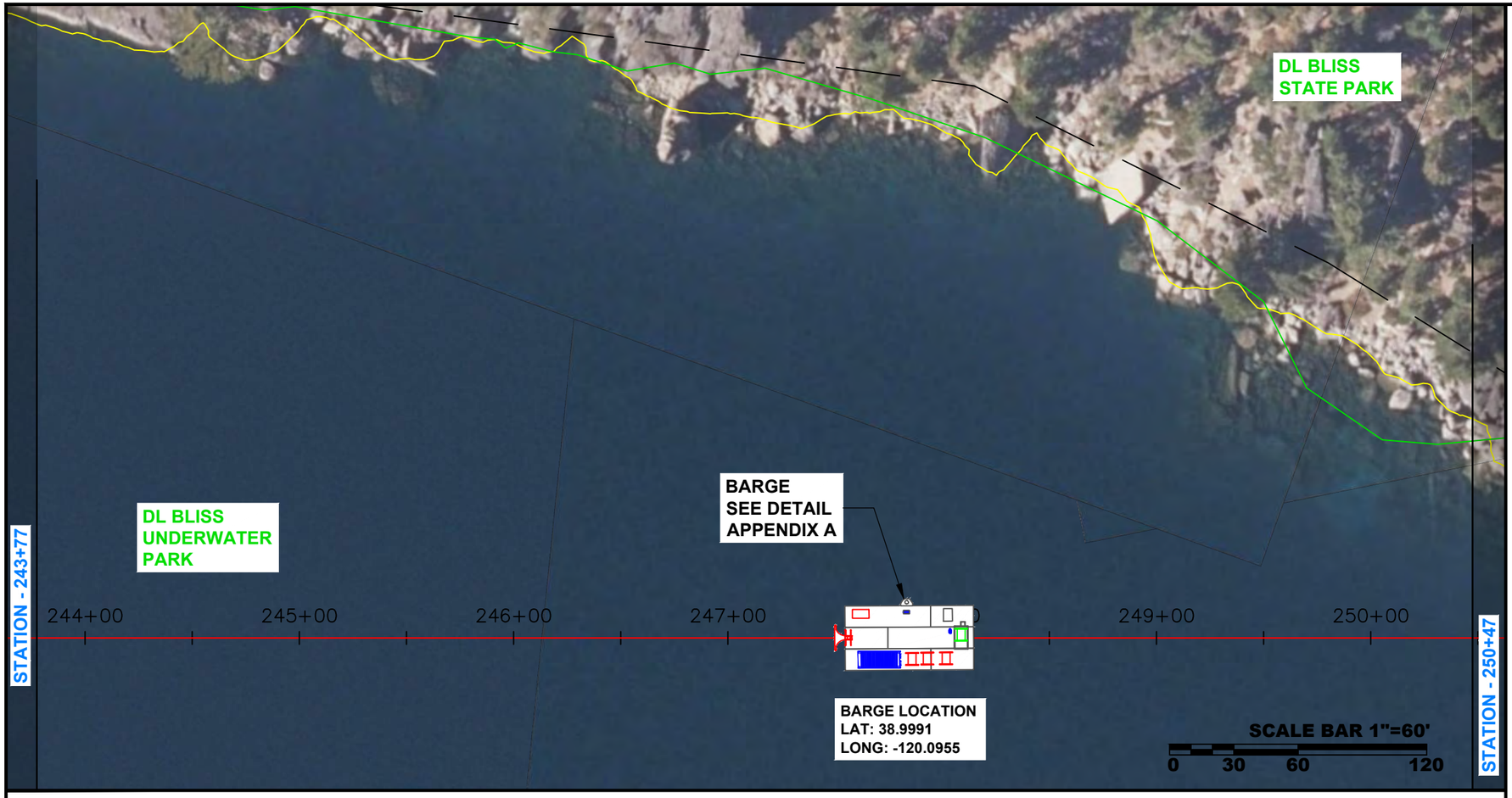
SAND (MARGINAL)

BOULDER (SPAWNING)

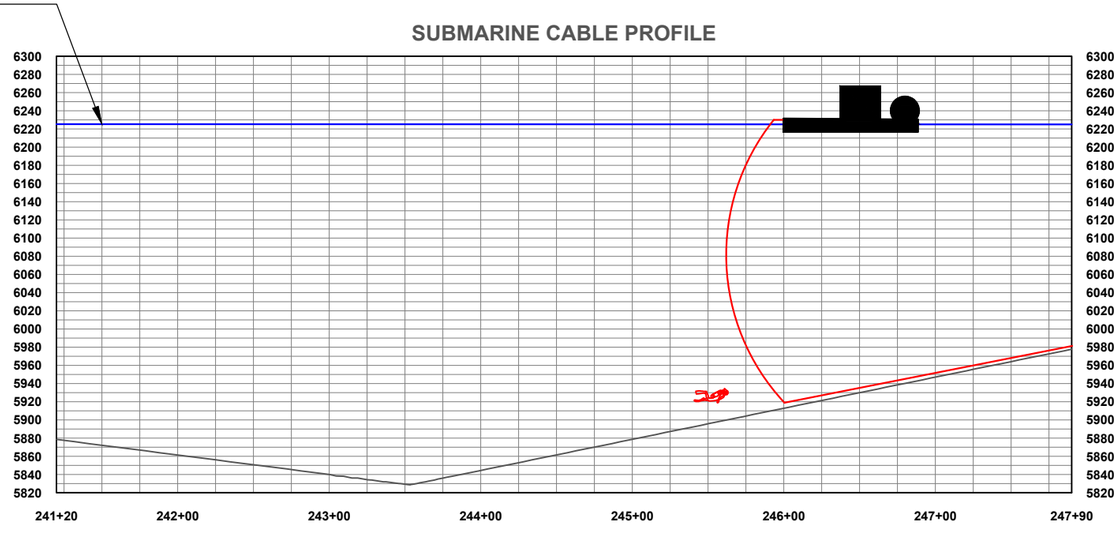
SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013
PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH
PROJECT CITY: LAKE TAHOE
PROJECT COUNTY: EL DORADO
ENG'R: JASON PARNHAM TEL: 775-683-5240
TYPE OF CONST. SUBMARINE CABLE REMOVAL
PROJECT NO. A020LET
DATE: 4/19/2022
DWG 38 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

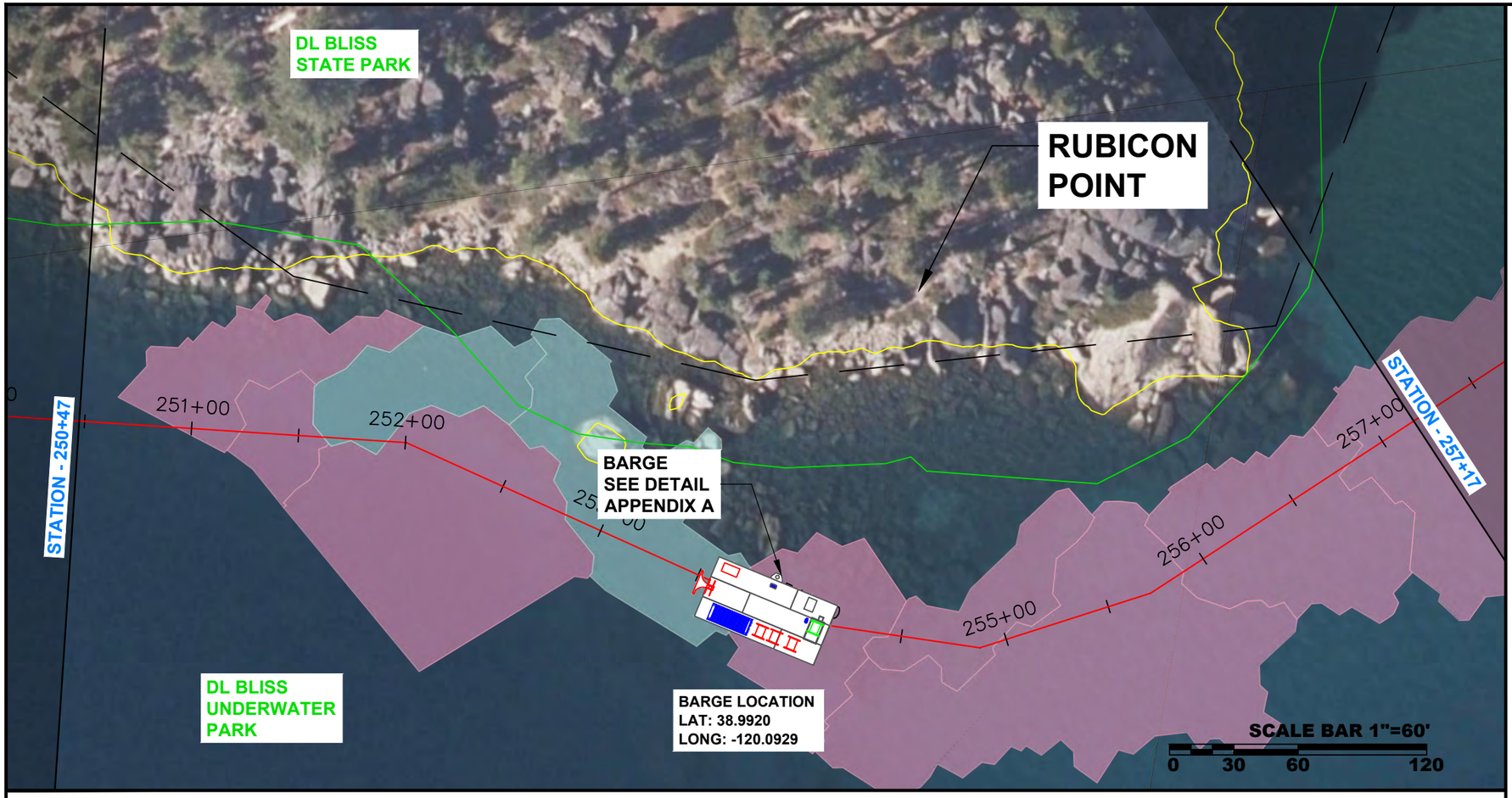
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

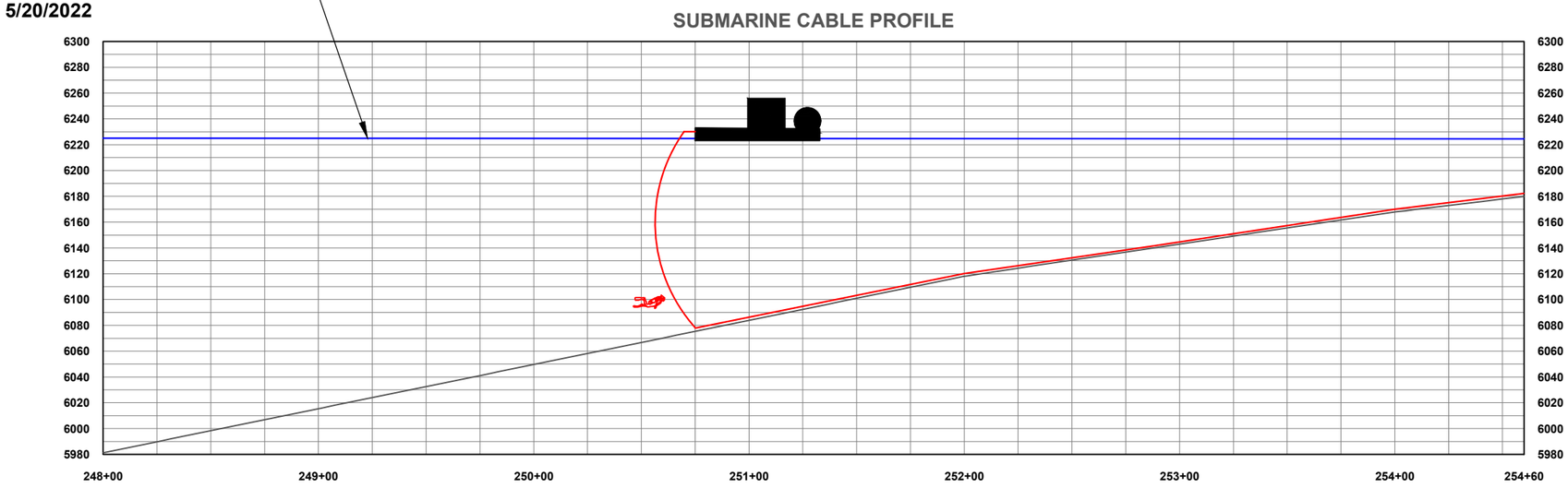
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 39 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

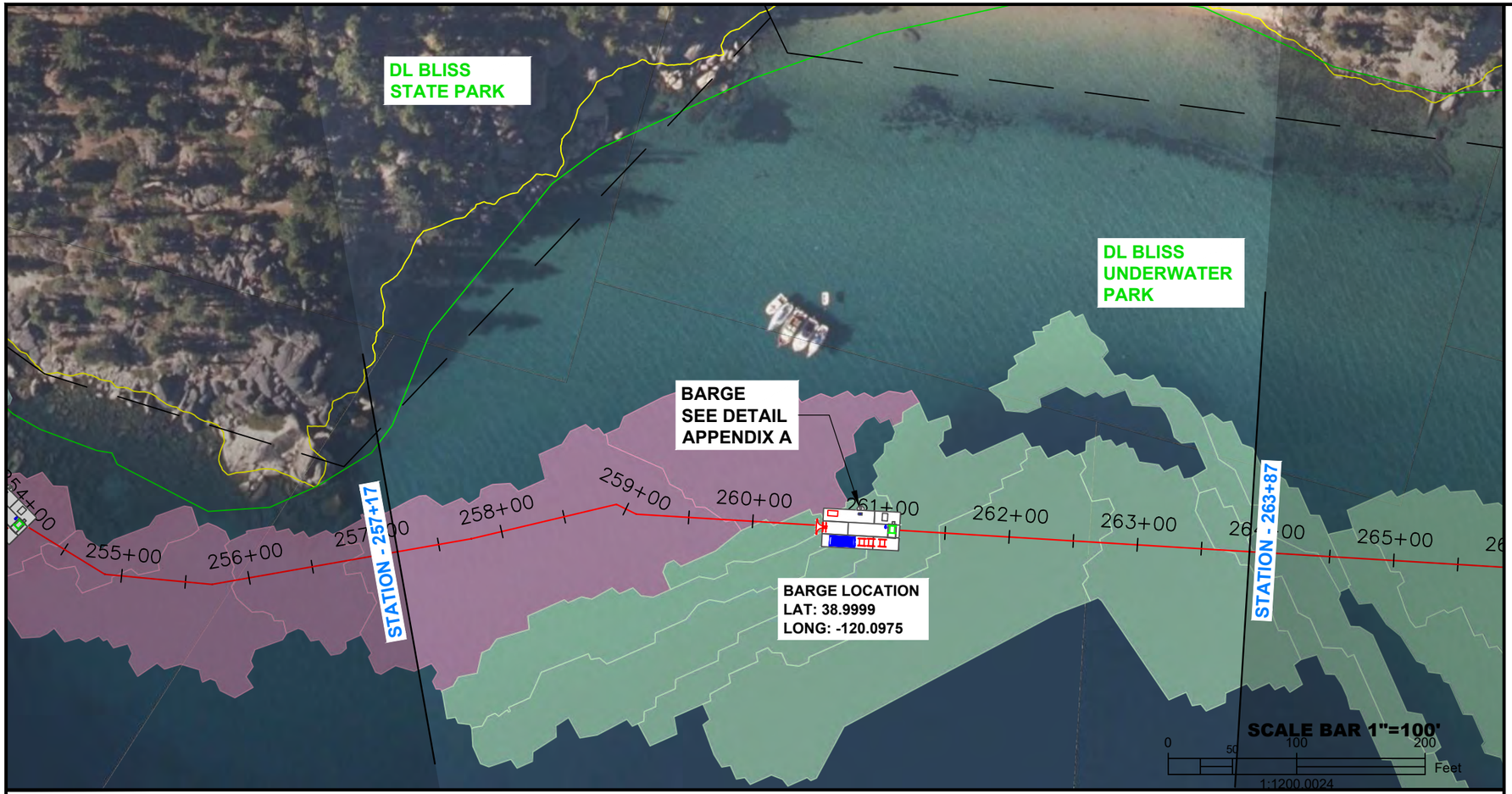
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

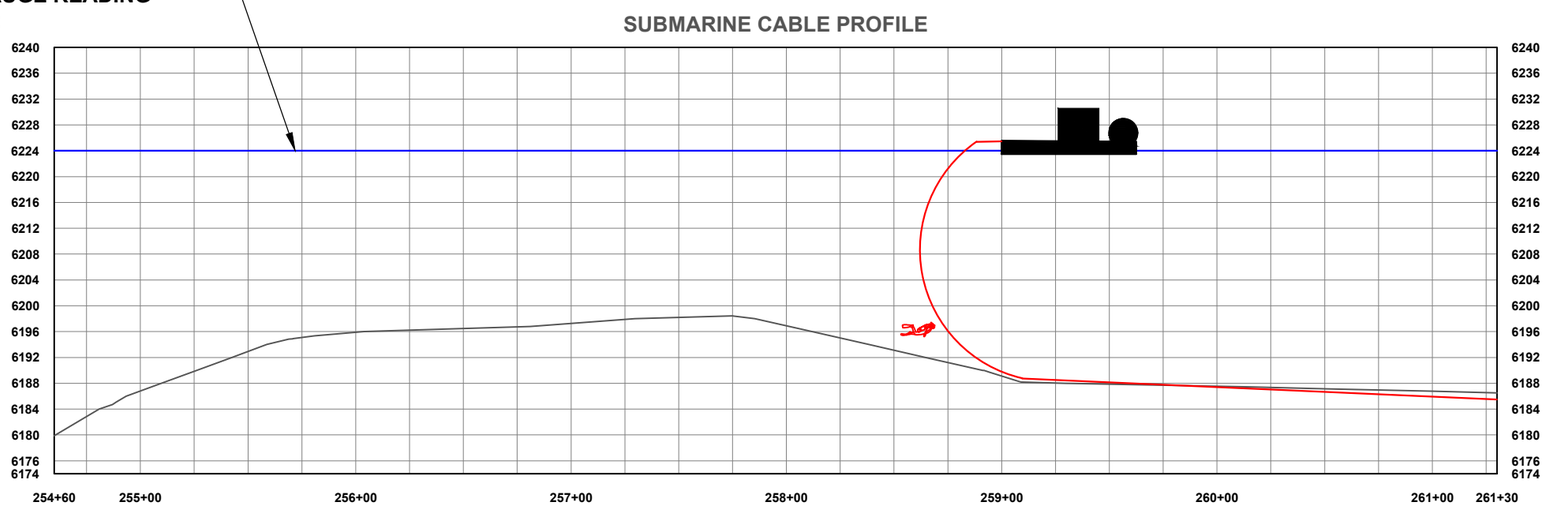
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 40 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

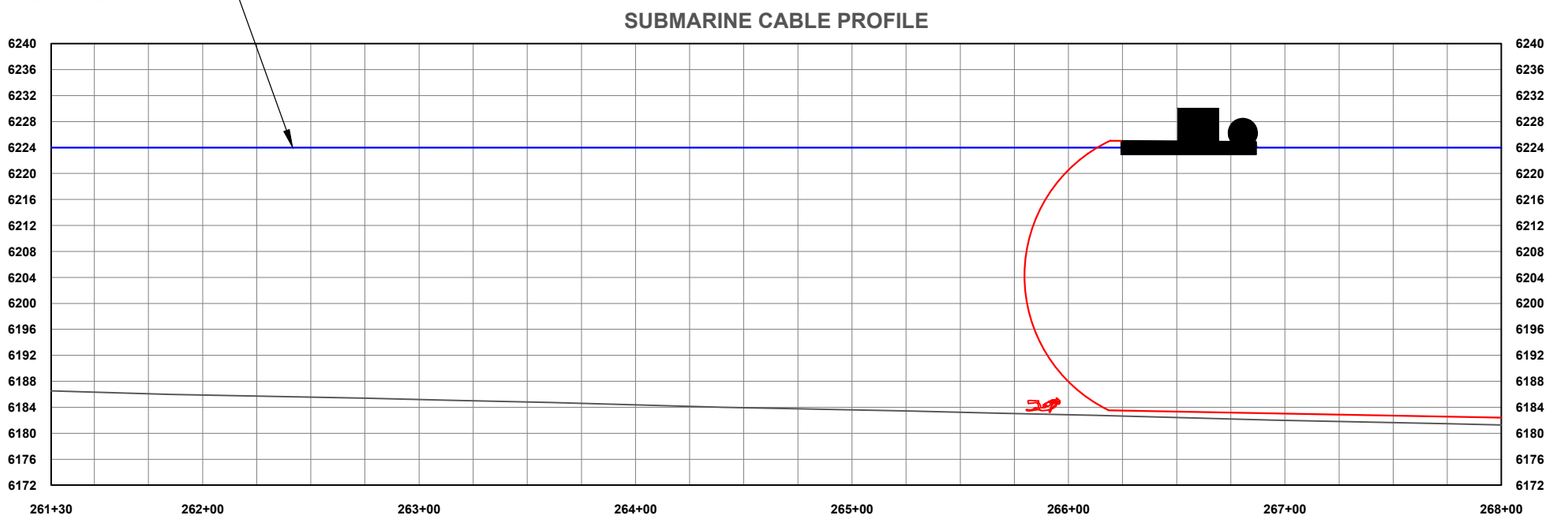
SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013
PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH
PROJECT CITY: LAKE TAHOE
PROJECT COUNTY: EL DORADO
ENG'R: JASON PARNHAM TEL: 775-683-5240
TYPE OF CONST. SUBMARINE CABLE REMOVAL
PROJECT NO. A020LET
DATE: 4/19/2022
DWG 41 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

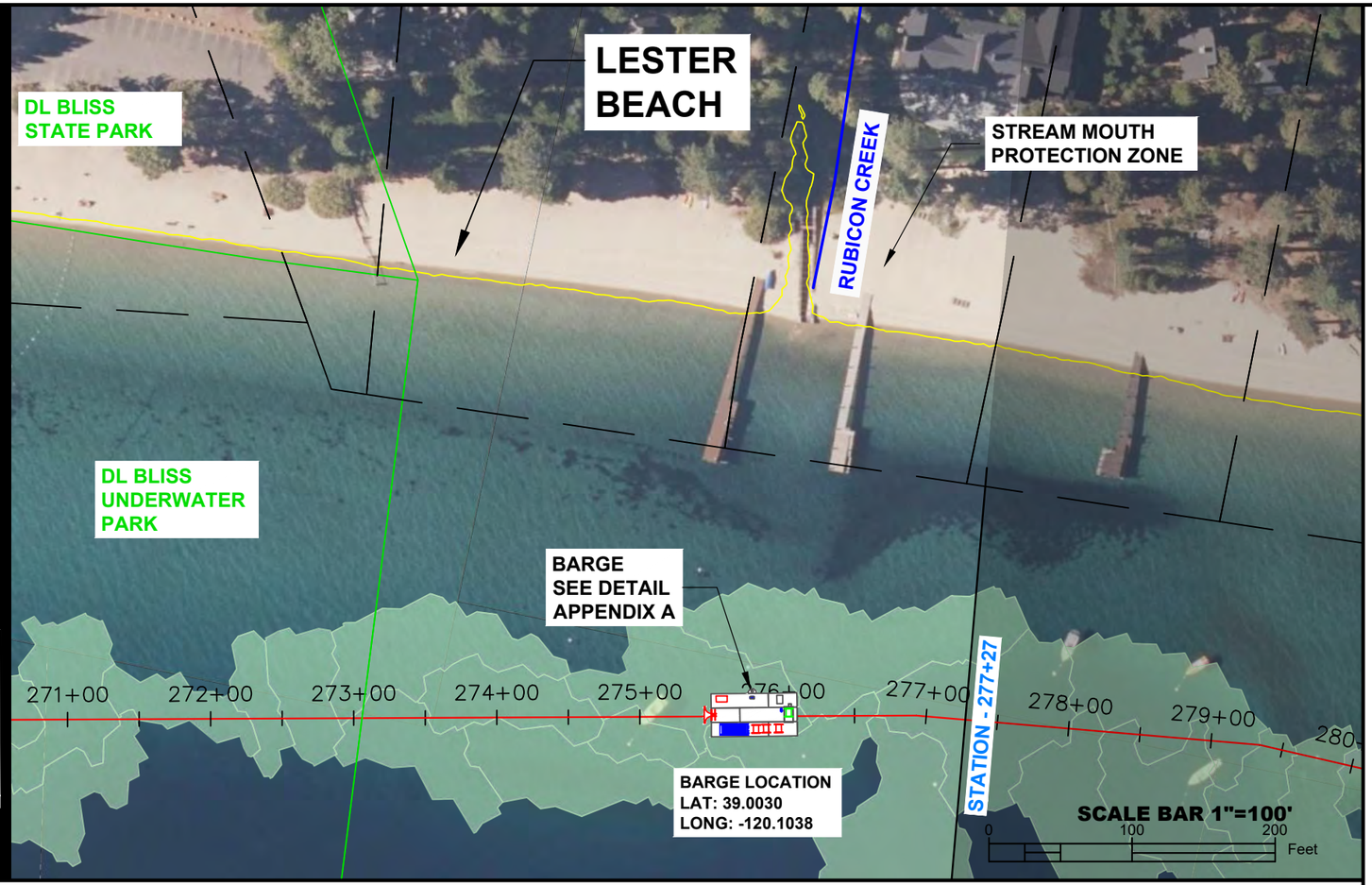
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

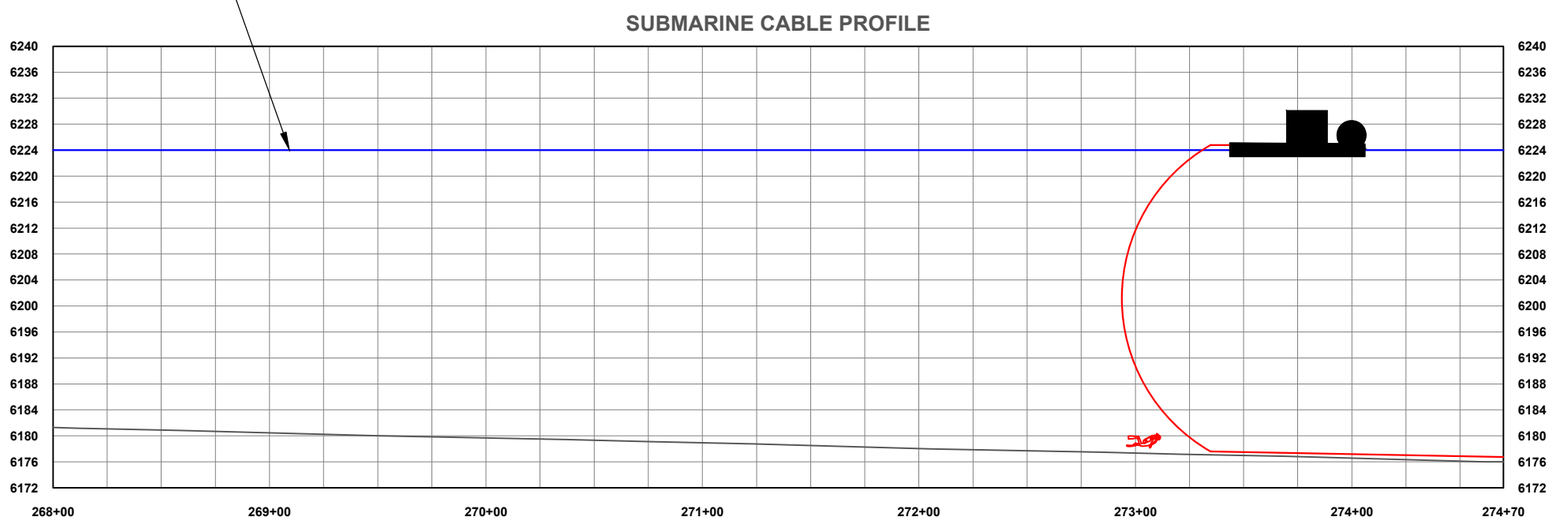
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 42 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

at&t

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL.: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

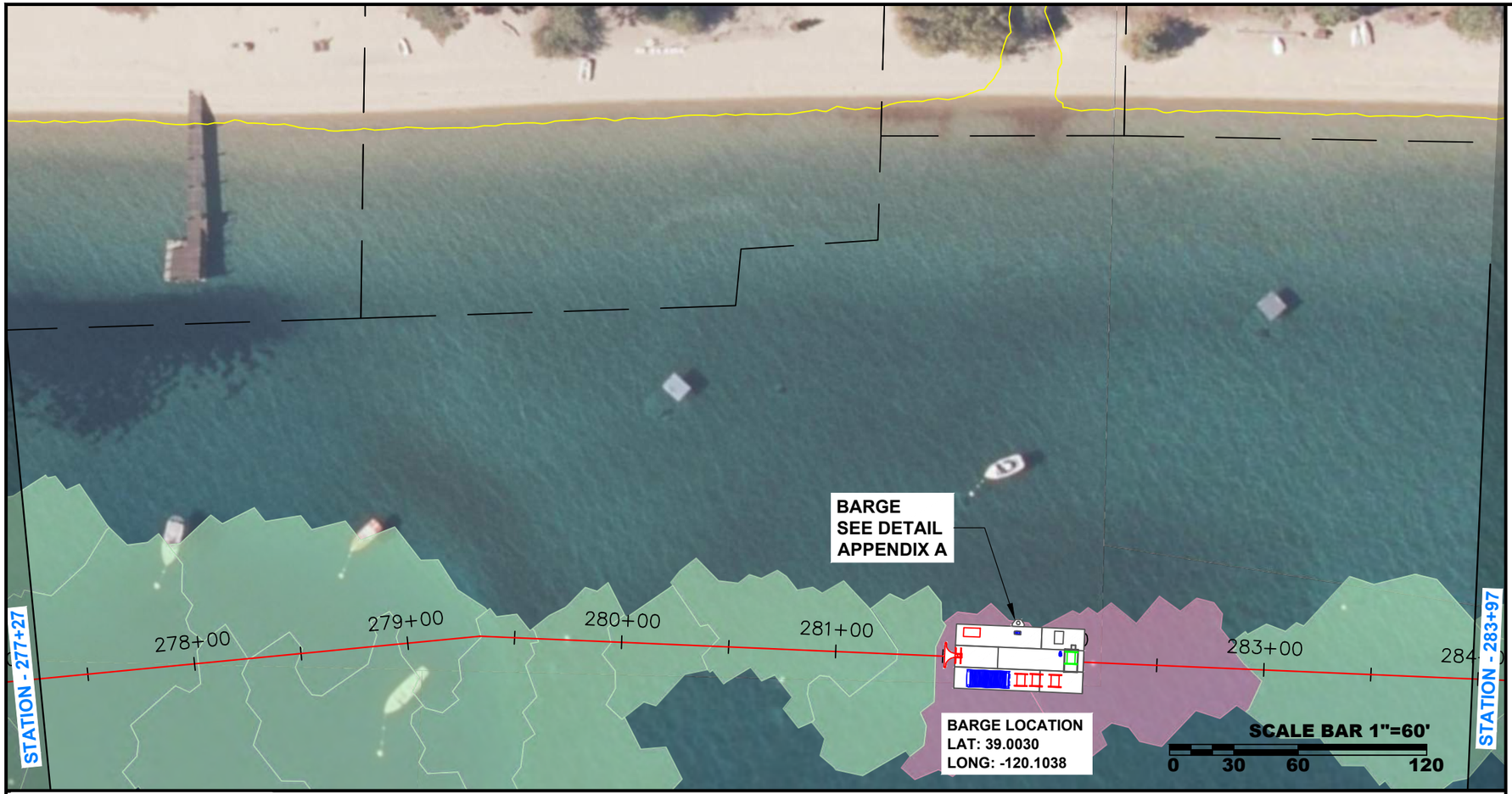
ENG'R: JASON PARNHAM TEL.: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

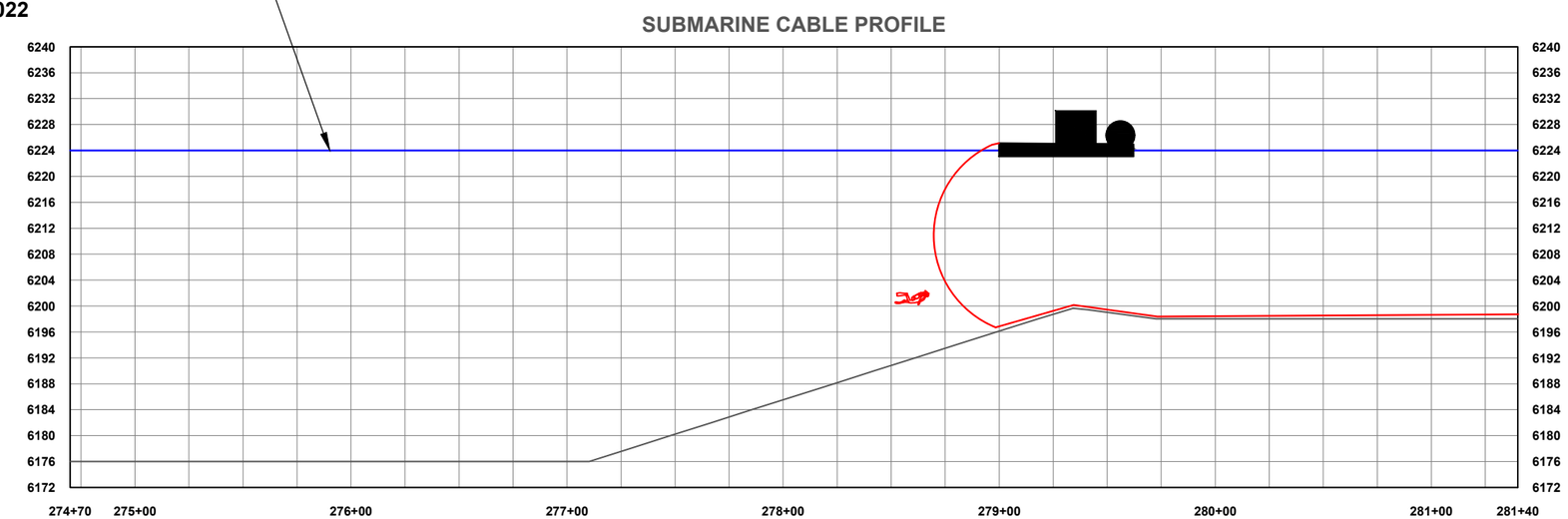
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 43 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

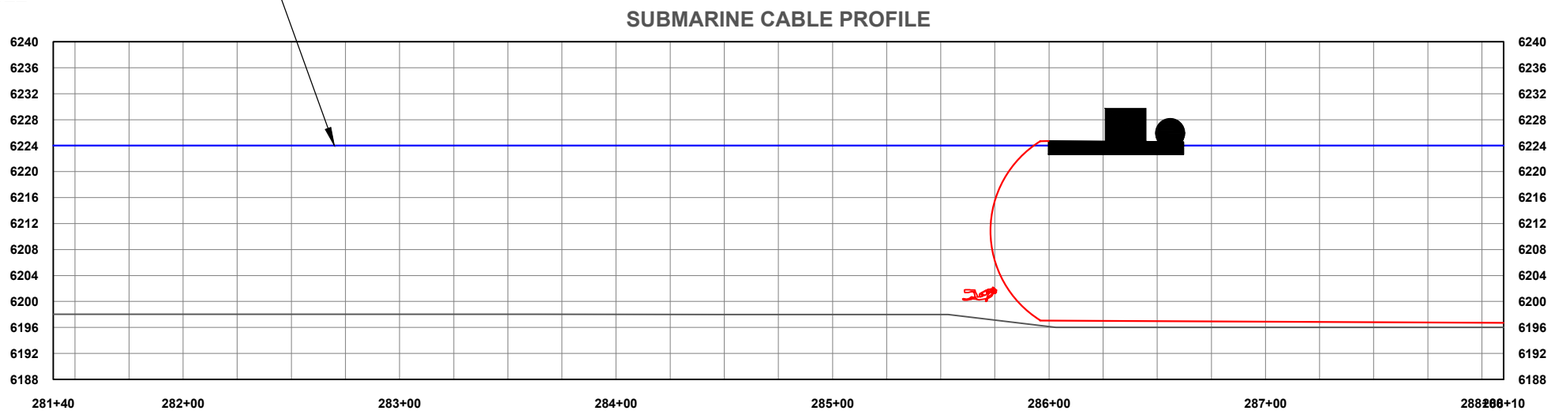
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 44 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

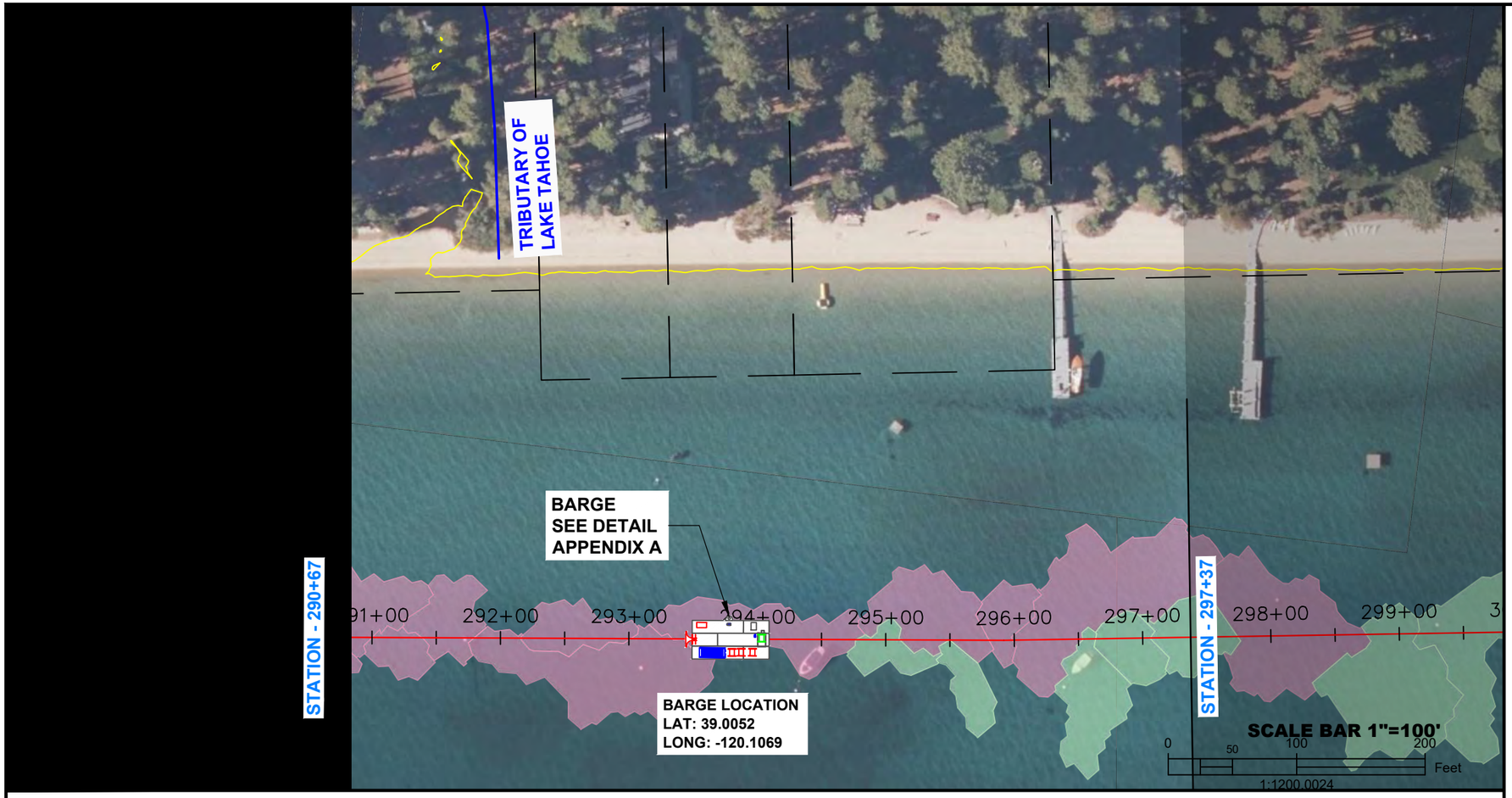
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

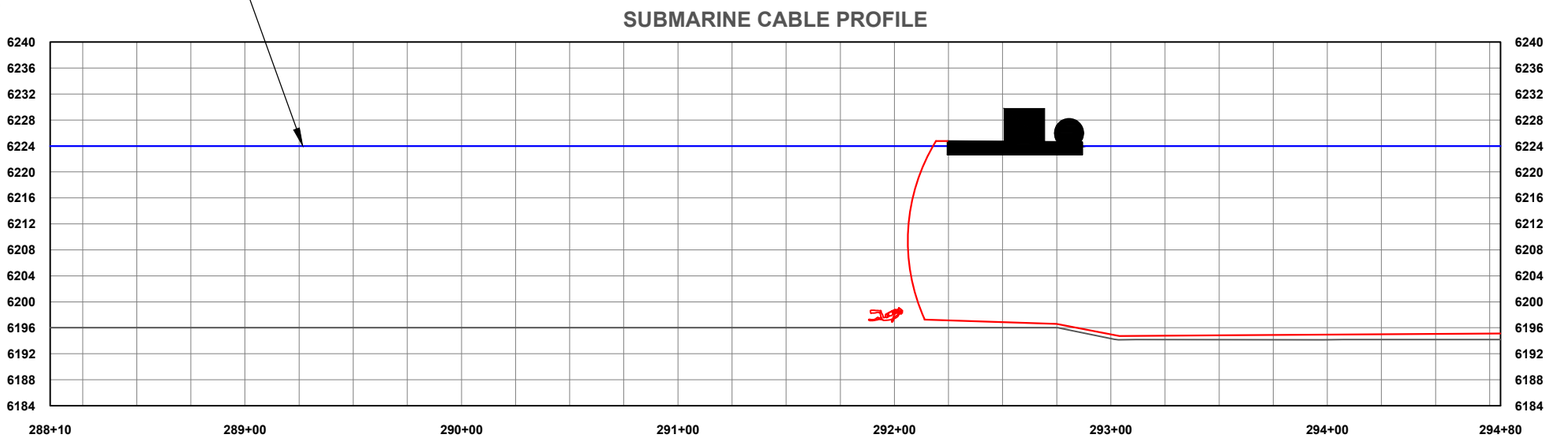
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 45 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

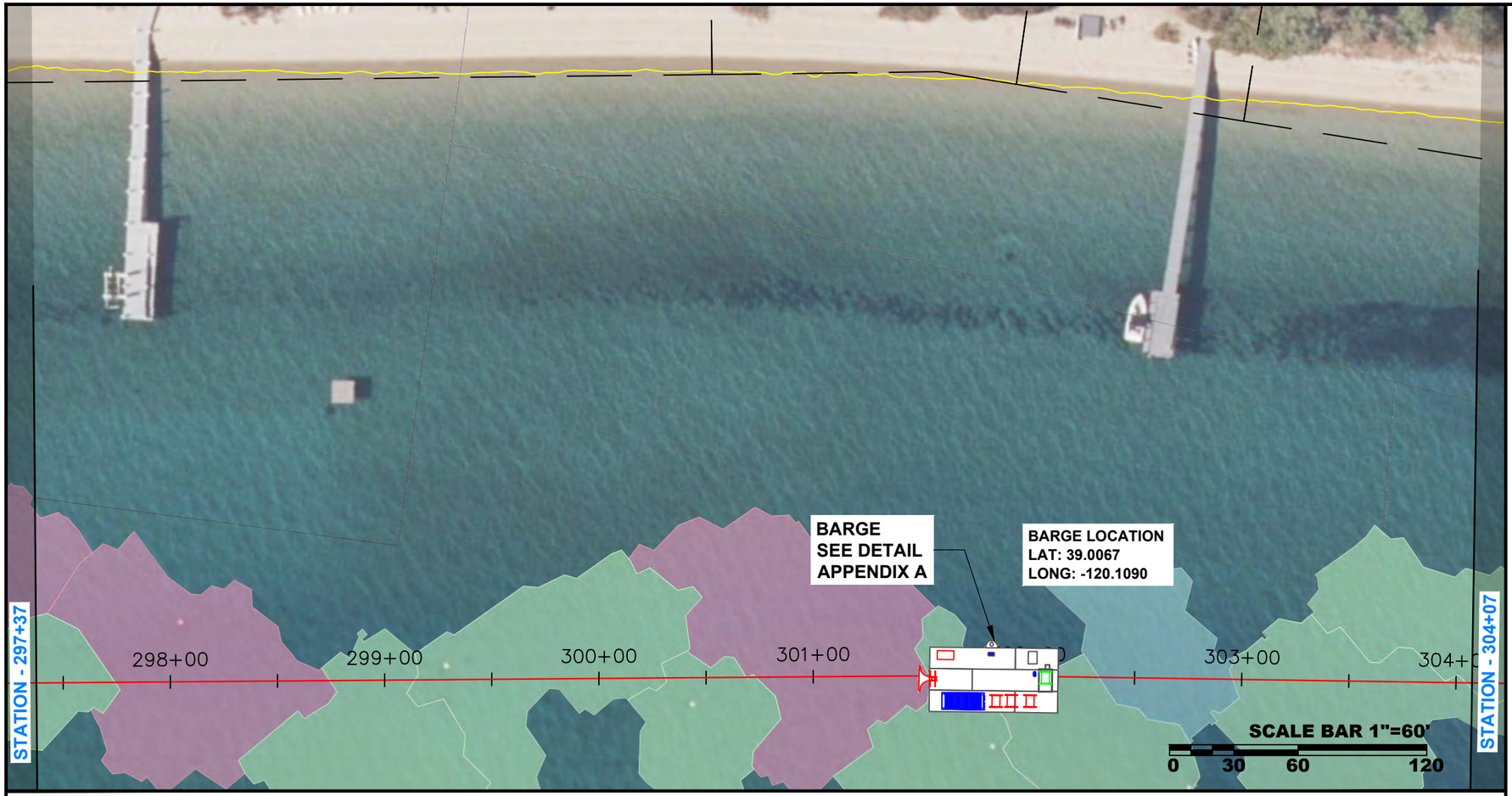
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

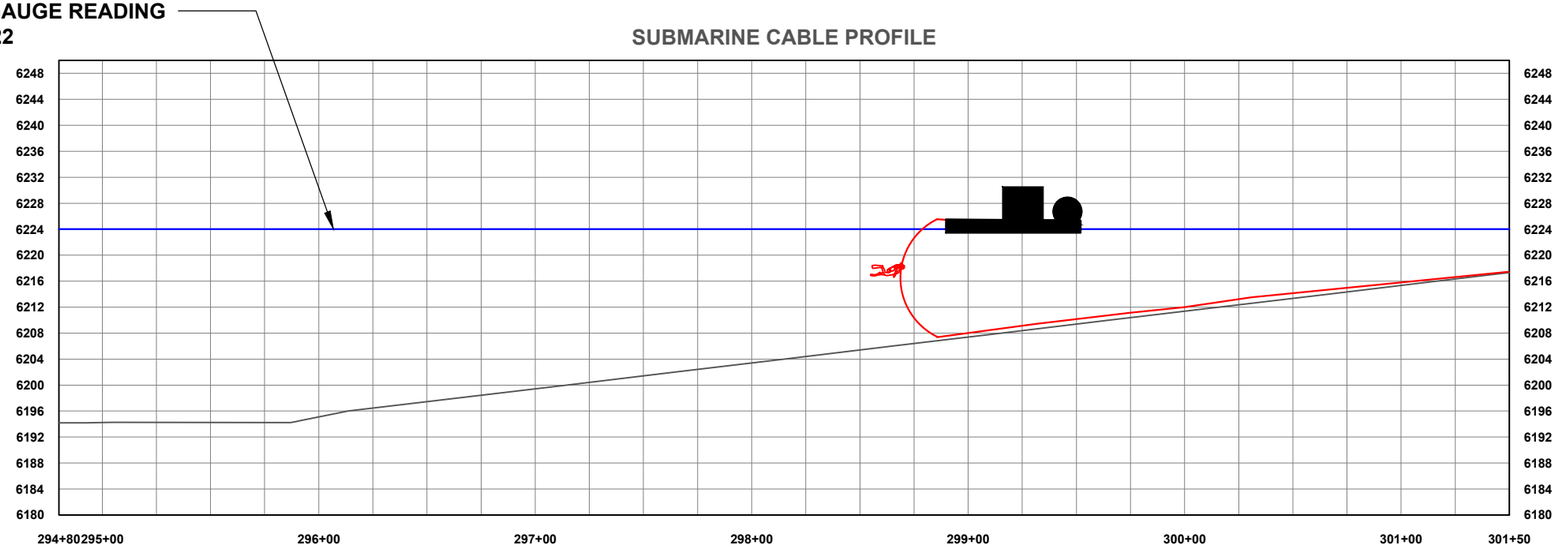
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 46 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

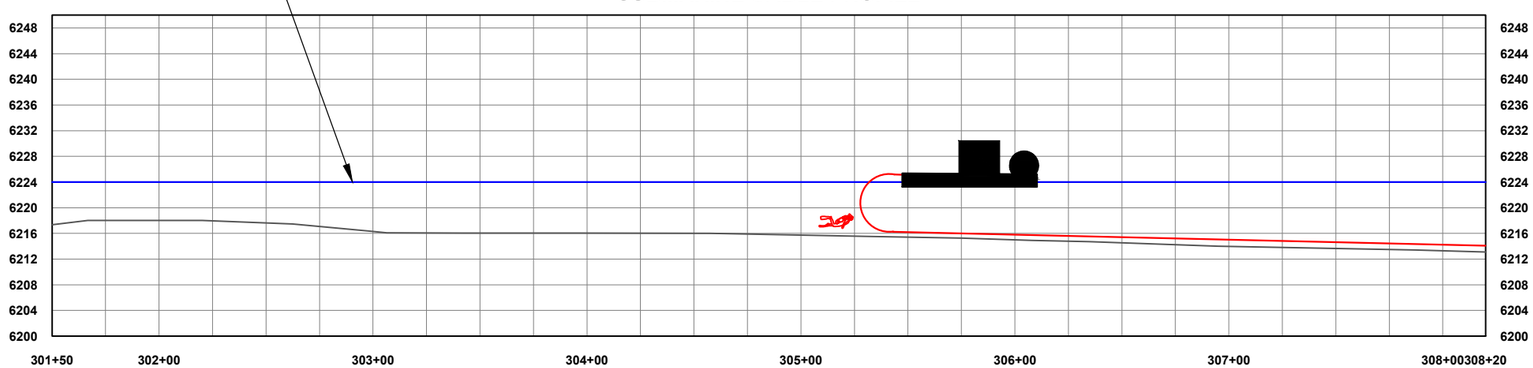
DATE: 4/19/2022

DWG 47 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

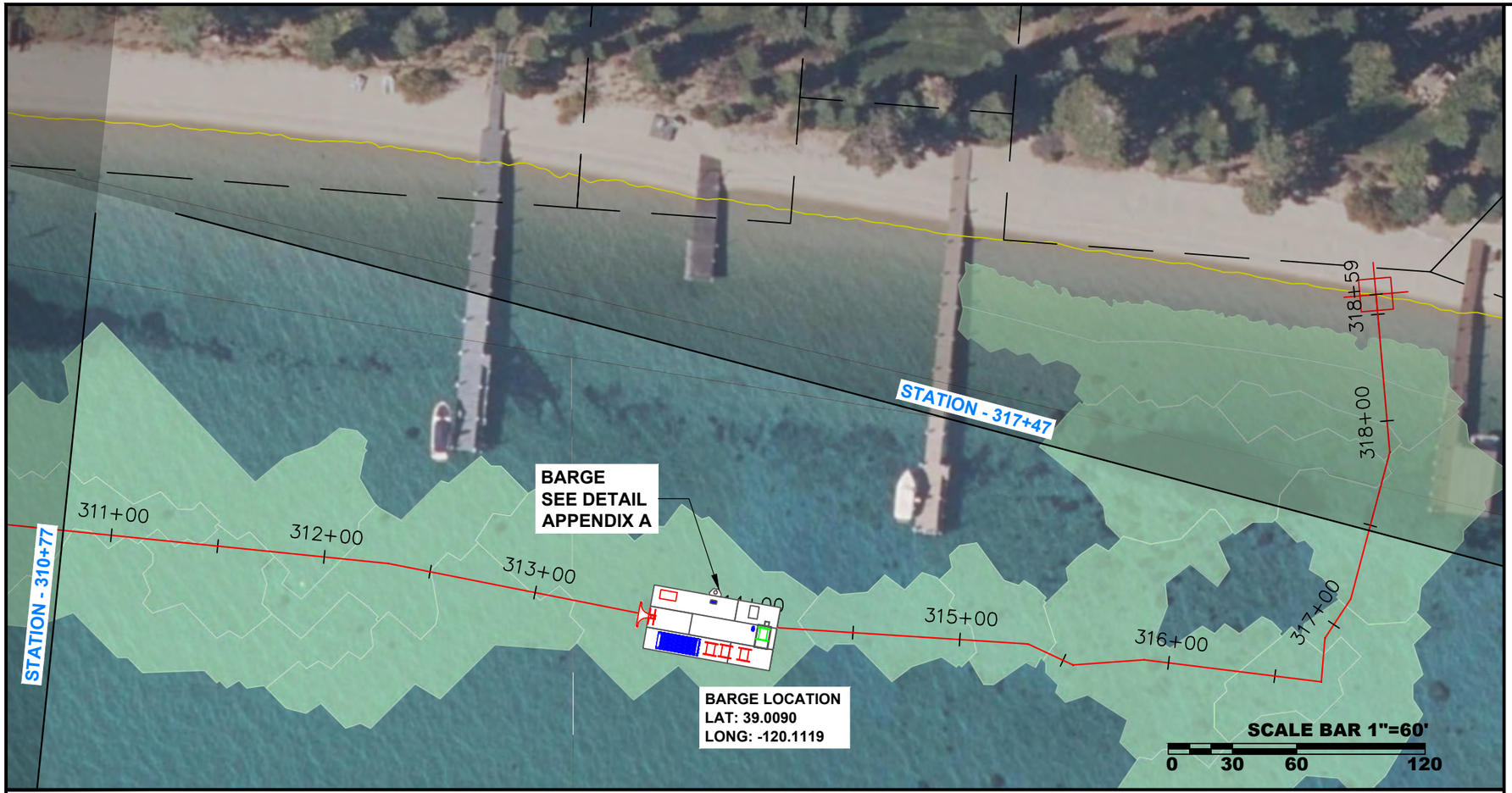
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

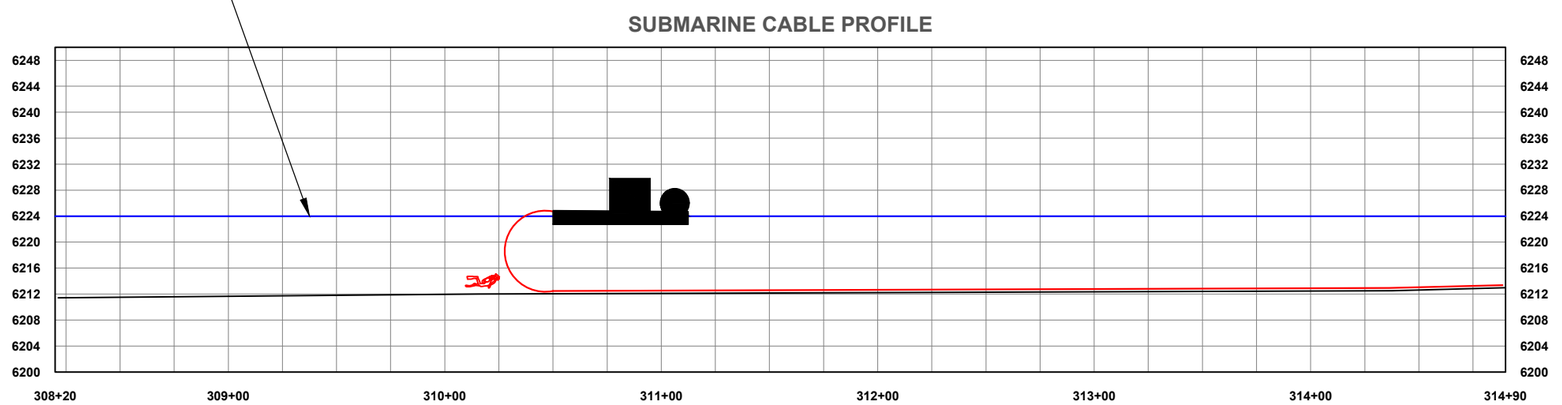
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 48 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

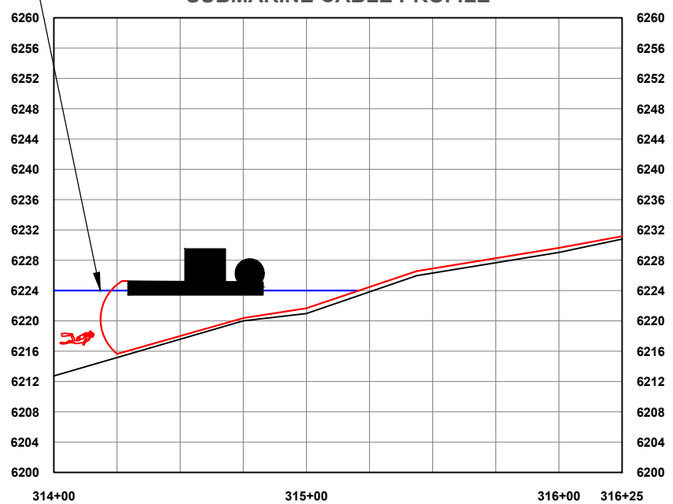
DATE: 4/19/2022

DWG 49 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

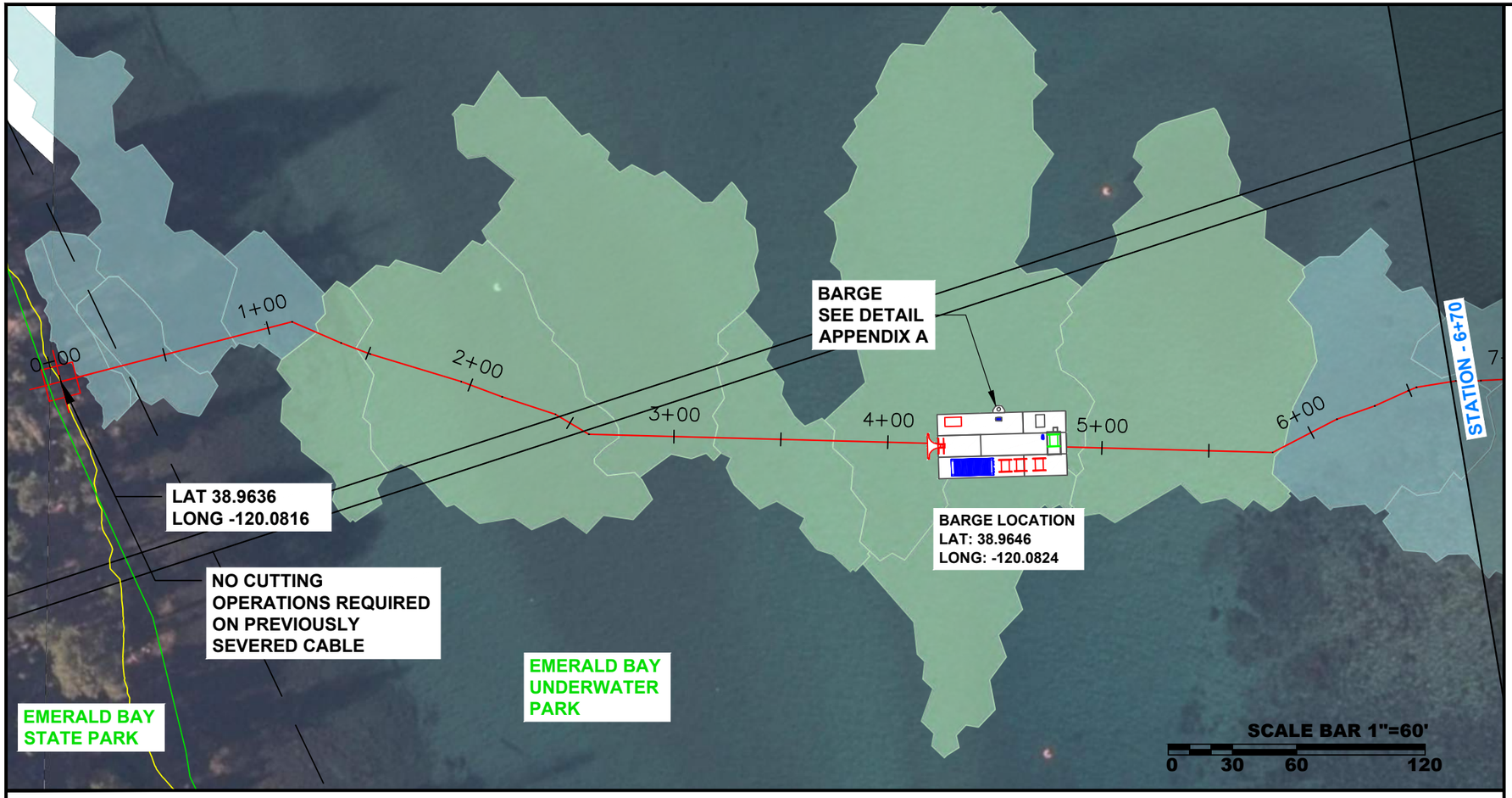
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

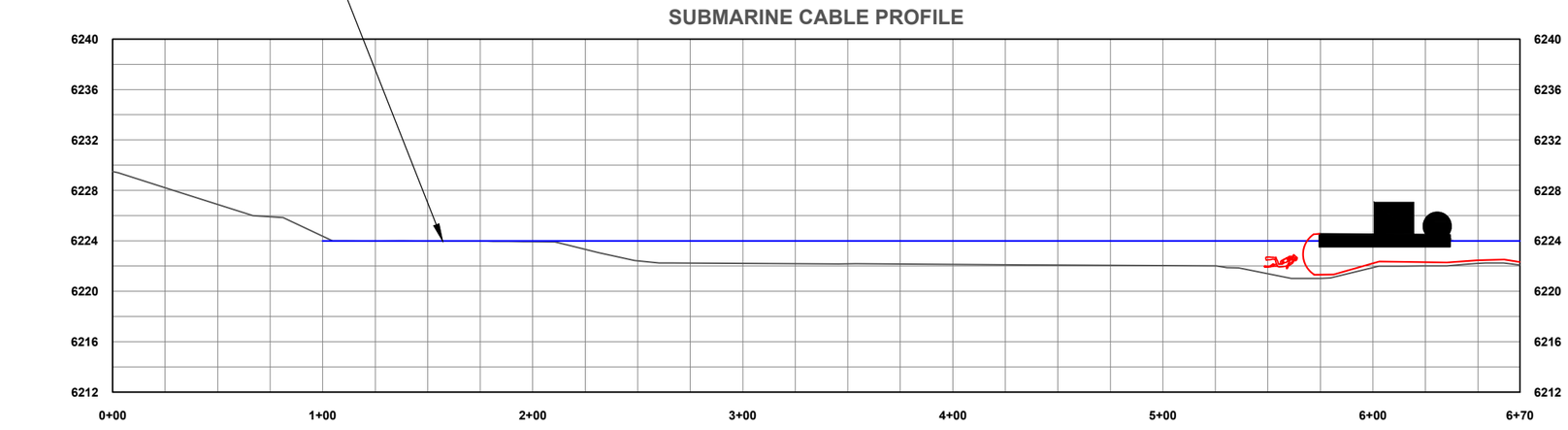
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 50 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

N W S E

PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

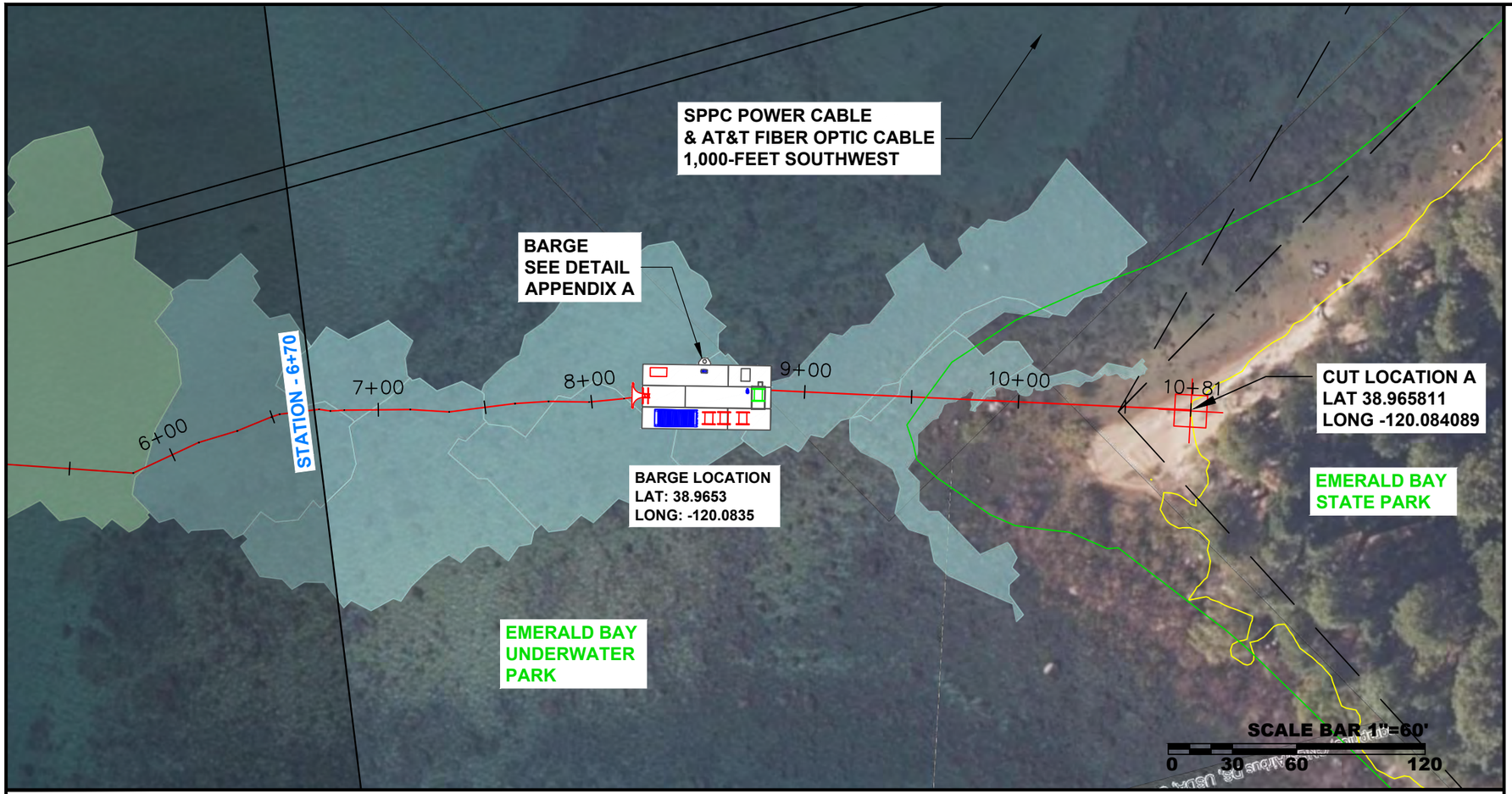
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

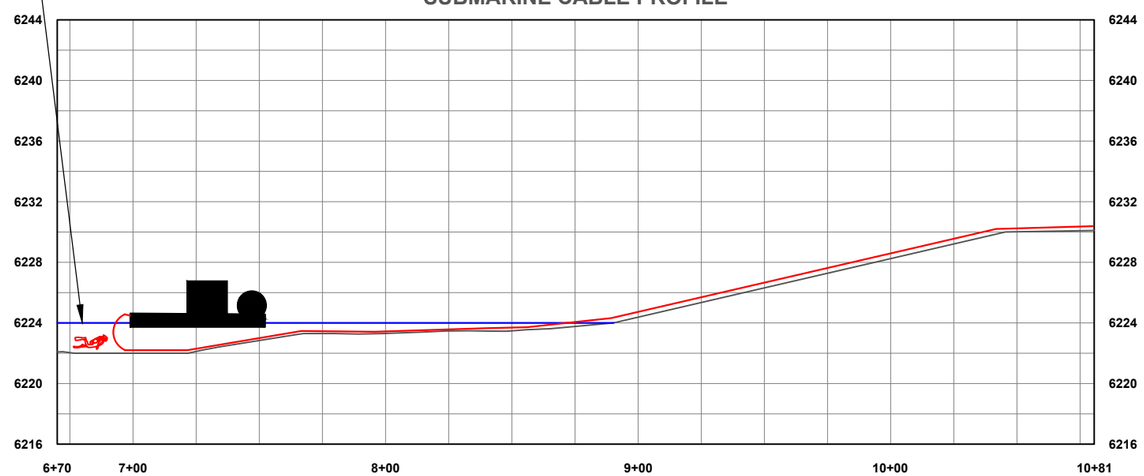
DATE: 4/19/2022

DWG 51 OF 52



CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

SUBMARINE CABLE

HIGH WATER LINE

STATE PARK BOUNDARY

PARCEL BOUNDARY

STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

PREPARED BY: S. RODRIGUEZ TEL.: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

ENG'R: JASON PARNHAM TEL.: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

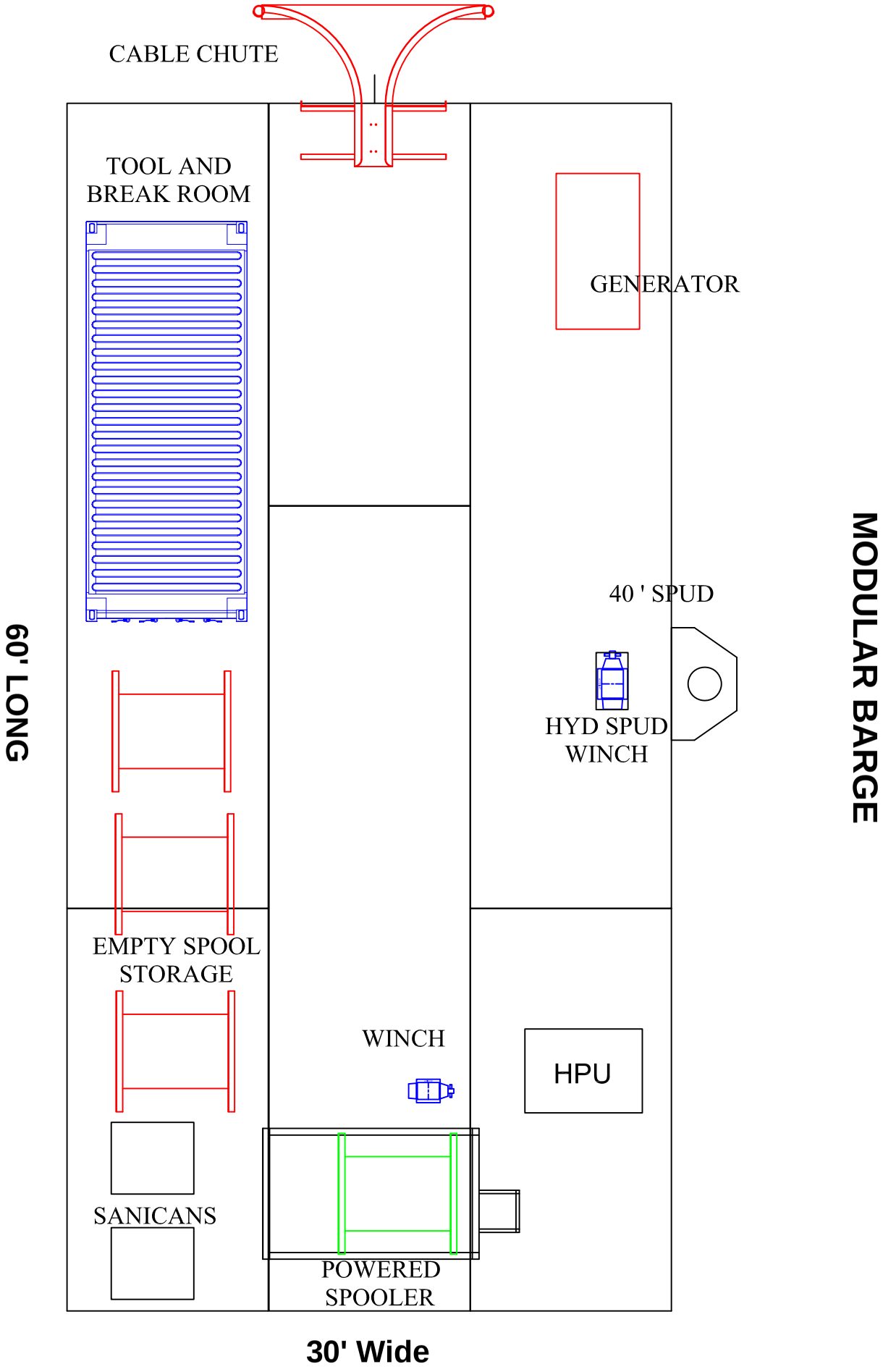
PROJECT NO.: A020LET

DATE: 4/19/2022

DWG 52 OF 52

PLAN SET - APPENDIX A

BARGE DETAIL


CABLE CHUTE
TOOL AND
BREAK ROOM
GENERATOR
40 ' SPUD
HYD SPUD
WINCH
EMPTY SPOOL
STORAGE
WINCH
HPU
SANICANS
POWERED
SPOOLER
60' LONG
MODULAR BARGE
30' Wide

PLAN SET - APPENDIX B

CUT LOCATION PHOTO LOG

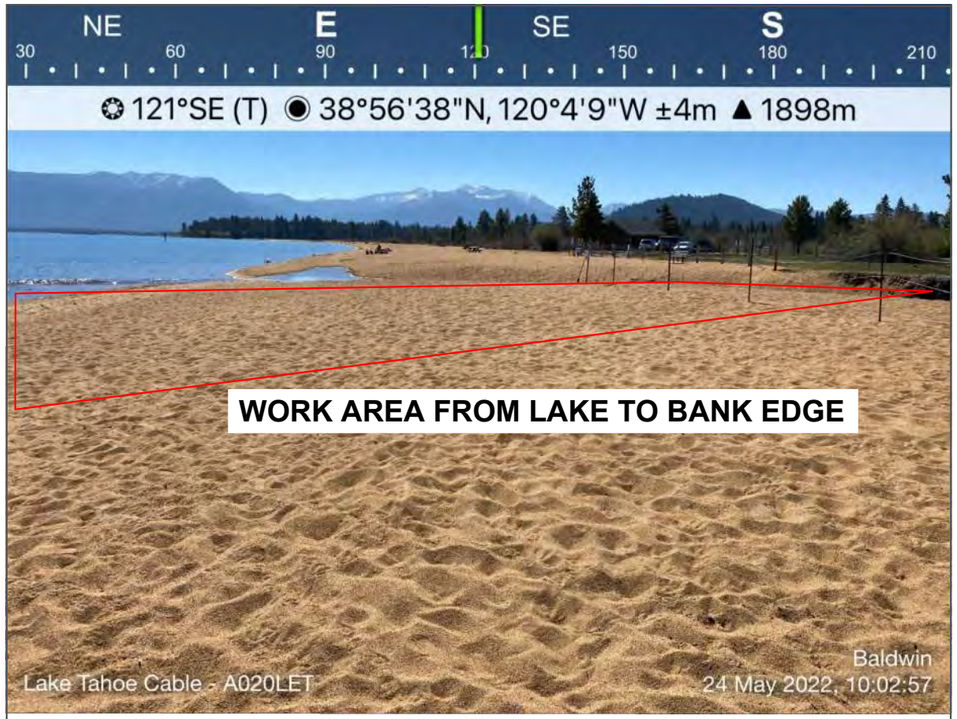


FIGURE 1A. BALDWIN BEACH WORK AREA

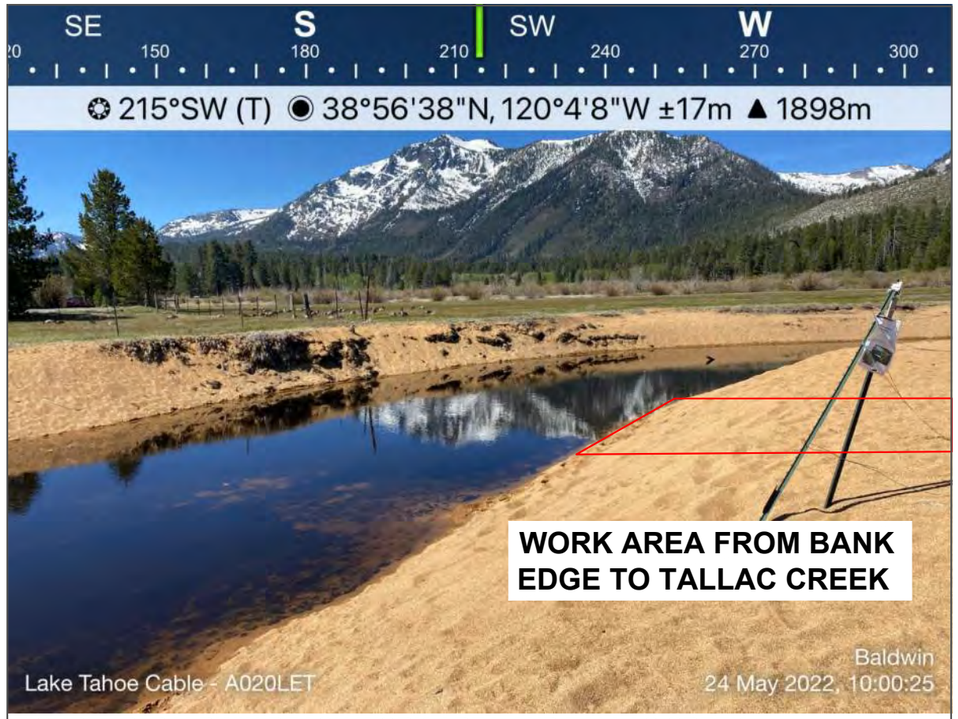


FIGURE 1B. BALDWIN BEACH WORK AREA AND TALLAC CREEK

CUT LOCATION #1 - BALDWIN BEACH

Work will occur from the edge of Lake Tahoe upslope to the inland edge of Tallac Creek. Equipment access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the beach for the excavator to enter and exit the work site. The cable will be exposed using an excavator proceeding from the lake edge to the top of the beach (Figure 1a) and then down to the lake edge of Tallac Creek (Figure 1b). At the inland edge of Tallac Creek, the cable will be hand excavated at the fence line and then cut and capped (Figure 1c). Once cut, the cable will be removed by pulling it onto the barge. Silt fencing will be installed along both edges of the creek to ensure no sediment enters the creek. The excavated areas will be filled with native soil and the topography returned to original grade. Storm water BMPs shall be provided down gradient of excavation, as required. BMP's may be removed after final stabilization of the ground disturbance.

CUT LOCATION #1 - BALDWIN BEACH

See text description to the left.



FIGURE 1C. CUT LOCATION #1

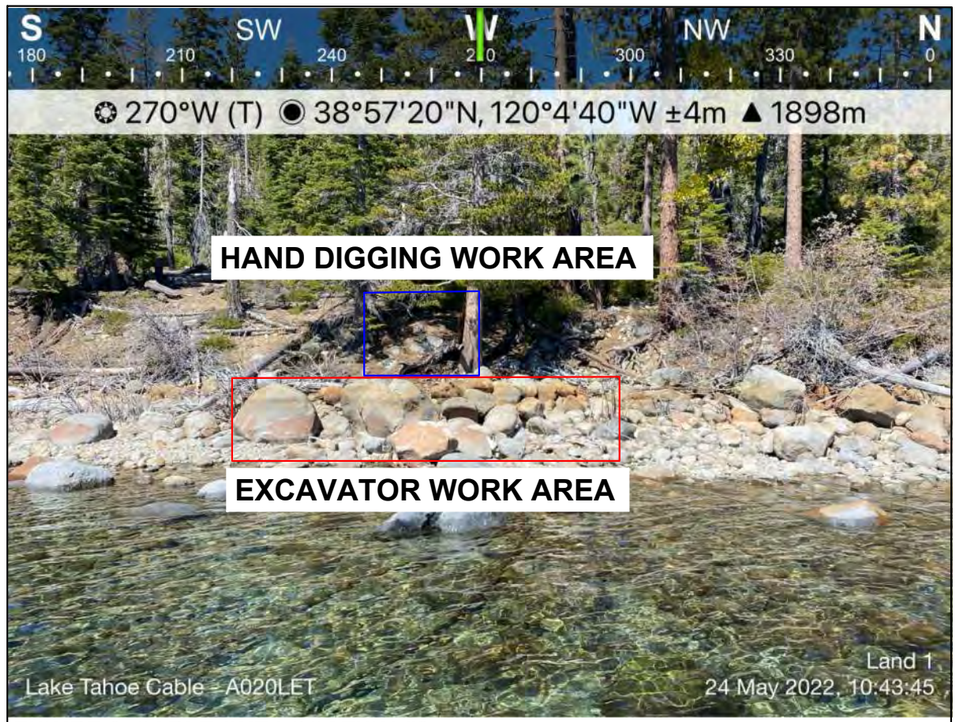


FIGURE 2. CABLE CUT LOCATION #2

CUT LOCATION #1 - BALDWIN BEACH

See text description on previous page

CUT LOCATION #2 - LAKE TAHOE

Work will occur from the edge of Lake Tahoe to the high water mark (Figure 2). The cable will be exposed using an excavator (to move boulders off of the cable) and shovels (to dig in sandy areas near splice point). Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable, pole and anchors will be removed. In case of limited barge accessibility, boulders may be removed using a sling and winch wire from the barge. Storm water BMPs shall be provided down gradient of excavation, as required. BMP's may be removed after final stabilization of the ground disturbance.

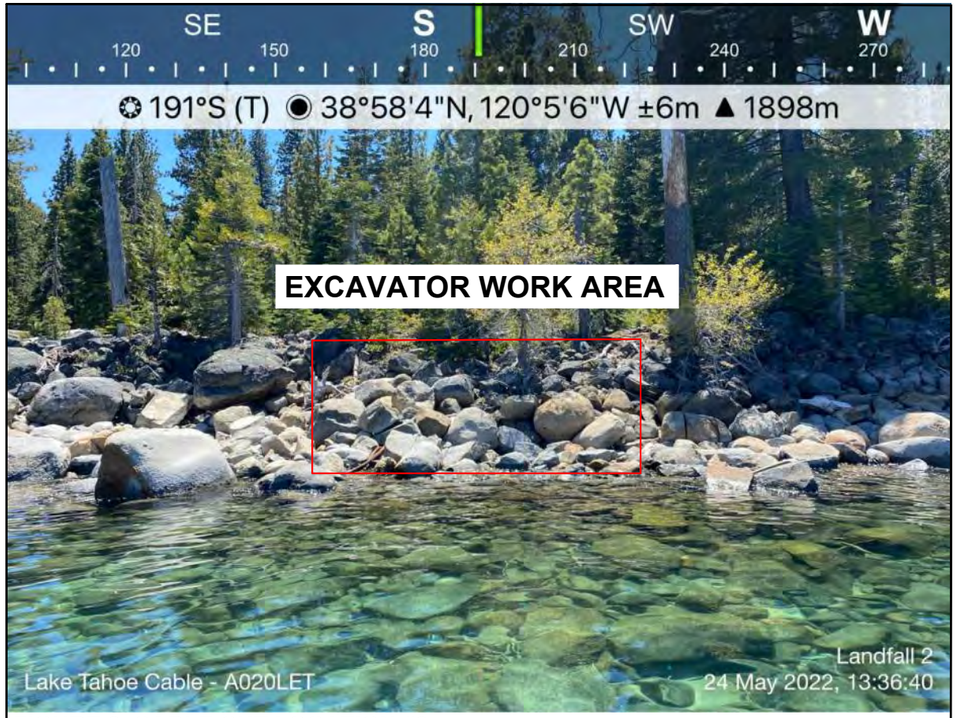


FIGURE 3. CABLE CUT LOCATION #3

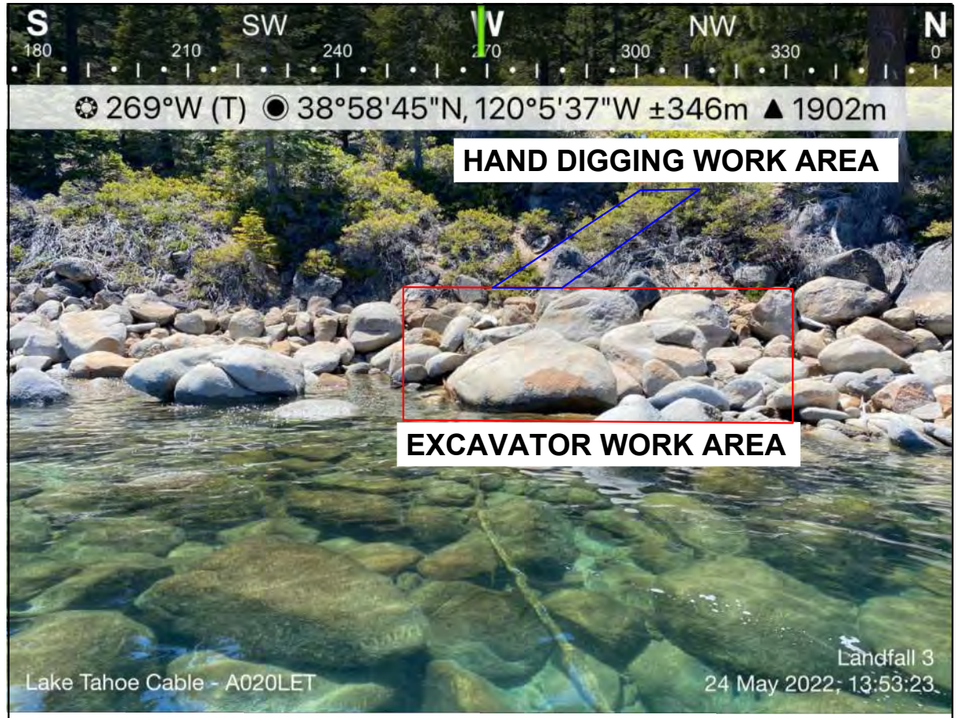


FIGURE 4. CUT LOCATION #4

CUT LOCATION #3 - LAKE TAHOE

Work will occur from the edge of Lake Tahoe to the high water mark (Figure 3). The cable will be exposed using an excavator (to move boulders off of the cable) and shovels (to dig in sandy areas near splice point). Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable will be removed. Storm water BMPs shall be provided down gradient of excavation. BMP's shall be removed after final stabilization of ground disturbance.

CUT LOCATION #4 - LAKE TAHOE

Work will occur from the edge of Lake Tahoe to the high water mark (Figure 4). The cable will be exposed using an excavator (to move boulders off of the cable) and shovels (to dig in sandy areas near splice point). Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable, pole, and anchors will be removed. Storm water BMPs shall be provided down gradient of excavation. BMP's may be removed after final stabilization of ground disturbance.

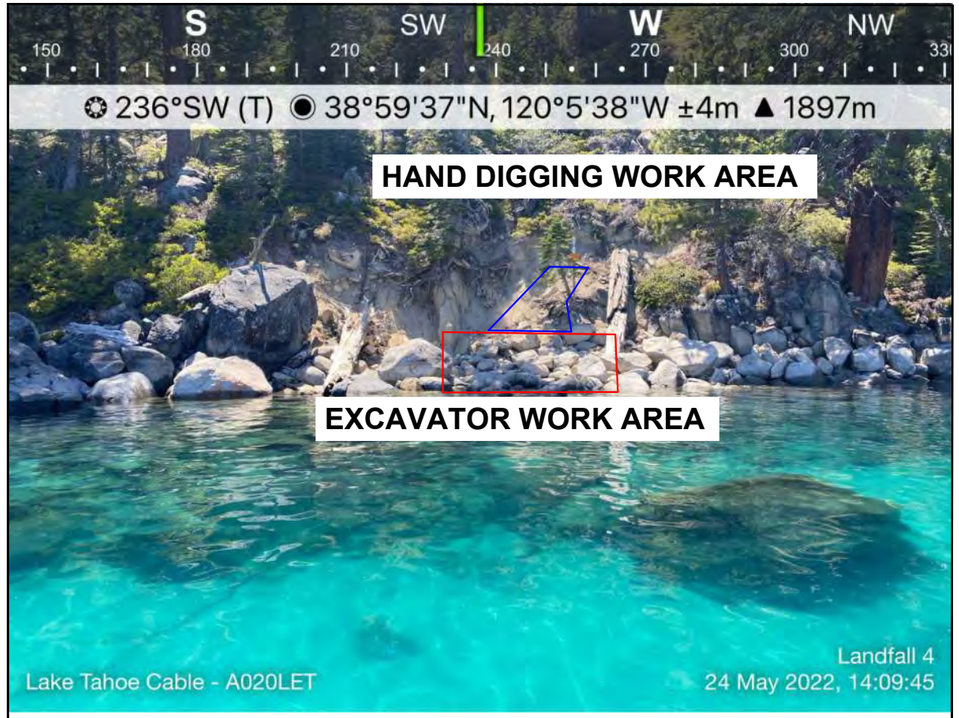


FIGURE 5. CUT LOCATION #5



FIGURE 6. CUT LOCATION #6

CUT LOCATION #5 - LAKE TAHOE

Work will occur from the edge of Lake Tahoe to the high water mark (Figure 5). The cable will be exposed using an excavator (to move boulders off of the cable) and shovels (to dig in sandy areas near splice point). Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable, pole, and anchors will be removed. Storm water BMPs shall be provided down gradient of excavation.

CUT LOCATION #6 - LAKE TAHOE

Work will occur from the edge of Lake Tahoe to the high water mark (Figure 6). The cable will be exposed using an excavator and shovels. Equipment and personnel access will be from the lake via a barge. The barge will get within a few feet of the shore and a ramp will be placed from the barge to the shore allowing the excavator to enter and exit the work site. Once on shore, the cable will be exposed using the excavator and hand digging, and then removed. Excavated soil will be placed back in the excavated area. Cable will be removed. Storm water BMPs shall be provided down gradient of excavation.

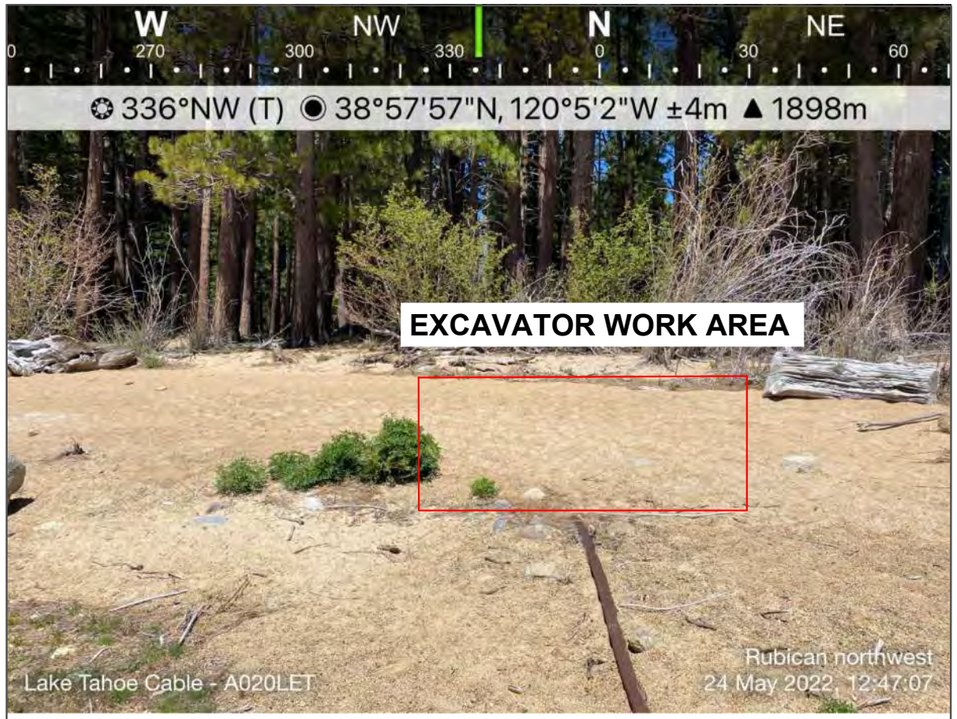


FIGURE 7. CUT LOCATION A

CUT LOCATION A - EMERALD BAY

Work will occur from the edge of Lake Tahoe to the high water mark (Figure 7). An excavator will not be used at this site. Personnel will access the site via barge or by foot. Once on shore, the cable will be exposed to the high water line using shovels and then cut and capped. Excavated soil will be placed back in the excavated area. The cable will be removed. Storm water BMPs shall be provided down gradient of excavation, as required. BMP's may be removed after final stabilization of the ground disturbance.

CUT LOCATION B - EMERALD BAY

The cable has been previously severed on the South side of the bay. One additional cut location may potentially be required contingent on the elevation of the cable. The cable must first be located and if it rests below the high water mark it must be severed up to that mark. Work will occur from the edge of Lake Tahoe to the high water mark. An excavator will not be used at this site. Personnel will access the site via barge or by foot. Once on shore, the cable will be exposed to the high water line using shovels and then cut and capped. Excavated soil will be placed back in the excavated area. The cable will be removed. Storm water BMPs shall be provided down gradient of excavation, as required. BMP's may be removed after final stabilization of the ground disturbance.

PLAN SET - APPENDIX C

STAGING AREA


PROJECT START
APPROXIMATELY
3.5 MILES WEST
TAHOE KEYS MARINA
PARKING LOT
Google Earth
Google Earth

PLAN SET - APPENDIX D

WATER QUALITY PROTECTION PLAN

WATER QUALITY PROTECTION PLAN

AT&T Project A020LET

Lake Tahoe

South Lake Tahoe, El Dorado County, California

Prepared for:

AT&T California

5250 S. Virginia Street, Suite 200

Reno, Nevada 89502



Prepared by:

R3X GROUP

June 2022

TABLE OF CONTENTS

1.0 OBJECTIVES AND AMENDMENTS 3

2.0 SITE DESCRIPTION 4

2.1 DESCRIPTION OF CONSTRUCTION 5

2.2 CONSTRUCTION SEQUENCE 5

2.3 ESTIMATE OF TOTAL PROJECT AREA AND DISTURBED AREA 5

3.0 ENGINEERING CONTROLS 6

3.1 EROSION AND SEDIMENT CONTROL 6

3.2 ADDITIONAL CONSTRUCTION SITE POLLUTION CONTROLS 7

4.0 IMPLEMENTATION, INSPECTION AND MAINTENANCE PLANS 13

4.1 KEEPING PLAN CURRENT 13

4.2 INSPECTION ACTIVITIES 13

4.3 INSPECTION SCHEDULE 14

APPENDICES

APPENDIX A – BEST MANAGEMENT PRACTICES

1.0 OBJECTIVES AND AMENDMENTS

The Water Quality Protection Plan (WQPP) has five (5) main objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are identified and managed.
2. All non-stormwater discharges are identified and either eliminated, controlled, or treated.
3. Site BMPs are implemented and result in the reduction or elimination of pollutant discharge from the construction activity to the best available technology (BAT) / best conventional technology (BCT) standard.
4. Stabilization BMPs designed to eliminate or reduce pollutants after construction is complete are implemented.
5. Protect the local ecosystem from invasive species.

The Water Quality Protection Plan is meant to be a “living document”, therefore, updated and additional information is expected to be added as the project progresses such as the following:

- Amendments,
- Adding BMPs as necessary,
- Increasing or decreasing the quantity of BMPs in the field that are already part of the Water Quality Protection Plan,
- Maintenance and repairs to BMPs.

This Water Quality Protection Plan shall be amended when:

- A change in construction or operations affects the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4), or
- Water Quality Protection Plan objectives to reduce or eliminate pollutant discharges have not been achieved.

2.0 SITE DESCRIPTION

Project: AT&T A020LET

Location: Lake Tahoe, South Lake Tahoe, El Dorado County, CA

AT&T California proposes the removal of two lengths of submarine telecommunications cable in Lake Tahoe and Emerald Bay. The longest cable is approximately 6-miles long and runs along the southwestern shore of Lake Tahoe. The cable stretches from Baldwin Beach past Rubicon Point near Lester Beach. Most the of the cable resides in the Emerald Bay and DL Bliss Underwater State Parks. This 6-mile cable comes up on shore at total of 6 times. The second cable rests at the mouth of Emerald Bay and spans approximately 1,000-feet. The shorter cable extends between the shores of Emerald Point and Eagles Point and lies in the Emerald Bay Underwater Park. The project area for both cables lie within the Lake Tahoe Basin Management Unit of the USDA Forest Service. The cables largely rest on the lakebed, not within the substrate, and measure approximately 4-inches in diameter.

Portions of the cable on land will be accessed from the barge from which a technician will approach the cut location on foot. Cable segments on shore are buried 4-6-inches. Sections of the cable may lie beneath large boulders, a mini excavator staged on the barge will be used to temporarily remove them. To remove the cable, it will be exposed at the high water line at 6,229.1-feet with hand tools or an excavator that will access the location by ramp from the barge, at which the cable will be severed. The cable will be cut with a reciprocating saw. A container will be used to collect particulates generated from the cable cutting operations. To minimize airborne cable particles, the cable will be kept wet during cutting operations. The cut end of the cable will be tied onto a steel cable and winched onto the barge, then spooled into segments. The portion above the high water line will be covered by a 3M shrink cap and reburied with hand tools. A touchdown monitor will observe the operation underwater and collect cable fragments that fall to the lakebed. A technician on the barge will skim fragments from the surface. Collected cable fragments will then be disposed into a container onboard. A technician will be responsible for monitoring plume events through visual observation and a turbidity meter.

2.1 DESCRIPTION OF CONSTRUCTION

Construction activities include the following:

1. Removal of submarine cable from lakebed

   The cut end of the cable will be tied onto a steel cable and winched onto a barge, then spooled into segments.

2. Terrestrial cable cutting

   The cable will be cut at six locations. To remove the cable, it will be exposed at the high water line at 6,229.1-feet with hand tools or an excavator that will access the location by ramp from the barge, at which the cable will be severed. The cable will be cut with a reciprocating saw.

3. Collection of cable fragments

   The cable will be cut with a reciprocating saw. A container will be used to collect particulates generated from the cable cutting operations. To minimize airborne cable particles, the cable will be kept wet during cutting operations. A touchdown monitor will observe the operation underwater and collect cable fragments that fall to the lakebed. A technician on the barge will skim fragments from the surface. Collected cable fragments will then be disposed into a container onboard.

2.2 CONSTRUCTION SEQUENCE (SS-01)

Project completion will require approximately 30 days. Specific beginning and ending points are to be determined. Typically, construction will progress in a linear manner. Construction shall be scheduled in a manner that minimizes the potential for pollutant discharges to receiving waters.

2.3 ESTIMATE OF TOTAL PROJECT AREA AND DISTURBED AREA

Ground disturbance will occur on terrestrial areas where the cable is excavated for removal. The following table is an estimate of total ground disturbance:

Work Activity	Linear Ft.	Disturbance per LF	Total Disturbance (Sq. Ft.)
Open Excavation	600	1 ft^2	600 ft^2
Hand Digging	6	10 ft^2	60 ft^2
Total Disturbance			**660 ft^2 or < 0.01 acres**

3.0 ENGINEERING CONTROLS

3.1 EROSION AND SEDIMENT CONTROL

Proposed BMPs are provided in the Water Quality Protection Plan, Attachment A.

All control measures must be properly selected, installed, and maintained in accordance with relevant manufacturers' specifications and good engineering practices as described in **Attachment A**. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the Operator must replace or modify the control for site conditions as soon as practicable.

3.1.1 Stabilization Practices

Soil stabilization, also referred to as erosion control, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Soil stabilization BMPs protect the soil surface by covering and/or binding soil particles.

Sufficient soil stabilization materials will be maintained onsite to allow implementation in conformance with this Water Quality Protection Plan. This includes implementation requirements for active and non-active areas that require deployment before the onset of precipitation.

Preservation of Existing Vegetation (SS-02)

Disturbance of vegetation will be limited to areas of excavation necessary to perform the scope of work. Existing vegetation outside the work area will be preserved.

Permanent Stabilization

The Contractor must provide permanent stabilization upon completion of the excavation work at each cut location. Permanent stabilization shall be achieved by restoring the site to preconstruction conditions. Soils should be returned to their excavation and tamped to their original compaction. Boulders moved during the cable removal process shall be returned to their original location.

3.1.2 Sediment Control

Sediment controls are structural measures that are intended to complement and enhance the selected soil stabilization (erosion control) measures and reduce sediment discharges from construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water.

Sediment control BMPs shall be installed at all appropriate locations along the site perimeter.

Fiber rolls (SC-05)

Fiber rolls may be used downgradient of excavations where they may be appropriately staked into the ground. Fiber rolls must be premanufactured and filled with weed-free straw or other fiber that does not have the potential to introduce invasive species. Fiber rolls used within the jurisdiction of the Lahontan RWQCB must be made entirely of biodegradable materials.

Sandbag Barrier (SC-08)

Sandbag barriers may be used downgradient of excavations where staking of BMPs into the ground is not possible. These areas would include cut locations primarily consisting of unlevel ground made up of rocks or boulders.

3.1.3 Tracking Control

Construction activities within existing roadways, access roads, and parking lots will be limited as much as possible. The Contractor is responsible for ensuring that construction equipment and vehicles do not come into contact with disturbed soils and/or do not carry soil onto paved surfaces. Access points for the vehicles will be monitored daily by the Contractor for soil/debris and cleaned as required. Access locations will be selected so as to minimize the possibility of carrying soil/debris onto pavements.

Street Sweeping (SC-07)

Sediment will be manually swept from paved areas as necessary at the end of each workday and prior to forecasted storms.

3.1.4 Stockpile Management (WM-03) and Wind Erosion Control

The perimeter of soil stockpiles shall be protected by the use of silt fence or filter socks. Soil stockpiles shall be aligned to minimize the amount of surface area exposed to wind direction and be covered or moistened with water anytime NOAA forecasts wind gusts that can cause fugitive dust during work days. Equipment contact with disturbed areas shall be minimized. Disturbed soil areas shall be promptly backfilled and stabilized.

3.2 ADDITIONAL CONSTRUCTION SITE POLLUTION CONTROLS

Staging Area

The Contractor shall communicate the proposed location of staging area(s) to all agencies involved in the approval of the project. The staging area shall implement the applicable best management practices and good housekeeping measures discussed herein to minimize the potential for the discharge of pollutants to receiving waters.

Material Delivery and Storage (WM-1)

The following substances may potentially be present during construction but will not be stored onsite: Fuels, Lubricants, Oils, Hydraulic Fluids. These substances will be kept in their original containers with the original manufacturer's label and Safety Data Sheets (SDSs) will be retained. Manufacturers' recommendations for proper use and disposal will be followed. All maintenance activities involving fuels, lubricants, oils, and hydraulic fluids shall be performed offsite, in a location where BMPs can be appropriately deployed to eliminate transport of pollutants to receiving waters.

Material Use (WM-2)

The following are material management practices that will be used to reduce the risk of spills or other accidental exposure of the materials and substances described above to storm water runoff.

Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project: An effort will be made to have only the amount of product sufficient to perform the work task for that day. All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, within the support vehicles or equipment. Substances will not be mixed with one another unless recommended by the manufacturer. Whenever possible, all of a product will be used before disposing of the container.

Hazardous Products

All hazardous products will be disposed of in the manner specified by local or state regulation or by the manufacturer. The individual who manages the day-to-day site operations will be responsible for implementing these procedures. These practices will be used to reduce the risks associated with hazardous materials. Products will be kept in original containers unless they are not re-sealable in which case the original container will be placed in a re-sealable container. If surplus product must be disposed, the manufacturers' or local and State recommended methods for proper disposal will be followed.

Product Specific Practices

Petroleum Products: All onsite vehicles and equipment will be monitored for leaks and receive regular preventative maintenance off site to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. Petroleum containers will be stored within an approved secondary containment when not in immediate use. In the event of a ruptured hydraulic line or leaking tank, the Contractor is responsible for cleaning, containerizing, and disposing of any impacted material resulting from the leak.

Spill Prevention and Control (WM-4)

The following practices will be followed for spill prevention and cleanup: Manufacturers' recommended methods for spill cleanup will be clearly posted, and site personnel will be made aware of the procedures, location of the information and cleanup supplies. Materials and equipment necessary for spill cleanup will be kept in a material storage area in a vehicle. Equipment and materials will include, but not limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose. All spills will be cleaned up immediately after discovery. The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance. Additionally, in the event of a significant spill, the nearest Emergency Response Team will be notified by dialing 911. The Spill Prevention Plan will be adjusted to include measures to prevent this type of spill from reoccurring, and how to clean up the spill if there is another. A description of the spill, what caused the spill, and the measures used to clean up the spill will also be included.

The Site Superintendent responsible for day-to-day operations will be the Spill Prevention and Cleanup Coordinator. He may designate at least one other site person who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of the prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the Site Superintendent's vehicle.

Solid Waste Management (WM-5)

All waste materials shall be collected onsite and placed in a waste receptacle daily. Wastes such as diesel, gas, or oil spill cleanup or drip pans will be kept in a separate labeled container offsite. The containers will meet all local, State and federal solid waste management regulations. The Contractor will utilize the services of a licensed solid waste management company. All trash and debris will be hauled to approved landfill. No construction waste will be buried onsite. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be made available to all personnel and the individual who manages the day-to-day site operations will be responsible for implementing these procedures.

Hazardous Waste Management (WM-6)

All hazardous waste will be disposed of in the manner specified by local or state regulation. All potentially hazardous waste caused by vehicle equipment leaks will be tested by an ELAP certified lab, properly disposed of in the manner specified by local or State regulation or by the manufacturer, and a receipt from a properly permitted facility kept for AT&T’s records. Water, soil, aggregate, or other materials contaminated by fluid leaks from vehicles will be handled and stored as a potentially hazardous waste. All potentially hazardous waste will be tested by an ELAP certified lab, properly disposed of in the manner specified by local or State regulation or by the manufacturer, and a receipt from a properly permitted facility retained.

Sanitary/Septic Waste Management (WM-9)

Contractors are to utilize public facilities or portable toilets located onsite.

Vehicle and Equipment Cleaning (NS-8)

Vehicles and equipment will not be cleaned onsite. Vehicles shall be cleaned at the Contractor's commercial yard.

Vehicle and Equipment Fueling (NS-9)

Vehicles will not be fueled onsite except in emergency situations. Fuel quantities will be limited to the minimum amount needed to bring the vehicle to working order and removed from the project site. Equipment may be fueled onsite using small, portable containers with a second person present with readily available spill control equipment.

Vehicle and Equipment Maintenance (NS-10)

Vehicle and equipment maintenance shall not be performed onsite except in emergency situations.

Material and Equipment Use Over Water (NS-13)

Vehicle and equipment cleaning or maintenance will not be performed onsite. Vehicles and equipment will not undergo maintenance except in emergency situations. All equipment repairs involving the potential for fluid leaks should be conducted in the Contractor's yard. Implement this BMP in accordance with all necessary permits required for construction within or near receiving waters, such as the Lahontan Regional Water Quality Board, U.S. Army Corps of Engineers, Department of Fish and Wildlife, Tahoe Regional Planning Agency, and other local permitting agencies.

Place drip pans and absorbent materials under equipment and vehicles and ensure that an adequate supply of spill cleanup materials is onsite in accordance with a spill response plan, if applicable. Ensure that staff are trained regarding the deployment of the spill response plan.

Drip pans shall be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is expected to be idle for more than one hour.

Install watertight curbs or toe boards to contain spills and prevent materials, tools, and debris from falling off the barge, platform, dock, etc.

Secure all materials to prevent discharges to receiving waters via wind.
Maintain vehicles and equipment in accordance with NS-10, "Vehicle and Equipment Maintenance." Remove leaking equipment from over the water and repair immediately.

Refer to WM-1, “Material Delivery and Storage” and WM-4, “Spill Prevention and Control.”

Inspect vehicles and equipment for leaks and spills daily when they are in operation, make necessary repairs.

Inspect equipment routinely and repair equipment as needed (e.g., worn or damaged hoses, fittings, gaskets).

Touchdown Monitor

A touchdown monitor shall be assigned to observe the subsurface cable removal process. The touchdown monitor will have the responsibility of monitoring turbidity and collecting cable fragments released during the extraction from the lakebed. The touchdown monitor shall assist the barge operator with removing the cable in a manner that preserves the integrity of the structure and minimizes fragmentation or release of frangible material.

Water Skimming

A technician shall be assigned to skim floating cable fragments during the cable removal process. Collected cable fragments will then be disposed into a container onboard and disposed at approved waste facility.

Turbidity Monitoring

Water quality threshold standards adopted by TRPA set a target to return the lake to the transparency observed in the late 1960s. The quality of water in the nearshore area is tracked by measuring turbidity, which is an indication of the cloudiness of water expressed in Nephelometric Turbidity Units. Cable removal operations could affect water quality by increasing turbidity and releasing nutrients into the surrounding water. Best management practices to minimize sediment disturbance shall be followed. Turbidity shall be monitored by the use of an onboard real-time continuous data logger and visual monitoring to ensure that sediment disturbance and consequent mobilization into the water column is minimized during in-water work. Turbidity thresholds shall be set by the Tahoe Regional Planning Agency and/or Lahontan Regional Water Quality Board. Work must cease in the event turbidity limits are exceeded. The methods or pace of the cable removal must be adjusted to achieve compliance with permit limits for turbidity. The turbidity meter shall be calibrated prior to arriving onsite. Turbidity logs shall be provided to jurisdictional agencies upon request.

Turbidity Curtain

Cable removal operations could affect water quality by increasing turbidity and releasing nutrients into the surrounding water. Turbidity curtain barriers are useful when working on the shoreline in a small, localized area. The purpose of a turbidity curtain is to contain the dispersion of sediment in water. A turbidity curtain may be

employed at cable cut locations if the Contractor observes turbidity above acceptable threshold levels or visually observes abnormally cloudy water.

Invasive Species Management

Aquatic invasive species are introduced and spread by moving boating, fishing or other aquatic equipment that have been in contact with contaminated waterbodies to areas that do not have such species. The Contractor shall conduct decontamination washing in the Contractor's commercial yard prior arriving onsite. Upon arriving at Lake Tahoe, watercraft will be subject to inspections for invasive species by the Tahoe Regional Planning Agency, Tahoe Resource Conservation District, or marina staff who are certified to conduct such inspections. Watercraft will be subject to decontamination (washing) if the result of the inspection warrants such action.

Invasive plants have a significant environmental impact on California's native flora and fauna. As a result, prevention of their introduction into areas where they do not occur, and preventing expansion where they do, is critical. Construction activities are a common vector for transporting non-native seed and root material. The Contractor shall adhere to the Best Management Practices created by the California Invasive Plan Council and contained in the Project's Biological Survey Report. The complete manual can be downloaded at www.cal-ipc.org/resources/library/publications/tuc/.

The Contractor shall conduct decontamination washing of all equipment and tools in the Contractor's commercial yard prior to arriving onsite. Before equipment can be used, the approved Project Biologist will conduct a field inspection to monitor for plant material and soil. If plant material or soil is found, the equipment must be removed from the site and cleaned prior to returning. All individuals working on the Project must inspect clothing, footwear and gear before initiating work each day.

4.0 IMPLEMENTATION, INSPECTION AND MAINTENANCE PLANS

The Contractor shall designate an Inspector to perform inspections, perform maintenance and repair activities. The Inspector shall have the primary responsibility and authority to implement the Water Quality Protection Plan and ensure the project is in compliance with all local, state and federal water quality regulations.

Duties of the Stormwater Inspector include:

1. Ensuring full compliance with the Water Quality Protection Plan.
2. Implementing all elements of the Water Quality Protection Plan.
3. Conducting turbidity monitoring.
4. Conducting daily inspections.
5. Conducting pre-storm inspections for eminent rain events.
6. Conducting post-storm inspections for rain events.
7. Mobilizing crews to repair, replace, and/or implement additional BMPs due to deficiencies, failures or other shortcomings identified during inspections.
8. Monitoring National Weather Service Forecast Office forecasts for likely precipitation events and alerting crews (http://www.weather.gov/).
9. Coordinating Water Quality Protection Plan amendments.
10. Ensuring elimination of all unauthorized discharges.
11. Implementing invasive species management protocols.

4.1 KEEPING PLAN CURRENT

The Inspector shall inform the Project Manager and this Water Quality Protection Plan shall be amended when there is a change in construction activities, design, operations, or maintenance which has a significant effect on discharges from the construction site which have not been otherwise addressed. The Water Quality Protection Plan shall be amended, and the Project Manager notified if any portion of this Water Quality Protection Plan is judged to be ineffective in controlling pollutant discharges from the construction site.

4.2 INSPECTION ACTIVITIES

The responsible person shall perform the following inspections:

- Disturbed areas and areas used for storage of materials that are exposed to precipitation will be inspected for evidence of, or the potential for, pollutants entering receiving waters.
- Erosion and sediment control measures identified in the Water Quality Protection Plan will be observed to ensure that they are operating correctly.

- Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

4.3 INSPECTION SCHEDULE

All controls in the project area shall be inspected at least once per day. A thorough inspection will be conducted prior and after any predicted storm event.

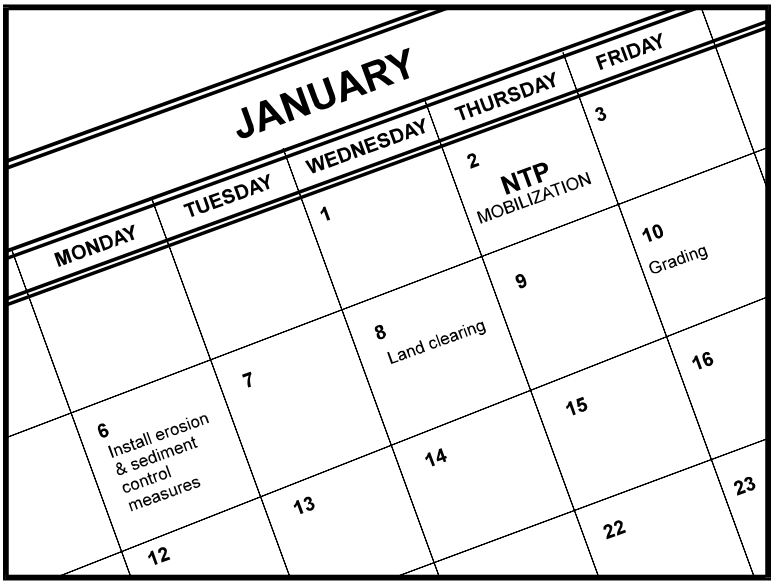
These inspections shall continue until the Project is deemed complete.

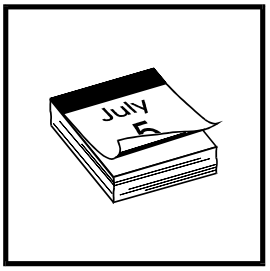
APPENDIX A

BEST MANAGEMENT PRACTICES (BMPS)

Scheduling

SS-1





Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose

This best management practice (BMP) involves developing, for every project, a schedule that includes sequencing of construction activities with the implementation of construction site BMPs such as temporary soil stabilization (erosion control) and temporary sediment controls measures. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Appropriate Applications

Construction sequencing shall be scheduled to minimize land disturbance for all projects during the rainy and non-rainy season. Appropriate BMPs shall be implemented during both rainy and non-rainy seasons.

Limitations

None identified.

Standards and Specifications

- Developing a schedule and planning the project are the very first steps in an effective storm water program. The schedule shall clearly show how the rainy season relates to soil-disturbing and re-stabilization activities. The construction schedule shall be incorporated into the SWPPP or WPCP.
- The schedule shall include detail on the rainy season implementation and deployment of:
  - Temporary soil stabilization BMPs.
  - Temporary sediment control BMPs.
  - Tracking control BMPs.
  - Wind erosion control BMPs.

  - Non-storm water BMPs.
  - Waste management and materials pollution control BMPs.

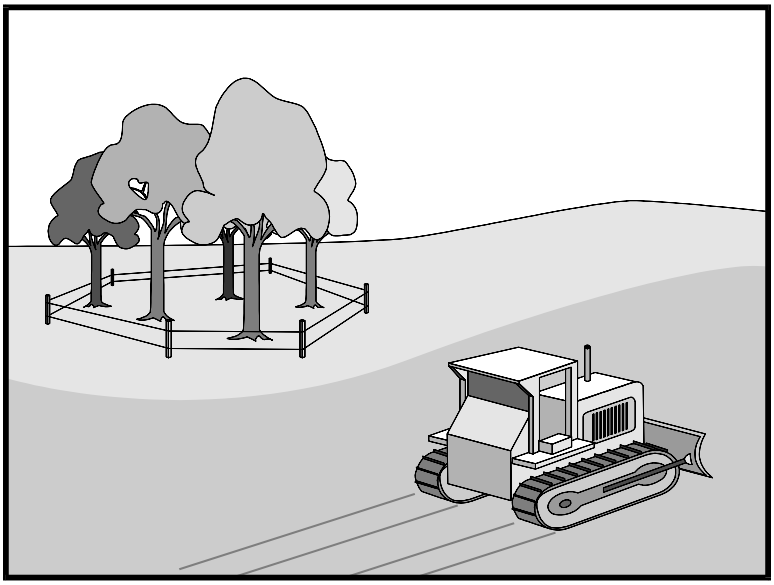
- Schedule shall also include dates for significant long-term operations or activities that may have planned non-storm water discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, bridge cleaning, etc.
- Schedule work to minimize soil disturbing activities during the rainy season.
- Develop the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, pouring foundations, installing utilities, etc., to minimize the active construction area during the rainy season.
- Schedule major grading operations for the non-rainy season when practical.
- Stabilize non-active areas within 14 days from the cessation of soil-disturbing activities or one day prior to the onset of precipitation, whichever occurs first.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment controls and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year-round to deploy soil stabilization and sediment control practices as required by Section 2 of this Manual. Erosion may be caused during dry seasons by unseasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year-round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Sequence trenching activities so that most open portions are closed before new trenching begins.
- Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
- Consider scheduling when establishing permanent vegetation (appropriate planting time for specified vegetation).
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

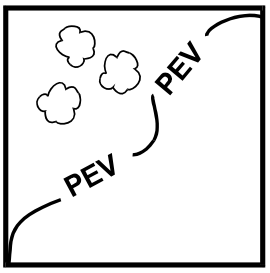
Maintenance and Inspection

- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted or when directed by the Resident Engineer (RE).
- The Special Provisions require annual submittal of a rainy season implementation schedule. Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

Preservation of Existing Vegetation

SS-2





Standard Symbol

BMP Objectives

Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management
- ○

Definition and Purpose

Preservation of existing vegetation is the identification and protection of desirable vegetation that provides erosion and sediment control benefits.

Appropriate Applications

- Preserve existing vegetation at areas on a site where no construction activity is planned or will occur at a later date. Specifications for preservation of existing vegetation can be found in Standard Specifications, Section 7-1.11.
- On a year-round basis, temporary fencing shall be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities in areas.
- Clearing and grubbing operations should be staged to preserve existing vegetation.

Limitations

Protection of existing vegetation requires planning, and may limit the area available for construction activities.

Standards and Specifications

Timing

- Preservation of existing vegetation shall be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities in areas identified on the plans to be preserved, especially on areas designated as Environmentally Sensitive Areas (ESAs).
- Preservation of existing vegetation shall conform to scheduling requirements set forth in the special provisions.

Design and Layout

- Mark areas to be preserved with temporary fencing made of orange polypropylene that is stabilized against ultraviolet light. The temporary fencing shall be at least 1 meter (3.2. ft) tall and shall have openings not larger than 50 mm by 50 mm (2 in by 2 in).

- Fence posts shall be either wood or metal, at the Contractor's discretion, as appropriate for the intended purpose. The post spacing and depth shall be adequate to completely support the fence in an upright position.

- Minimize the disturbed areas by locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling.

- Consider the impact of grade changes to existing vegetation and the root zone.

Installation

- Construction materials, equipment storage, and parking areas shall be located where they will not cause root compaction.

- Keep equipment away from trees to prevent trunk and root damage.

- Maintain existing irrigation systems.

- Employees and subcontractors shall be instructed to honor protective devices. No heavy equipment, vehicular traffic, or storage piles of any construction materials shall be permitted within the drip line of any tree to be retained. Removed trees shall not be felled, pushed, or pulled into any retained trees. Fires shall not be permitted within 30 m (100 ft) of the drip line of any retained trees. Any fires shall be of limited size, and shall be kept under continual surveillance. No toxic or construction materials (including paint, acid, nails, gypsum board, chemicals, fuels, and lubricants) shall be stored within 15 m (50 ft) of the drip line of any retained trees, nor disposed of in any way which would injure vegetation.

Trenching and Tunneling

- Trenching shall be as far away from tree trunks as possible, usually outside of the tree drip line or canopy. Curve trenches around trees to avoid large roots or root concentrations. If roots are encountered, consider tunneling under them. When trenching and/or tunneling near or under trees to be retained, tunnels shall be at least 450 mm (18 in) below the ground surface, and not below the tree center to minimize impact on the roots.

- Tree roots shall not be left exposed to air; they shall be covered with soil as soon as possible, protected, and kept moistened with wet burlap or peat moss until the tunnel and/or trench can be completed.

- The ends of damaged or cut roots shall be cut off smoothly.

- Trenches and tunnels shall be filled as soon as possible. Careful filling and tamping will eliminate air spaces in the soil which can damage roots.

- Remove any trees intended for retention if those trees are damaged seriously enough to affect their survival. If replacement is desired or required, the new tree shall be of similar species, and at least 50 mm (2 in) caliper, unless

otherwise required by the contract documents.

- After all other work is complete, fences and barriers shall be removed last. This is because protected trees may be destroyed by carelessness during the final cleanup and landscaping.

Maintenance and Inspection

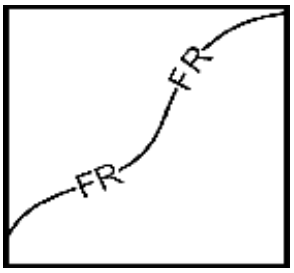
During construction, the limits of disturbance shall remain clearly marked at all times. Irrigation or maintenance of existing vegetation shall conform to the requirements in the landscaping plan. If damage to protected trees still occurs, maintenance guidelines described below shall be followed:

- Serious tree injuries shall be attended to by an arborist.
- During construction, District Environmental shall be contacted to ensure that ESAs are protected.

Fiber Rolls

SC-5





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

A fiber roll consists of wood excelsior, rice or wheat straw, or coconut fibers that is rolled or bound into a tight tubular roll and placed on the toe and face of slopes to intercept runoff, reduce its flow velocity, release the runoff as sheet flow and provide removal of sediment from the runoff. Fiber rolls may also be used for inlet protection and as check dams under certain situations.

Appropriate Applications

- This BMP may be implemented on a project-by-project basis with other BMPs when determined necessary and feasible by the RE.
- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- Below the toe of exposed and erodible slopes.
- Fiber rolls may be used as check dams in unlined ditches if approved by the Resident Engineer (RE) or the District Construction Storm Water Coordinator (refer to SC-4 “Check Dams”).
- Fiber rolls may be used for drain inlet protection if approved by the RE or the District Construction Storm Water Coordinator (refer to SC-10 “Storm Drain Inlet Protection”).
- Down-slope of exposed soil areas.
- Around temporary stockpiles.
- Along the perimeter of a project.

Limitations

- Runoff and erosion may occur if fiber roll is not adequately trenched in.
- Fiber rolls at the toe of slopes greater than 1:5 may require the use of 500 mm (20” diameter) or installations achieving the same protection (i.e., stacked smaller diameter fiber rolls, etc.).
- Fiber rolls may be used for drainage inlet protection if they can be properly anchored.
- Difficult to move once saturated.
- Fiber rolls could be transported by high flows if not properly staked and trenched in.
- Fiber rolls have limited sediment capture zone.
- Do not use fiber rolls on slopes subject to creep, slumping, or landslide.

Standards and Specifications

Fiber Roll Materials

- Fiber rolls shall be either:

  (1) Prefabricated rolls.

  (2) Rolled tubes of erosion control blanket.

Assembly of Field Rolled Fiber Roll

- Roll length of erosion control blanket into a tube of minimum 200 mm (8 in) diameter.
- Bind roll at each end and every 1.2 m (4 ft) along length of roll with jute-type twine.

Installation

- Slope inclination of 1:4 or flatter: fiber rolls shall be placed on slopes 6.0 m apart.
- Slope inclination of 1:4 to 1:2: fiber rolls shall be placed on slopes 4.5 m apart.
- Slope inclination 1:2 or greater: fiber rolls shall be placed on slopes 3.0 m apart.
- Stake fiber rolls into a 50 to 100 mm (2 to 4 in) trench.

- Drive stakes at the end of each fiber roll and spaced 600 mm (2 ft) apart if Type 2 installation is used (refer to Page 4). Otherwise, space stakes 1.2 m (4 ft) maximum on center if installed as shown on Pages 5 and 6.
- Use wood stakes with a nominal classification of 19 by 19 mm (3/4 by 3/4 in), and minimum length of 600 mm (24 in).
- If more than one fiber roll is placed in a row, the rolls shall be overlapped; not abutted.

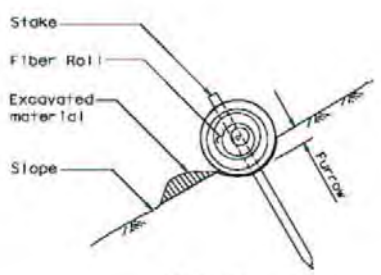
Removal

- Fiber rolls are typically left in place.
- If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground.

Maintenance and Inspection

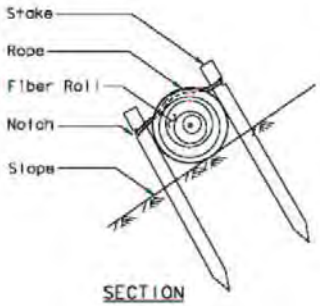
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- Inspect fiber rolls when rain is forecast. Perform maintenance as needed or as required by the RE.
- Inspect fiber rolls following rainfall events and a least daily during prolonged rainfall. Perform maintenance as needed or as required by the RE.
- Maintain fiber rolls to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches three quarters (3/4) of the barrier height. Removed sediment shall be incorporated in the project at locations designated by the RE or disposed of outside the highway right-of-way in conformance with the Standard Specifications.

Fiber Rolls

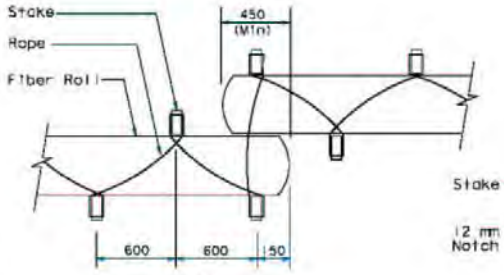


SECTION

TEMPORARY FIBER ROLL
(TYPE 1)

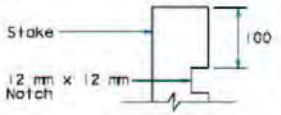


SECTION



PLAN

TEMPORARY FIBER ROLL
(TYPE 2)

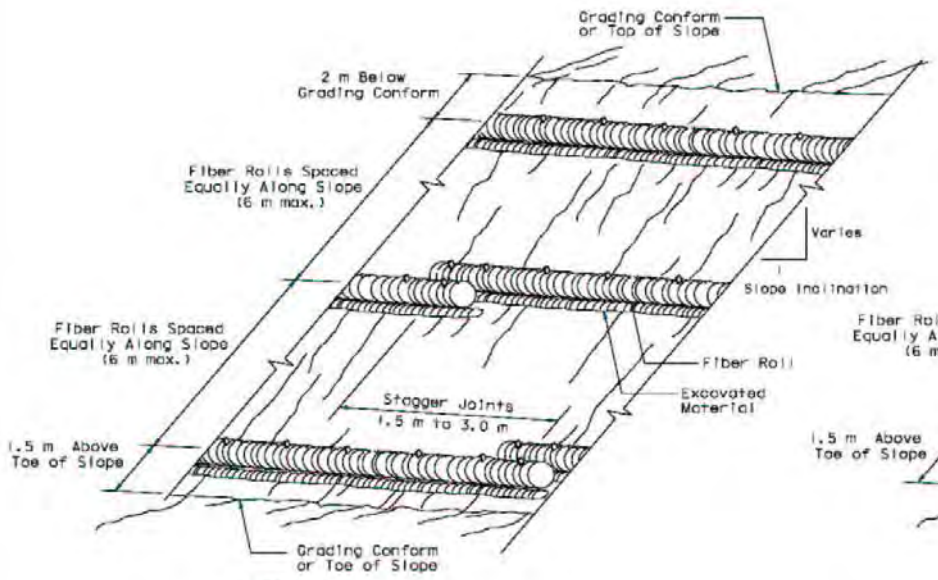


ELEVATION

NOTCH DETAIL

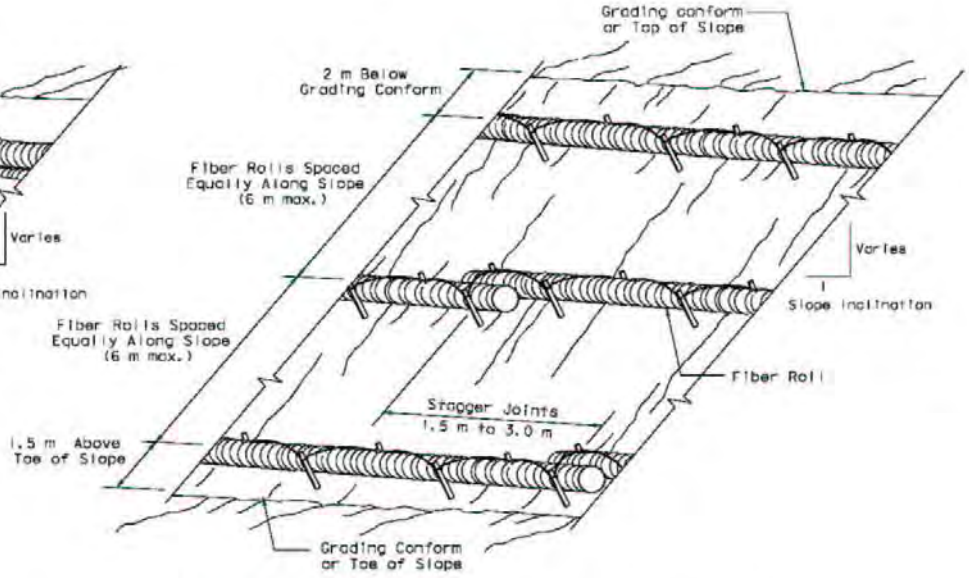
NOTE

1. Temporary fiber roll spacing varies depending upon slope inclination.



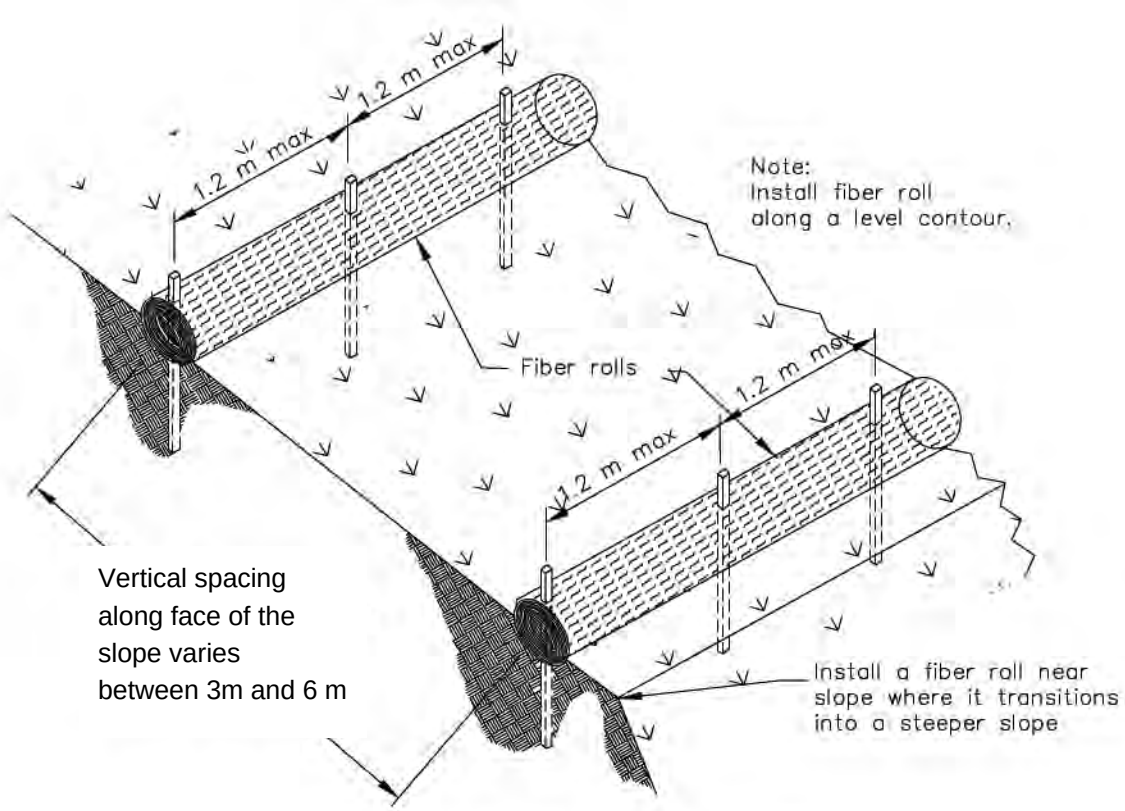
PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 1)

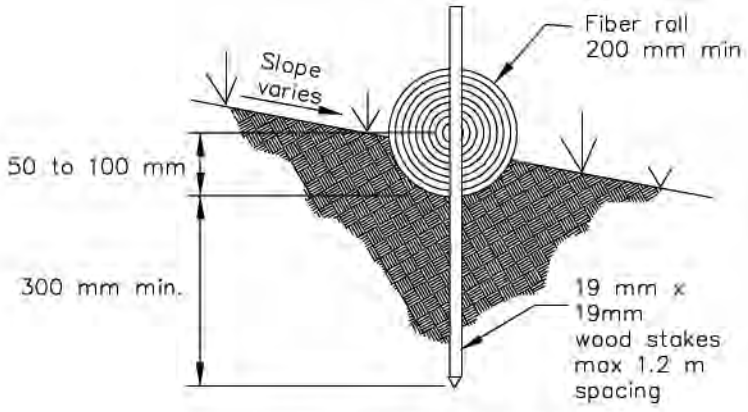


PERSPECTIVE

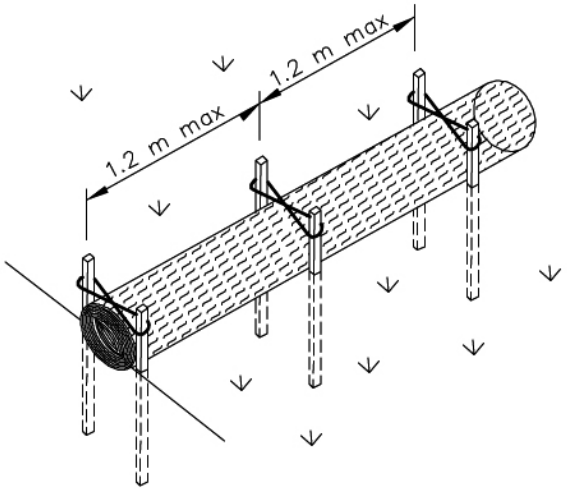
TEMPORARY FIBER ROLL (TYPE 2)

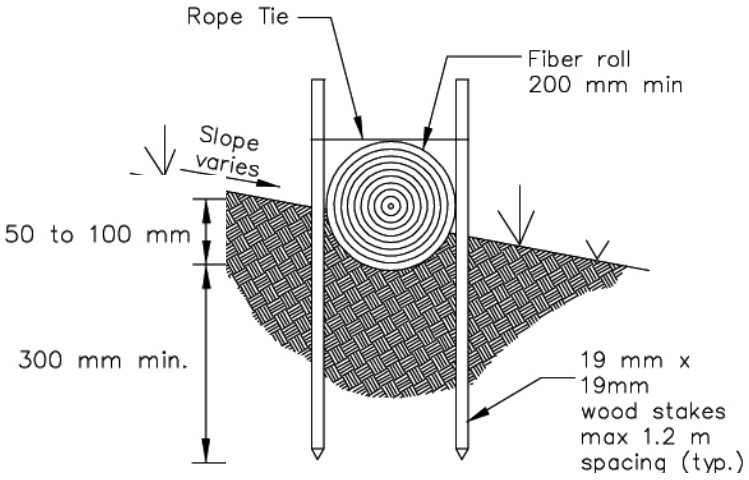


TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.





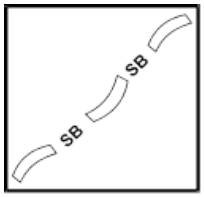
OPTIONAL ENTRENCHMENT DETAIL

N.T.S.

Sandbag Barrier

SC-8





Standard Symbol



Definition and Purpose

A sandbag barrier is a temporary linear sediment barrier consisting of stacked sandbags, designed to intercept and slow the flow of sediment-laden sheet flow runoff. Sandbag barriers allow sediment to settle from runoff before water leaves the construction site.

Appropriate Applications

Along the perimeter of a site.

Along streams and channels.

Below the toe of exposed and erodible slopes.

Down slope of exposed soil areas.

Around stockpiles.

Across channels to serve as a barrier for utility trenches or provide a temporary channel crossing for construction equipment, to reduce stream impacts.

Parallel to a roadway to keep sediment off paved areas.

At the top of slopes to divert roadway runoff away from disturbed slopes.

To divert or direct flow or create a temporary sediment/desilting basin.

During construction activities in stream beds when the contributing drainage area is less than 5 ac.

When extended construction, period limits the use of either silt fences or straw bale barriers.

Along the perimeter of vehicle and equipment fueling and maintenance areas or chemical storage areas.

To capture and detain non-stormwater flows until proper cleaning operations occur.

When site conditions or construction sequencing require adjustments or relocation of the barrier to meet changing field conditions and needs during construction.

To temporarily close or continue broken, damaged or incomplete curbs.

Limitations

Limit the drainage area upstream of the barrier to 5 ac.

Degraded sandbags may rupture when removed, spilling sand.

Installation can be labor intensive.

Limited durability for long-term projects.

When used to detain concentrated flows, maintenance requirements increase.

Consider using gravel bags whenever possible since they often do not require as much maintenance or impact wildlife when used near ESAs.

Standards and Specifications

Materials

Sandbag Material

Sandbag can be woven polypropylene, polyethylene or polyamide fabric, minimum unit weight four ounces per square yard, mullen burst strength exceeding 300 psi in conformance with the requirements in ASTM designation D3786, and ultraviolet stability exceeding 70% in conformance with the requirements in ASTM designation D4355. Use of burlap is not acceptable.

Sandbag Size

Each sand-filled bag should have a length of 18 in, width of 12 in, thickness of 3 in, and mass of approximately 33 lb. Bag dimensions are nominal, and may vary based on locally available materials. Alternative bag sizes must be submitted to the RE for approval prior to deployment.

Fill Material

All sandbag fill material can be non-cohesive, Class 1 or Class 2 permeable material free from clay and deleterious material, conforming to the provisions in Standard Specifications Section 47-2.02D “Permeable Material”. The requirements for the Durability Index and Sand Equivalent do not apply. Fill material is subject to approval by the RE.

Installation

When used as a linear sediment control:

- Install along a level contour.
- Turn ends of sandbag row up slope to prevent flow around the ends.
- Generally, sandbag barriers may be used in conjunction with temporary soil stabilization controls up slope to provide effective erosion and sediment control.

Construct sandbag barriers with a set-back of at least 3 ft from the toe of a slope. Where it is determined to be not practical due to specific site conditions, the sandbag barrier may be constructed at the toe of the slope, but should be constructed as far from the toe of the slope as practicable.

Maintenance and Inspection

Inspect sandbag barriers before and after each rainfall event, and weekly year round.

Reshape or replace sandbags as needed, or as directed by the RE.

Repair washouts or other damages as needed, or as directed by the RE.

Inspect sandbag barriers for sediment accumulations and remove sediments when accumulation reaches one-third the barrier height. Removed sediment can be incorporated in the project at locations designated by the RE or disposed of outside the highway right of way in conformance with the Standard Specifications 14-10.

Remove sandbags when no longer needed. Remove sediment accumulation, and clean, re-grade, and stabilized the area.

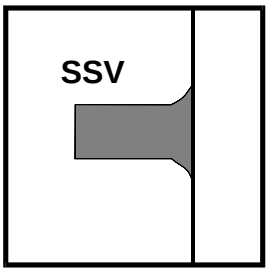
SWPPP or WPCP

Sandbag Barrier must be discussed in Section 500.3 of the SWPPP or Section 30.2 of the WPCP.

Street Sweeping and Vacuuming

SC-7





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ● Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Practices to remove tracked sediment to prevent the sediment from entering a storm drain or watercourse.

Appropriate Applications

These practices are implemented anywhere sediment is tracked from the project site onto public or private paved roads, typically at points of ingress/egress.

Limitations

Sweeping and vacuuming may not be effective when soil is wet or muddy.

Standards and Specifications

- ■ Kick brooms or sweeper attachments shall not be used.
- ■ Inspect potential sediment tracking locations daily.
- ■ Visible sediment tracking shall be swept and/or vacuumed daily.
- ■ If not mixed with debris or trash, consider incorporating the removed sediment back into the project.

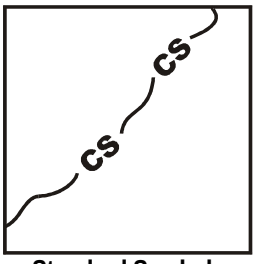
Maintenance and Inspection

- ■ Inspect ingress/egress access points daily and sweep tracked sediment as needed, or as required by the Resident Engineer (RE).
- ■ Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- ■ Adjust brooms frequently; maximize efficiency of sweeping operations.
- ■ After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite in conformance with the provisions in Standard Specifications Section 7-1.13 .

Stockpile Management

WM-3





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and storm water pollution from stockpiles of soil, and paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate, asphalt binder (so called “cold mix” asphalt) and pressure treated wood.

Appropriate Applications

Implemented in all projects that stockpile soil and other materials.

Limitations

- None identified

Standards and Specifications

- Protection of stockpiles is a year-round requirement.
- Locate stockpiles a minimum of 15 m (50 ft)away from concentrated flows of storm water, drainage courses, and inlets.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information see BMP WE-1, “Wind Erosion Control.”
- Stockpiles of contaminated soil shall be managed in accordance with BMP WM-7, “Contaminated Soil Management.”
- Bagged materials should be placed on pallets and under cover.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials shall be protected further as follows:

- ***Soil stockpiles:***

  - During the rainy seasons, soil stockpiles shall be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.

  - During the non-rainy season, soil stockpiles shall be covered and protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

- ***Stockpiles of portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate subbase:***

  - During the rainy season, the stockpiles shall be covered or protected with a temporary perimeter sediment barrier at all times.

  - During the non-rainy season, the stockpiles shall be covered or protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

- ***Stockpiles of "cold mix":***

  - During the rainy season, cold mix stockpiles shall be placed on and covered with plastic or comparable material at all times.

  - During the non-rainy season, cold mix stockpiles shall be placed on and covered with plastic or comparable material prior to the onset of precipitation.

- ***Stockpiles/Storage of pressure treated wood with copper, chromium, and arsenic or ammonical, copper, zinc, and arsenate:***

  - During the rainy season, treated wood shall be covered with plastic or comparable material at all times.

  - During the non-rainy season, treated wood shall be covered with plastic or comparable material and shall be placed on pallets prior to the onset of precipitation.

Protection of Active Stockpiles

Active stockpiles of the identified materials shall be protected further as follows:

- All stockpiles shall be covered, stabilized, or protected with a temporary linear sediment barrier prior to the onset of precipitation.

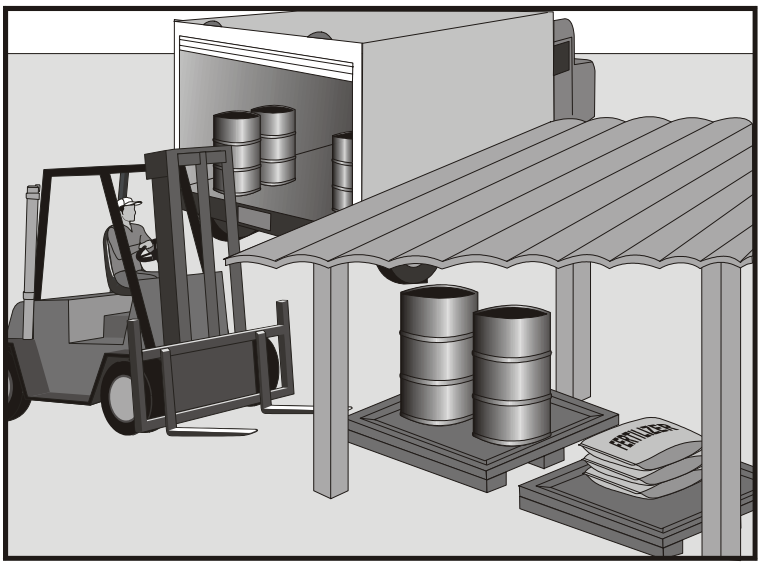
- Stockpiles of "cold mix" shall be placed on and covered with plastic or comparable material prior to the onset of precipitation.

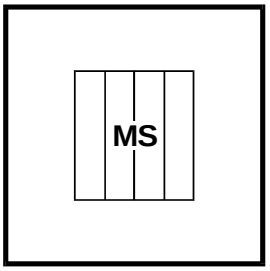
Maintenance and Inspections

- Repair and/or replace perimeter controls and covers as needed, or as directed by the RE, to keep them functioning properly. Sediment shall be removed when sediment accumulation reaches one-third (1/3) of the barrier height.

Material Delivery and Storage

WM-1





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Procedures and practices for the proper handling and storage of materials in a manner that minimizes or eliminates the discharge of these materials to the storm drain system or to watercourses.

Appropriate Applications

These procedures are implemented at all construction sites with delivery and storage of the following:

- Hazardous chemicals such as:
  - Acids,
  - lime,
  - glues,
  - adhesives,
  - paints,
  - solvents, and
  - curing compounds.
- Soil stabilizers and binders.
- Fertilizers.
- Detergents.
- Plaster.
- Petroleum products such as fuel, oil, and grease.
- Asphalt and concrete components.
- Pesticides and herbicides.

- Other materials that may be detrimental if released to the environment.

Limitations

- Space limitation may preclude indoor storage.
- Storage sheds must meet building & fire code requirements.

Standards and Specifications

General

- Train employees and subcontractors on the proper material delivery and storage practices.
- Temporary storage area shall be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) shall be supplied to the Resident Engineer (RE) for all materials stored.

Material Storage Areas and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 shall be stored in approved containers and drums and shall be placed in temporary containment facilities for storage.
- Throughout the rainy season, each temporary containment facility shall have a permanent cover and side wind protection or be covered during non-working days and prior to and during rain events.
- A temporary containment facility shall provide for a spill containment volume able to contain precipitation from a 24-hour, 25-year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility shall be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility shall be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills shall be collected and placed into drums. These liquids shall be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids shall be sent to an approved disposal site.
- Sufficient separation shall be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, shall not be stored in the same temporary containment facility.
- Materials shall be stored in their original containers and the original product labels shall be maintained in place in a legible condition. Damaged or otherwise illegible labels shall be replaced immediately.

-
- Bagged and boxed materials shall be stored on pallets and shall not be allowed to accumulate on the ground. To provide protection from wind and rain, throughout the rainy season, bagged and boxed materials shall be covered during non-working days and prior to rain events.
- Stockpiles shall be protected in accordance with BMP WM-3, "Stockpile Management."
- Minimize the material inventory stored on-site (e.g., only a few days supply).
- Have proper storage instructions posted at all times in an open and conspicuous location.
- Do not store hazardous chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and when possible, under cover in secondary containment.
- Keep hazardous chemicals well labeled and in their original containers.
- Keep ample supply of appropriate spill clean up material near storage areas.
- Also see BMP WM-6, "Hazardous Waste Management", for storing of hazardous materials.

Material Delivery Practices

- Keep an accurate, up-to-date inventory of material delivered and stored on-site.
- Employees trained in emergency spill clean-up procedures shall be present when dangerous materials or liquid chemicals are unloaded.

Spill Clean-up

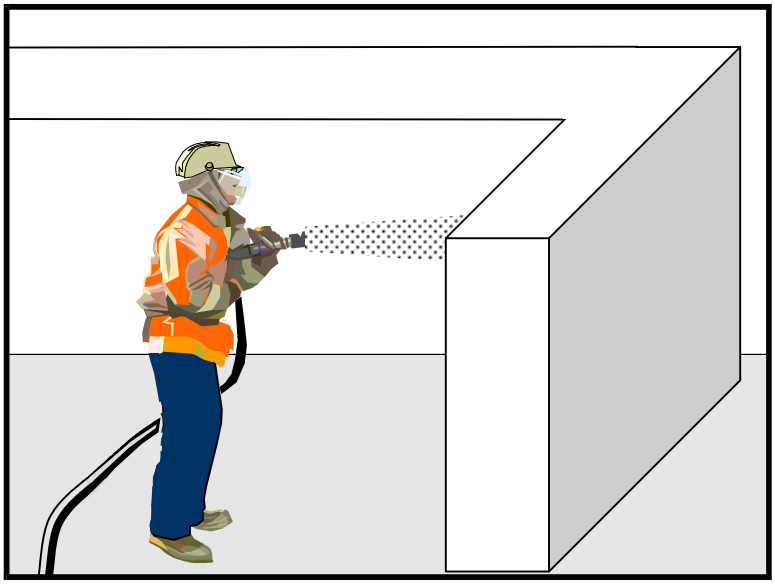
- Contain and clean up any spill immediately.
- If significant residual materials remain on the ground after construction is complete, properly remove and dispose any hazardous materials or contaminated soil.
- See BMP WM-4, "Spill Prevention and Control", for spills of chemicals and/or hazardous materials.

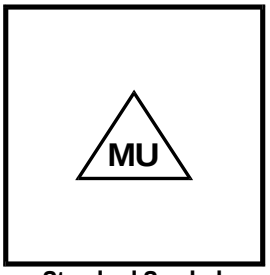
Maintenance and Inspection

- Storage areas shall be kept clean, well organized, and equipped with ample clean-up supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners shall be repaired or replaced as needed to maintain proper function.
- Inspect storage areas before and after rainfall events, and at least weekly during other times. Collect and place into drums any spills or accumulated rainwater.

Material Use

WM-2





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These are procedures and practices for use of construction material in a manner that minimizes or eliminates the discharge of these materials to the storm drain system or to watercourses.

Appropriate Applications

This BMP applies to all construction projects. These procedures apply when the following materials are used or prepared on site:

- Hazardous chemicals such as:

  Acids,
  lime,
  glues,
  adhesives,
  paints,
  solvents, and
  curing compounds.

- Soil stabilizers and binders.
- Fertilizers.
- Detergents.
- Plaster.
- Petroleum products such as fuel, oil, and grease.
- Asphalt and concrete components.
- Pesticides and herbicides.
- Other materials that may be detrimental if released to the environment.

Material Use

WM-2

Limitations

- Safer alternative building and construction products may not be available or suitable in every instance.

Standards and Specifications

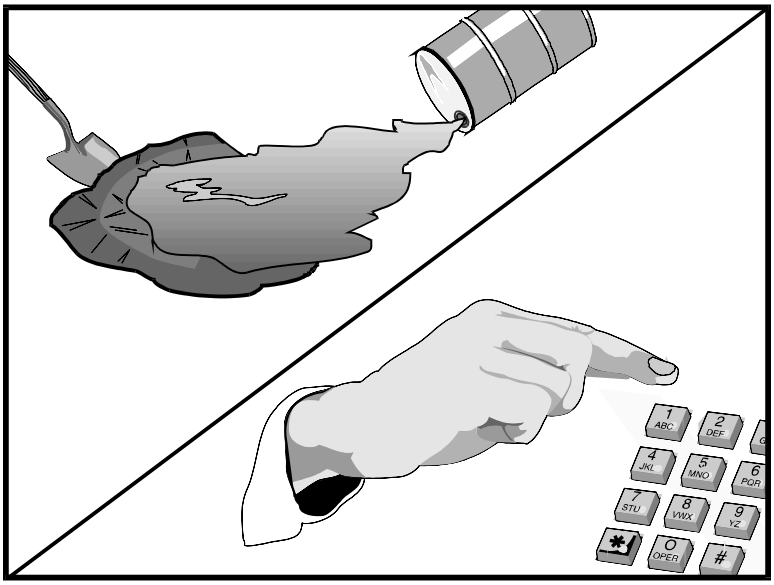
- Material Safety Data Sheets (MSDS) shall be supplied to the Resident Engineer (RE) for all materials.
- Latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, may be disposed of with other construction debris.
- Do not remove the original product label, it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoors, or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain or watercourse. Dispose of any paint thinners, residue and sludge(s), that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practical, and rinse to a drain leading to a sanitary sewer where permitted, or into a concrete washout pit. For oil-based paints, clean brushes to the extent practical and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials on-site when practical.
- Do not over-apply fertilizers and pesticides. Prepare only the amount needed. Strictly follow the recommended usage instructions. Apply surface dressings in smaller applications, as opposed to large applications, to allow time for it to work in and to avoid excess materials being carried off-site by runoff.
- Application of herbicides and pesticides shall be performed by a licensed applicator.
- Contractors are required to complete the “Report of Chemical Spray Forms” when spraying herbicides and pesticides.
- Keep an ample supply of spill clean up material near use areas. Train employees in spill clean up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.

Maintenance and Inspections

- Spot check employees and subcontractors monthly throughout the job to ensure appropriate practices are being employed.

Spill Prevention and Control

WM-4





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These procedures and practices are implemented to prevent and control spills in a manner that minimizes or prevents the discharge of spilled material to the drainage system or watercourses.

Appropriate Application

This best management practice (BMP) applies to all construction projects. Spill control procedures are implemented anytime chemicals and/or hazardous substances are stored. Substances may include, but are not limited to:

- Soil stabilizers/binders.
- Dust Palliatives.
- Herbicides.
- Growth inhibitors.
- Fertilizers.
- Deicing/anti-icing chemicals.
- Fuels.
- Lubricants.
- Other petroleum distillates.

To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes shall be contained and cleaned up immediately.

Limitations

- This BMP only applies to spills caused by the contractor.
- Procedures and practices presented in this BMP are general. Contractor shall identify appropriate practices for the specific materials used or stored on-site.

Standards and Specifications

- To the extent that it doesn't compromise clean up activities, spills shall be covered and protected from storm water run-on during rainfall.
- Spills shall not be buried or washed with water.
- Used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose shall be stored and disposed of in conformance with the special provisions.
- Water used for cleaning and decontamination shall not be allowed to enter storm drains or watercourses and shall be collected and disposed of in accordance with BMP WM-10, "Liquid Waste Management."
- Water overflow or minor water spillage shall be contained and shall not be allowed to discharge into drainage facilities or watercourses.
- Proper storage, clean-up and spill reporting instruction for hazardous materials stored or used on the project site shall be posted at all times in an open, conspicuous and accessible location.
- Waste storage areas shall be kept clean, well organized and equipped with ample clean-up supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers and liners shall be repaired or replaced as needed to maintain proper function.

Education

- Educate employees and subcontractors on what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce proper spill prevention and control measures.

Cleanup and Storage Procedures

- Minor Spills
  - Minor spills typically involve small quantities of oil, gasoline, paint, etc., which can be controlled by the first responder at the discovery of the spill.
  - Use absorbent materials on small spills rather than hosing down or burying the spill.
  - Remove the absorbent materials promptly and dispose of properly.
  - The practice commonly followed for a minor spill is:
    - Contain the spread of the spill.
    - Recover spilled materials.
    - Clean the contaminated area and/or properly dispose of contaminated materials.
- Semi-Significant Spills
  - Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
  - Clean up spills immediately:
    - Notify the project foreman immediately. The foreman shall notify the Resident Engineer (RE).
    - Contain spread of the spill.
    - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
    - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
    - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

- Significant/Hazardous Spills
  - For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps shall be taken:
    - Notify the RE immediately and follow up with a written report.
    - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
    - Notify the Governor's Office of Emergency Services Warning Center, (805) 852-7550.
    - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor shall notify the National Response Center at (800) 424-8802.
    - Notification shall first be made by telephone and followed up with a written report.
    - The services of a spills contractor or a Haz-Mat team shall be obtained immediately. Construction personnel shall not attempt to clean up the spill until the appropriate and qualified staff have arrived at the job site.
    - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, RWQCB, etc.

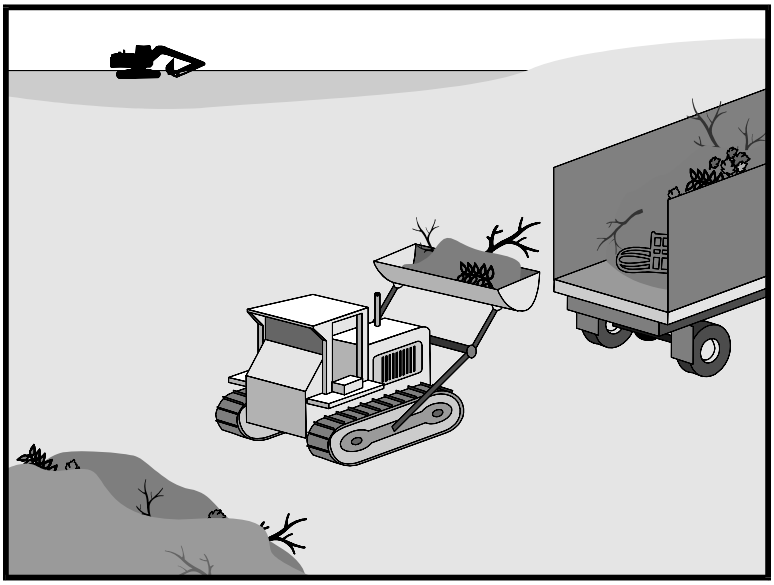
Maintenance and Inspection

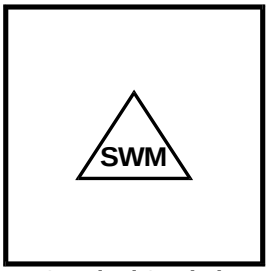
- Verify weekly that spill control clean up materials are located near material storage, unloading, and use areas.
- Update spill prevention and control plans and stock appropriate clean-up materials whenever changes occur in the types of chemicals used or stored onsite.

`

Solid Waste Management

WM-5





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Solid waste management procedures and practices are designed to minimize or eliminate the discharge of pollutants to the drainage system or to watercourses as a result of the creation, stockpiling, or removal of construction site wastes.

Appropriate Applications

Solid waste management procedures and practices are implemented on all construction projects that generate solid wastes.

Solid wastes include but are not limited to:

- Construction wastes including brick, mortar, timber, steel and metal scraps, sawdust, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials.
- Highway planting wastes, including vegetative material, plant containers, and packaging materials.
- Litter, including food containers, beverage cans, coffee cups, paper bags, plastic wrappers, and smoking materials, including litter generated by the public.

Limitations

- Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

Standards and Specifications

Education

- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce proper solid waste procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Wherever possible, minimize production of solid waste materials.

Collection, Storage, and Disposal

- Dumpsters of sufficient size and number shall be provided to contain the solid waste generated by the project and properly serviced.
- Littering on the project site shall be prohibited.
- To prevent clogging of the storm drainage system litter and debris removal from drainage grates, trash racks, and ditch lines shall be a priority.
- Trash receptacles shall be provided in the Contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Construction debris and litter from work areas within the construction limits of the project site shall be collected and placed in watertight dumpsters at least weekly regardless of whether the litter was generated by the Contractor, the public, or others. Collected litter and debris shall not be placed in or next to drain inlets, storm water drainage systems or watercourses.
- Full dumpsters shall be removed from the project site and the contents shall be disposed of outside the highway right-of-way in conformance with the provisions in the Standard Specifications Section 7-1.13.
- Litter stored in collection areas and containers shall be handled and disposed of by trash hauling contractors.
- Construction debris and waste shall be removed from the site every two weeks or as directed by the RE.

- Construction material visible to the public shall be stored or stacked in an orderly manner to the satisfaction of the RE.
- Storm water run-on shall be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas shall be located at least 15 m (50 ft) from drainage facilities and watercourses and shall not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters shall be securely covered from wind and rain by covering the waste with tarps or plastic sheeting or protected in conformance with the applicable Disturbed Soil Area protection section.
- Dumpster washout on the project site is not allowed.
- Notify trash hauling contractors that only watertight dumpsters are acceptable for use on-site.
- Plan for additional containers during the demolition phase of construction.
- Plan for more frequent pickup during the demolition phase of construction.
- Construction waste shall be stored in a designated area approved by the RE.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Keep the site clean of litter debris.
- Make sure that toxic liquid wastes (e.g., used oils, solvents, and paints) and chemicals (e.g., acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Dispose of non-hazardous waste in accordance with Standard Specification 7-1.13, Disposal of Material Outside the Highway Right of Way.
- For disposal of hazardous waste, see BMP WM-6, “Hazardous Waste Management.” Have hazardous waste hauled to an appropriate disposal and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and/or surplus building materials when practical. For example, trees and shrubs from land clearing can be converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Maintenance and Inspection

- The WPCM shall monitor onsite solid waste storage and disposal procedures.
- Police site for litter and debris.

Hazardous Waste Management

WM-6



Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Stormwater Management
- Materials and Waste Management

Definition and Purpose

These are procedures and practices to minimize or eliminate the discharge of pollutants from construction site hazardous waste to the storm drain systems or to watercourses.

Appropriate Applications

This best management practice (BMP) applies to all construction projects.

Hazardous waste management practices are implemented on construction projects that generate waste from the use of:

- Petroleum Products
- Asphalt Products
- Concrete Curing Compounds
- Pesticides
- Palliatives
- Acids
- Paints
- Stains
- Solvents
- Septic Wastes
- Wood Preservatives
- Roofing Tar, or
- Any materials deemed a hazardous waste in California, Title 22 Division 4.5, or listed in 40 CFR Parts 110, 117, 261, or 302.

Limitations

Nothing in this BMP relieves the Contractor from responsibility for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.

This BMP does not cover aerially deposited lead (ADL) soils. For ADL soils refer to WM-7, "Contaminated Soil Management," and the project special provisions.

Standards and Specifications

Education

Educate employees and subcontractors on hazardous waste storage and disposal procedures.

Educate employees and subcontractors on potential dangers to humans and the environment from hazardous wastes.

Instruct employees and subcontractors on safety procedures for common construction site hazardous wastes.

Instruct employees and subcontractors in identification of hazardous and solid waste.

Hold regular meetings to discuss and reinforce hazardous waste management procedures (incorporate into regular safety meetings and tailgate sessions).

The WPC Manager must oversee and enforce proper hazardous waste management procedures and practices.

Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.

Storage Procedures

Wastes shall be stored in sealed containers constructed of a suitable material and shall be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172,173, 177 and 178, 179.

All hazardous waste shall be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.

Waste containers shall be stored in temporary containment facilities that shall comply with the following requirements:

- Temporary containment facility shall provide for a spill containment volume able to contain precipitation from a 24-hour, 25-year storm event, plus the greater of ten percent of the aggregate volume of all containers or 100 percent of the capacity of the largest tank within its boundary, whichever is greater.
- Temporary containment facility shall be impervious to the materials stored there for a minimum contact time of 72 hours.
- Temporary containment facilities shall be maintained free of accumulated rainwater and spills. In the event of spills or leaks accumulated rainwater and spills shall be placed into drums after each rainfall. These liquids shall be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids shall be sent to an approved disposal site.
- Sufficient separation shall be provided between stored containers to allow for spill cleanup and emergency response access.

- Incompatible materials, such as chlorine and ammonia, shall not be stored in the same temporary containment facility.
- Temporary containment facilities shall be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs. A storage facility having a solid cover and sides is preferred to a temporary tarp. Storage facilities shall be equipped with adequate ventilation.

Drums shall not be overfilled and wastes shall not be mixed.

Unless watertight, containers of dry waste shall be stored on pallets.

Paint brushes and equipment for water and oil based paints shall be cleaned within a contained area and shall not be allowed to contaminate site soils, watercourses or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused shall be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths shall be disposed of as solid waste.

Ensure that adequate hazardous waste storage volume is available.

Ensure that hazardous waste collection containers are conveniently located.

Designate hazardous waste storage areas on site away from storm drains or watercourses and away from moving vehicles and equipment to prevent accidental spills.

Minimize production or generation of hazardous materials and hazardous waste on the job site.

Use containment berms in fueling and maintenance areas and where the potential for spills is high.

Segregate potentially hazardous waste from non-hazardous construction site debris.

Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.

Clearly label all hazardous waste containers with the waste being stored and the date of accumulation.

Place hazardous waste containers in secondary containment.

Do not allow potentially hazardous waste materials to accumulate on the ground.

Do not mix wastes.

Disposal Procedures

Waste shall be disposed of outside the highway right of way within 90 days of being generated, or as directed by the RE. In no case, shall hazardous waste storage exceed requirements in Title 22 CCR, Section 66262.34.

Waste shall be disposed of by a licensed hazardous waste transporter at an authorized and licensed disposal facility or recycling facility utilizing properly completed Uniform Hazardous Waste Manifest forms.

An ELAP accredited laboratory shall sample waste and analyze it to determine the appropriate disposal facility.

Make sure that toxic liquid wastes (e.g., used oils, solvents, and paints) and chemicals (e.g., acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for solid waste construction debris.

Properly dispose of rainwater in secondary containment that may have mixed with hazardous waste.

Recycle any useful material such as used oil or water-based paint when practical.

Attention is directed to "Hazardous Material", "Contaminated Material", and "Aerially Deposited Lead" of the contract documents regarding the handling and disposal of hazardous materials.

Maintenance and Inspection

The WPC Manager or QSP shall monitor on-site hazardous waste storage and disposal procedures.

Waste storage areas shall be kept clean, well-organized, and equipped with ample clean up supplies as appropriate for the materials being stored.

Storage areas shall be inspected in conformance with the provisions in the contract documents. At a minimum, storage areas must be inspected before, daily during extended storm event, after every storm event and weekly year-round. Perimeter controls, containment structures, covers, and liners shall be repaired or replaced as needed to maintain proper function.

Hazardous spills shall be cleaned up and reported in conformance with the applicable Safety Data Sheet (SDS) and the instructions posted at the project site.

The National Response Center, at (800) 424-8802, shall be notified of spills of Federal reportable quantities in conformance with the requirements in 40 CFR parts 110, 117, and 302.

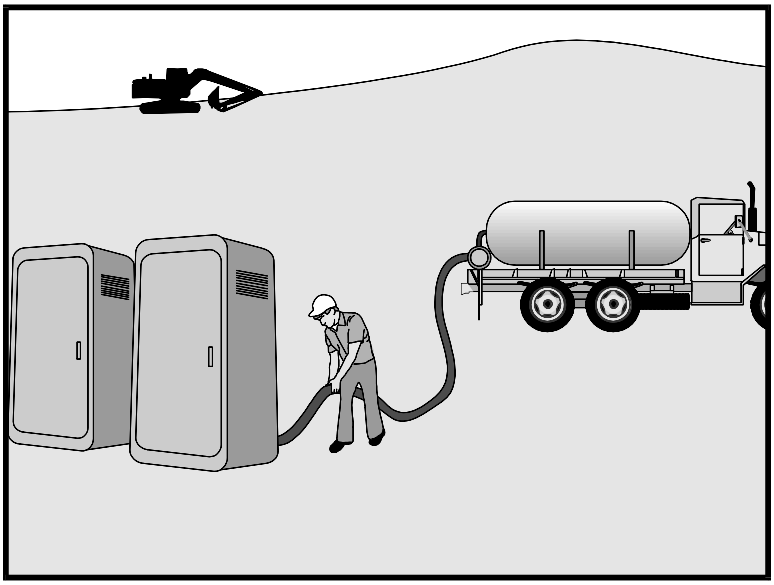
Copy of the hazardous waste manifests shall be provided to the RE.

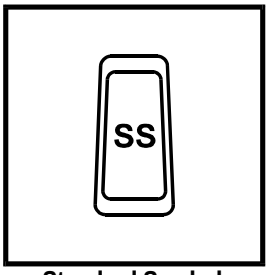
SWPPP or WPCP

Hazardous Waste Management must be discussed in Section 500.4 of the SWPPP or Section 30.3 of the WPCP.

Sanitary/Septic Waste Management

WM-9





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Procedures and practices to minimize or eliminate the discharge of construction site sanitary/septic waste materials to the storm drain system or to watercourses.

Appropriate Applications

Sanitary/septic waste management practices are implemented on all construction sites that use temporary or portable sanitary/septic waste systems.

Limitations

- None identified.

Standards and Specifications

Education

- Educate employees, subcontractors, and suppliers on sanitary/septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary/septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary/septic waste.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.

Storage and Disposal Procedures

- Temporary sanitary facilities shall be located away from drainage facilities, watercourses, and from traffic circulation. When subjected to high winds or risk.

- Wastewater shall not be discharged or buried within the highway right-of-way.
- Sanitary and septic systems that discharge directly into sanitary sewer systems, where permissible, shall comply with the local health agency, city, county, and sewer district requirements.
- If using an on site disposal system, such as a septic system, comply with local health agency requirements.
- Properly connect temporary sanitary facilities that discharge to the sanitary sewer system to avoid illicit discharges.
- Ensure that sanitary/septic facilities are maintained in good working order by a licensed service.
- Use only reputable, licensed sanitary/septic waste haulers.

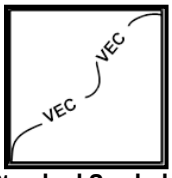
Maintenance and Inspection

- The Contractor's Water Pollution Control Manager (WPCM) shall monitor onsite sanitary/septic waste storage and disposal procedures at least weekly.

Vehicle and Equipment Cleaning

NS-8





Standard Symbol



Definition and Purpose

Vehicle and equipment cleaning procedures and practices are used to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning operations to storm drain systems or to watercourses.

Appropriate Applications

These procedures are applied on all construction sites where vehicle and equipment cleaning is performed.

Limitations

This BMP may be limited or disallowed under regulatory agency permits, particularly near Environmentally Sensitive Areas (ESAs).

Generates non-stormwater that requires management, and, in some cases, the disposal of hazardous waste.

Standards and Specifications

General Requirements

Limit vehicle and equipment cleaning or washing at the job site except for the safety and protection of the equipment and as needed to comply with regulatory agency permits and approvals.

Cleaning of vehicles and equipment with soap, solvents or steam shall not occur on the job site unless the RE has been notified in advance and the resulting wastes are fully contained in accordance with Standard Specifications Section 14-11 or 13-4.03D (5), whichever is applicable. Do not use diesel to clean vehicles and minimize the use of solvents.

Vehicle and Equipment Cleaning

NS-8

Vehicle and equipment wash water shall be contained for percolation or evaporative drying away from storm drain inlets or receiving waters and should not be discharged within the highway right-of-way. Apply other appropriate BMPs as applicable.

All vehicles/equipment that regularly enter and leave the construction site must be cleaned off-site.

Resulting wastes and by-products shall not be discharged or buried within the highway right-of-way, and must be captured and recycled or disposed according to the requirements of WM-10, "Liquid Waste Management" or WM-6, "Hazardous Waste Management," depending on the waste characteristics.

Implementation

When vehicle/equipment washing/cleaning must occur onsite, and the operation cannot be located within a structure or building equipped with appropriate disposal facilities, the outside cleaning area shall have the following characteristics, and shall be arranged with the WPC Manager, QSD, or QSP as well as the Construction Storm Water Coordinator:

- Located away from storm drain inlets, drainage facilities, or watercourses.
- Paved with concrete or asphalt and bermed to contain wash waters and to prevent run-on and runoff.
- Configured with a sump to allow collection and disposal of wash water.
- Wash waters shall not be discharged to storm drains or watercourses.
- Used only when necessary.

When cleaning vehicles/equipment with water:

- Use as little water as possible. High pressure sprayers may use less water than a hose, and shall be considered.
- Use positive shutoff valve to minimize water usage.
- Facility wash racks shall discharge to a sanitary sewer, recycle system or other approved discharge system and shall not discharge to the storm drainage system or watercourses.

Maintenance and Inspection

The control measure shall be inspected at least weekly, prior to a forecasted rain event, daily during extended rain events and post-storm events.

Inspect wash area and sump regularly. Remove liquids and sediment as needed or as directed by the RE.

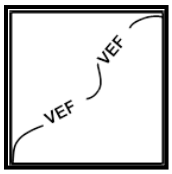
SWPPP or WPCP

Vehicle Equipment Cleaning must be discussed in Section 500.4.2 of the SWPPP or Section 30.3 of the WPCP.

Vehicle and Equipment Fueling

NS-9





Standard Symbol



Definition and Purpose

Vehicle and equipment fueling procedures and practices are designed to minimize or eliminate the discharge of fuel spills and leaks into storm drain systems or to receiving waters.

Appropriate Applications

These procedures are applied on all construction sites where vehicle and equipment fueling takes place.

Limitations

This BMP may be limited or disallowed under regulatory agency permits, particularly near Environmentally Sensitive Areas (ESAs).

Onsite vehicle and equipment fueling should only be used where it's impractical to send vehicles and equipment off-site for fueling.

Standards and Specifications

When fueling must occur onsite, the contractor shall select and designate an area or areas to be used, subject to approval of the RE.

Dedicated fueling areas shall be protected from stormwater run-on and runoff, and shall be located at least 50 feet from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.

Protect fueling areas with berms or dikes to prevent run-on, runoff, and to contain spills.

For long-term projects, consider constructing roofs or using portable tents over maintenance and fueling areas.

Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on fueling trucks and used on small spills instead of hosing down or burying techniques. Affected absorbent material and spill kits should be removed promptly and disposed of properly after use.

Drip pans or absorbent pads shall be readily available during vehicle and equipment fueling.

Vehicle and equipment fueling areas shall not be left unattended during fueling activities.

Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut-off to control drips.

Use vapor recovery nozzles to help control drips as well as air pollution where required by the Air Quality Management Districts.

Ensure the nozzle is secured upright when not in use.

Fuel tanks shall not be "topped-off."

Federal, state, and local requirements shall be observed for any stationary above ground storage tanks. Refer to WM-1, “Material Delivery and Storage” for specifics as to what needs to be included for BMP protection and documented in the SWPPP or WPCP.

Portable fuel canisters should be kept in a flammable cabinet when not in use.

Maintenance and Inspection

Vehicles and equipment shall be inspected on each day of use for leaks. Leaks shall be repaired immediately or problem vehicles or equipment shall be removed from the project site.

Fueling areas and storage tanks shall be inspected at least weekly, prior to a forecasted rain event, daily during extended rain events and post-storm events.

Immediately cleanup spills and properly dispose of contaminated soil and cleanup materials.

SWPPP or WPCP

Vehicle and Equipment Fueling must be discussed in Section 500.4.2 of the SWPPP or Section 30.3 of the WPCP.

Vehicle and Equipment Maintenance NS-10





Standard Symbol



Definition and Purpose

Procedures and practices to minimize or eliminate the discharge of pollutants to the storm drain systems or to receiving waters from vehicle and equipment maintenance activities.

Appropriate Applications

These procedures apply on all construction projects where an onsite uncovered yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

This BMP may be limited or disallowed under regulatory agency permits, particularly near Environmentally Sensitive Areas (ESAs).

Onsite vehicle and equipment maintenance should only be used where it's impractical to send vehicles and equipment off-site for fueling.

Standards and Specifications

When maintenance must occur onsite, the contractor shall select and designate an area to be used, subject to approval of the RE and implement appropriate controls for the activities to be performed.

Dedicated maintenance areas shall be on level ground and protected from storm water run-on and runoff, and shall be located at least 50 ft from downstream drainage facilities and receiving waters.

Protect maintenance areas with berms or dikes to prevent run-on, runoff, and to contain spills.

For long-term projects, consider constructing roofs or using portable tents over maintenance areas.

Absorbent spill clean-up materials and spill kits shall be available in maintenance areas and used on small spills instead of hosing down or burying techniques. Affected absorbent material and spill kits should be removed promptly and disposed of properly after use.

Drip pans or absorbent pads shall be placed under vehicles and equipment when performing maintenance work that involves fluids. Vehicles and equipment maintenance areas shall not be left unattended during maintenance activities.

Drip pans or plastic sheeting shall be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than one hour.

Properly dispose or recycle used batteries and tires as well as any other vehicle or equipment parts.

Substances used to coat asphalt transport trucks and asphalt-spreading equipment shall be non-toxic.

Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.

Do not dump fuels and lubricants onto the ground.

Do not place used oil in a dumpster or pour into a storm drain or watercourse.

Do not bury used tires.

Repair fluid and oil leaks immediately.

Provide spill containment dikes or secondary containment around stored oil and chemical drums. Refer to WM-1, "Material Delivery and Storage" for details.

Maintenance and Inspection

Vehicles and equipment shall be inspected on each day of use for leaks. Leaks shall be repaired immediately or removed from the project site.

Maintenance areas and storage tanks shall be inspected regularly.

Maintain waste fluid containers in leak proof condition.

Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

Inspection and Maintenance of these areas must be properly documented and the WPC Manager must ensure no potential for discharges occur from these areas as part of the non-visible monitoring requirements.

SWPPP or WPCP

Vehicle and Equipment Maintenance must be discussed in Section 500.4 of the SWPPP or Section 30.3 of the WPCP.

Material and Equipment Use Over Water

NS-13





Standard Symbol



Definition and Purpose

Procedures for the proper use, storage, and disposal of materials and equipment on barges, boats, temporary construction pads, or similar locations that minimize or eliminate the discharge of potential pollutants into storm drain inlets or receiving waters.

Appropriate Applications

These procedures shall be implemented for construction materials and wastes (solid and liquid) and any other materials that may be detrimental if released. Applies where materials and equipment are used on barges, boats, docks, and other platforms over or adjacent to a watercourse.

Limitations

Specific requirements may be included in the contract documents and permit documents associated with regulatory agencies such as the Regional Water Quality Control Board (RWQCB), U.S. Army Corps of Engineers, and California Department of Fish and Wildlife.

Standards and Specifications

Measures to prevent the discharge of potential pollutants into storm drain inlets or receiving waters while operating equipment or using materials over water are considered BMPs by the regulatory agencies and should be documented in the SWPPP.

Material and Equipment Use Over Water

NS-13

Implement this BMP in accordance with all necessary permits required for construction within or near receiving waters, such as RWQCB, U.S. Army Corps of Engineers, Department of Fish and Wildlife and other local permitting agencies.

Place drip pans and absorbent materials under equipment and vehicles and ensure that an adequate supply of spill cleanup materials is onsite in accordance with a spill response plan, if applicable. Ensure that staff are trained regarding the deployment of the spill response plan.

Drip pans shall be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is expected to be idle for more than one hour.

Install watertight curbs or toe boards to contain spills and prevent materials, tools, and debris from falling off the barge, platform, dock, etc.

Secure all materials to prevent discharges to receiving waters via wind.

Discharges to receiving waters shall be reported to the RE and the WPC Manager immediately upon discovery.

Maintain vehicles and equipment in accordance with NS-10, "Vehicle and Equipment Maintenance." If a leaking line cannot be repaired, remove equipment from over the water and repair immediately.

Collect and contain demolished material in accordance with NS-15, "Structure Demolition/Removal Over or Adjacent to Water."

Refer to WM-1, "Material Delivery and Storage" and WM-4, "Spill Prevention and Control."

Ensure the timely and proper removal of accumulated wastes over water. Refer to WM-5, "Solid Waste Management" and WM-6, "Hazardous Waste Management."

Maintenance and Inspection

Inspect vehicles and equipment for leaks and spills daily when they are in operation, make necessary repairs.

Ensure that employees and subcontractors implement appropriate measures for storage and use of materials and equipment.

Inspect and maintain all associated BMPs and perimeter controls to ensure continuous protection of the watercourse.

Inspect materials and equipment for leaks and spills at least weekly, prior to a forecasted rain event, daily during extended rain events and post-storm events.

Inspect equipment routinely and repair equipment as needed (e.g., worn or damaged hoses, fittings, gaskets).

Material and Equipment Use Over Water

NS-13

Inspection and Maintenance of these areas must be properly documented and ensure no potential for discharges occur from these areas as part of the non-visible monitoring requirements.

SWPPP or WPCP

Material and Equipment Use Over Water must be discussed in Section 500.4.1 of the SWPPP or Section 30.3.1 of the WPCP.

Appendix 2. CNDDB records

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Meeks Bay (3912011) OR Emerald Bay (3812081) OR South Lake Tahoe (3811988) OR Freel Peak (3811978) OR Echo Lake (3812071) OR Pyramid Peak (3812072) OR Rockbound Valley (3812082) OR Homewood (3912012) OR Tahoe City (3912022) OR Kings Beach (3912021) OR Marlette Lake (3911928) OR Glenbrook (3911918))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01085	***Ambystoma macrodactylum sigillatum*** southern long-toed salamander	None	None	G5T4	S3	SSC
AAAAD09020	***Hydromantes platycephalus*** Mount Lyell salamander	None	None	G4	S4	WL
AAABH01170	***Lithobates pipiens*** northern leopard frog	None	None	G5	S2	SSC
AAABH01340	***Rana sierrae*** Sierra Nevada yellow-legged frog	Endangered	Threatened	G1	S1	WL
ABNKC01010	***Pandion haliaetus*** osprey	None	None	G5	S4	WL
ABNKC10010	***Haliaeetus leucocephalus*** bald eagle	Delisted	Endangered	G5	S3	FP
ABNKC12020	***Accipiter striatus*** sharp-shinned hawk	None	None	G5	S4	WL
ABNKC12060	***Accipiter gentilis*** northern goshawk	None	None	G5	S3	SSC
ABNKC22010	***Aquila chrysaetos*** golden eagle	None	None	G5	S3	FP
ABNSB13010	***Asio otus*** long-eared owl	None	None	G5	S3?	SSC
ABNYF07090	***Picoides arcticus*** black-backed woodpecker	None	None	G5	S2	
ABPAE33040	***Empidonax traillii*** willow flycatcher	None	Endangered	G5	S1S2	
ABPAU08010	***Riparia riparia*** bank swallow	None	Threatened	G5	S2	
ABPBX03010	***Setophaga petechia*** yellow warbler	None	None	G5	S3S4	SSC
ABPBXB3010	***Xanthocephalus xanthocephalus*** yellow-headed blackbird	None	None	G5	S3	SSC
AFCHA02081	***Oncorhynchus clarkii henshawi*** Lahontan cutthroat trout	Threatened	None	G5T3	S1	
AFCHA03060	***Prosopium williamsoni*** mountain whitefish	None	None	G5	S3	SSC
AFCJB1303P	***Siphateles bicolor pectinifer*** Lahontan Lake tui chub	None	None	G4T3	S1S2	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AFCJC02330	***Catostomus lahontan*** Lahontan mountain sucker	None	None	GNR	S2	SSC
AMACC01090	***Myotis thysanodes*** fringed myotis	None	None	G4	S3	
AMACC01110	***Myotis volans*** long-legged myotis	None	None	G4G5	S3	
AMAEA0102L	***Ochotona princeps schisticeps*** gray-headed pika	None	None	G5T4	S2S4	
AMAEB03012	***Lepus americanus tahoensis*** Sierra Nevada snowshoe hare	None	None	G5T3T4Q	S2	SSC
AMAEB03041	***Lepus townsendii townsendii*** western white-tailed jackrabbit	None	None	G5T5	S3?	SSC
AMAFA01013	***Aplodontia rufa californica*** Sierra Nevada mountain beaver	None	None	G5T3T4	S2S3	SSC
AMAFJ01010	***Erethizon dorsatum*** North American porcupine	None	None	G5	S3	
AMAJF01014	***Martes caurina sierrae*** Sierra marten	None	None	G4G5T3	S3	
AMAJF01020	***Pekania pennanti*** Fisher	None	None	G5	S2S3	SSC
AMAJF03010	***Gulo gulo*** wolverine	None	Threatened	G4	S1	FP
AMAJF04010	***Taxidea taxus*** American badger	None	None	G5	S3	SSC
CTT51110CA	***Sphagnum Bog*** Sphagnum Bog	None	None	G3	S1.2	
CTT51200CA	***Fen*** Fen	None	None	G2	S1.2	
ICMAL05970	***Stygobromus lacicolus*** Lake Tahoe amphipod	None	None	G1	S1	
ICMAL05A70	***Stygobromus tahoensis*** Lake Tahoe stygobromid	None	None	G1	S1	
IICOL58010	***Atractelmis wawona*** Wawona riffle beetle	None	None	G3	S1S2	
IIHYM24250	***Bombus occidentalis*** western bumble bee	None	None	G2G3	S1	
IIHYM24460	***Bombus morrisoni*** Morrison bumble bee	None	None	G4G5	S1S2	
IIPLE03200	***Capnia lacustra*** Lake Tahoe benthic stonefly	None	None	G1	S1	
IITRI77010	***Desmona bethula*** amphibious caddisfly	None	None	G2G3	S2S3	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
IMBIV27020	***Margaritifera falcata*** western pearlshell	None	None	G4G5	S1S2	
IMGASM6020	***Helisoma newberryi*** Great Basin rams-horn	None	None	G1	S1S2	
NBMUS13010	***Bruchia bolanderi*** Bolander's bruchia	None	None	G3G4	S3	4.2
NBMUS3C011	***Elodium blandowii*** Blandow's bog moss	None	None	G4	S2	2B.3
NBMUS4L020	***Meesia triquetra*** three-ranked hump moss	None	None	G5	S4	4.2
NBMUS4L030	***Meesia uliginosa*** broad-nerved hump moss	None	None	G5	S3	2B.2
NLVER00460	***Peltigera gowardii*** western waterfan lichen	None	None	G4?	S3	4.2
PDAST0S1S2	***Artemisia tripartita ssp. tripartita*** threetip sagebrush	None	None	G5T4T5	S2	2B.3
PDAST20065	***Chaenactis douglasii var. alpina*** alpine dusty maidens	None	None	G5T5	S2	2B.3
PDAST3M2K0	***Erigeron miser*** starved daisy	None	None	G3?	S3?	1B.3
PDBOR0A0R0	***Cryptantha crymophila*** subalpine cryptantha	None	None	G3	S3	1B.3
PDBRA061R1	***Arabis rigidissima var. demota*** Galena Creek rockcress	None	None	G3T3Q	S1	1B.2
PDBRA110D1	***Draba asterophora var. asterophora*** Tahoe draba	None	None	G2T2?	S2?	1B.2
PDBRA110D2	***Draba asterophora var. macrocarpa*** Cup Lake draba	None	None	G2T1	S1	1B.1
PDBRA270M0	***Rorippa subumbellata*** Tahoe yellow cress	None	Endangered	G1	S1	1B.1
PDBRA40130	***Boechera tularensis*** Tulare rockcress	None	None	G3	S3	1B.3
PDCAB01010	***Brasenia schreberi*** watershield	None	None	G5	S3	2B.3
PDFAB0F120	***Astragalus austiniae*** Austin's astragalus	None	None	G2G3	S2S3	1B.3
PDHYD0C4D0	***Phacelia stebbinsii*** Stebbins' phacelia	None	None	G3	S3	1B.2
PDLAM1U0J0	***Scutellaria galericulata*** marsh skullcap	None	None	G5	S2	2B.2
PDLNT020A0	***Utricularia intermedia*** flat-leaved bladderwort	None	None	G5	S3	2B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDLNT020E0	***Utricularia ochroleuca*** cream-flowered bladderwort	None	None	G4G5	S1	2B.2
PDMAL140F0	***Sphaeralcea munroana*** Munro's desert mallow	None	None	G4	S1	2B.2
PDONA060R0	***Epilobium palustre*** marsh willowherb	None	None	G5	S2	2B.3
PDONA06180	***Epilobium howellii*** subalpine fireweed	None	None	G4	S4	4.3
PDPGN083S4	***Eriogonum luteolum var. saltuarium*** Jack's wild buckwheat	None	None	G5T1	S1	1B.2
PDPGN086U9	***Eriogonum umbellatum var. torreyanum*** Donner Pass buckwheat	None	None	G5T2	S2	1B.2
PDPOR030A0	***Claytonia megarhiza*** fell-fields claytonia	None	None	G5	S2	2B.3
PDPOR040K0	***Lewisia longipetala*** long-petaled lewisia	None	None	G2	S2	1B.3
PDRHA0C010	***Rhamnus alnifolia*** alder buckthorn	None	None	G5	S3	2B.2
PMCYP033H0	***Carex davyi*** Davy's sedge	None	None	G3	S3	1B.3
PMCYP036D0	***Carex hystericina*** porcupine sedge	None	None	G5	S2	2B.1
PMCYP03720	***Carex lasiocarpa*** woolly-fruited sedge	None	None	G5	S2	2B.3
PMCYP037K0	***Carex limosa*** mud sedge	None	None	G5	S3	2B.2
PMCYP0Q1G0	***Schoenoplectus subterminalis*** water bulrush	None	None	G4G5	S3	2B.3
PMLIL022D0	***Allium tribracteatum*** three-bracted onion	None	None	G2	S2	1B.2
PMPOA2Y080	***Glyceria grandis*** American manna grass	None	None	G5	S3	2B.3
PMPOT03080	***Potamogeton epihydrus*** Nuttall's ribbon-leaved pondweed	None	None	G5	S2S3	2B.2
PMPOT03091	***Stuckenia filiformis ssp. alpina*** northern slender pondweed	None	None	G5T5	S2S3	2B.2
PMPOT030Z0	***Potamogeton robbinsii*** Robbins' pondweed	None	None	G5	S3	2B.3
PPOPH010K0	***Botrychium montanum*** western goblin	None	None	G3	S2	2B.1
PPOPH010L0	***Botrychium crenulatum*** scalloped moonwort	None	None	G4	S3	2B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PPOPH010R0	***Botrychium minganense*** Mingan moonwort	None	None	G4G5	S3	2B.2
PPOPH010S0	***Botrychium ascendens*** upswept moonwort	None	None	G3G4	S2	2B.3

Record Count: 83

Appendix 3. Tahoe Yellow Cress Survey

RARE PLANT SURVEY FOR TAHOE YELLOW CRESS

CABLE REMOVAL PROJECT



Prepared for:

R3X Group, Inc.

Prepared by:

Sierra Ecosystem Associates

1024 Simon Drive, Suite H
Placerville, CA 95667

FINAL

AUGUST 4, 2022

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 METHODOLOGY 4

3.0 RESULTS 4

4.0 SITE PHOTOS 10

LIST OF FIGURES

Figure 1. Project Location 2

Figure 2. Survey Areas and Terrestrial Cut Locations 3

Figure 3. Location 1 across Tallac Creek with multiple occurrences of TYC 5

Figure 4. Location 4 - One plant located approximately 12 inches from the cables. 8

1.0 INTRODUCTION

The following sections address the R3X proposed Cable Removal Project (Project). The Project is located in South Lake Tahoe, California along the southwest shore of Lake Tahoe from north of D.L. Bliss State Park to Baldwin Beach. The project involves the removal of approximately 75 tons of lead cable from Lake Tahoe. The cable is mostly underwater but intersects the shoreline in 6 different onshore locations. An endemic plant species to the shores of Lake Tahoe, the Tahoe yellow cress (*Rorippa subumbellata*), has multiple occurrences nearby as shown in Figure 2. This Tahoe Yellow Cress is listed as endangered under the California Endangered Species Act and is a candidate for protection under the federal Endangered Species Act. A survey was completed to assess the nearby populations to determine the location of this species relative to Project disturbance areas.

Figure 1. Project Location



Figure 2. Survey Areas and Terrestrial Cut Locations



2.0 METHODOLOGY

Sierra Ecosystem Associates, Inc. (SEA) staff Senior Ecologist, Jeremy Waites (J. Waites), and Natural Resource Analyst, Summer Von Aesch (S. Von Aesch) visited the project site and completed a rare plant survey with a focus on Tahoe Yellow Cress (TYC) on July 21, 2022. The survey consisted of travelling along the shoreline of Lake Tahoe to each location and conducting a survey. The survey consisted of a floristic pedestrian survey from the water's edge to the high-water mark. The survey collected species information for all plants in the disturbance area and within 50 feet of the cable removal. If rare plants were found, information was collected on number of plants, size of population(s), and exact location of the rare plants and the cable using a sub-meter GPS unit. Pictures were taken of each rare plant occurrence as well as the overview of the site.

3.0 RESULTS

Following the completion of the field survey, SEA found Tahoe yellow cress in Location 1 and Location 4. An overview of each cut location and pictures of the Tahoe Yellow Cress found are recorded below.

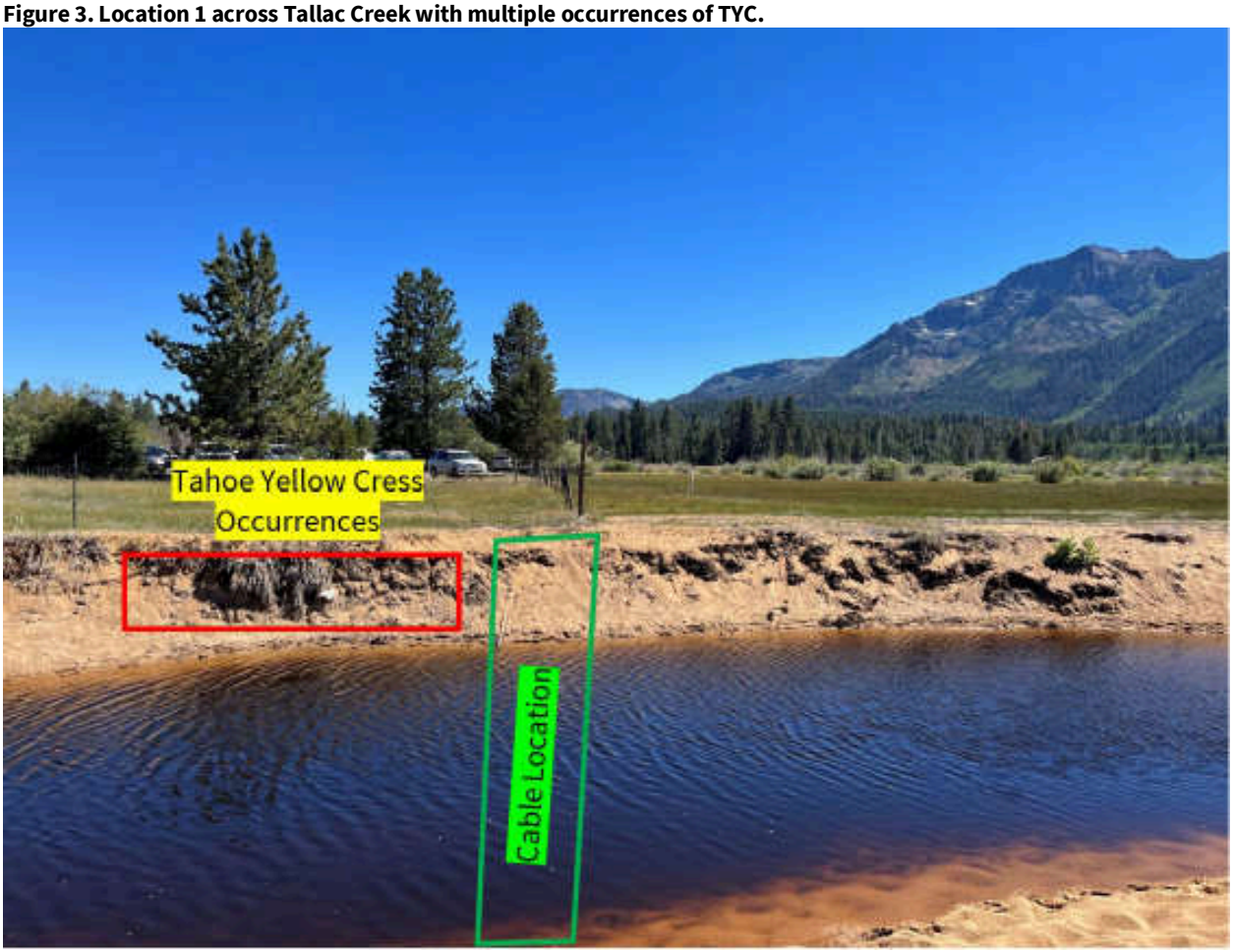
Location 1

Location 1 cuts across the mouth of Tallac Creek on Baldwin Beach. The vegetation around the site consisted of mullein, sedge species, lupine, and Tahoe Yellow Cress. Eight individual plants are located a few feet down stream of the removal location. The location of the plants in relation to the cable removal is shown in Figure 3.

Species Present

- *Rorippa subumbellata*
- *Verbascum thapsus*
- *Lupinus polyphyllus*
- *Carex nebrascensis*

Figure 3. Location 1 across Tallac Creek with multiple occurrences of TYC.



Location 2

Location 2 is on a rocky shore 0.75 mile south of the mouth of Emerald Bay. The vegetation around the site consists of various wetland plants such as willow, aspen, and alder. No occurrences of TYC were present.

Species Present

- *Populus trichocarpa*
- *Alnus incana*
- *Populus tremuloides*
- *Potentilla gracilis*
- *Pinus contorta*
- *Galium ssp.*
- *Salix lasiolepis*
- *Rorippa curvisiliqua*

Location 3
This site cuts across the low-lying peninsula on the north side of the mouth of Emerald Bay. The cable removal area is on a well vegetated rocky shore. The vegetation above the ordinary high-water mark (OHWM) is dominated by overstory trees consisting of sugar pine, Jeffrey pine, ponderosa pine, white fir, and black cottonwood. The understory was on the sandy shore was productive with No occurrences of TYC were found in this location.

Species Present
- *Quercus vacciniifolia*
- *Abies concolor*
- *Calocedrus decurrens*
- *Hieracium albiflorum*
- *Pinus lambertiana*
- *Pinus jeffreyii*
- *Pinus ponderosa*
- *Populus trichocarpa*
- *Potentilla gracilis*
- *Galium ssp.*
- *Deschampsia cespitosa*

Location 3A
The north side of the mouth of Emerald Bay where the cable removal is proposed is a heavily vegetated sandy shoreline consisting mostly of lupine and cinquefoil. No occurrences of TYC were found in this location.

Species Present
- *Hosackia pinnata*
- *Acmispon decumbens*
- *Lupinus polyphyllus*
- *Rumex triangulivalvis*
- *Verbascum thapsus*
- *Mentha canadensis*
- *Salix lasiandra*
- *Potentilla gracilis*
- *Hieracium albiflorum*

Location 4
This cable removal area is located north of Emerald Bay on a rocky shore. The vegetation consisted of mostly huckleberry oak. One occurrence of TYC was found adjacent to the cable and is shown in Figure 4.

Species Present

- *Pseudognaphalium californicum*
- *Hieracium albiflorum*
- *Carex ssp.*
- *Deschampsia cespitosa*
- *Potentilla gracilis*
- *Rorippa subumbellata*
- *Arctostaphylos patula*
- *Pinus lambertiana*
- *Quercus vacciniifolia*
- *Pinus jeffreyi*
- *Abies concolor*

Figure 4. Location 4 - One plant located approximately 12 inches from the cables.



Location 5

Location 5 is just to the south of Lighthouse Point. This site is on a steep rocky shore with little vegetation. No occurrences of TYC were found in this location.

Species Present

- *Ceanothus velutinus*
- *Galium ssp.*
- *Abies concolor*
- *Deschampsia cespitosa*

Location 6

Location 6 is 0.6 mile north of D. L. Bliss State Park. The site is on a sandy shore between private docks with almost no vegetation below the OHWM. No occurrences of TYC were found in this location.

Species Present

- *Ribes ssp.*
- *Salix lasiolepis*

4.0 SITE PHOTOS

Photo 1. A view of the stream bank on Tallac Creek where the Tahoe yellow cress is located at cut location 1.



Photo 2. An overview of cut location 2.



Photo 3. An overview of cut location 3.



Photo 4. An overview of cut location 3A.



Photo 5. Tahoe yellow cress at cut location 4.



Photo 6. An overview of cut location 5.

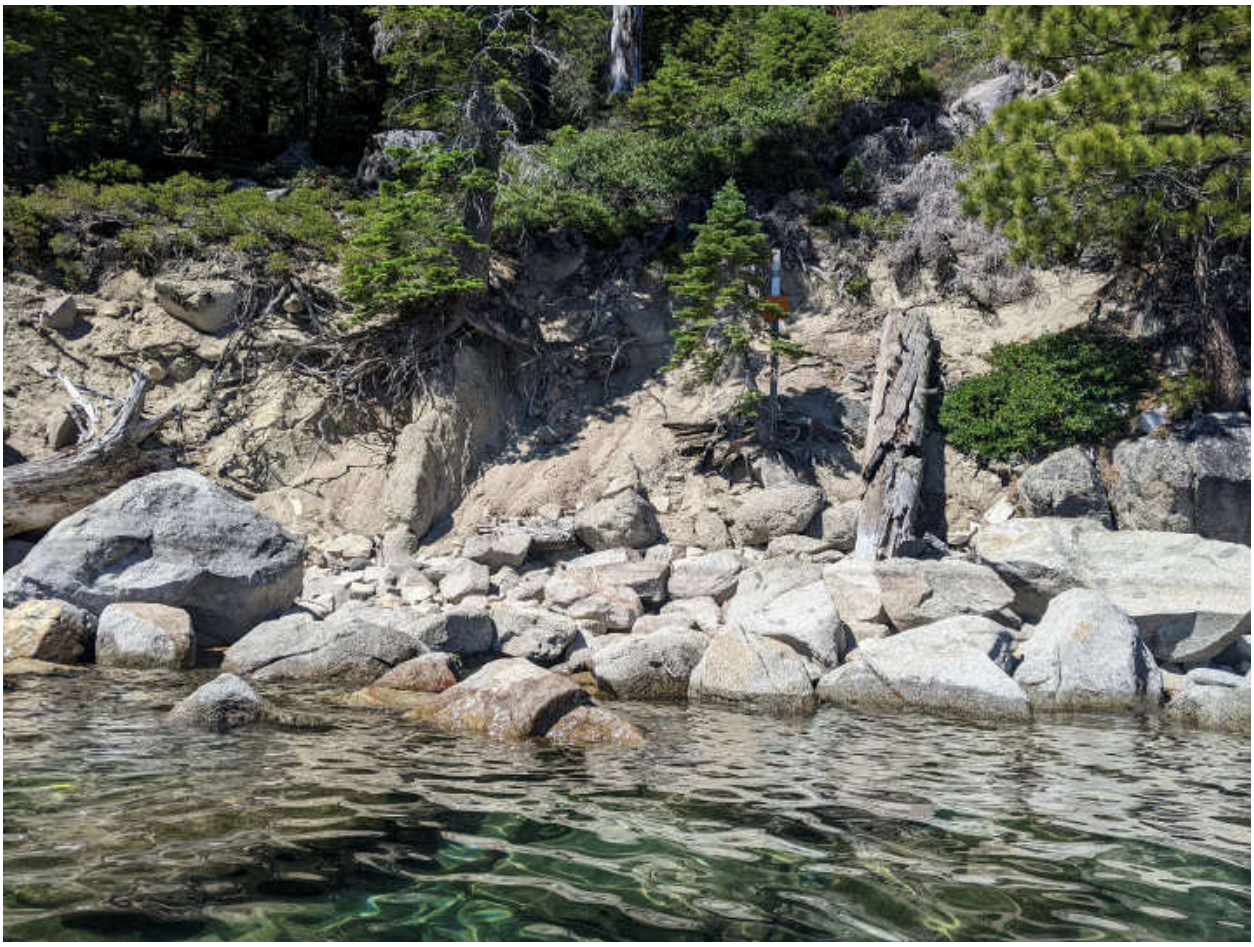


Photo 7. An overview of cut location 6.

