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 a mini 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.

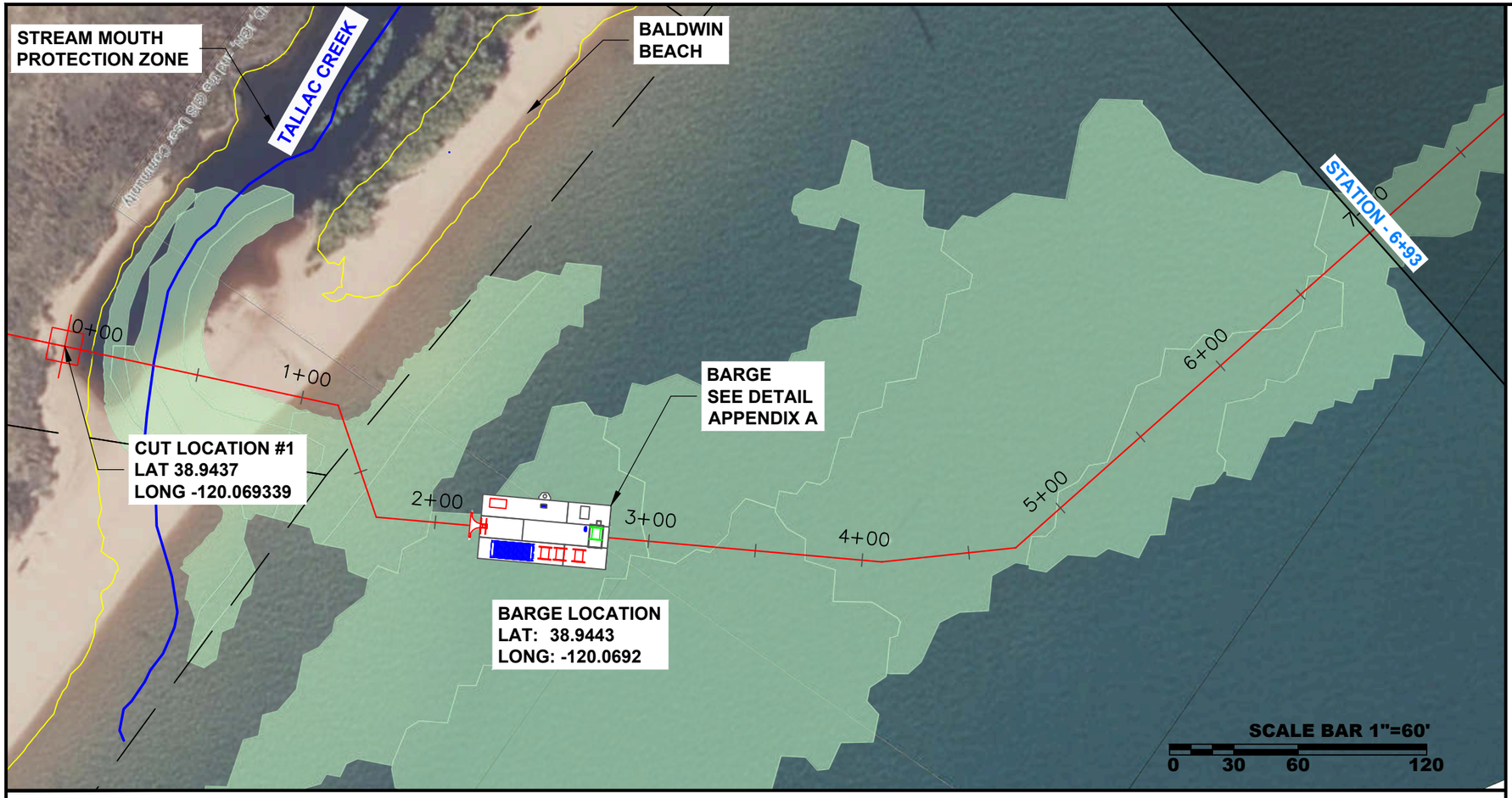
23. THE SIERRA DISTRICT WATER & SEWER PLANT SUPERVISOR SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF ACTIVITIES.

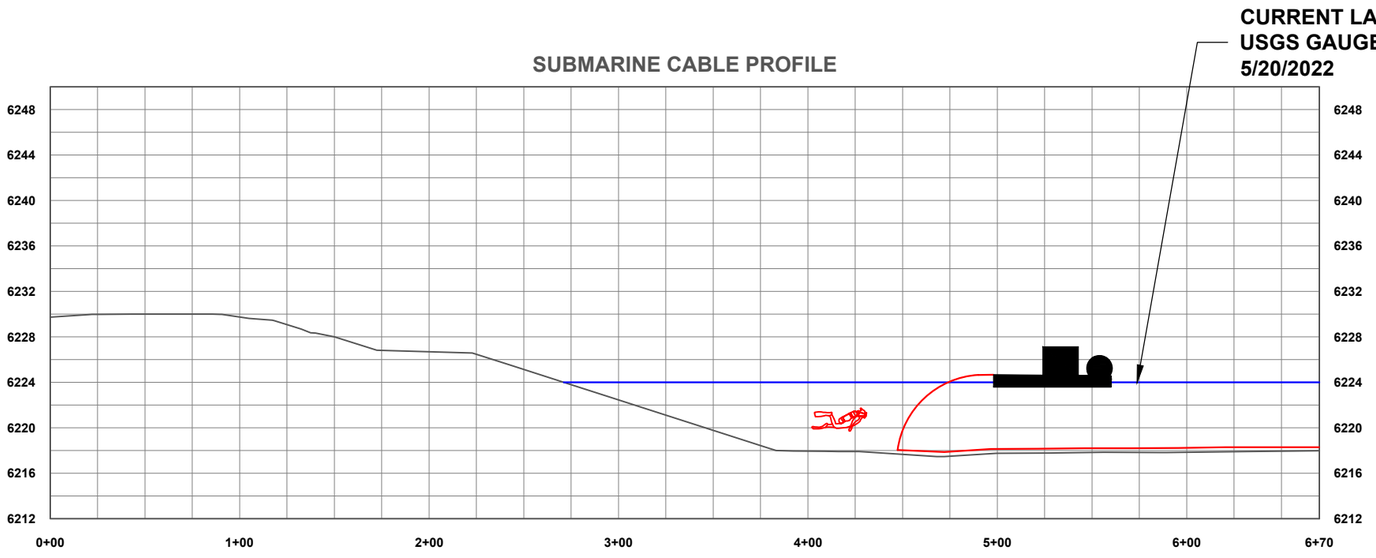
24. CONTRACTOR SHALL CAP ALL CUT ENDS PRIOR TO REELING THE CABLE TO MINIMIZE EXPOSURE OF THE INTERNAL SHEATH WITH WATER.

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
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DATE: 4/19/2022
PROJECT COUNTY: EL DORADO





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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
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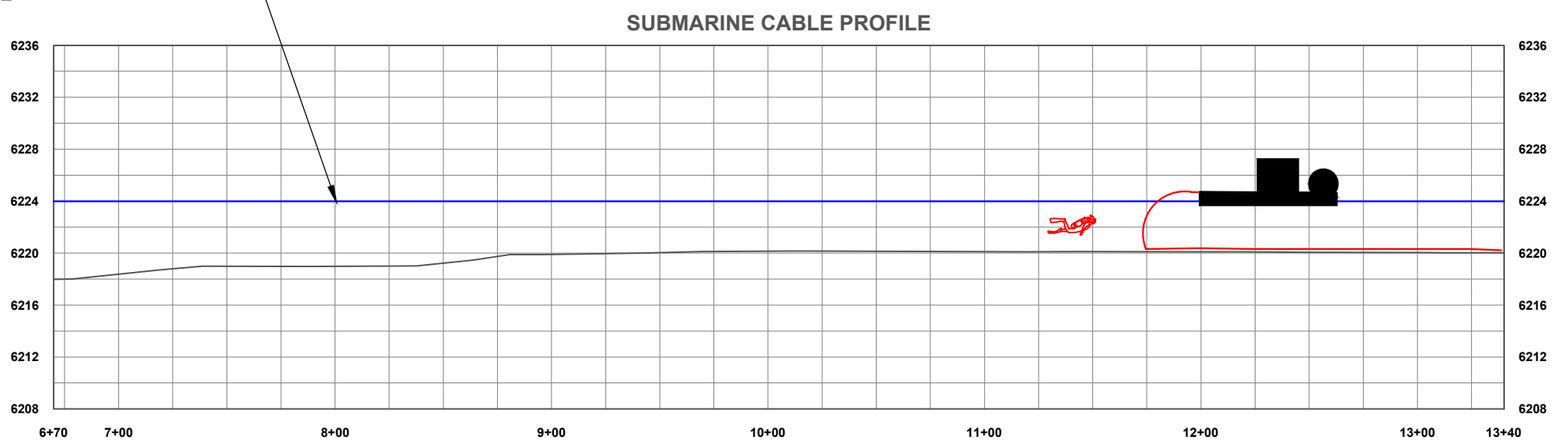
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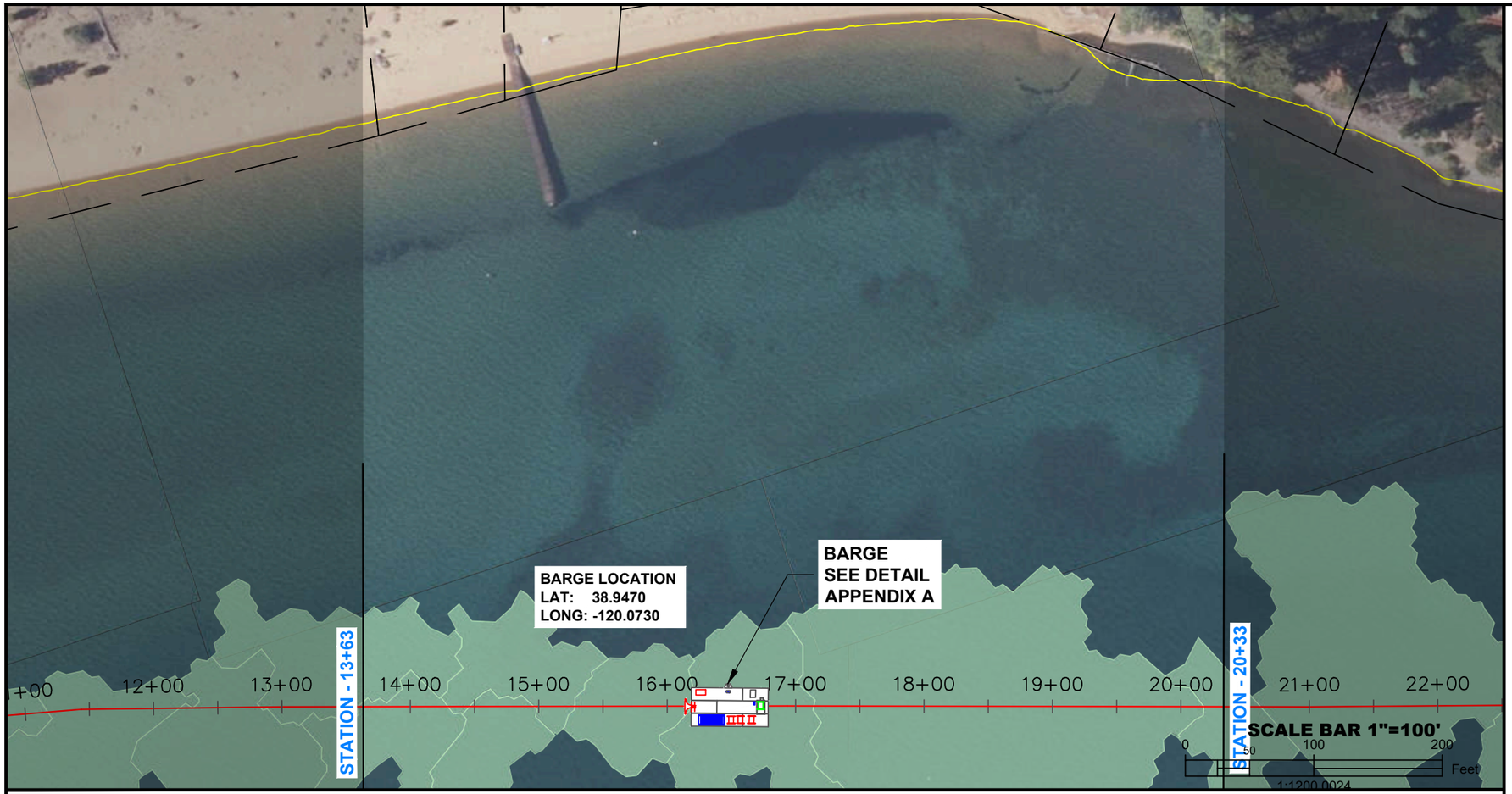
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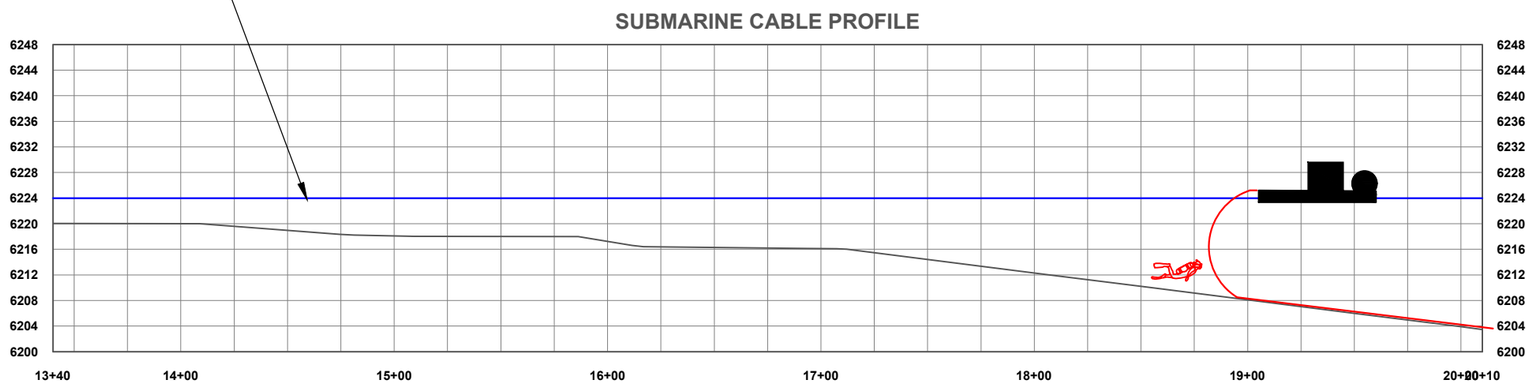
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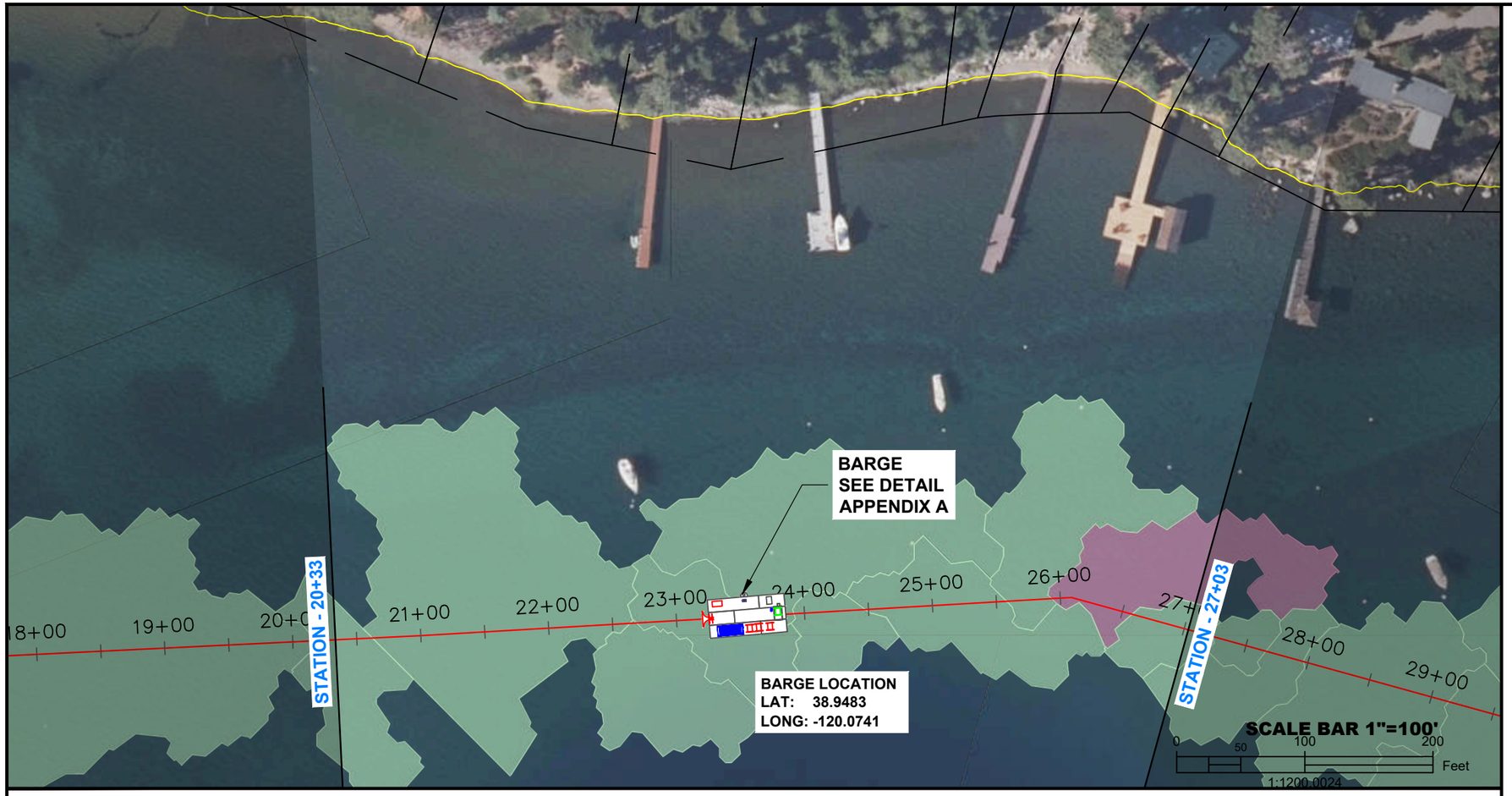
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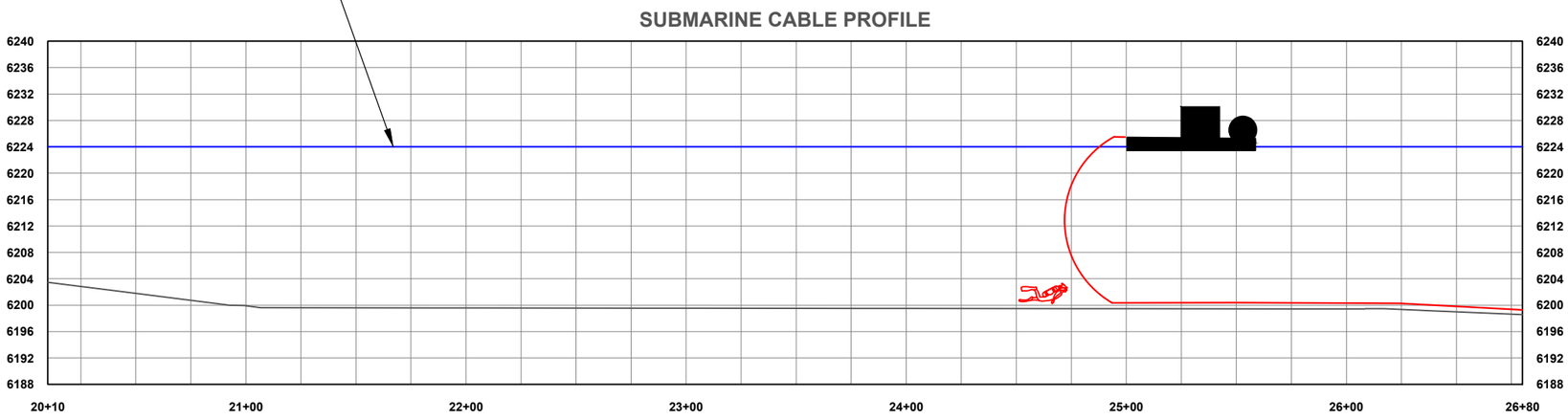
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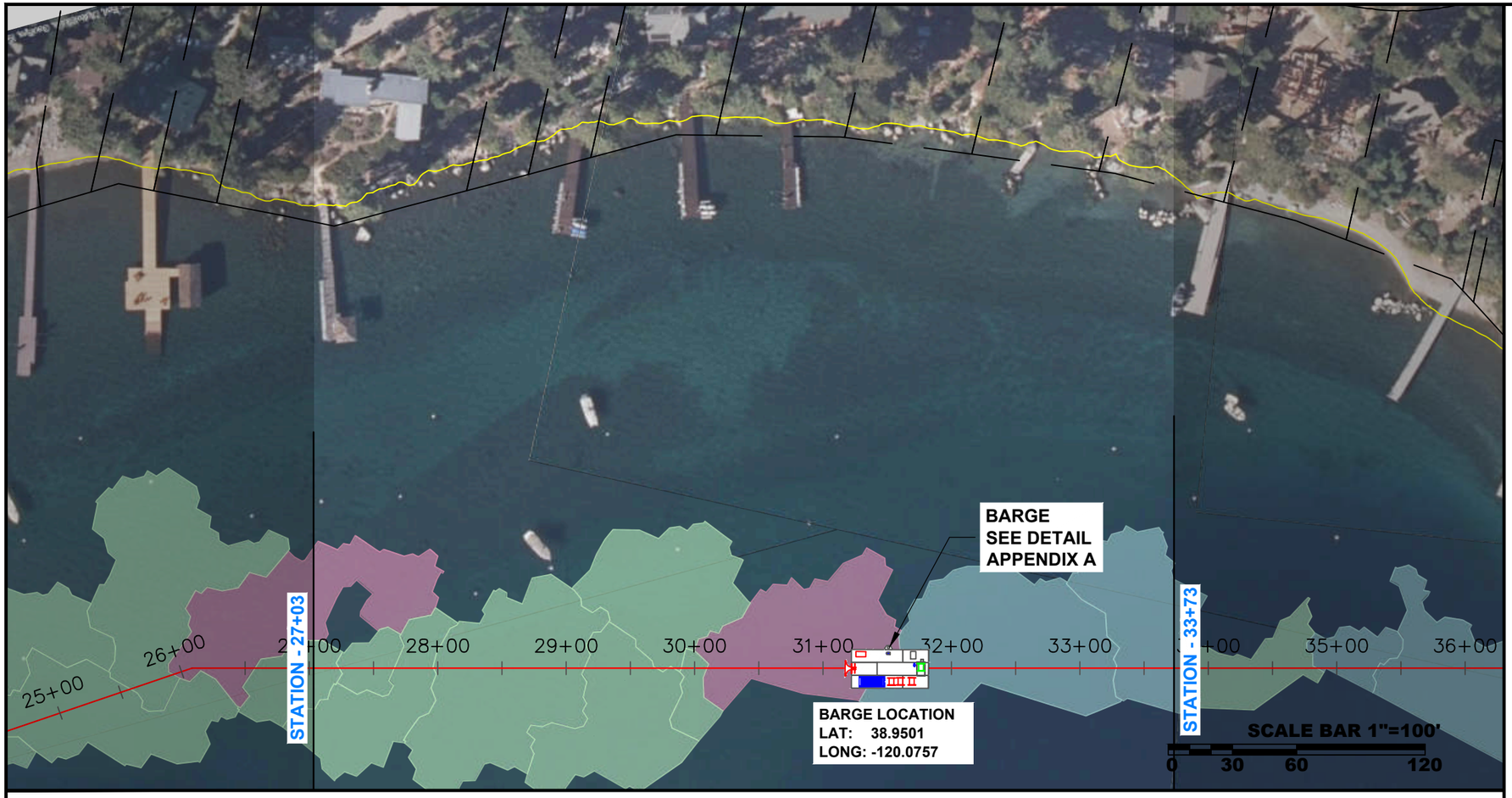
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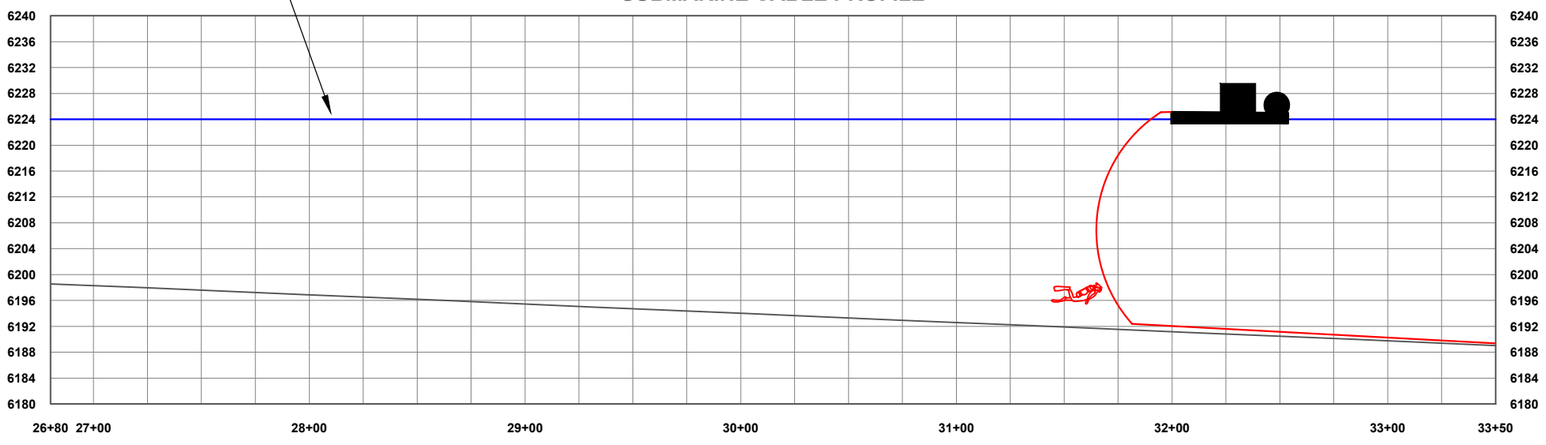
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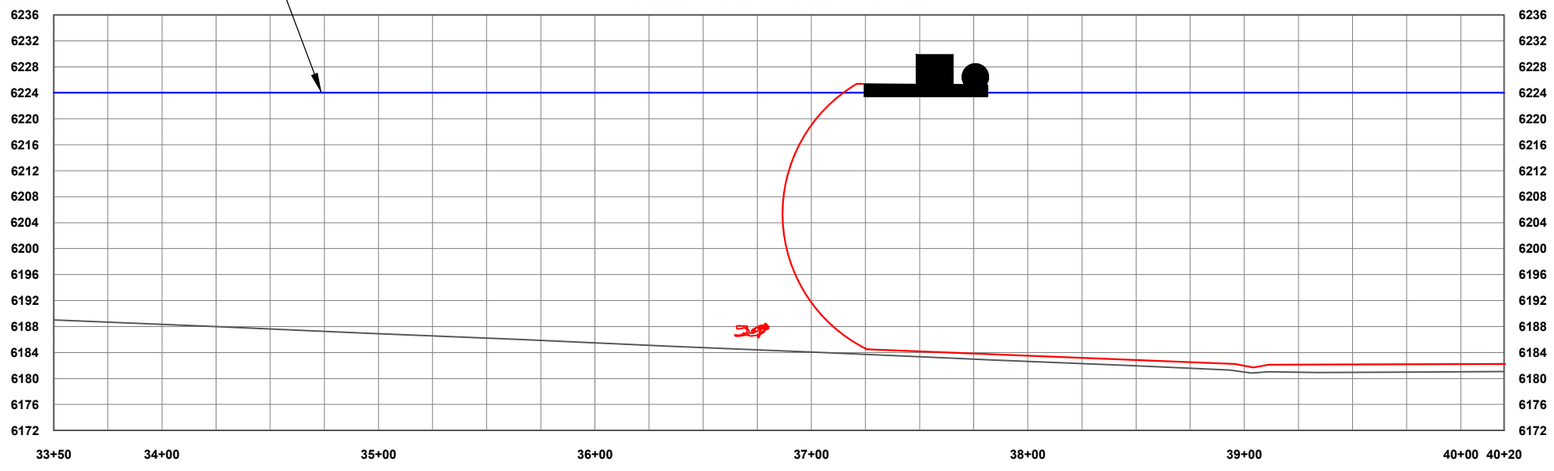
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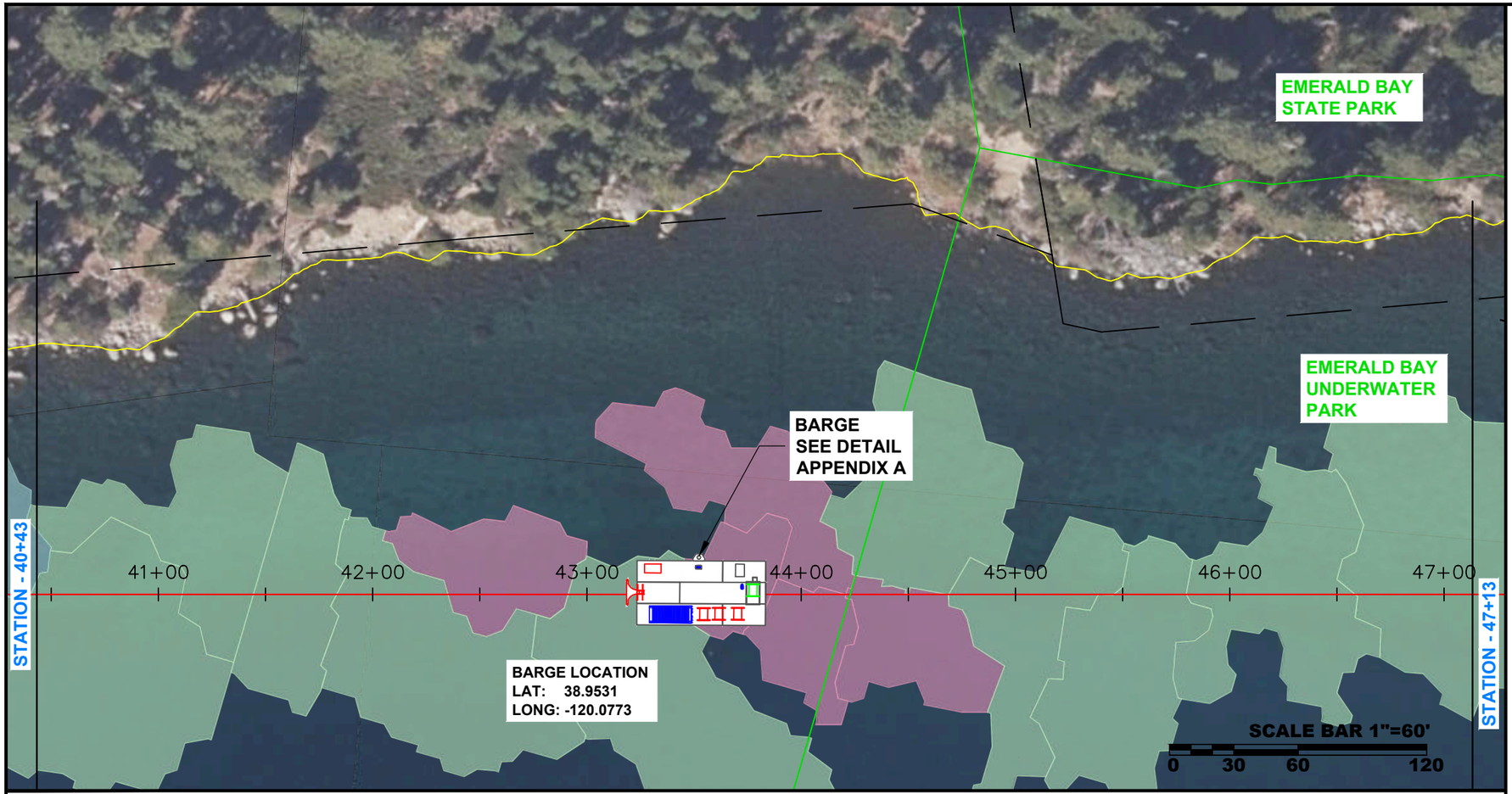
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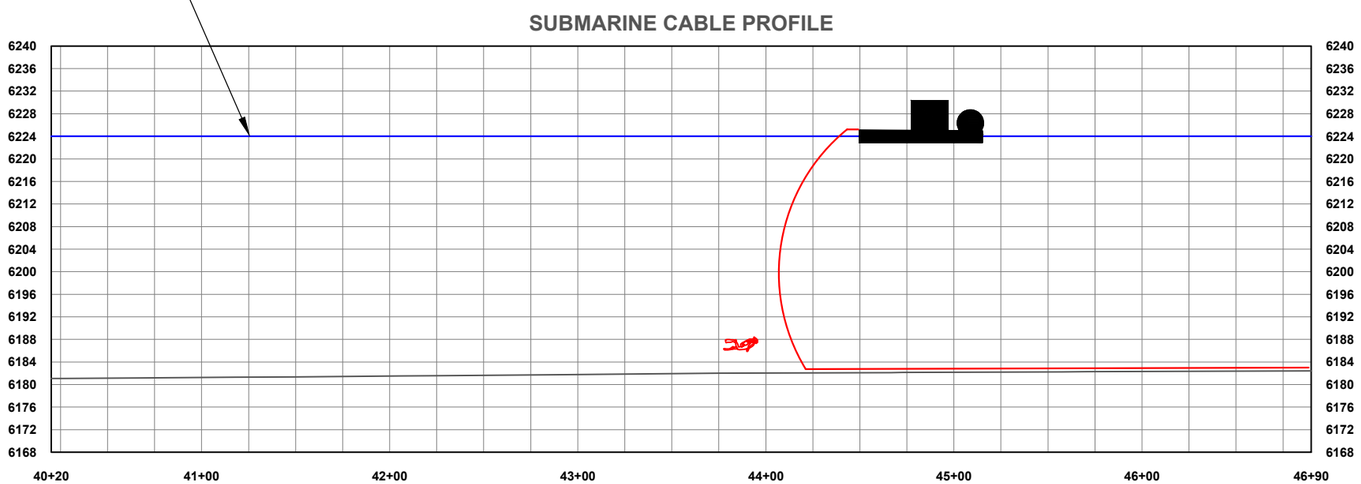
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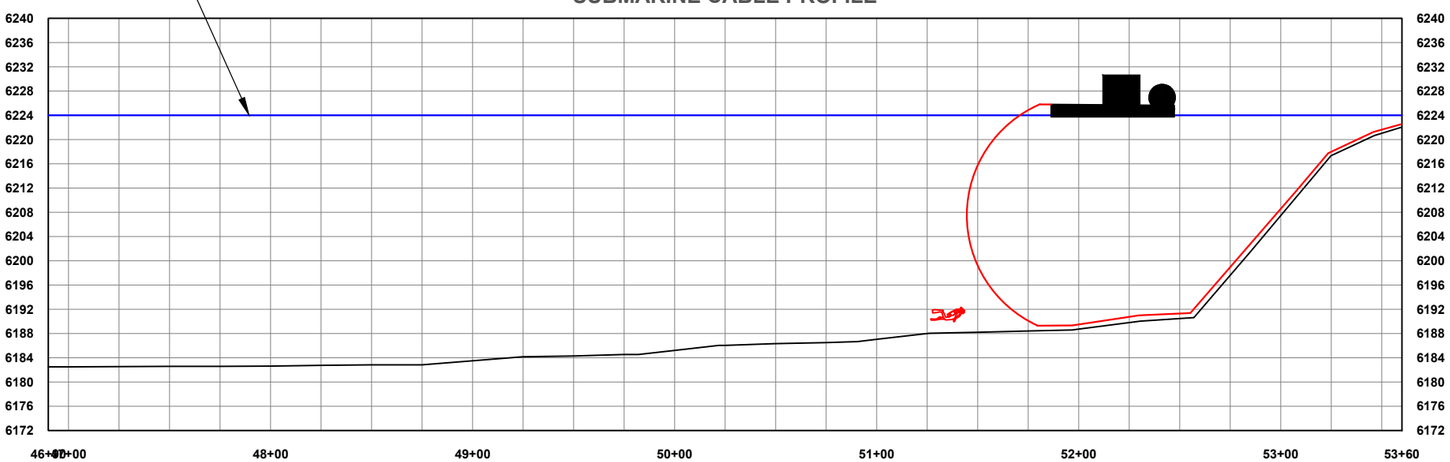
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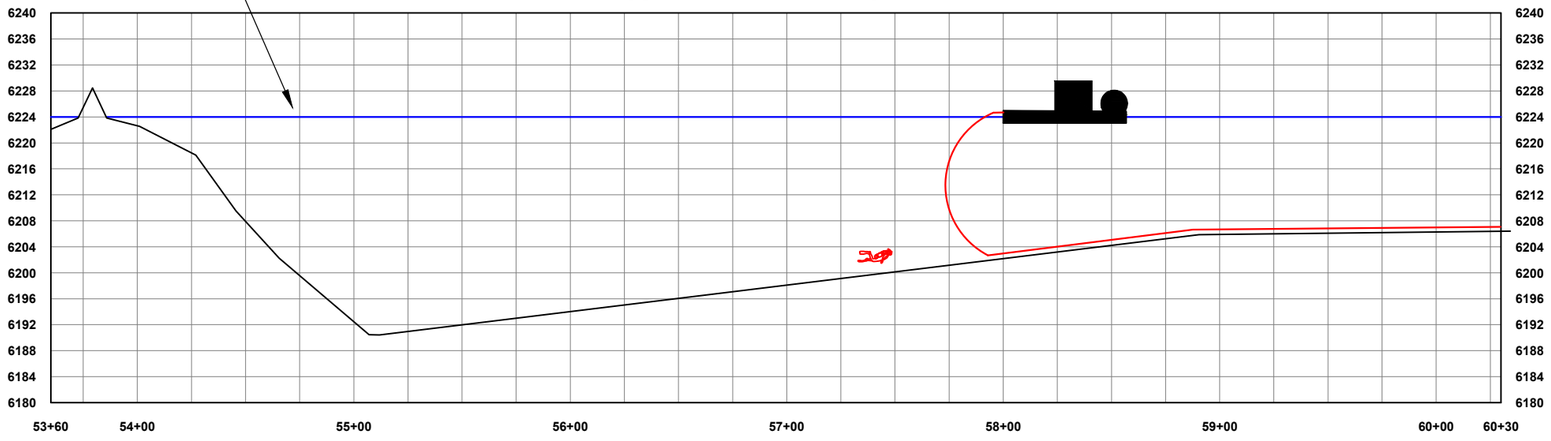
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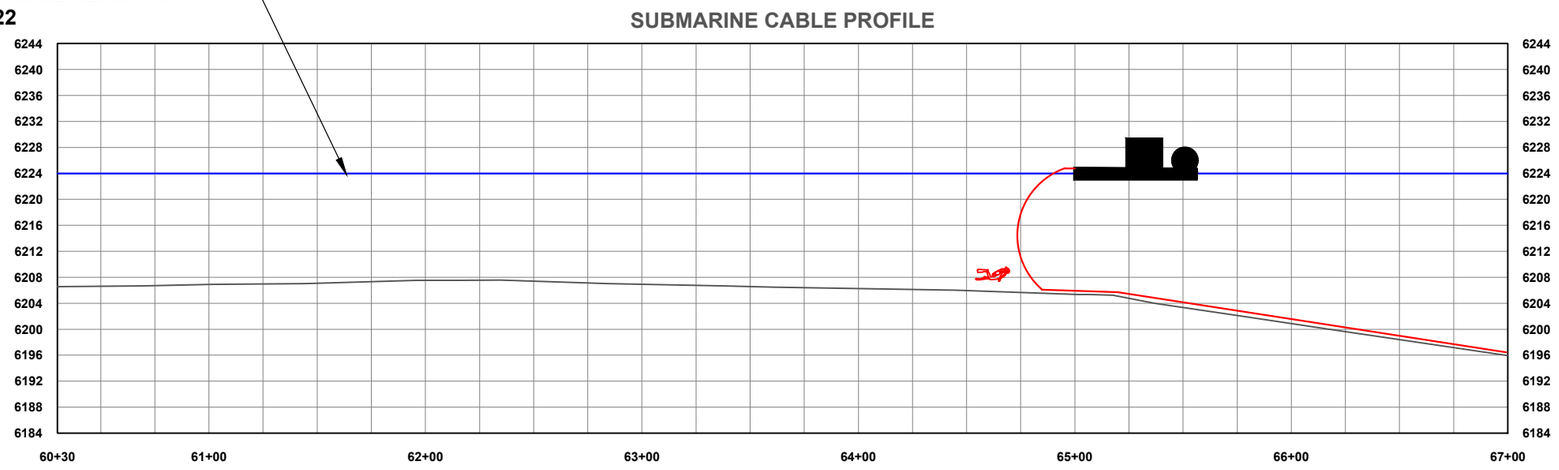
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CURRENT LAKE ELEVATION
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R3X GROUP

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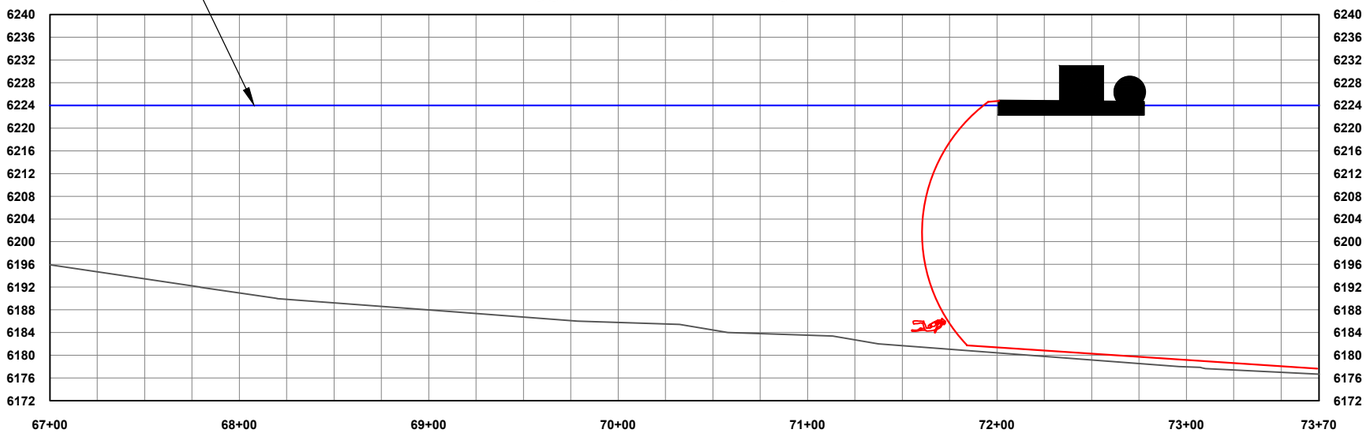
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CURRENT LAKE ELEVATION
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SUBMARINE CABLE PROFILE



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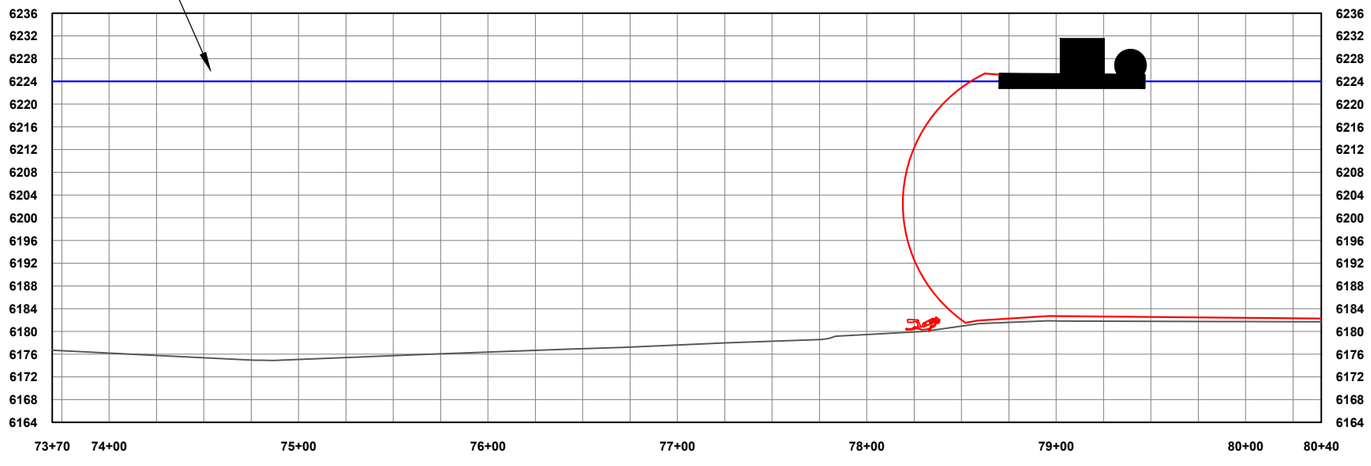
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CURRENT LAKE ELEVATION
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SUBMARINE CABLE PROFILE



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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

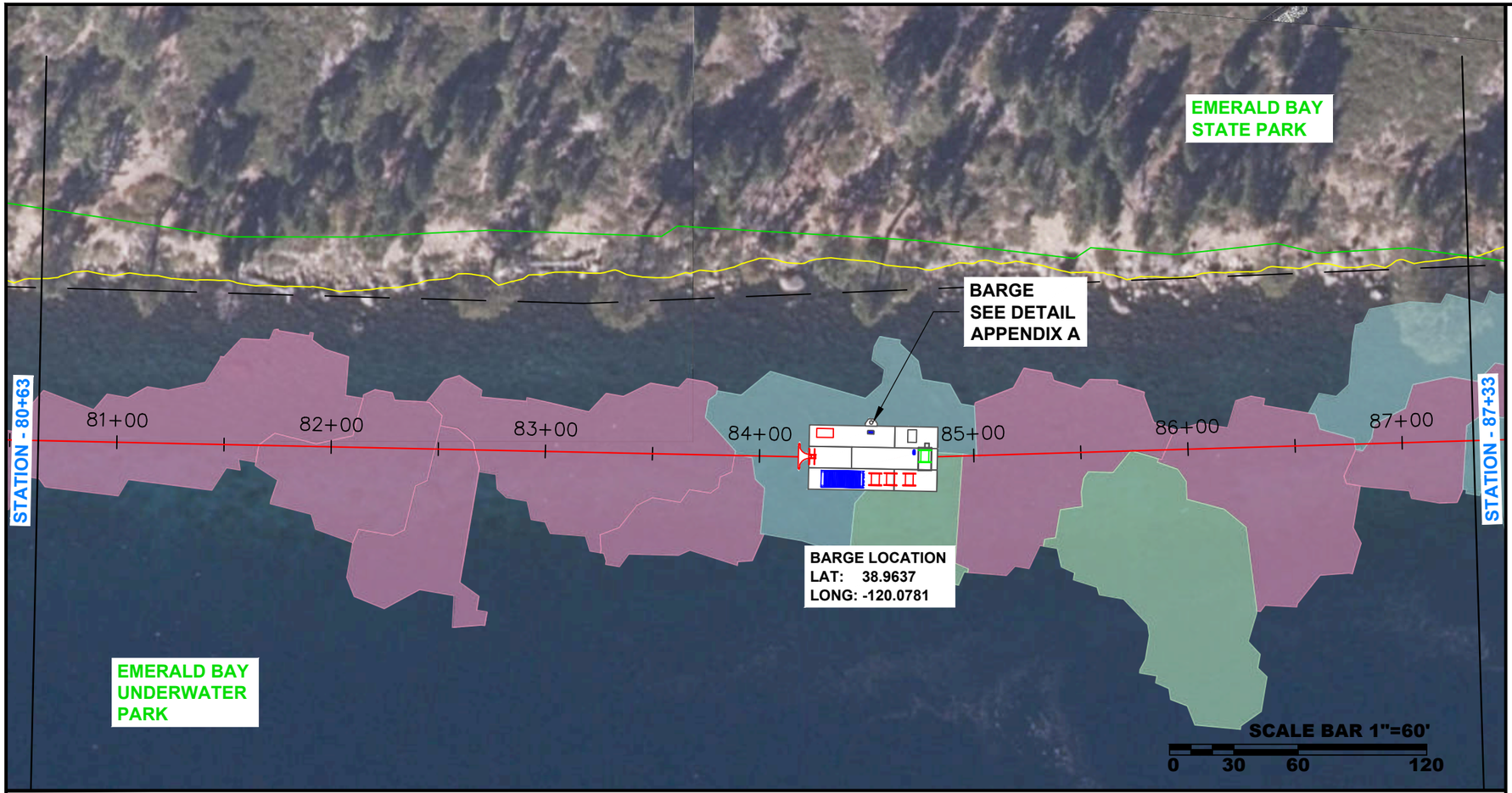
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

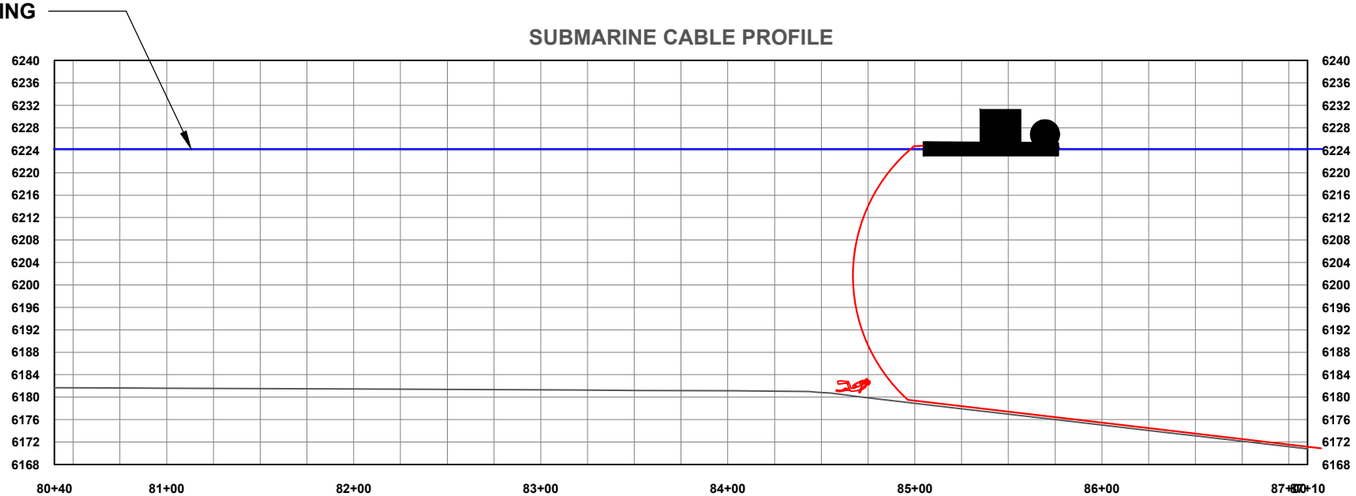
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CURRENT LAKE ELEVATION
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5/20/2022



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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

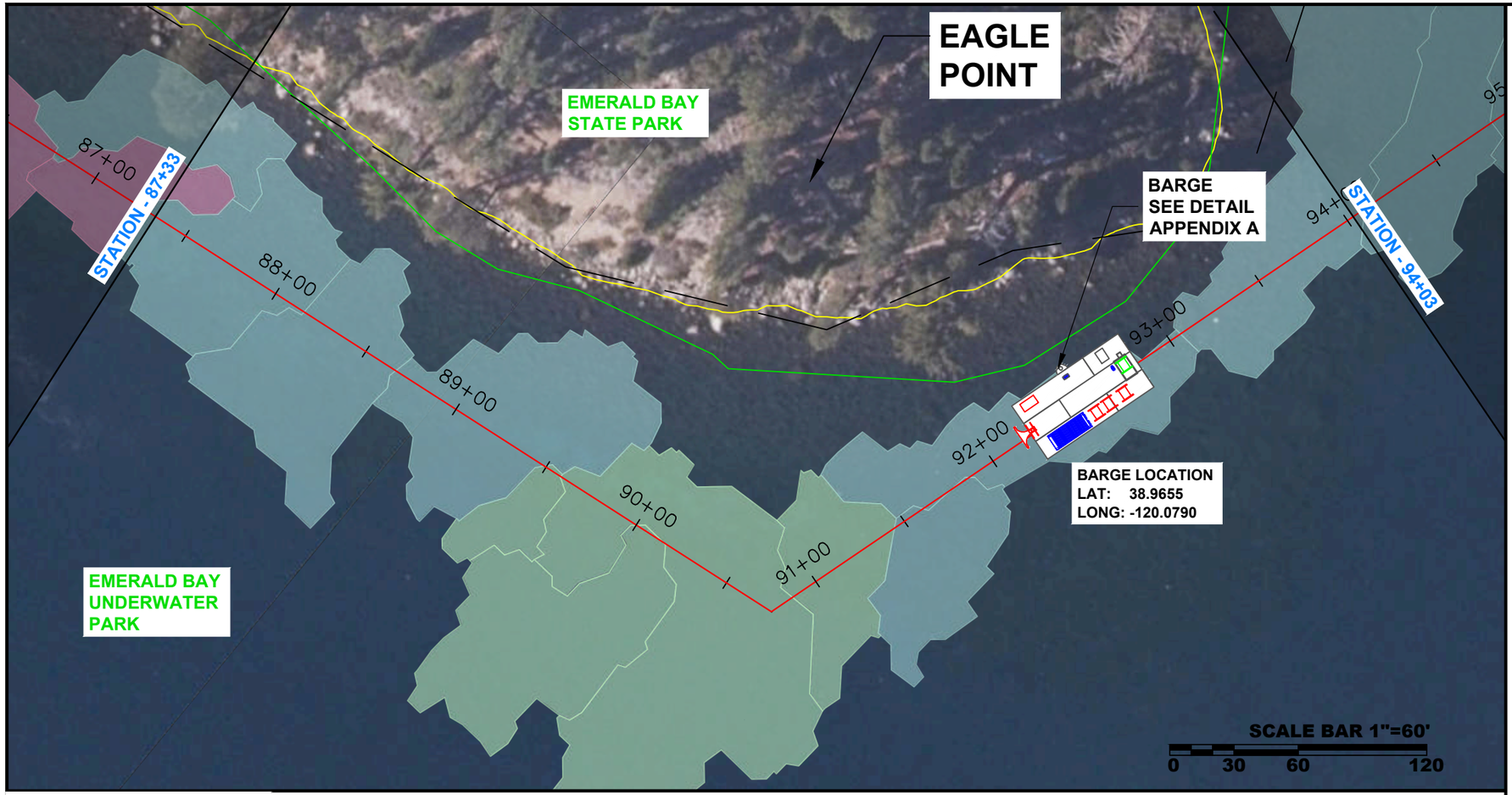
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

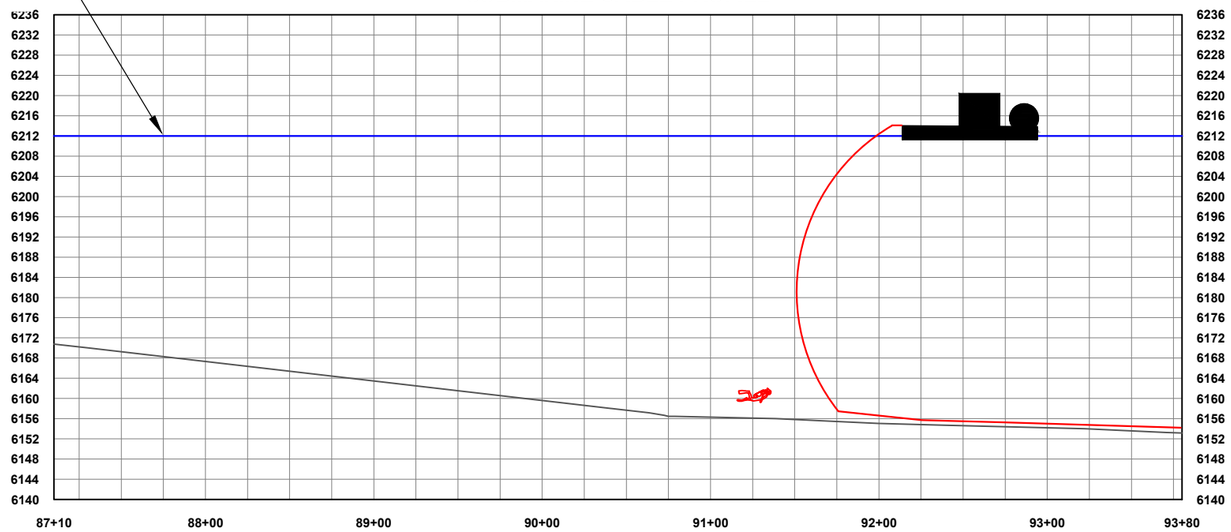
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CURRENT LAKE ELEVATION
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SUBMARINE CABLE PROFILE



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LEGEND

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HIGH WATER LINE

STATE PARK BOUNDARY

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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

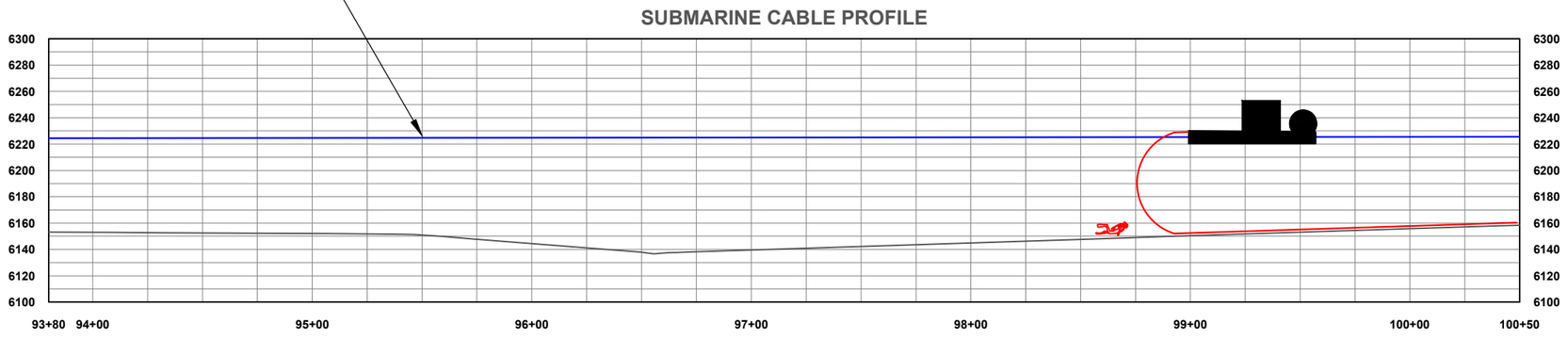
PROJECT NO. A020LET

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CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



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LEGEND

CUT LOCATIONS

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BARGE

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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

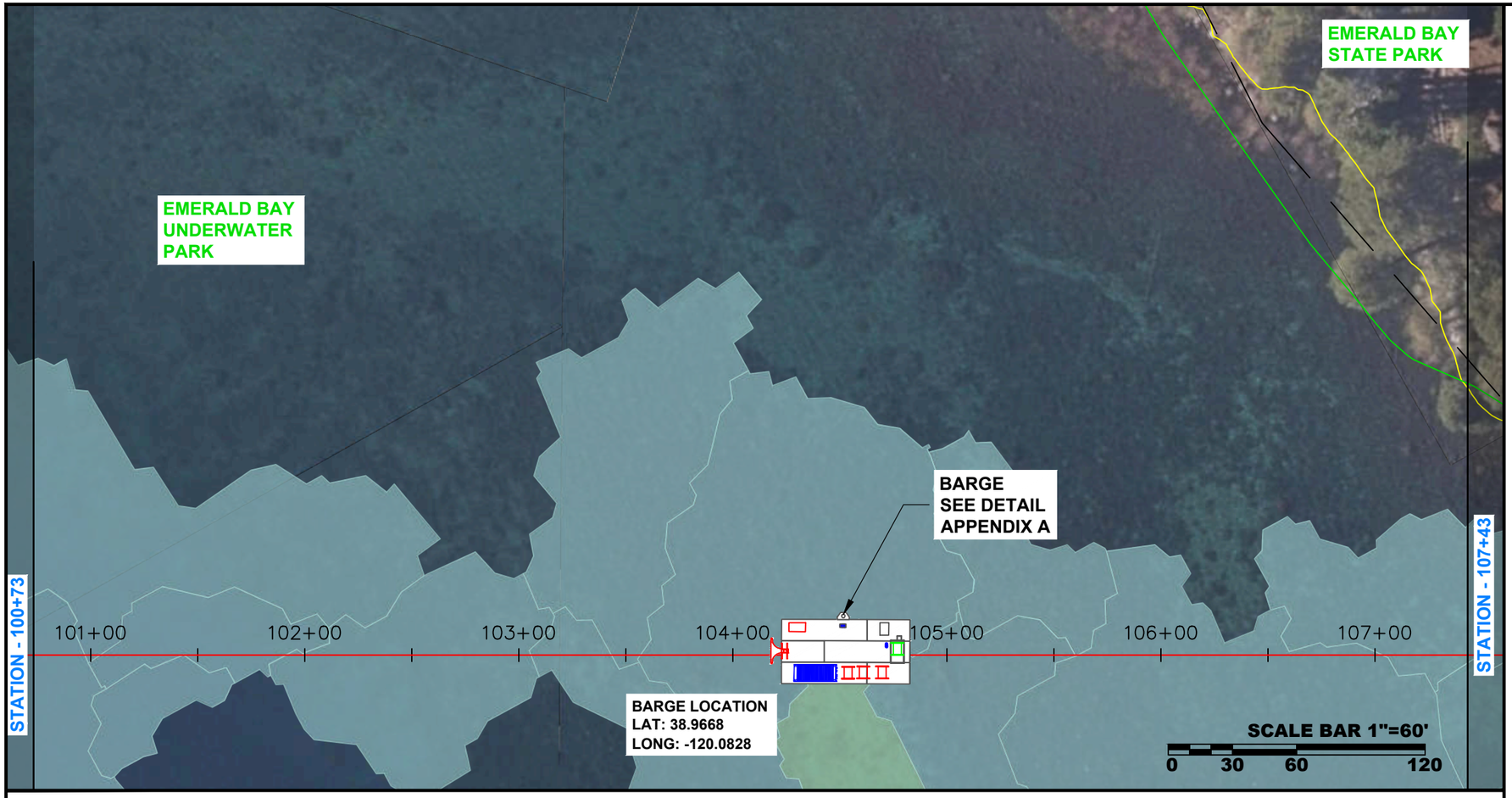
PROJECT COUNTY: EL DORADO

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

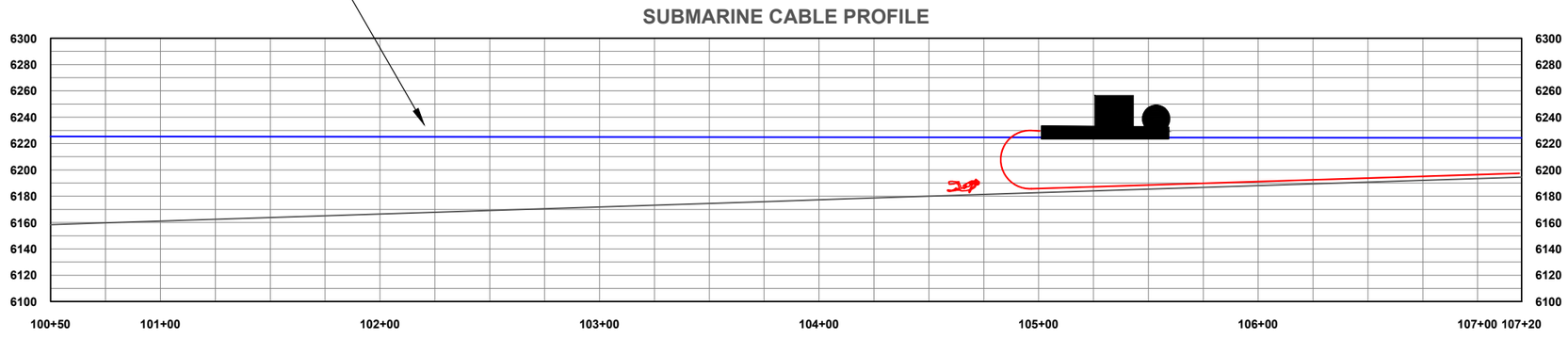
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

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CURRENT LAKE ELEVATION
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STATE PARK BOUNDARY

PARCEL BOUNDARY

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1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

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R3X GROUP

N E S W

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

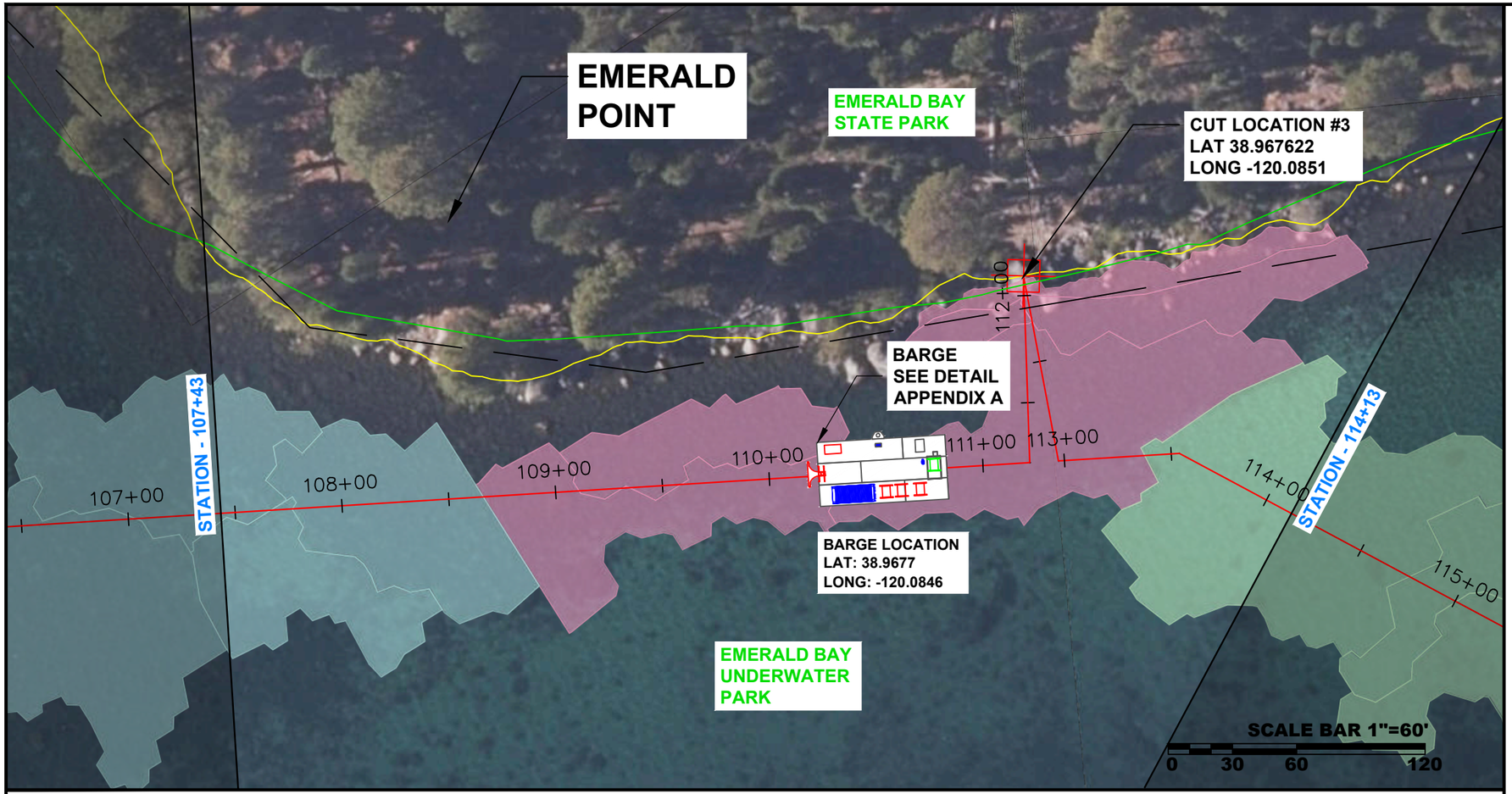
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

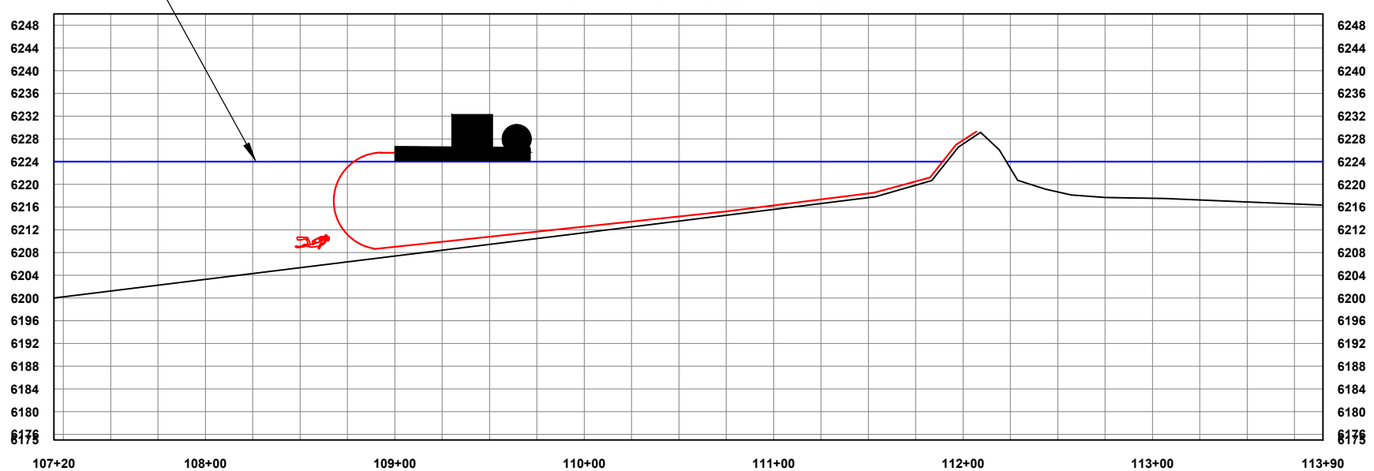
DATE: 4/19/2022

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CURRENT LAKE ELEVATION
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SUBMARINE CABLE PROFILE



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LEGEND

CUT LOCATIONS

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BARGE

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HIGH WATER LINE

STATE PARK BOUNDARY

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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

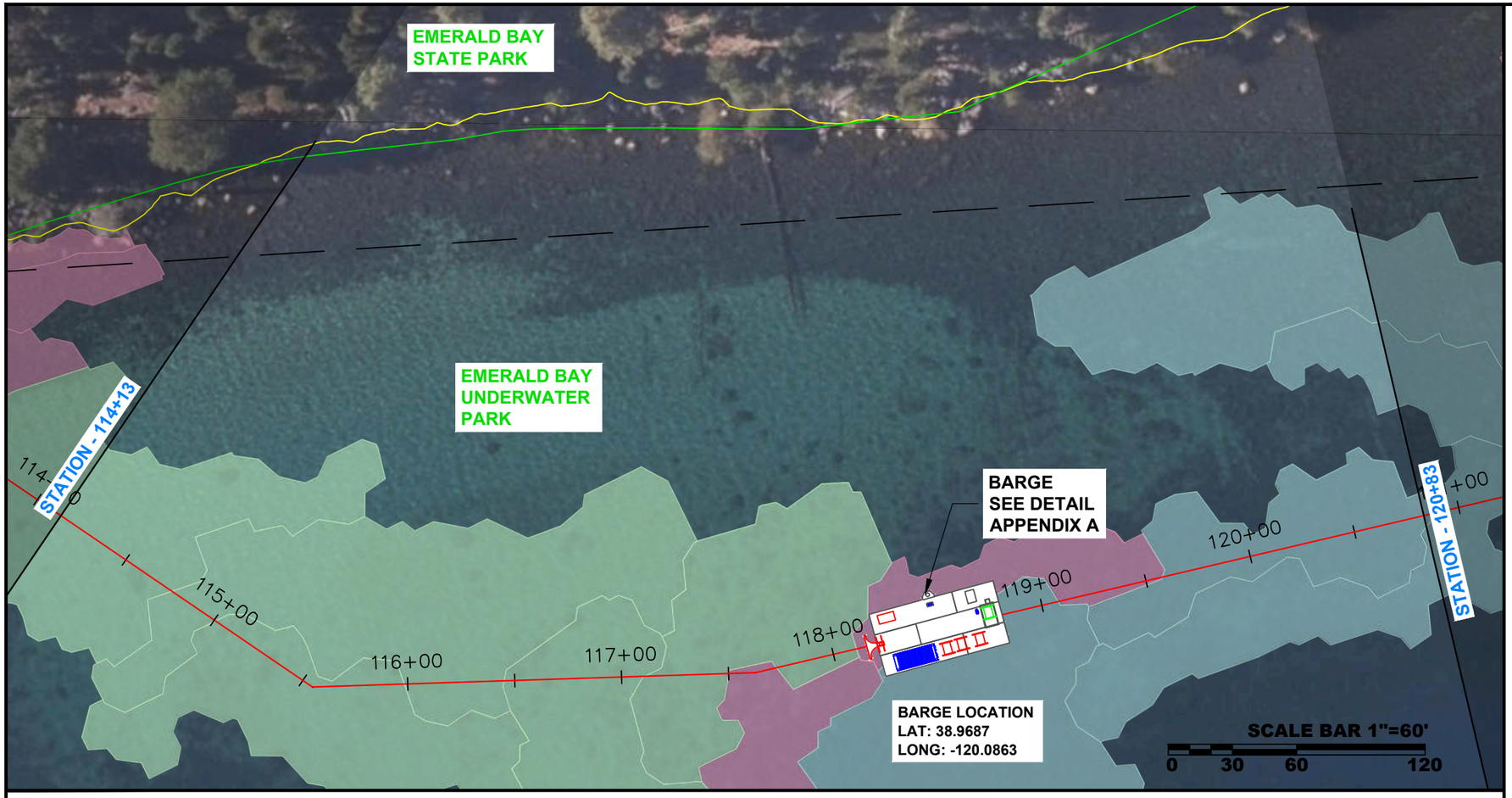
ENG'R: JASON PARNHAM TEL.: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

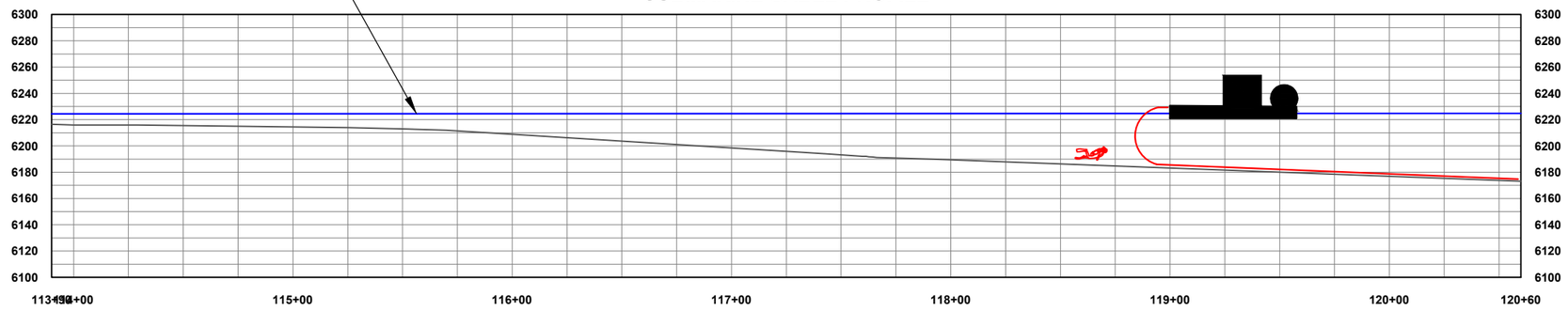
DATE: 4/19/2022

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CURRENT LAKE ELEVATION
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SUBMARINE CABLE PROFILE



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LEGEND

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STREAMS

1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

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R3X GROUP

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

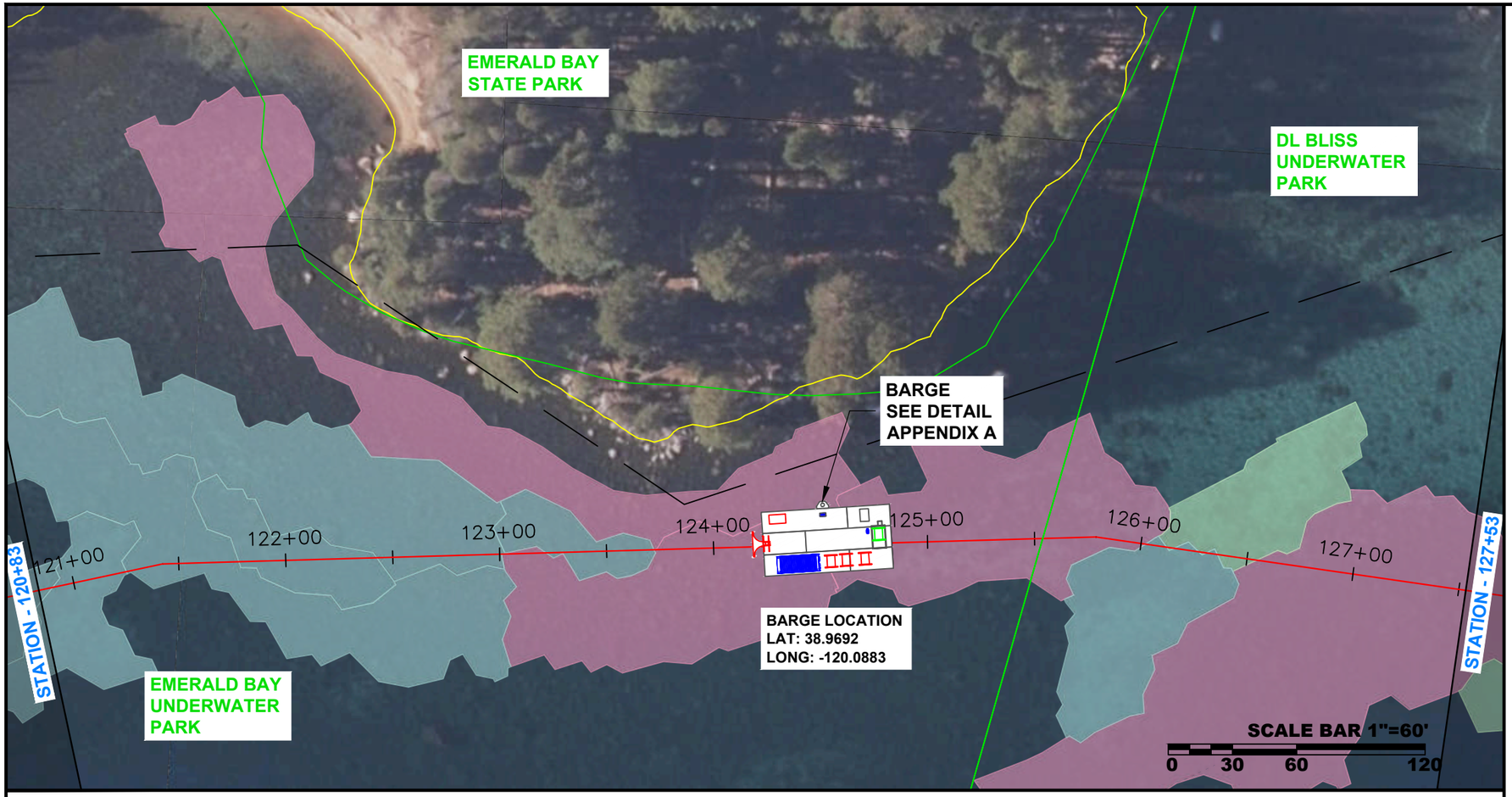
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

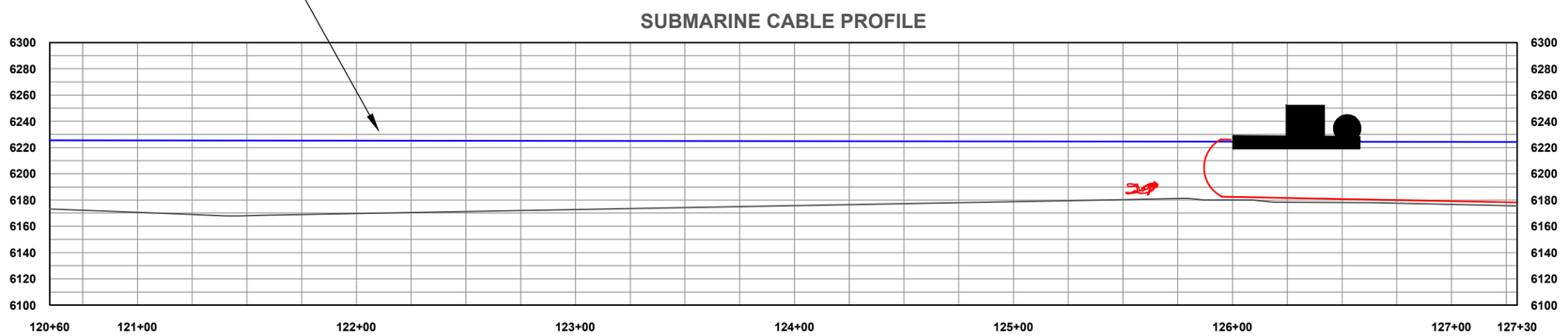
PROJECT NO.: A020LET

DATE: 4/19/2022

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CURRENT LAKE ELEVATION
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5/20/2022



LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

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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

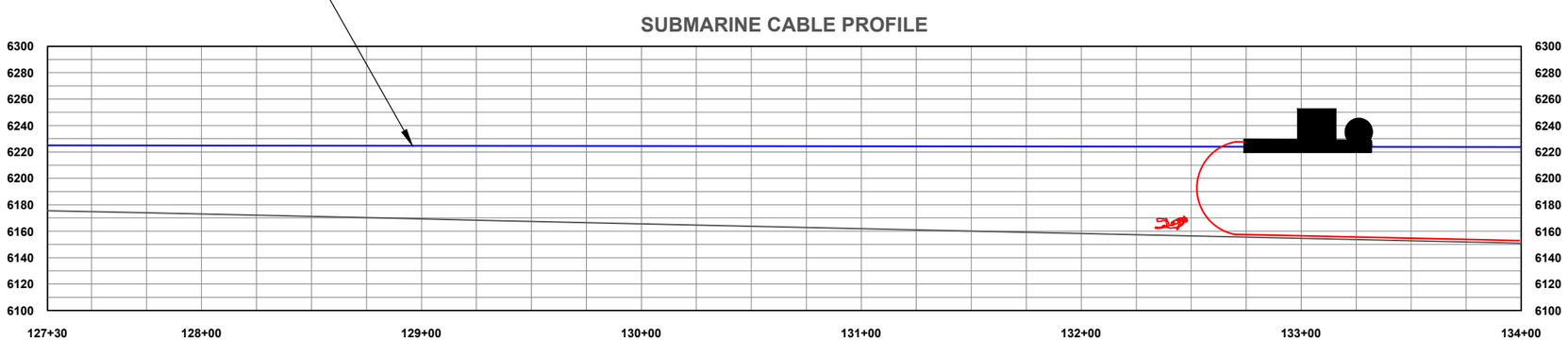
PROJECT NO.: A020LET

DATE: 4/19/2022

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CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



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LEGEND

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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

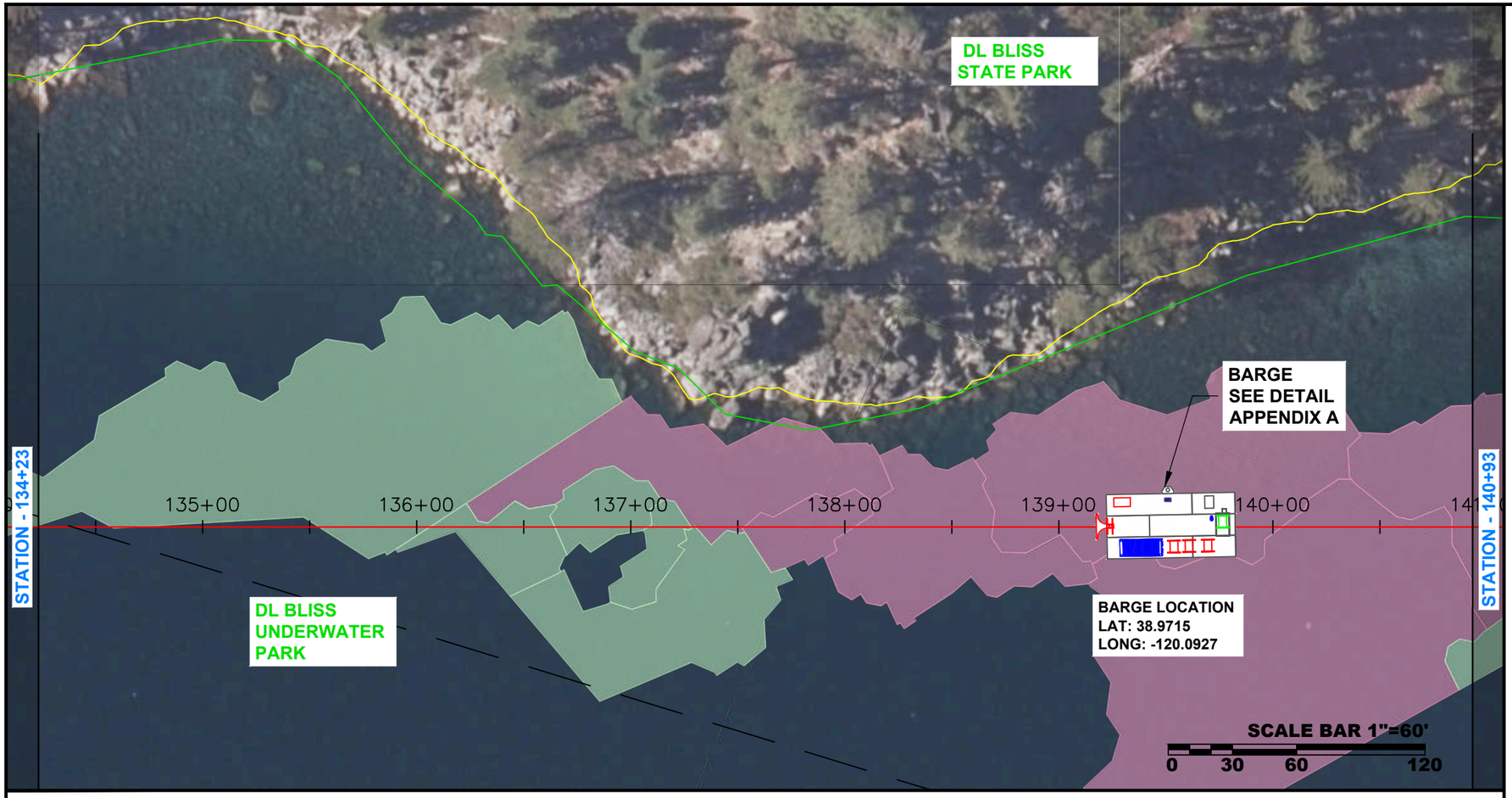
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

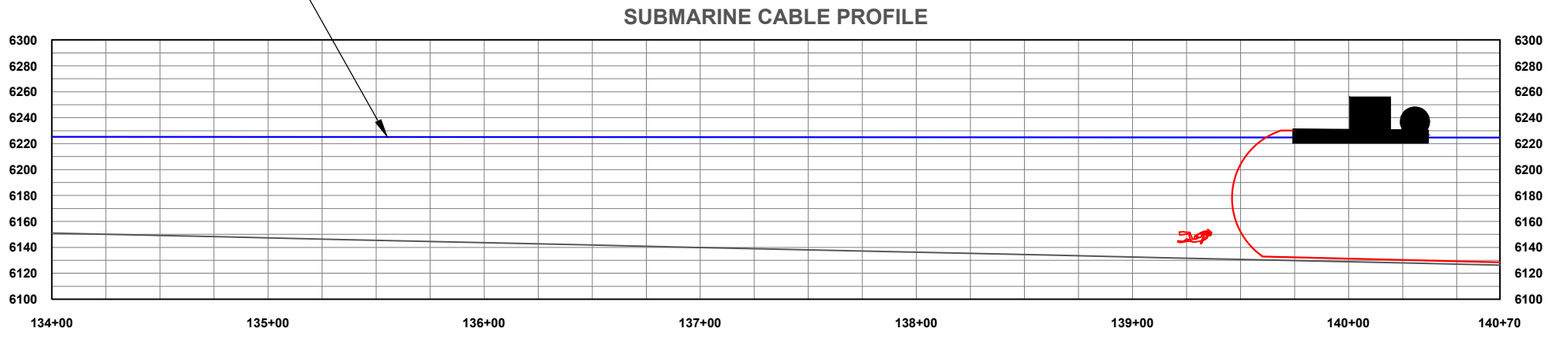
PROJECT NO.: A020LET

DATE: 4/19/2022

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CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



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LEGEND

CUT LOCATIONS

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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

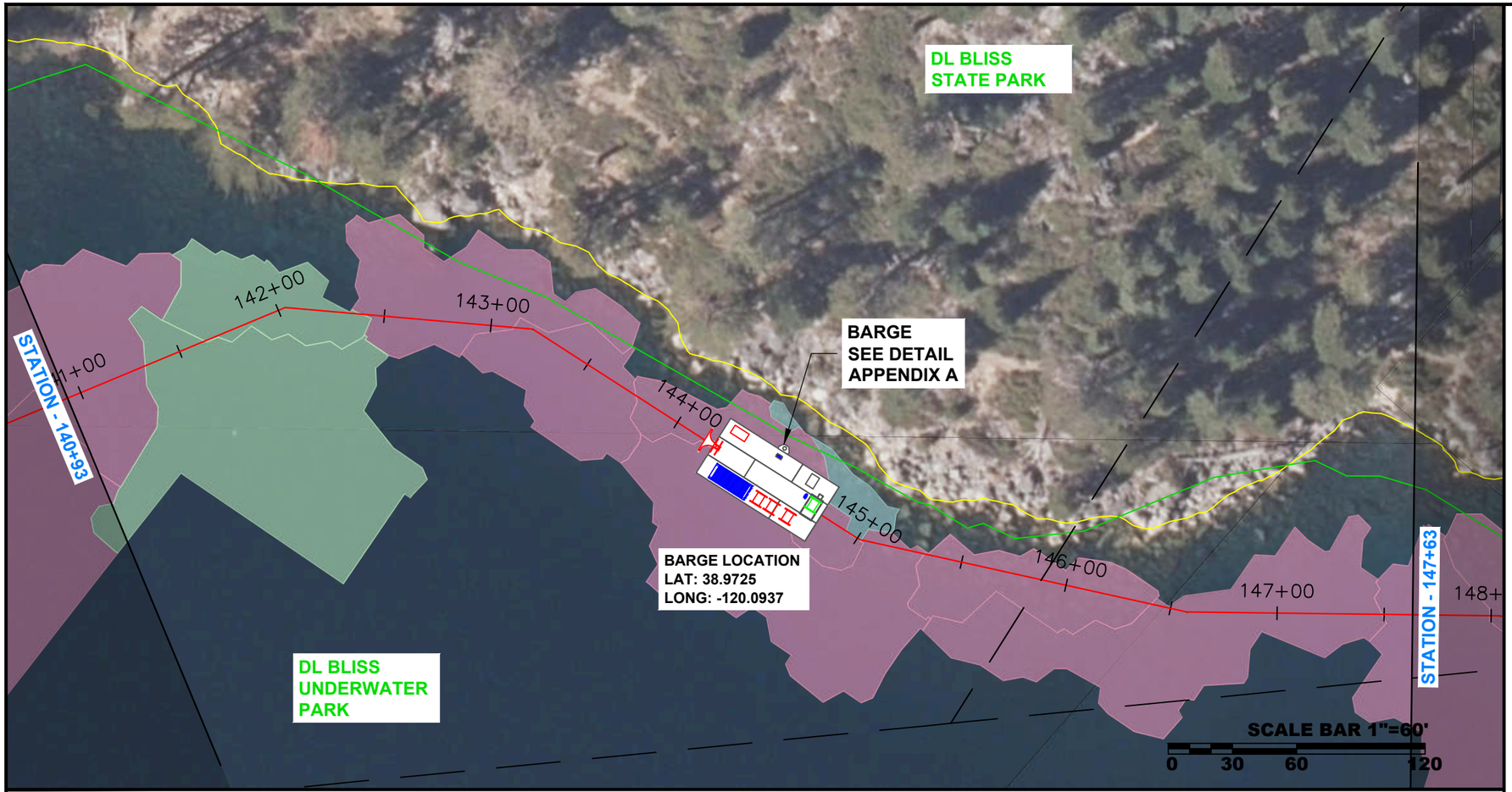
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

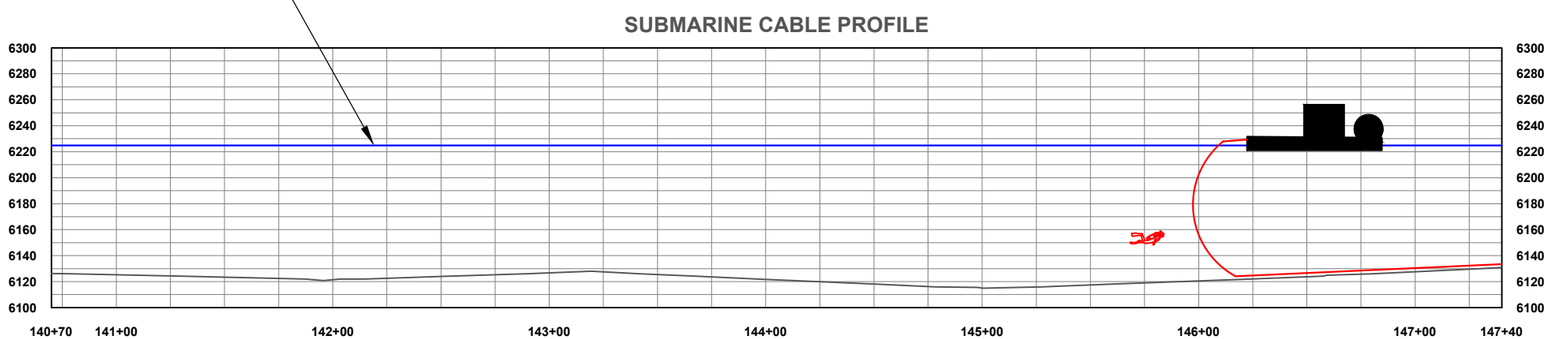
PROJECT NO.: A020LET

DATE: 4/19/2022

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CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022



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LEGEND

CUT LOCATIONS

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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

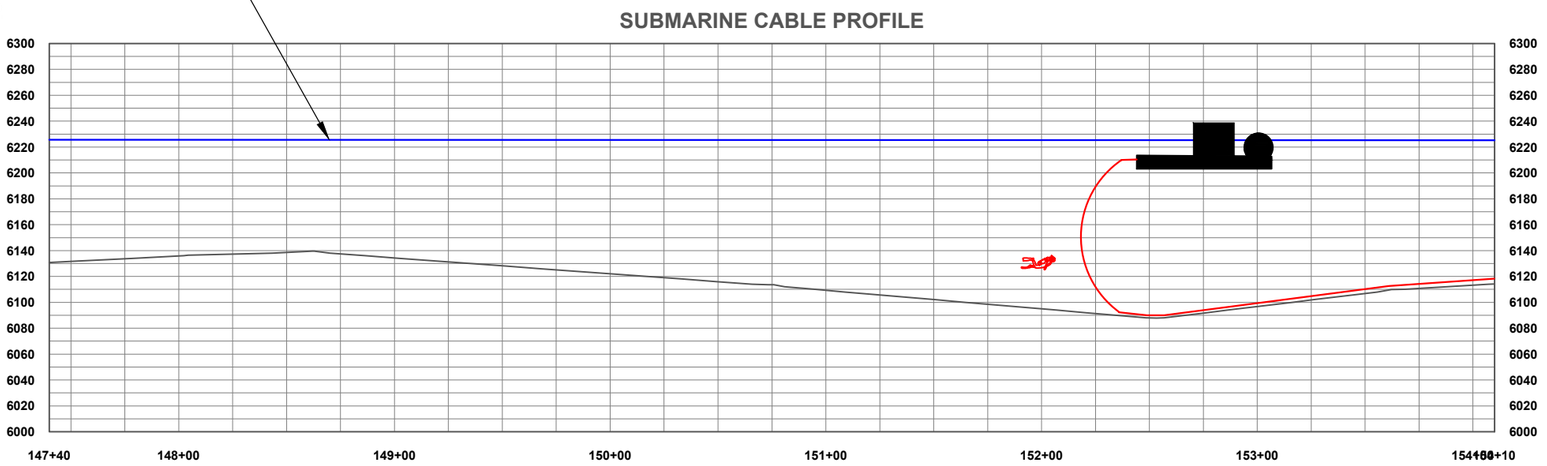
PROJECT NO.: A020LET

DATE: 4/19/2022

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CURRENT LAKE ELEVATION
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5/20/2022



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LEGEND

CUT LOCATIONS

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STATE PARK BOUNDARY

PARCEL BOUNDARY

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1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

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E

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

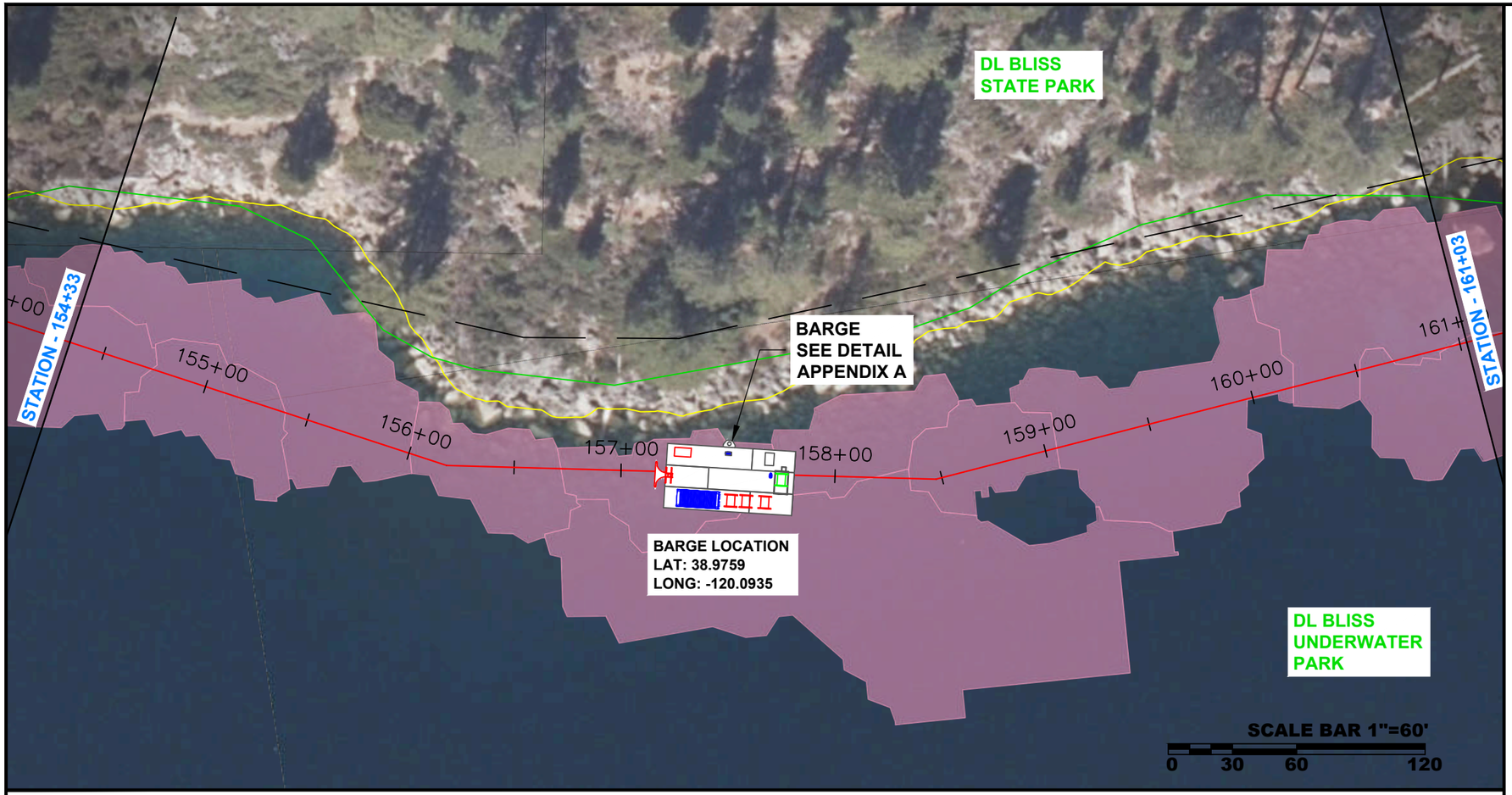
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

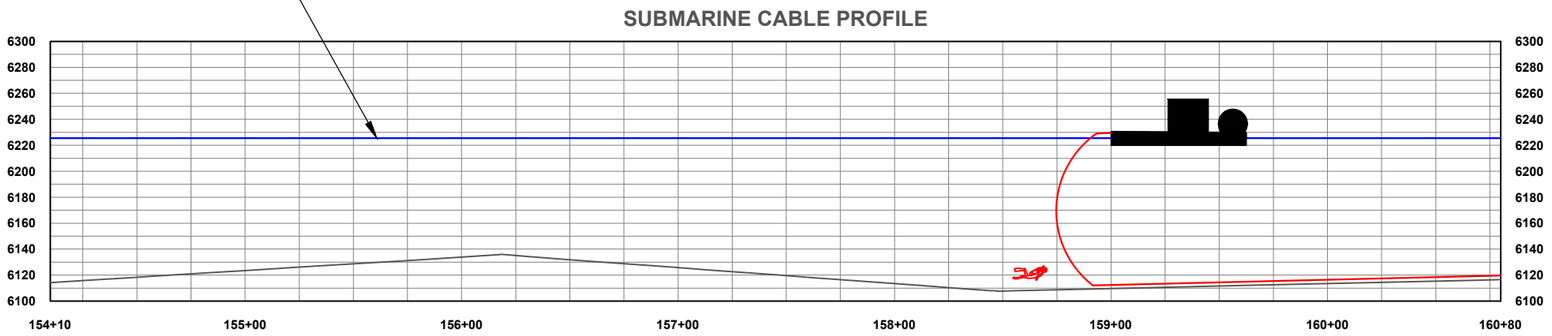
PROJECT NO.: A020LET

DATE: 4/19/2022

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CURRENT LAKE ELEVATION
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5/20/2022



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LEGEND

CUT LOCATIONS

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STATE PARK BOUNDARY

PARCEL BOUNDARY

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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

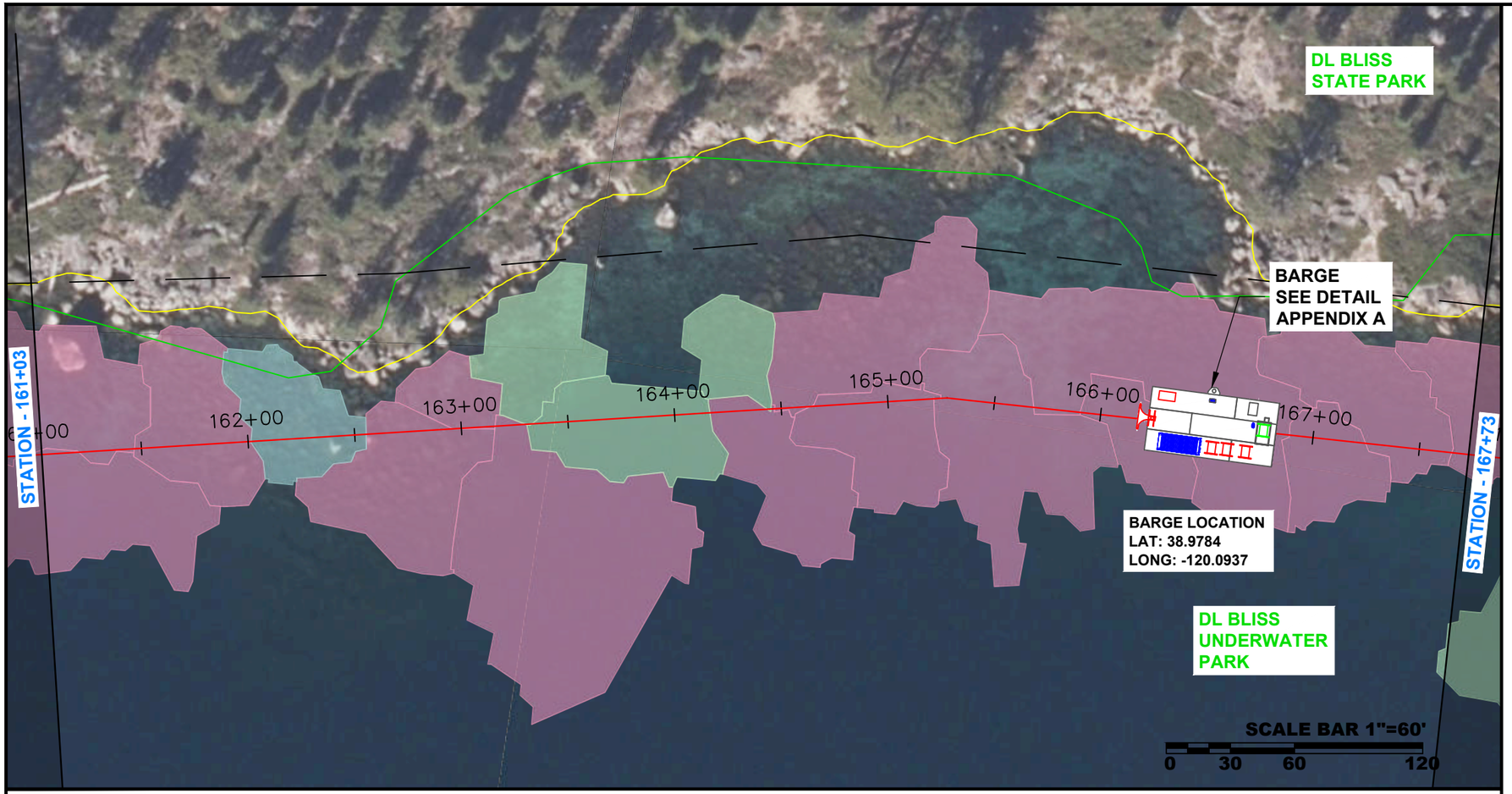
PROJECT COUNTY: EL DORADO

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

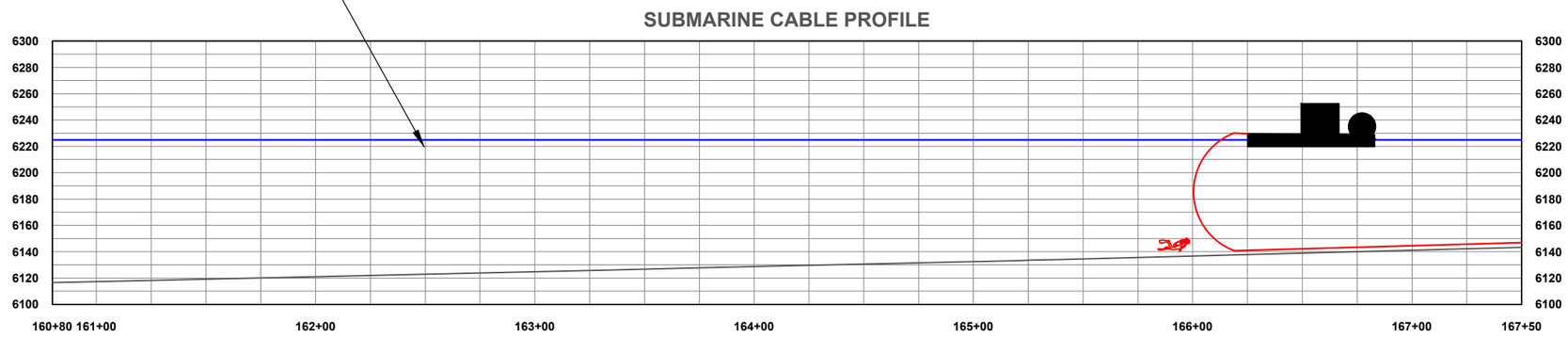
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

DWG 26 OF 52 DATE: 4/19/2022



CURRENT LAKE ELEVATION
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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

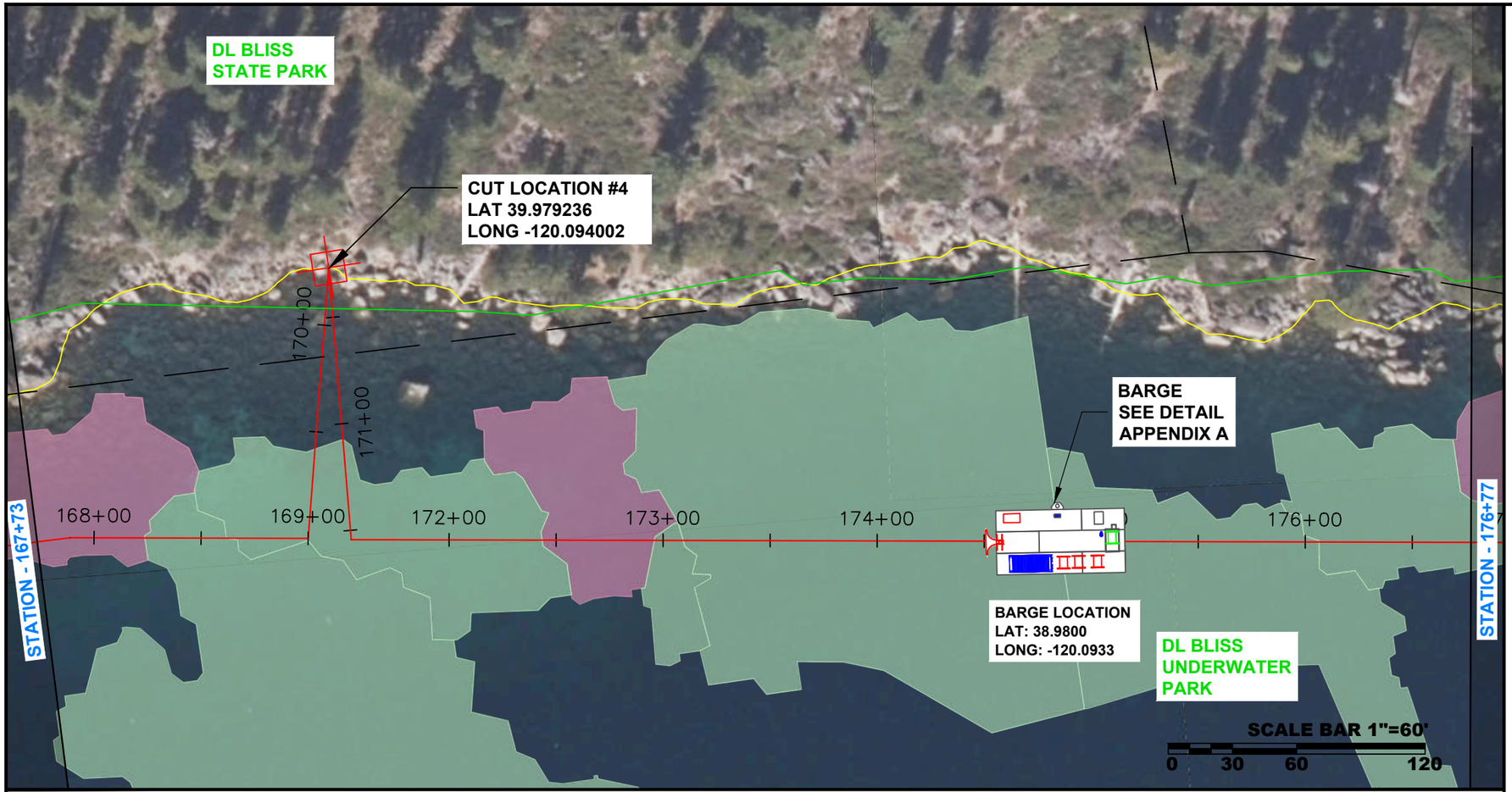
PROJECT COUNTY: EL DORADO

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

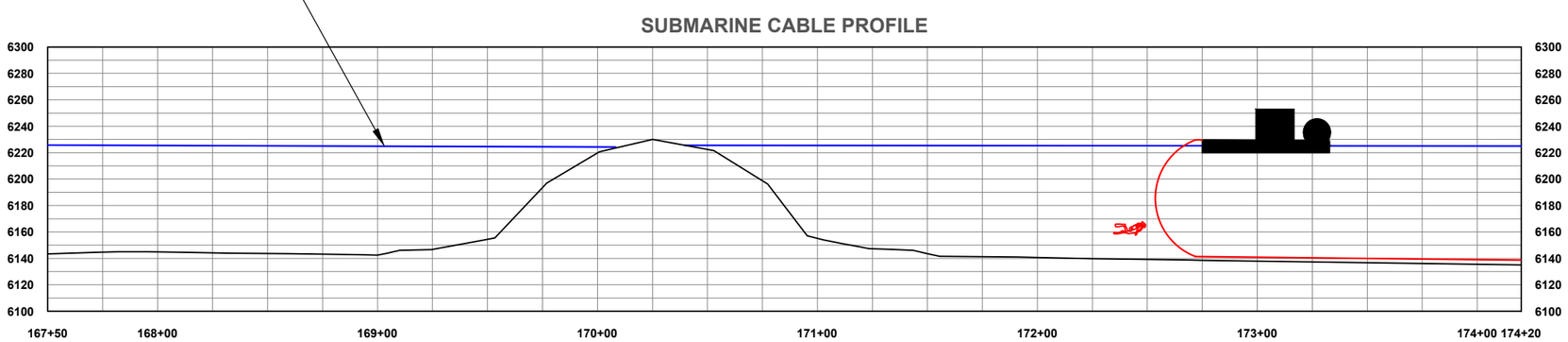
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

DWG 27 OF 52 DATE: 4/19/2022



CURRENT LAKE ELEVATION
USGS GAUGE READING
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SUBSTRATE CLASS (FISH HABITAT)

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R3X GROUP

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

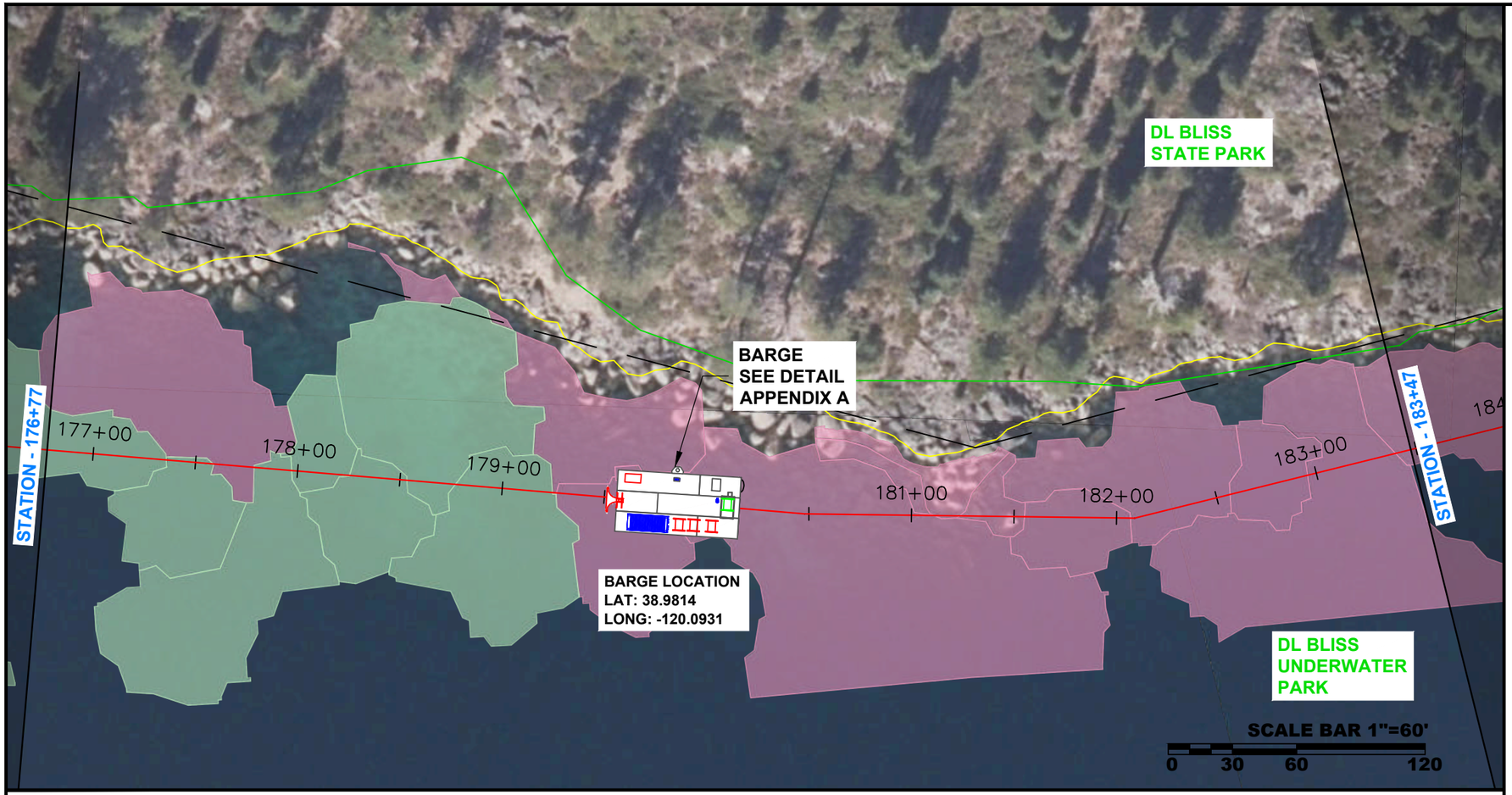
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

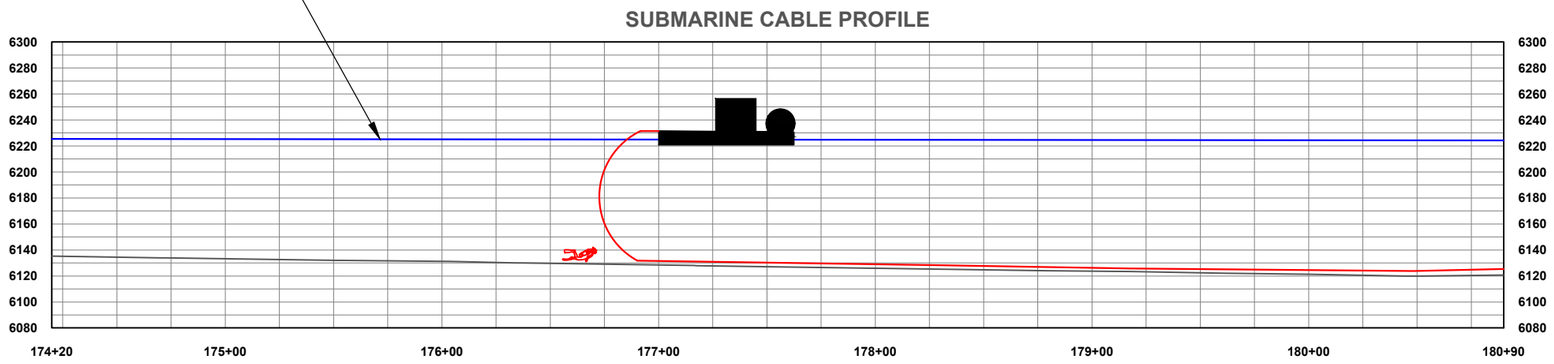
PROJECT NO.: A020LET

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CURRENT LAKE ELEVATION
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5/20/2022



at&t

LEGEND

CUT LOCATIONS

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BARGE

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HIGH WATER LINE

STATE PARK BOUNDARY

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BOULDER (SPAWNING)

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

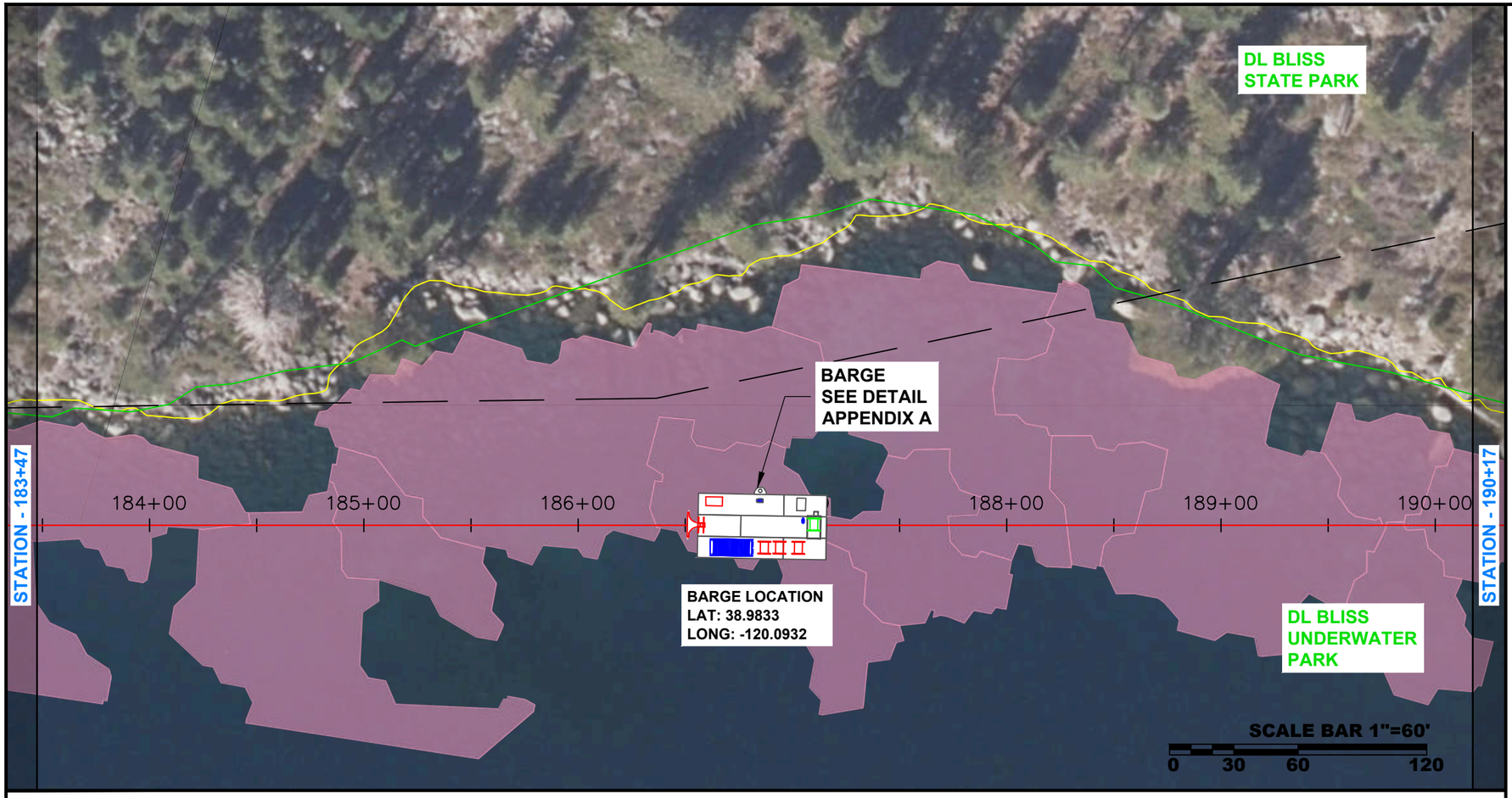
PROJECT COUNTY: EL DORADO

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

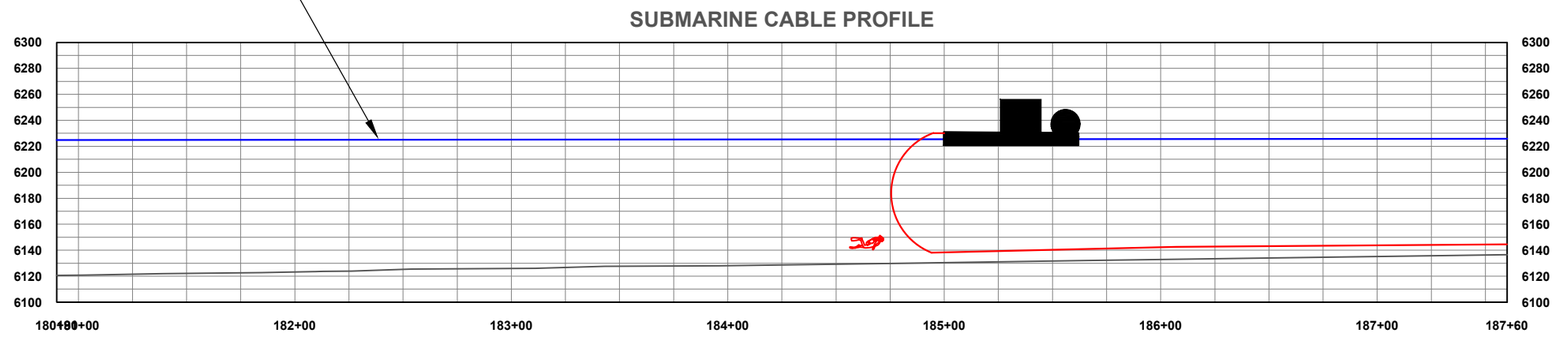
TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

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USGS GAUGE READING
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HIGH WATER LINE

STATE PARK BOUNDARY

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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

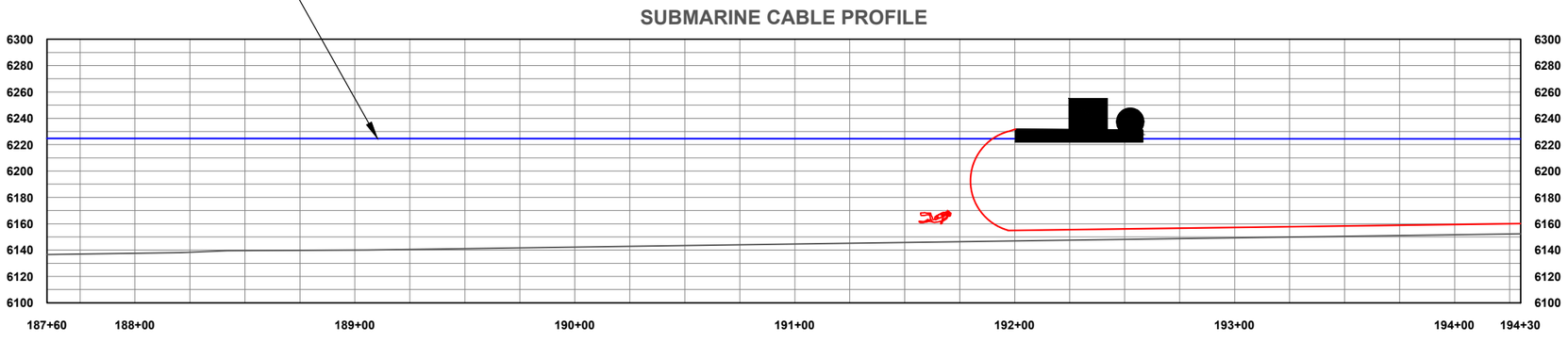
PROJECT NO.: A020LET

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1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

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R3X GROUP

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

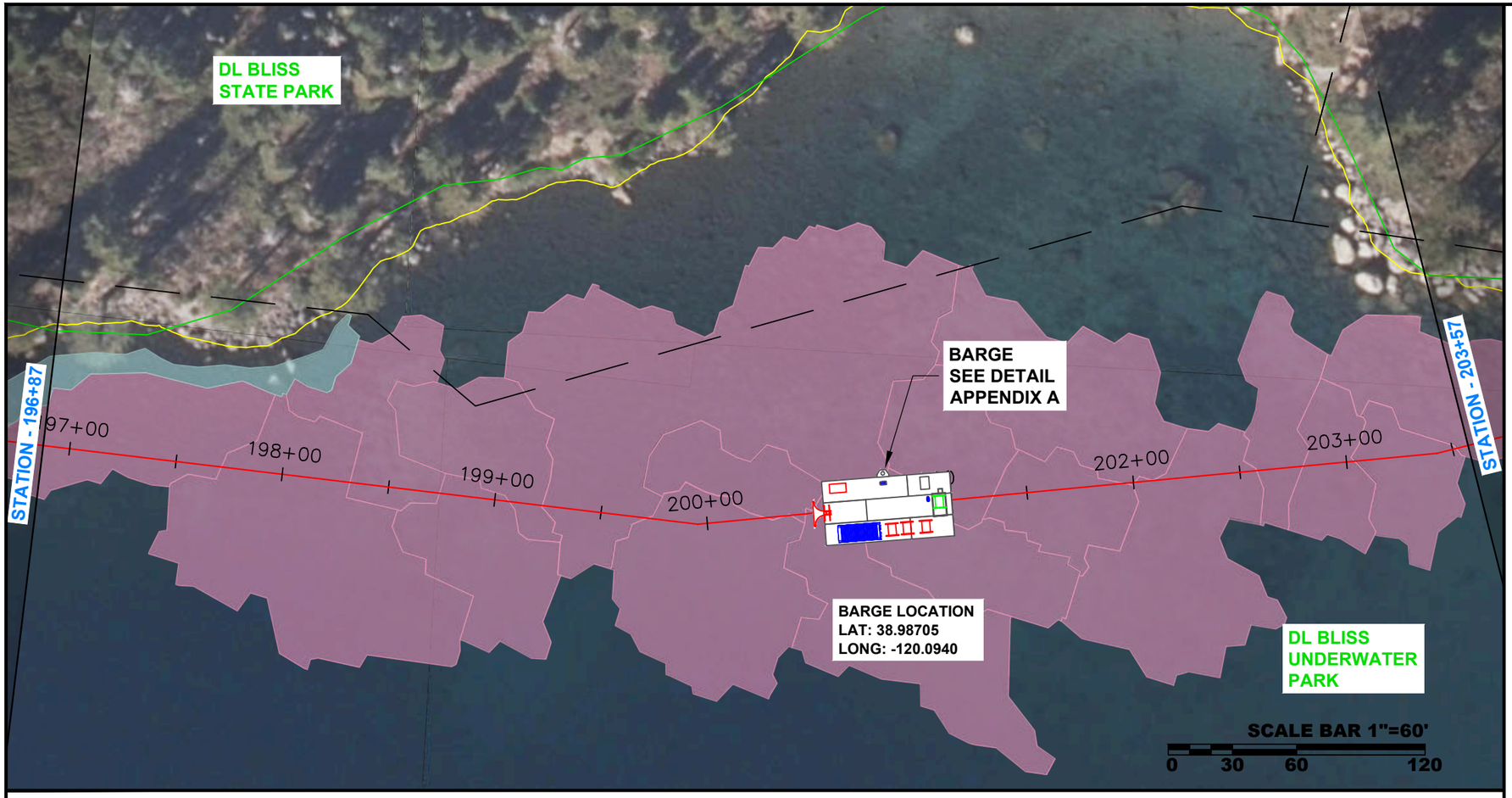
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST. SUBMARINE CABLE REMOVAL

PROJECT NO. A020LET

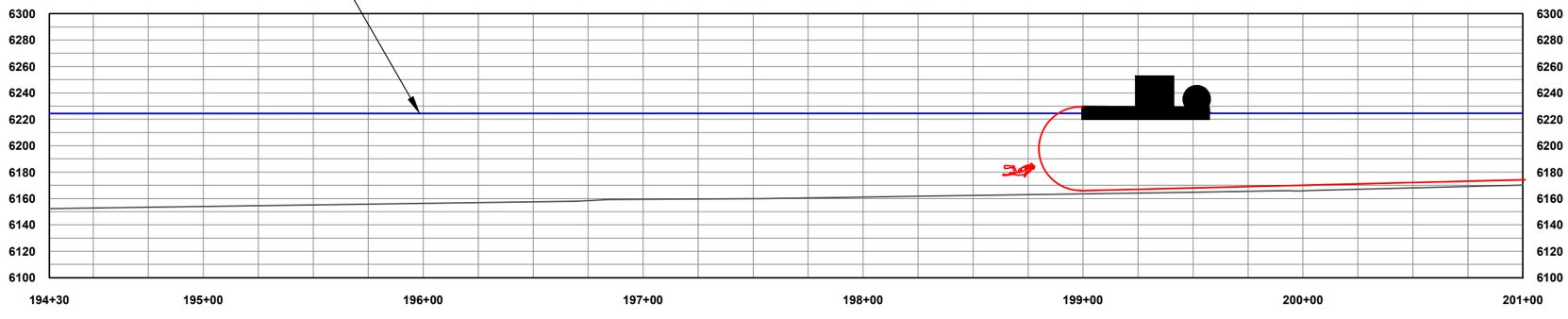
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SUBSTRATE CLASS (FISH HABITAT)

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BOULDER (SPAWNING)

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

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PROJECT COUNTY: EL DORADO

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

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

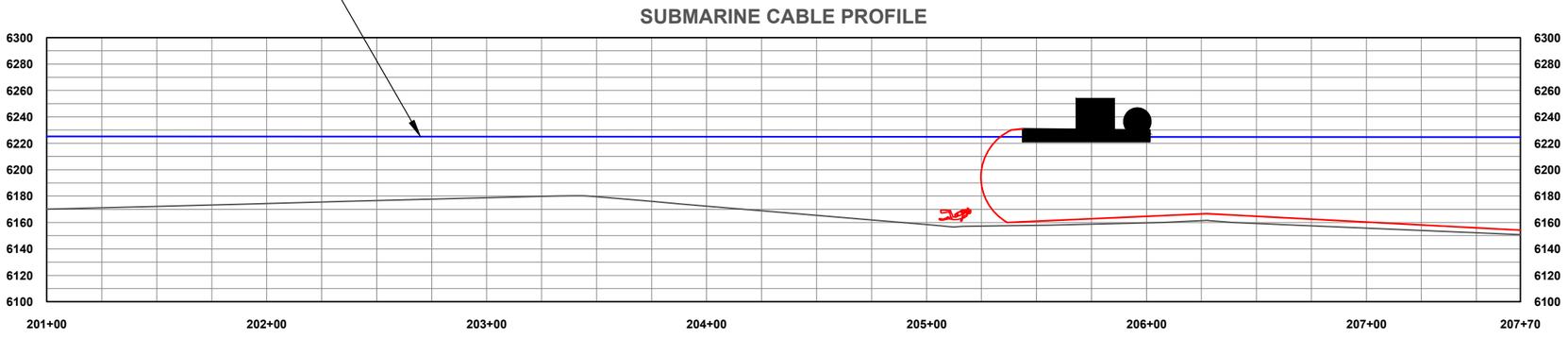
PROJECT NO.: A020LET

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1970 CABLE EASEMENT

SUBSTRATE CLASS (FISH HABITAT)

SAND (MARGINAL)

BOULDER (SPAWNING)

SAND/COBBLE/BOULDER (SPAWNING)

R3X GROUP

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

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PROJECT COUNTY: EL DORADO

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

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

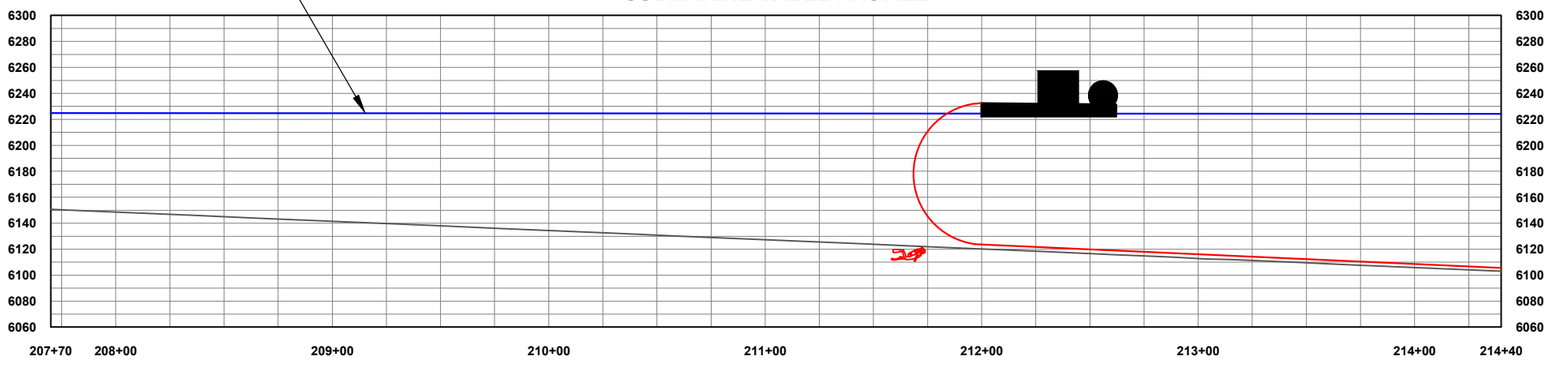
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PROJECT COUNTY: EL DORADO

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

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

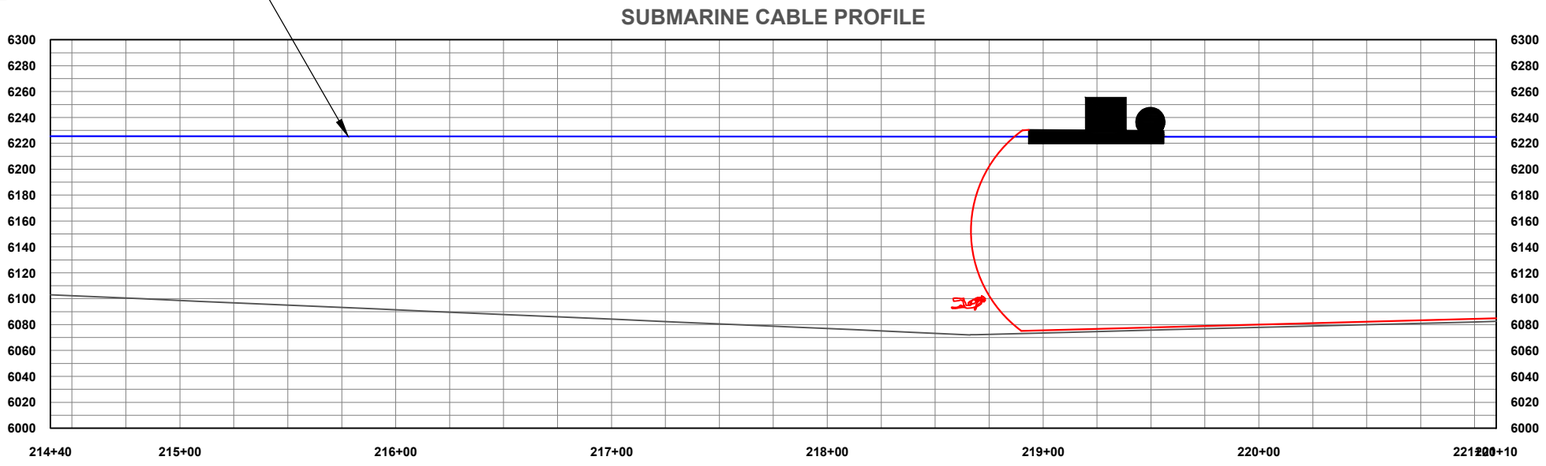
PROJECT NO.: A020LET

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E

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

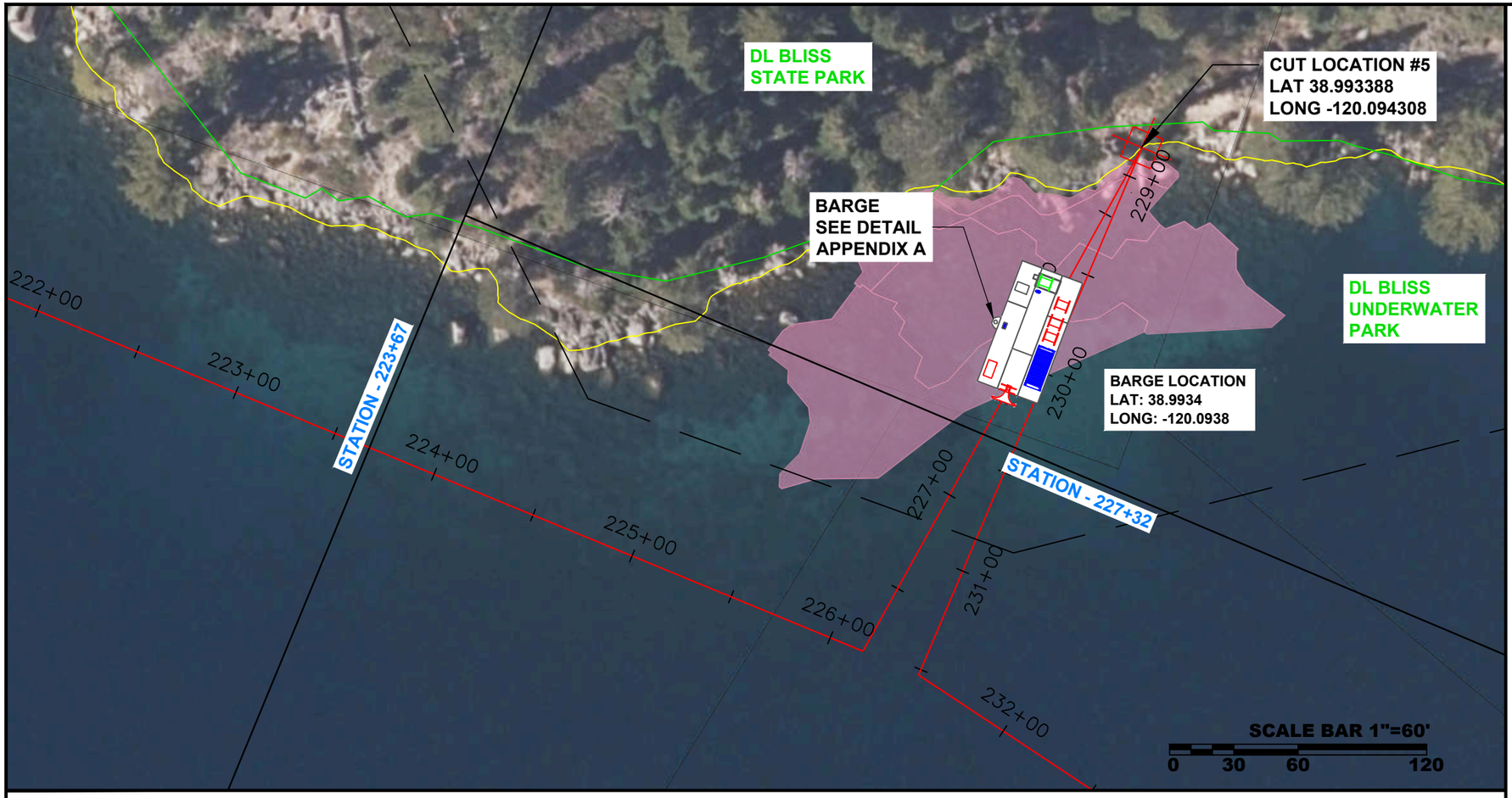
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

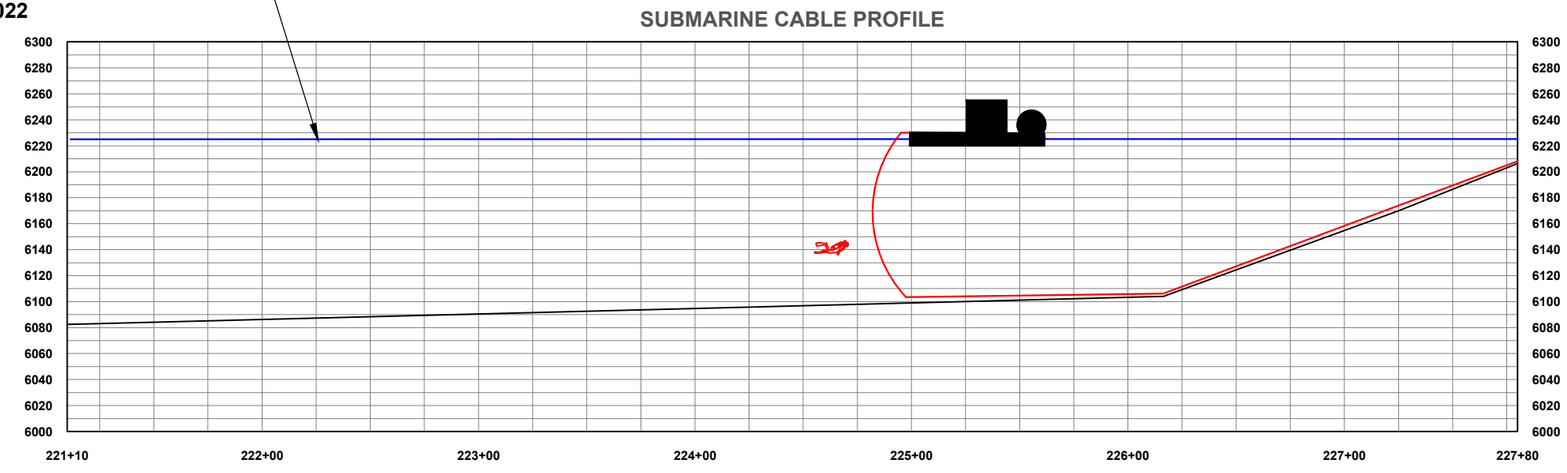
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PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

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PROJECT COUNTY: EL DORADO

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

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

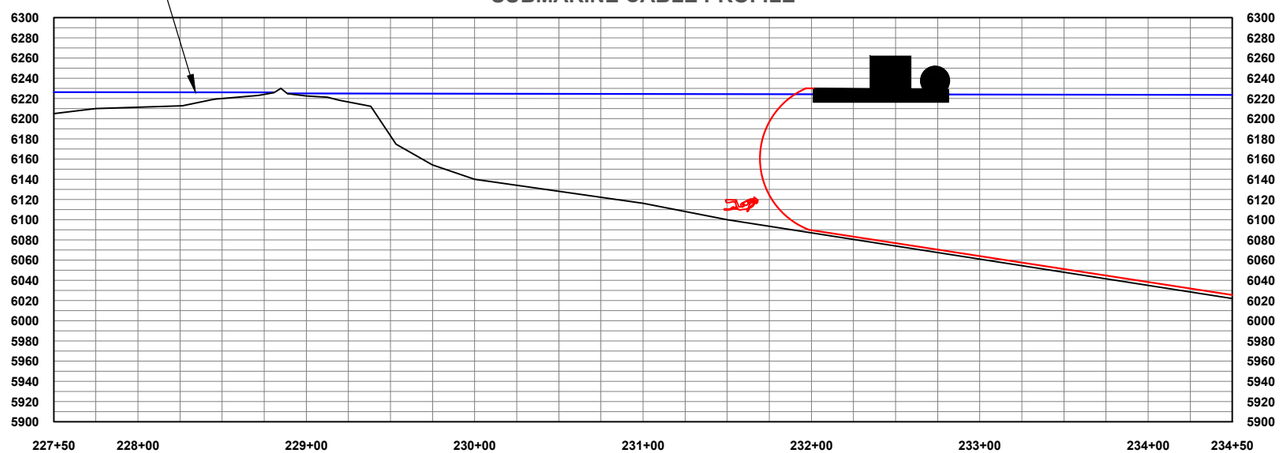
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CURRENT LAKE ELEVATION
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SUBMARINE CABLE PROFILE



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PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

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PROJECT COUNTY: EL DORADO

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

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

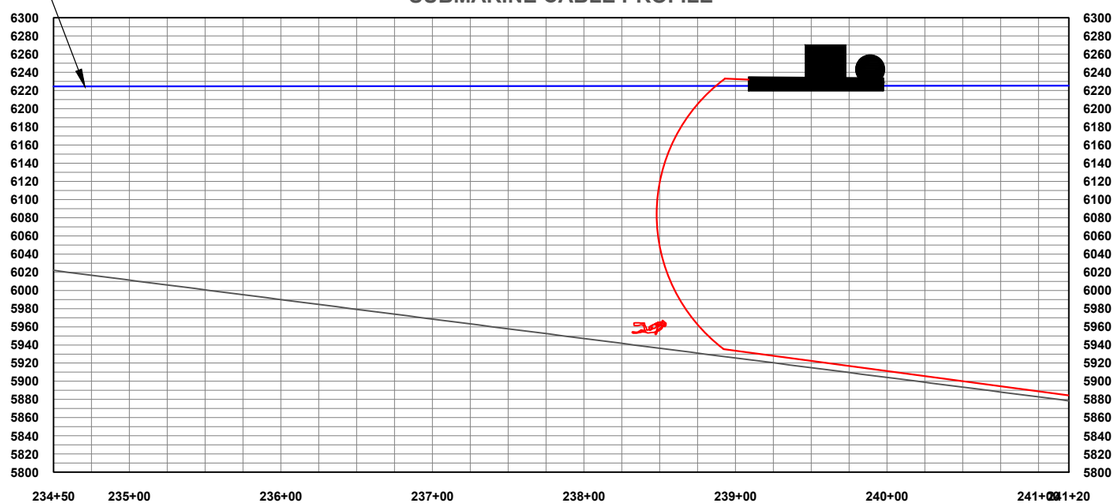
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PREPARED BY: S. RODRIGUEZ TEL: (254) 723-0013

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

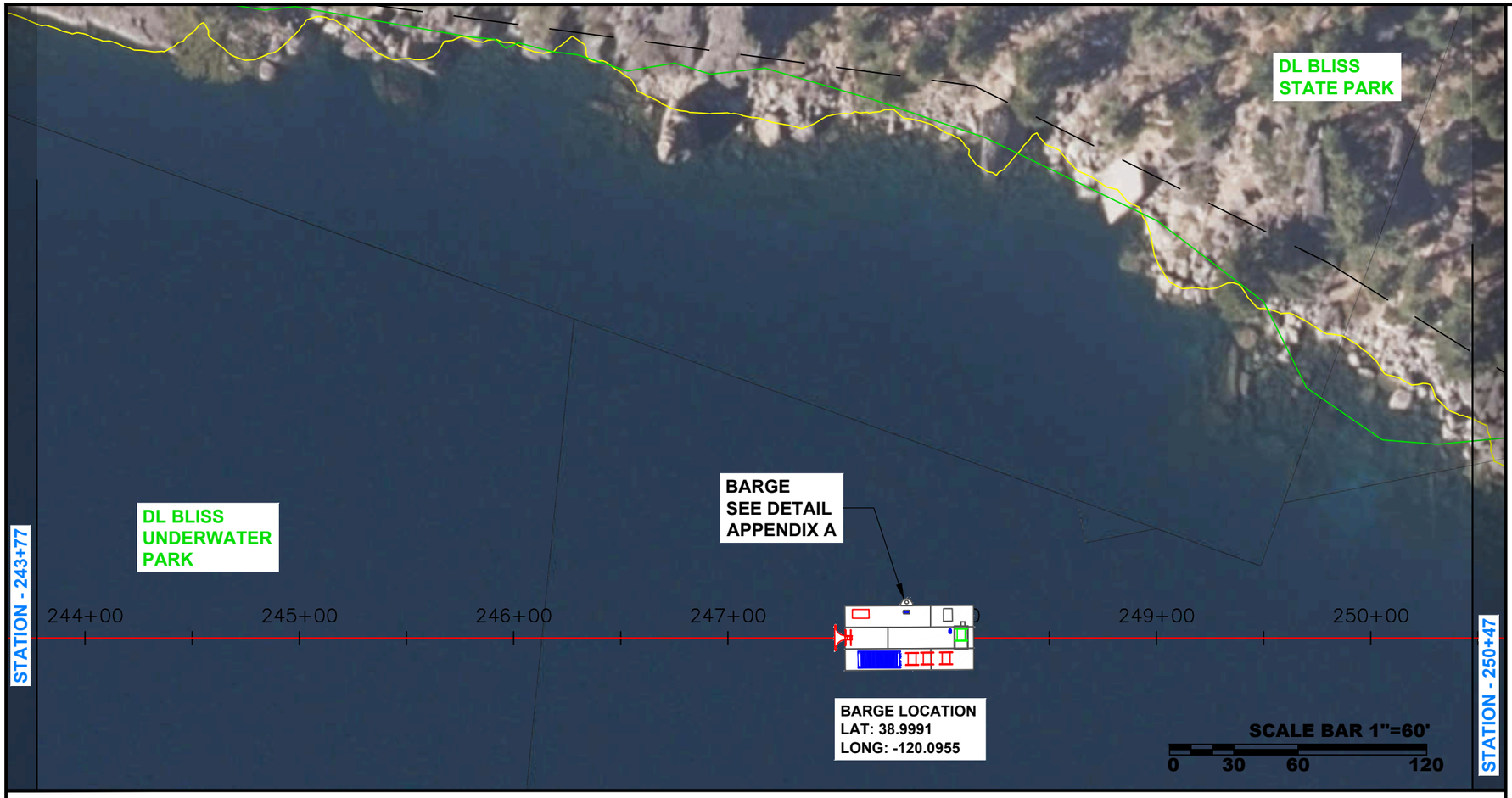
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

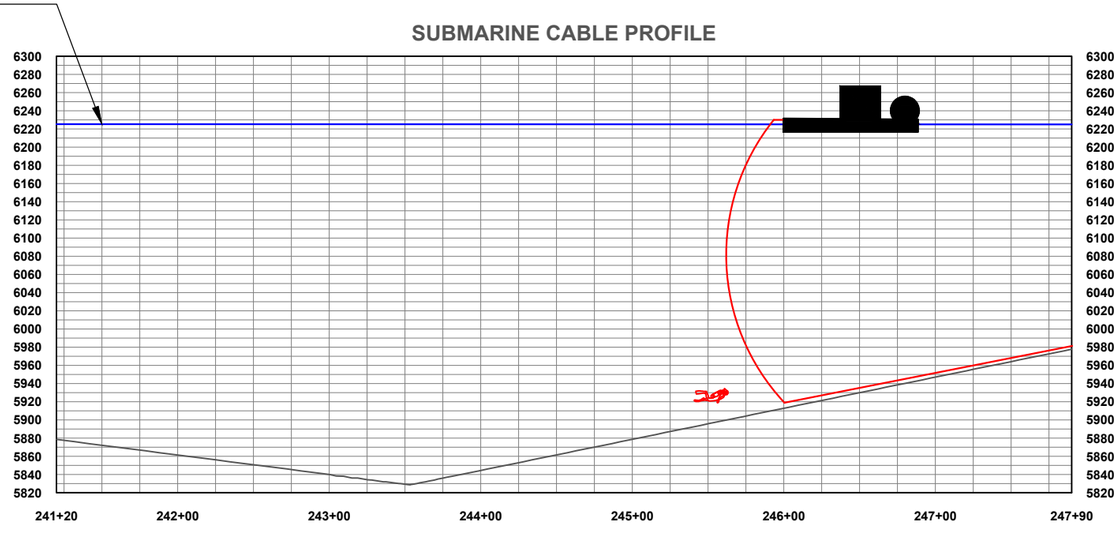
PROJECT NO.: A020LET

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SUBSTRATE CLASS (FISH HABITAT)

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

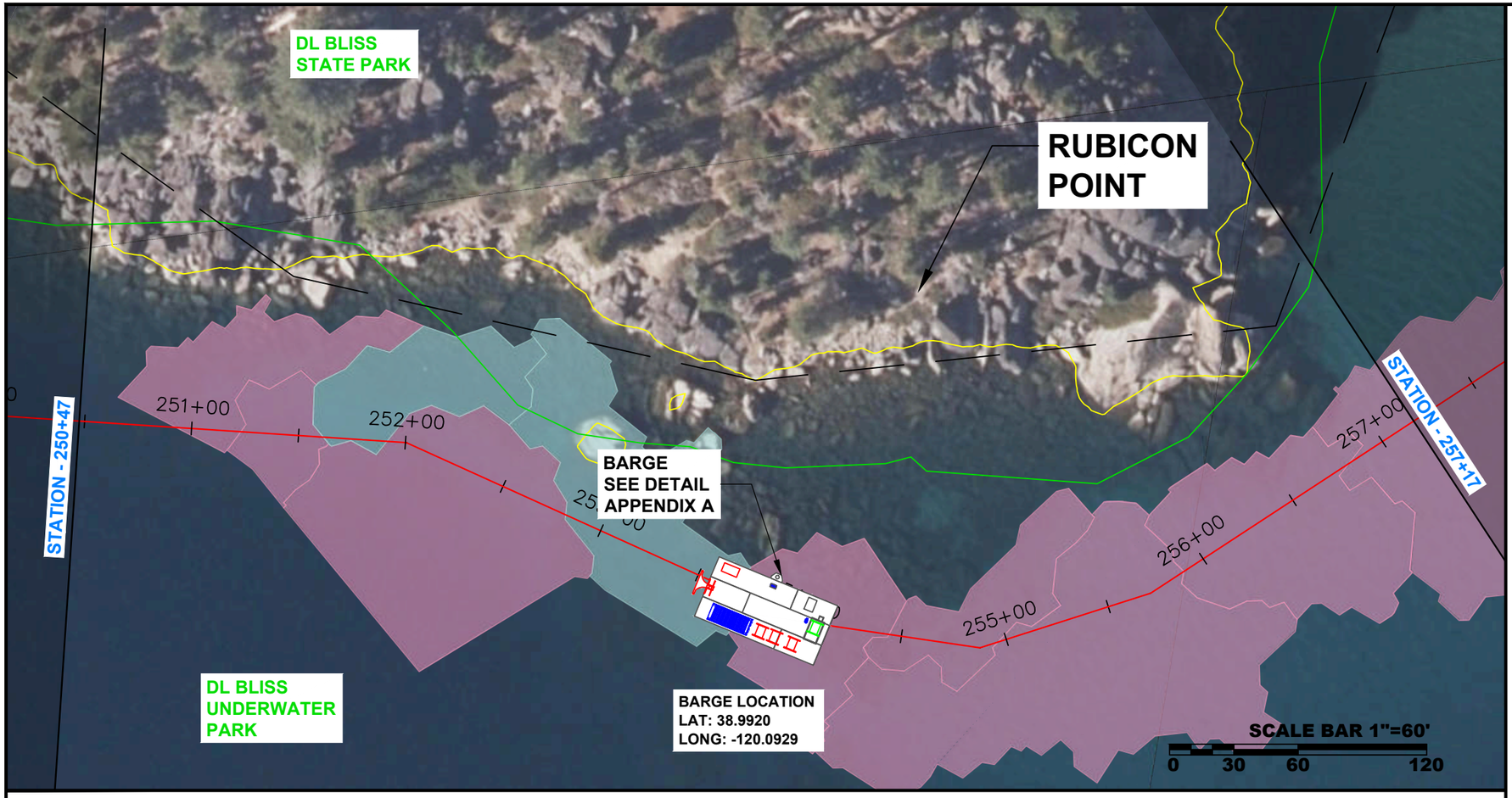
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

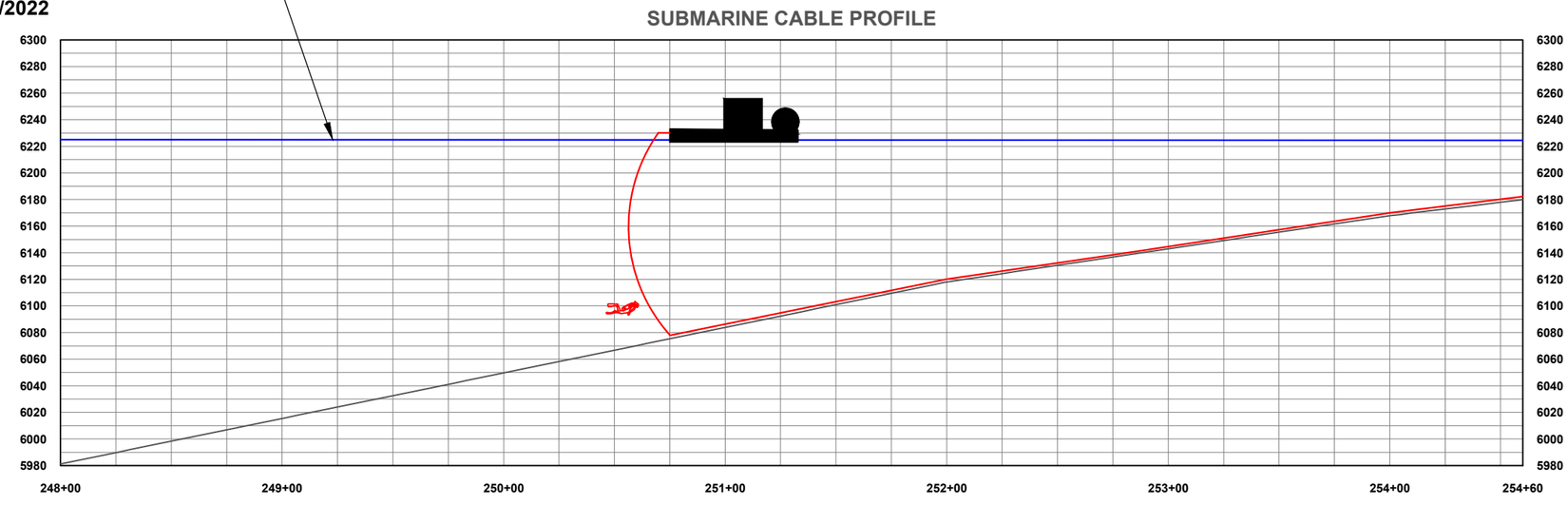
PROJECT NO.: A020LET

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SUBSTRATE CLASS (FISH HABITAT)

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

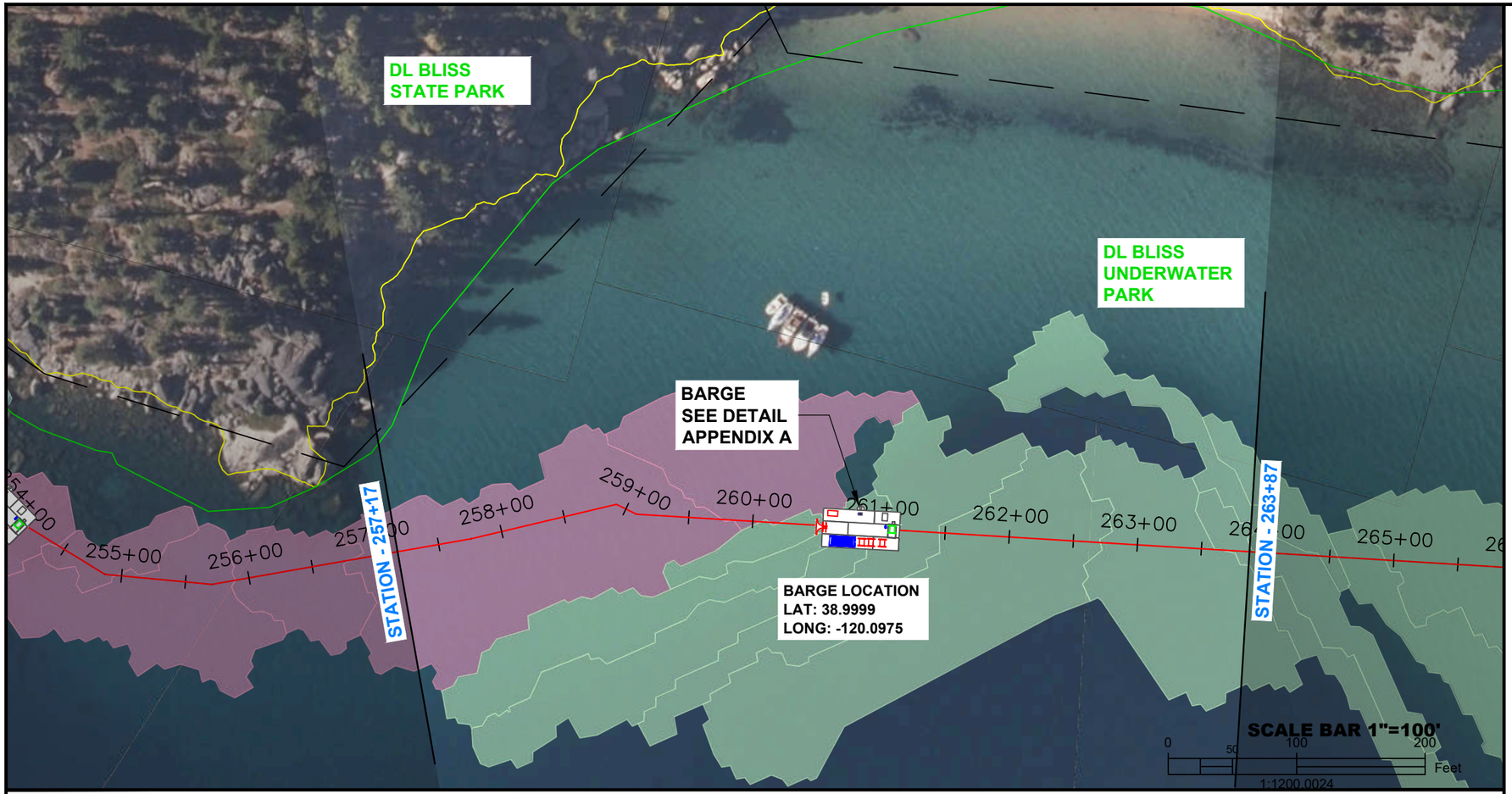
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

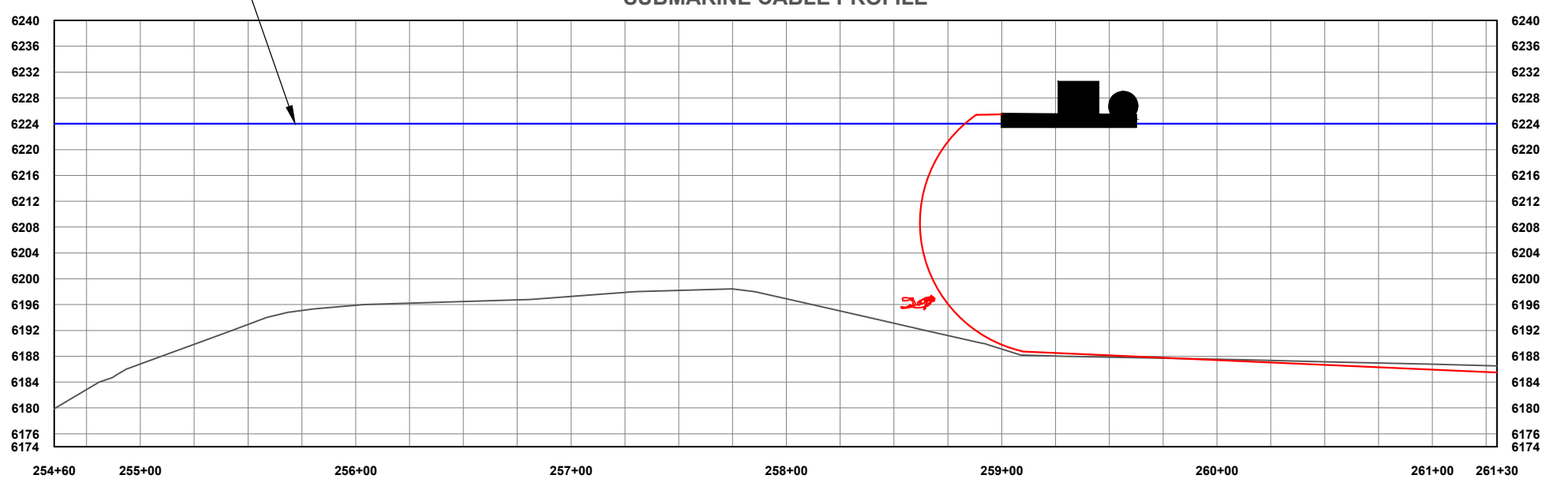
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SUBSTRATE CLASS (FISH HABITAT)

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

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PROJECT COUNTY: EL DORADO

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

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

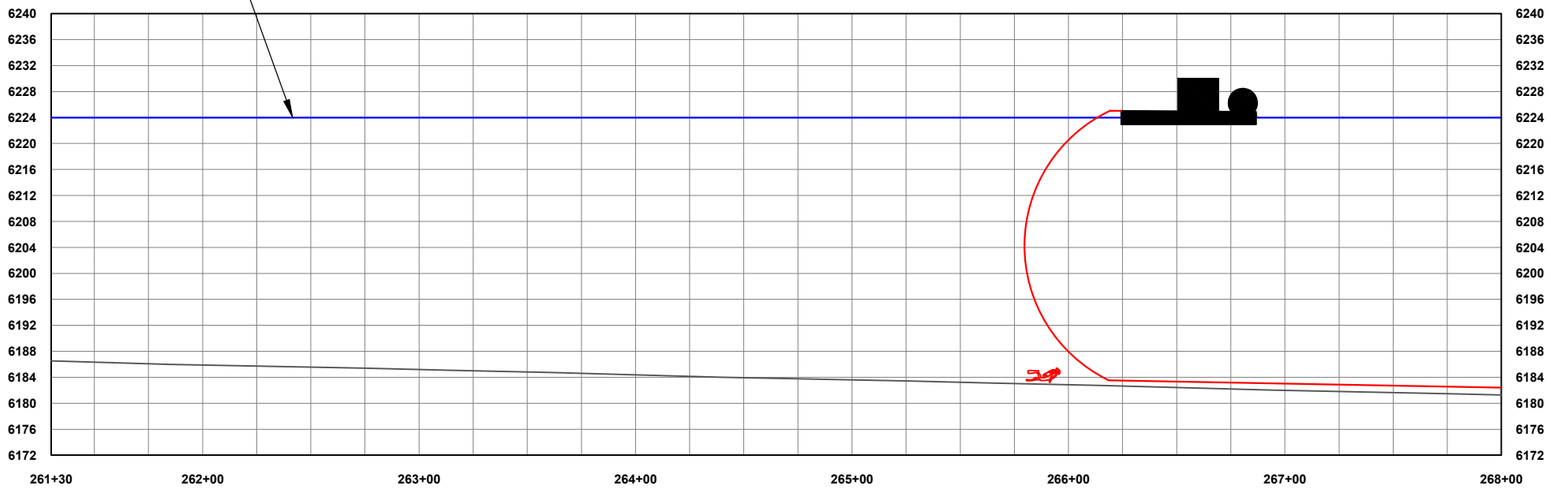
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R3X GROUP

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

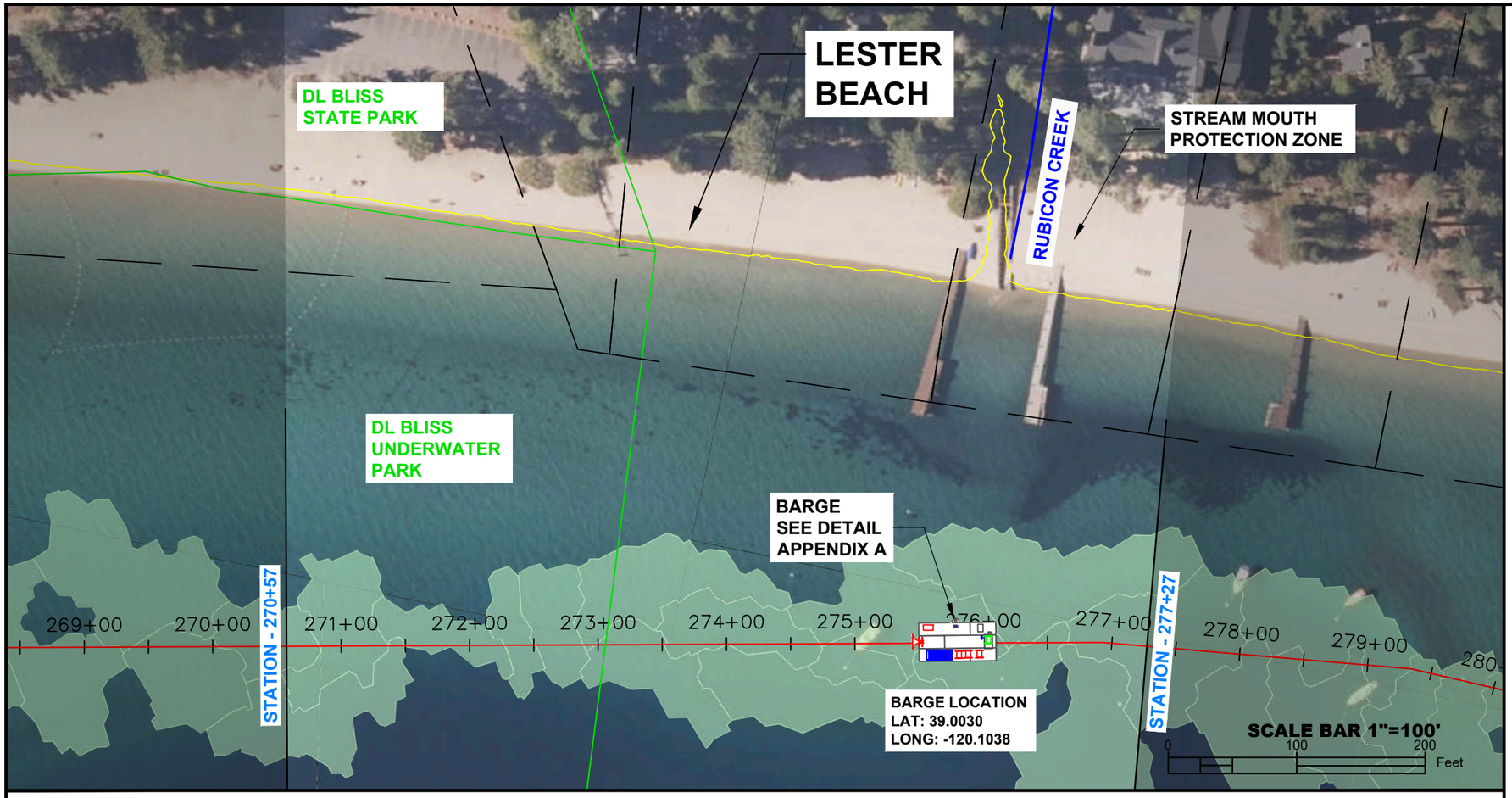
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

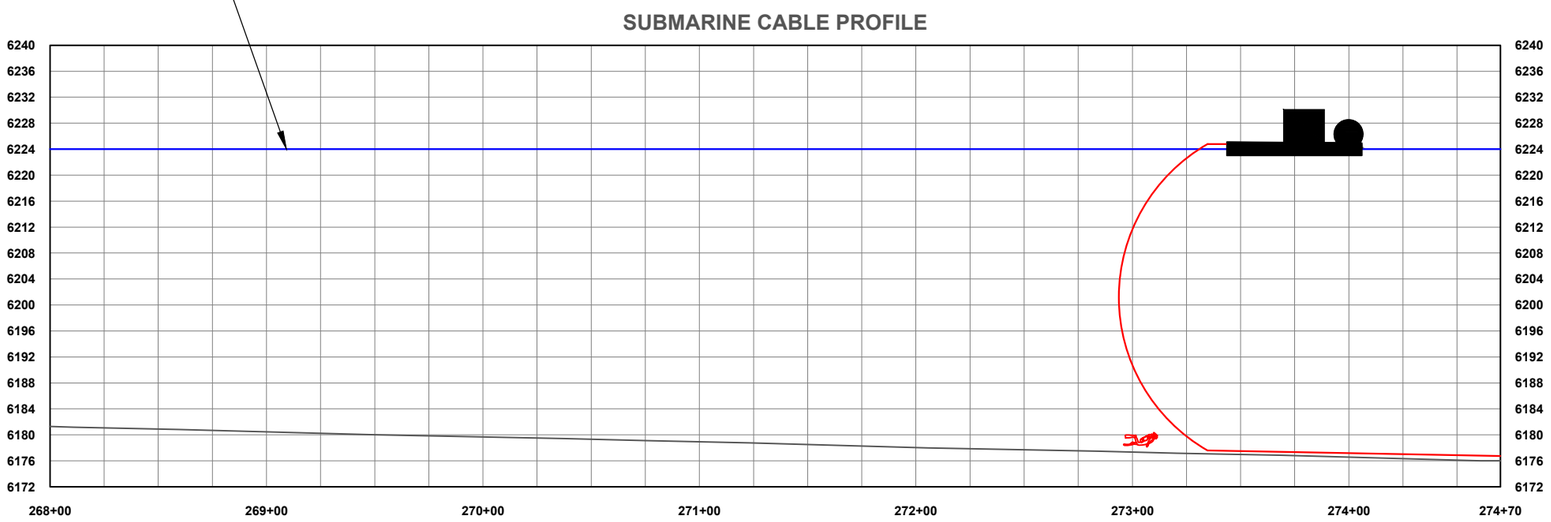
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R3X GROUP

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

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

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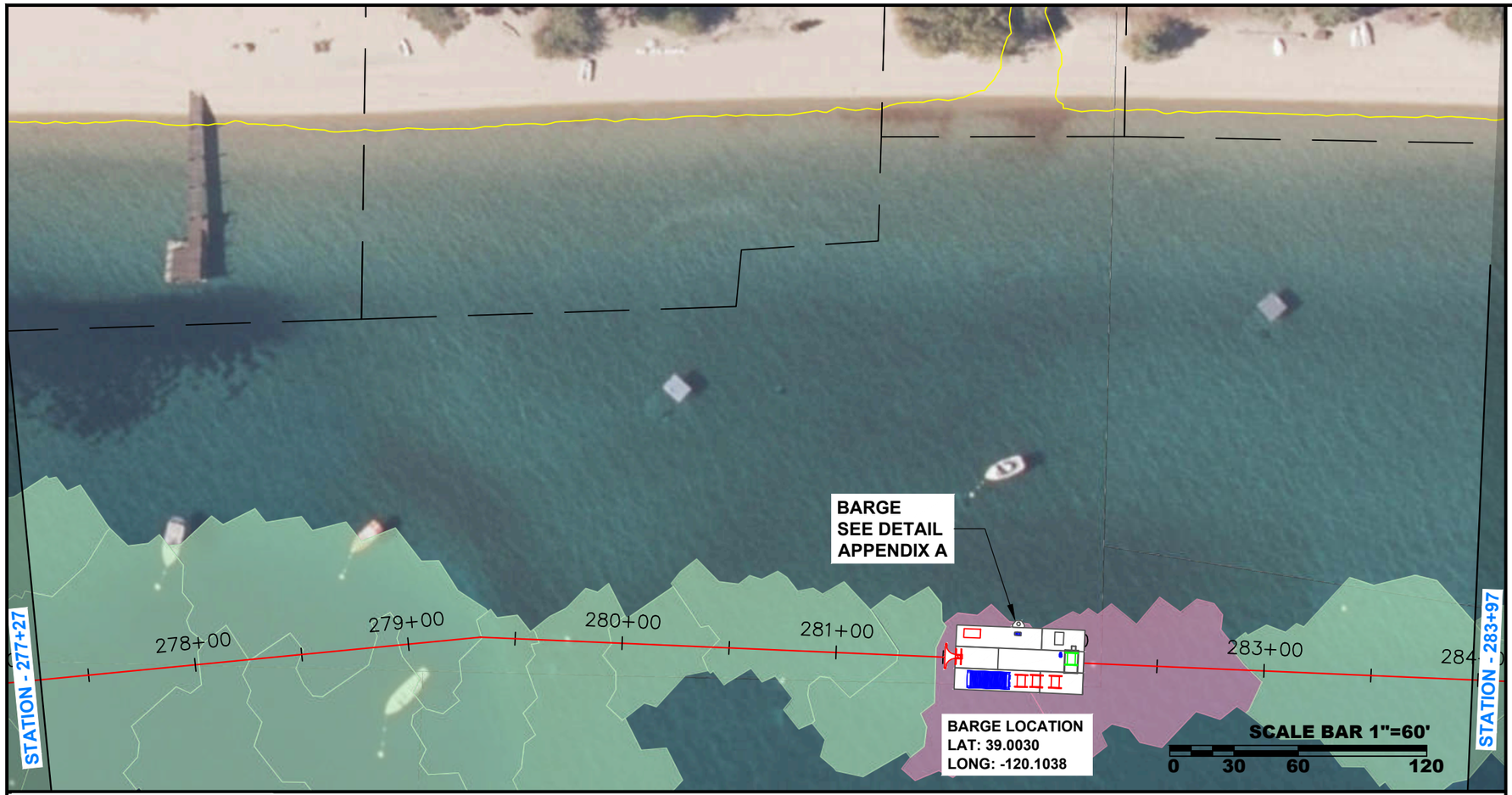
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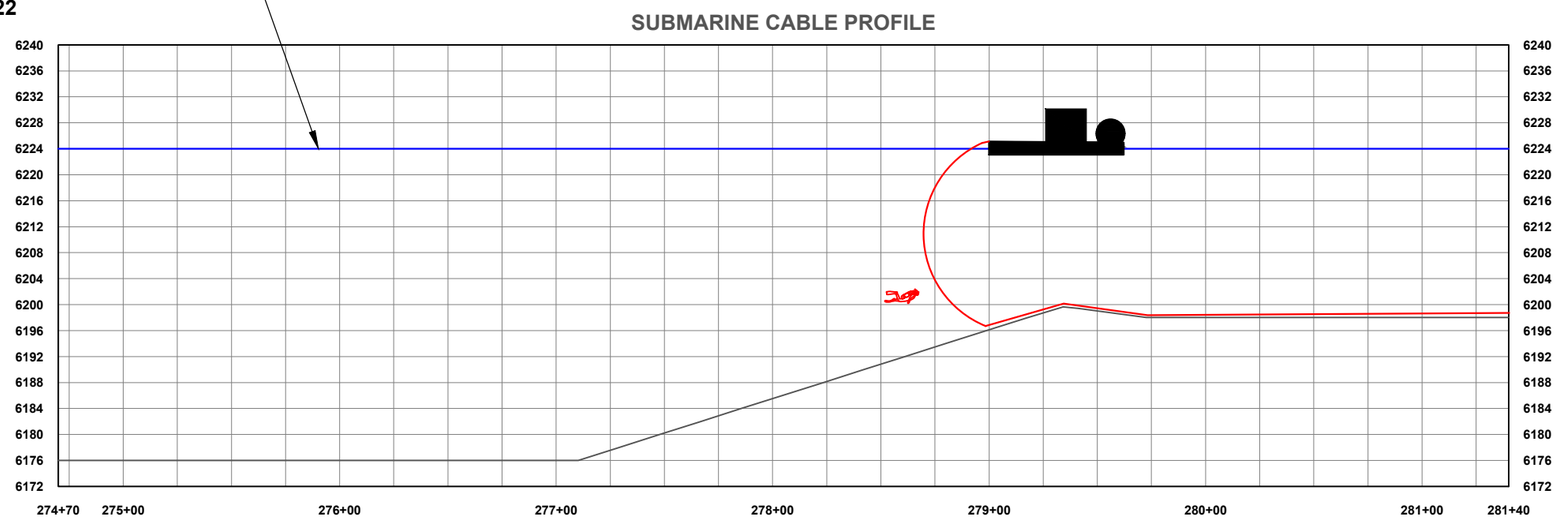
PROJECT NO.: A020LET

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PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

PROJECT CITY: LAKE TAHOE

PROJECT COUNTY: EL DORADO

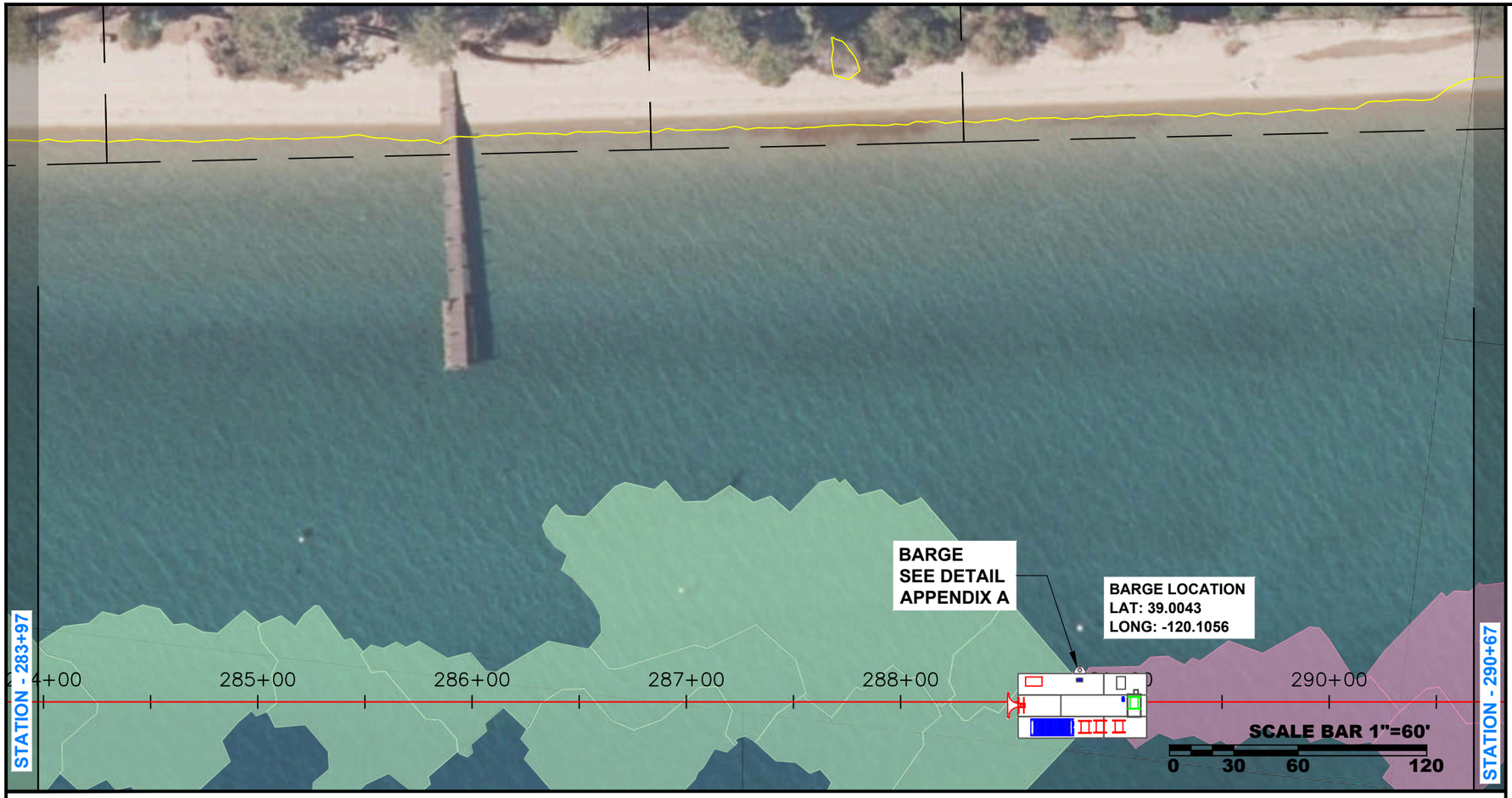
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

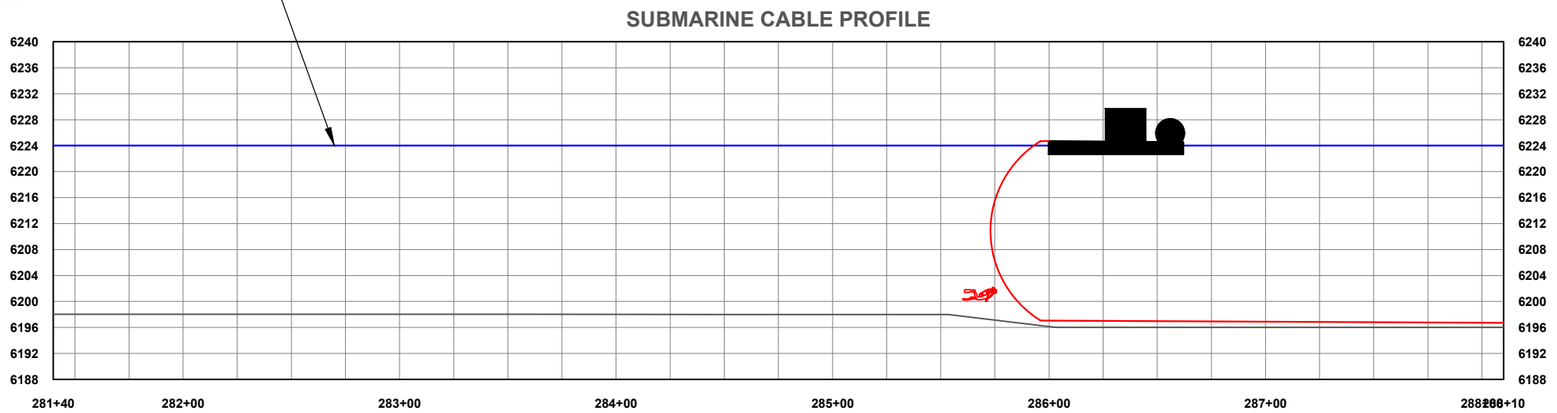
PROJECT NO.: A020LET

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CURRENT LAKE ELEVATION
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ENG'R: JASON PARNHAM TEL: 775-683-5240

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

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT LOCATION: EMERALD BAY, BALDWIN BEACH

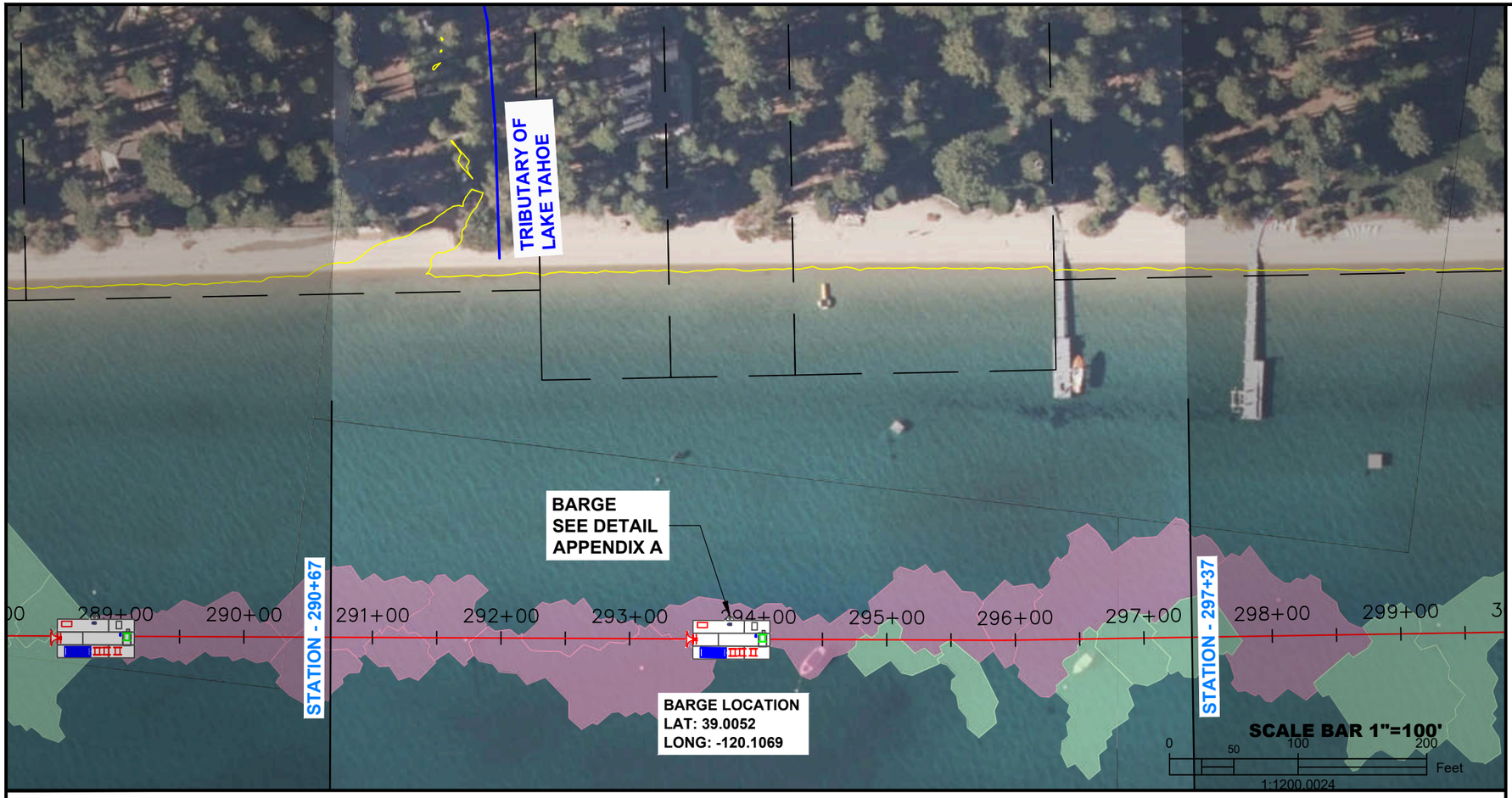
PROJECT NO.: A020LET

PROJECT CITY: LAKE TAHOE

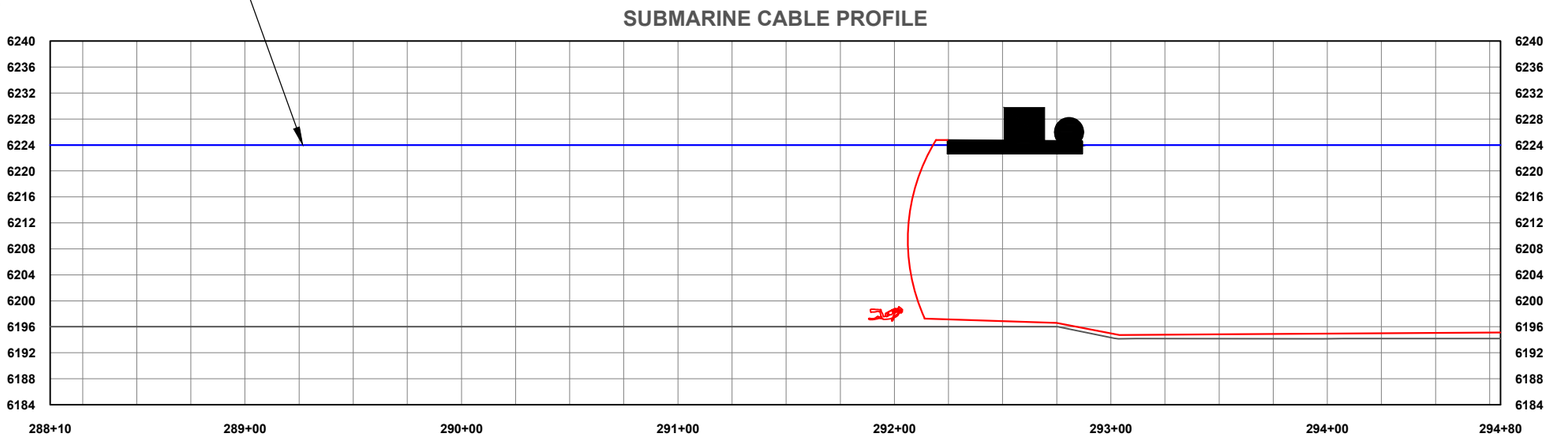
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DATE: 4/19/2022

PROJECT COUNTY: EL DORADO



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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

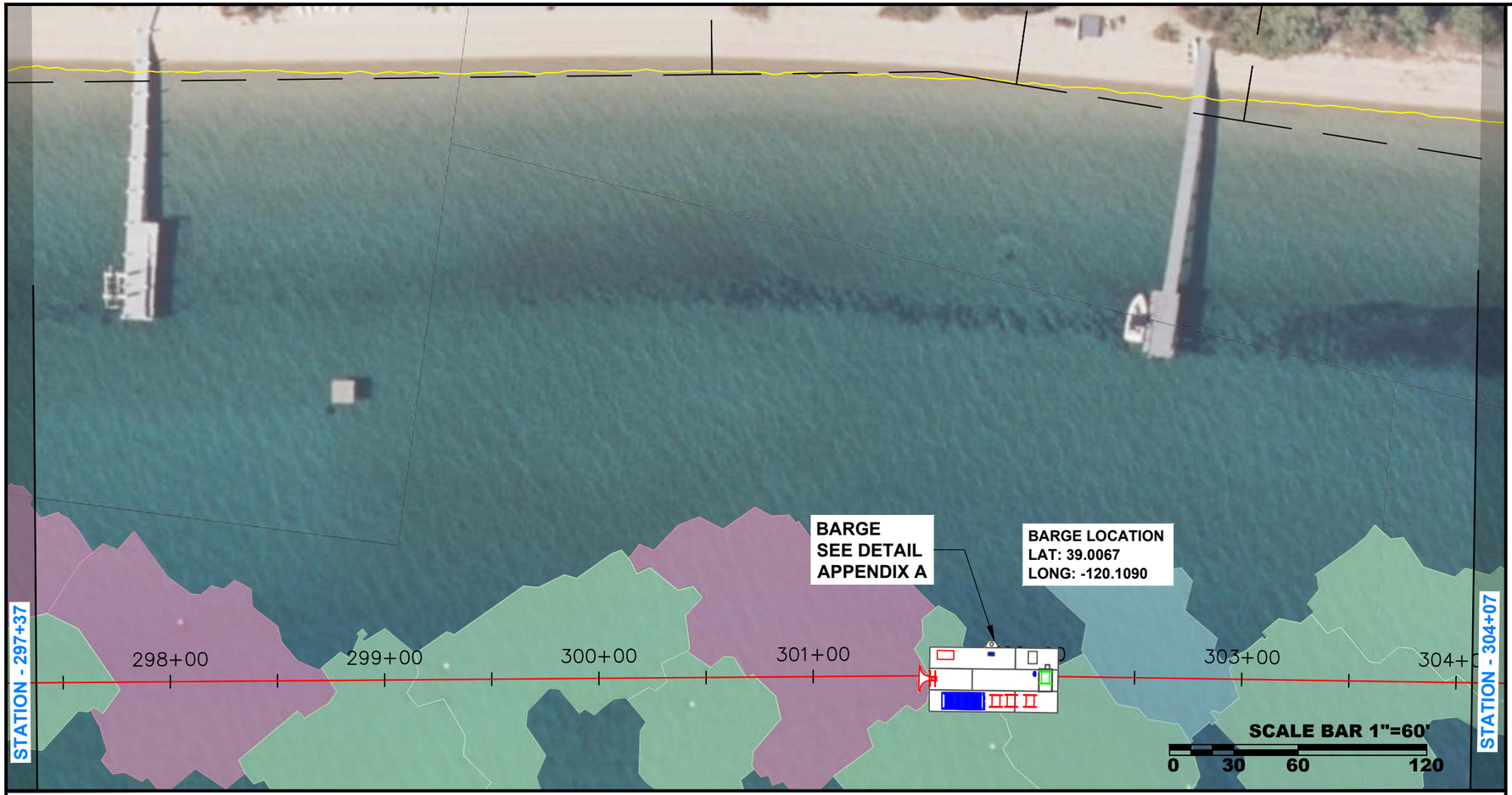
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

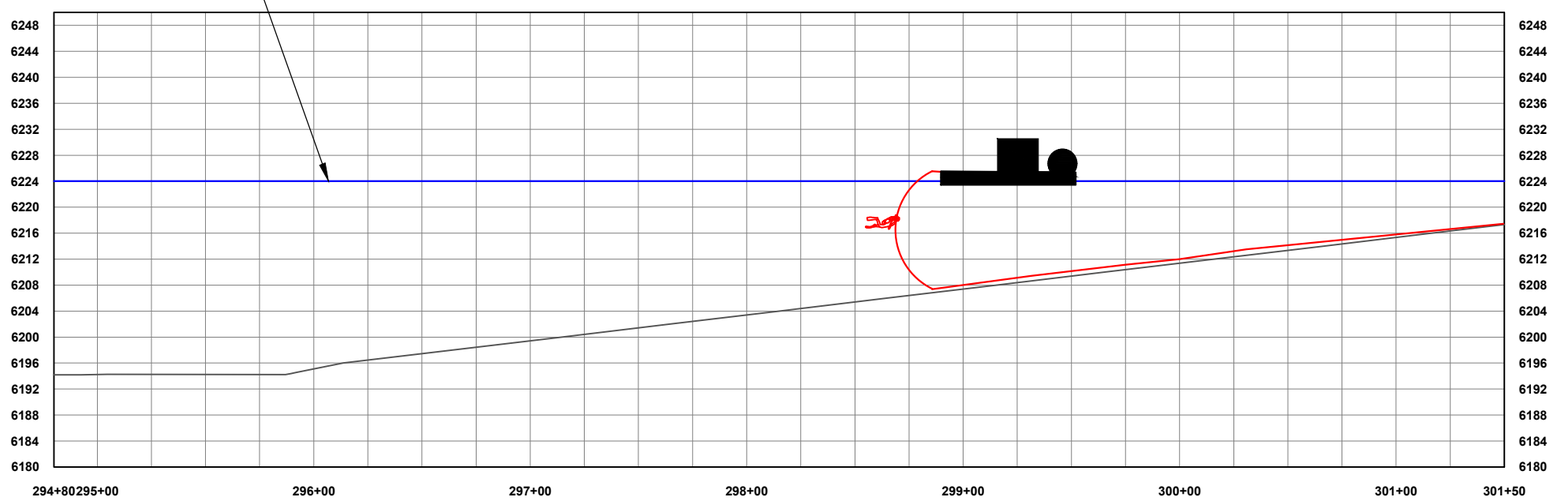
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CURRENT LAKE ELEVATION
USGS GAUGE READING
5/20/2022

SUBMARINE CABLE PROFILE



at&t

LEGEND

CUT LOCATIONS

TOUCHDOWN MONITOR

BARGE

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HIGH WATER LINE

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STREAMS

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TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

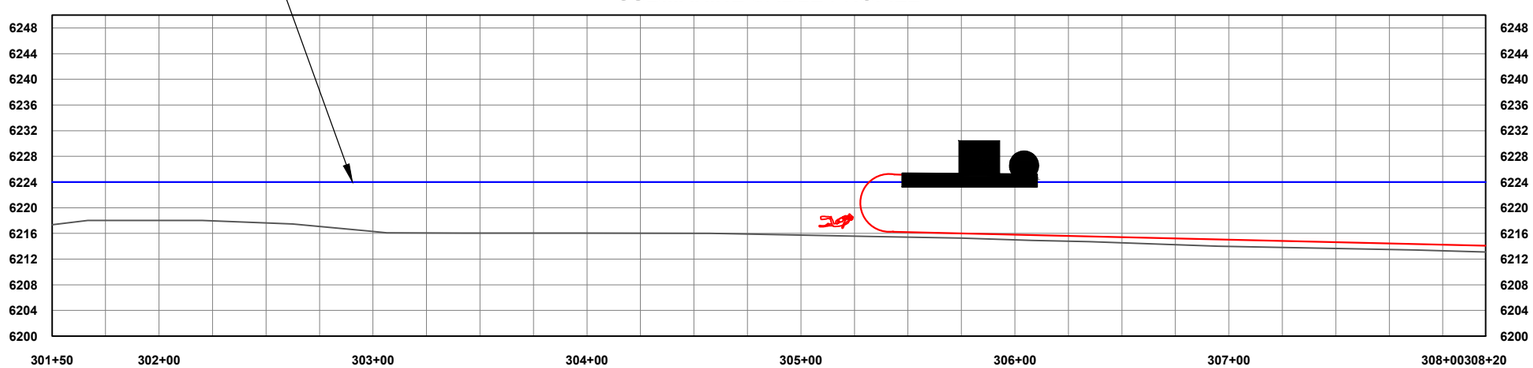
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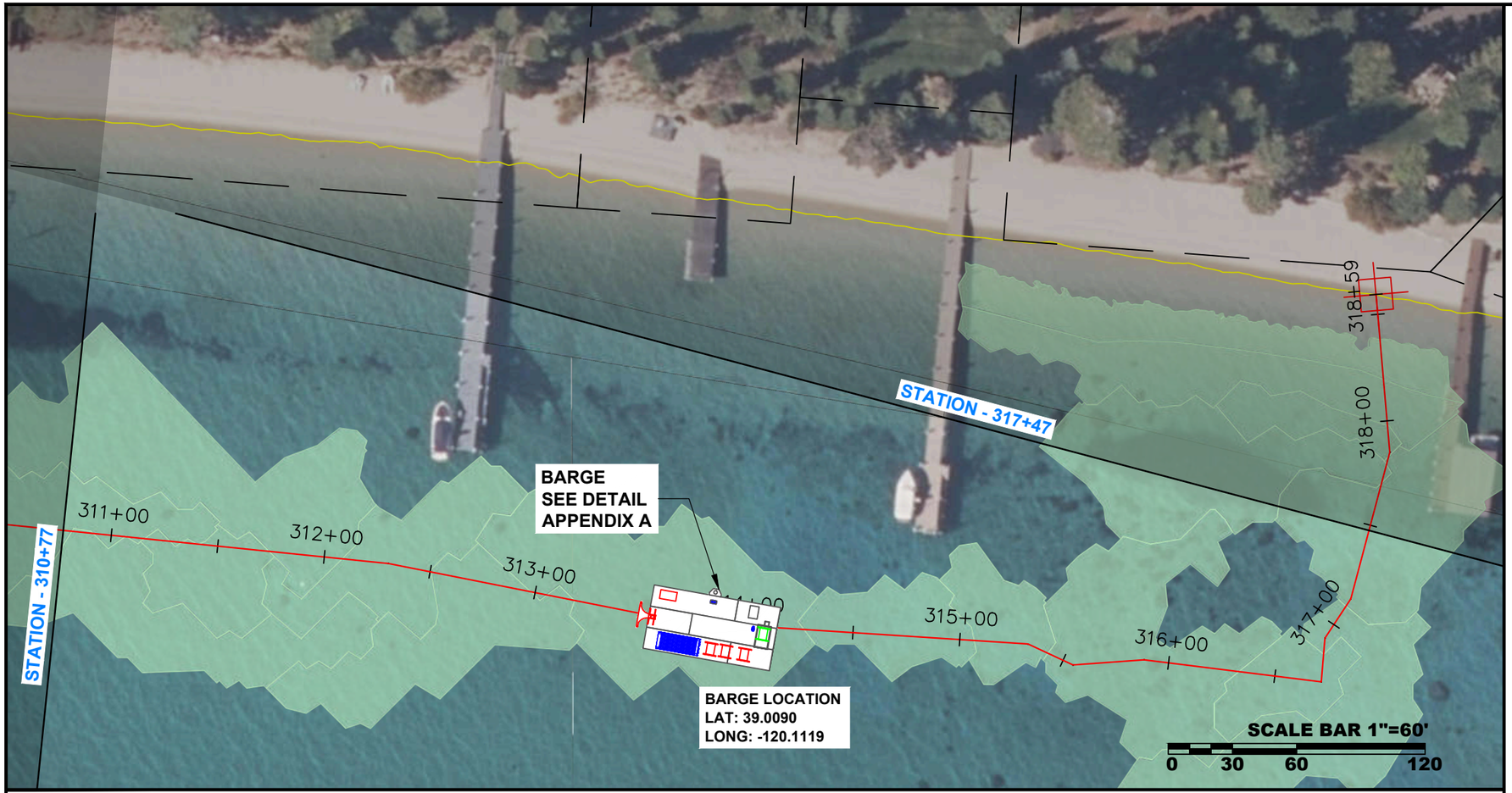
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

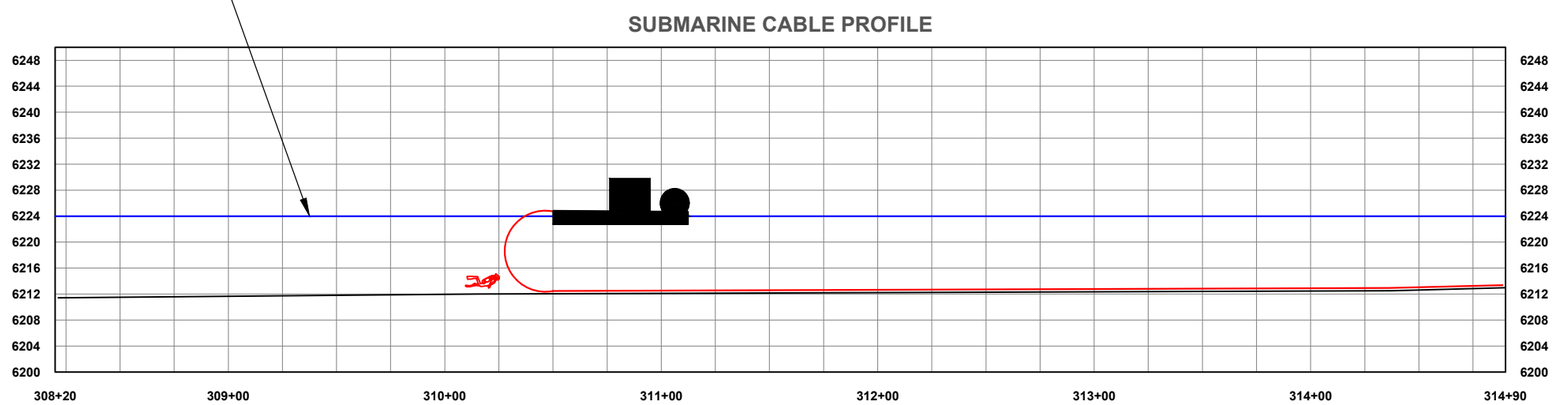
PROJECT NO.: A020LET

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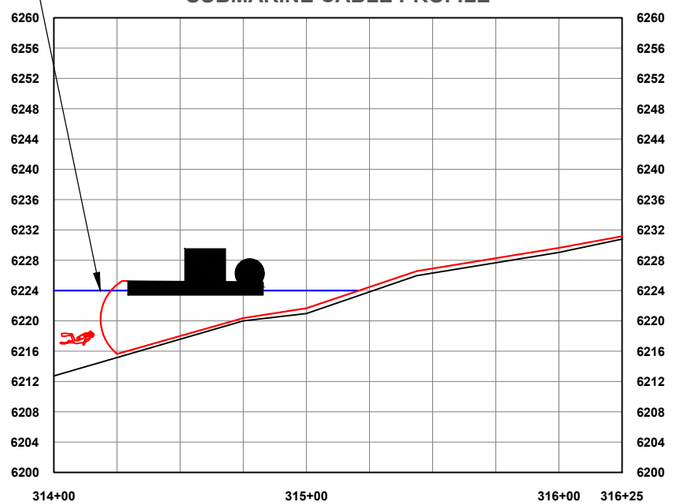
R3X GROUP

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
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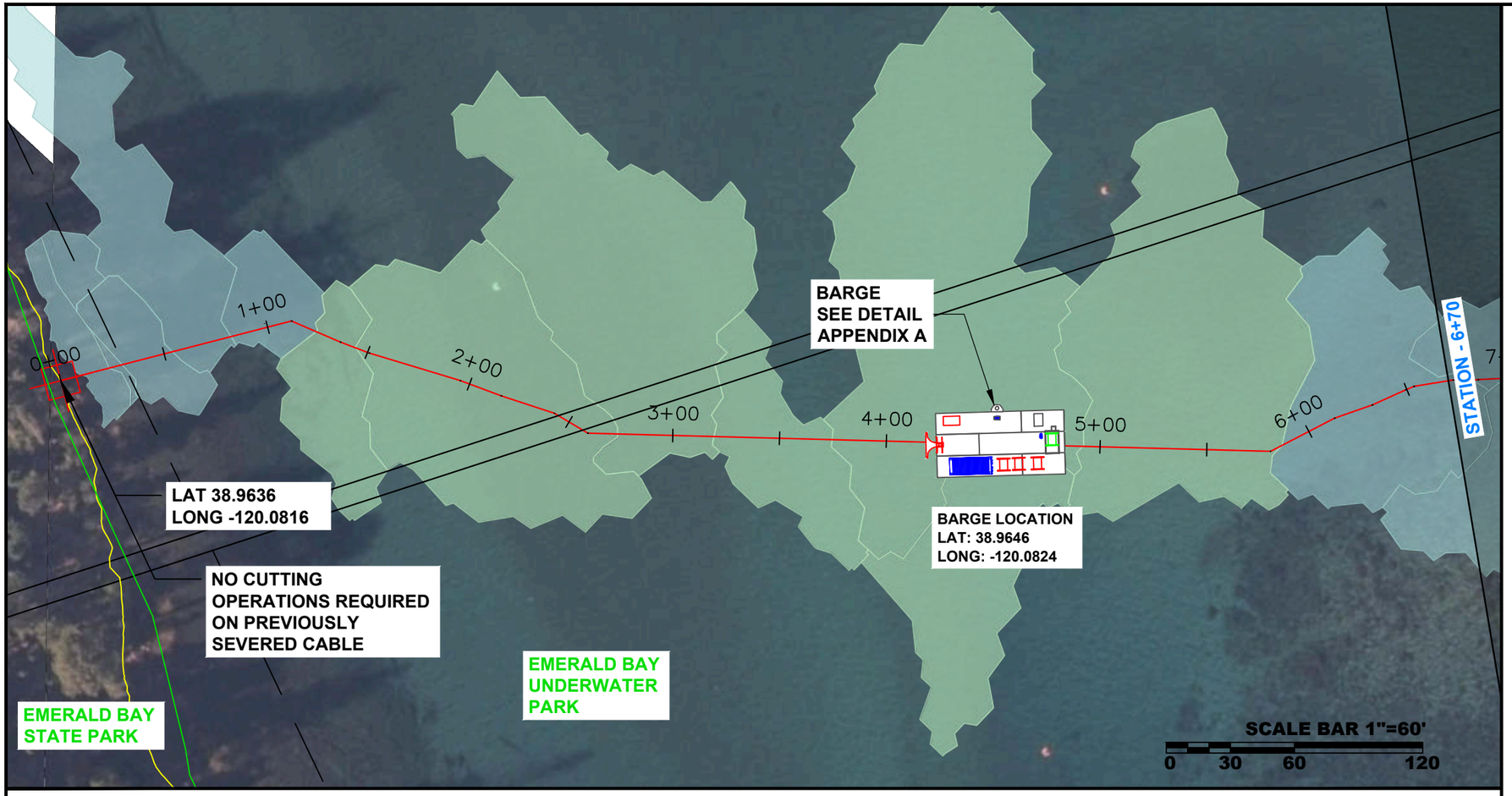
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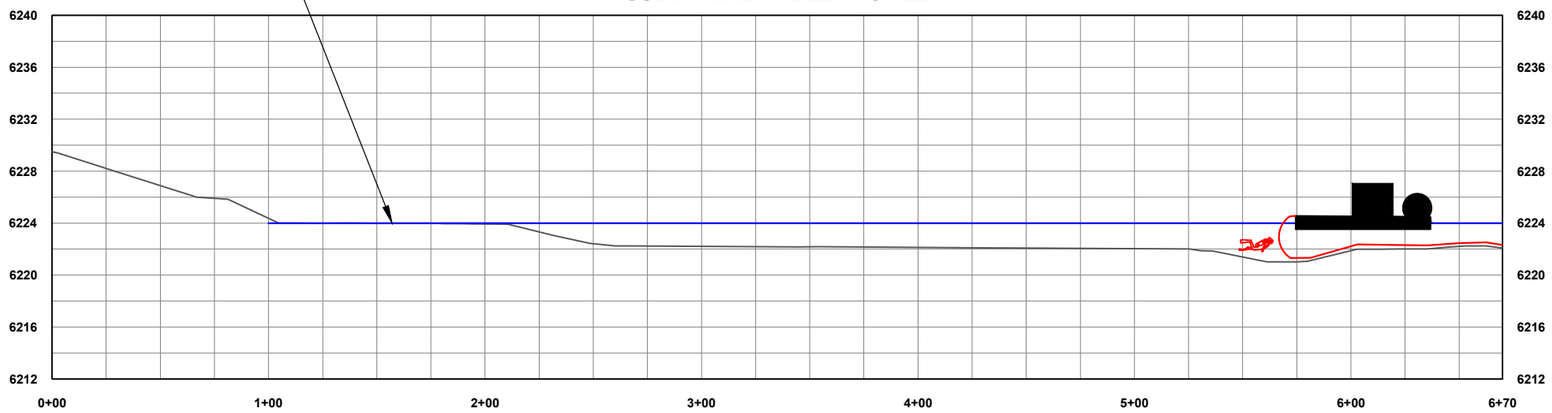
DATE: 4/19/2022

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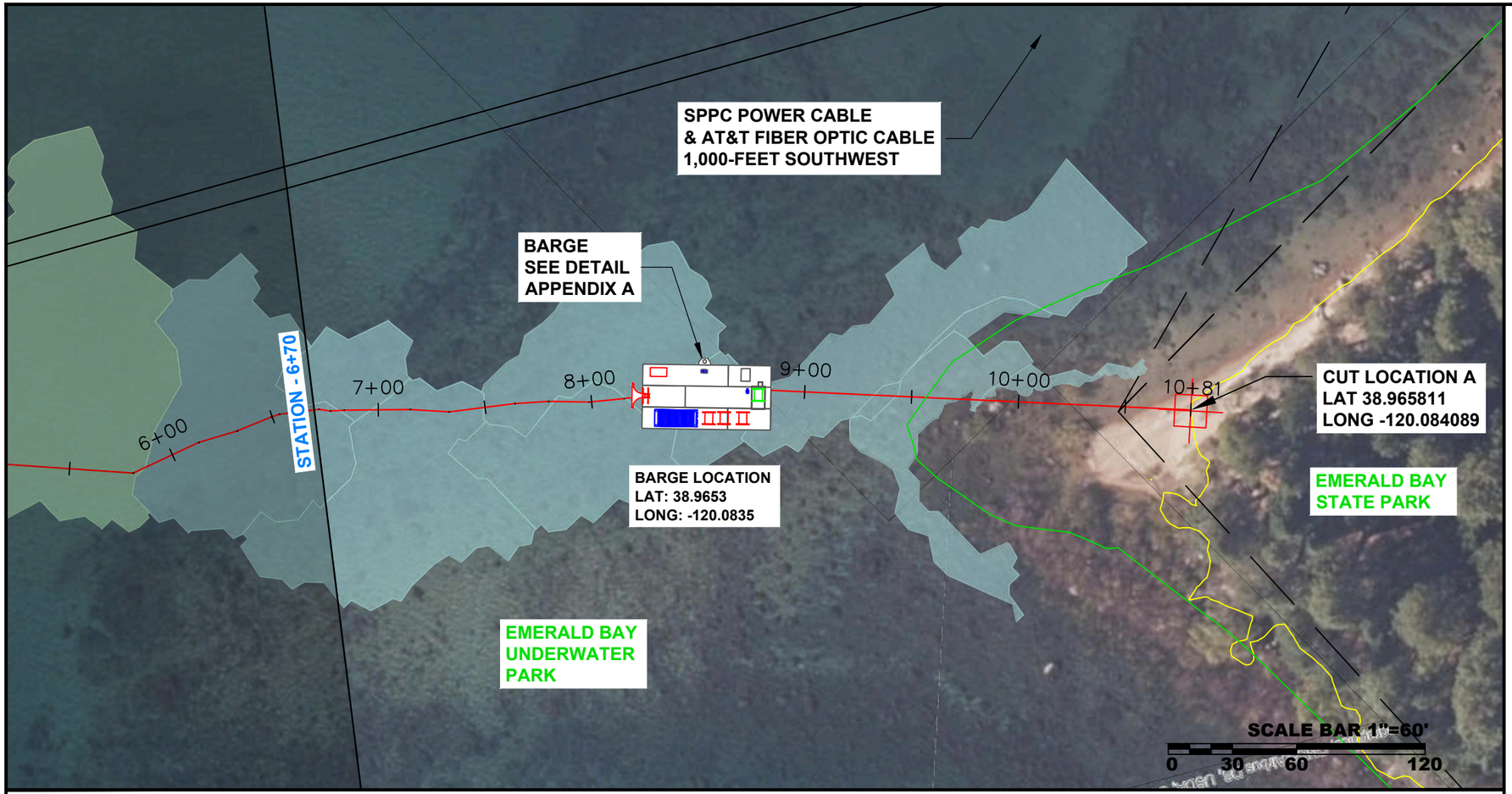
ENG'R: JASON PARNHAM TEL: 775-683-5240

TYPE OF CONST.: SUBMARINE CABLE REMOVAL

PROJECT NO.: A020LET

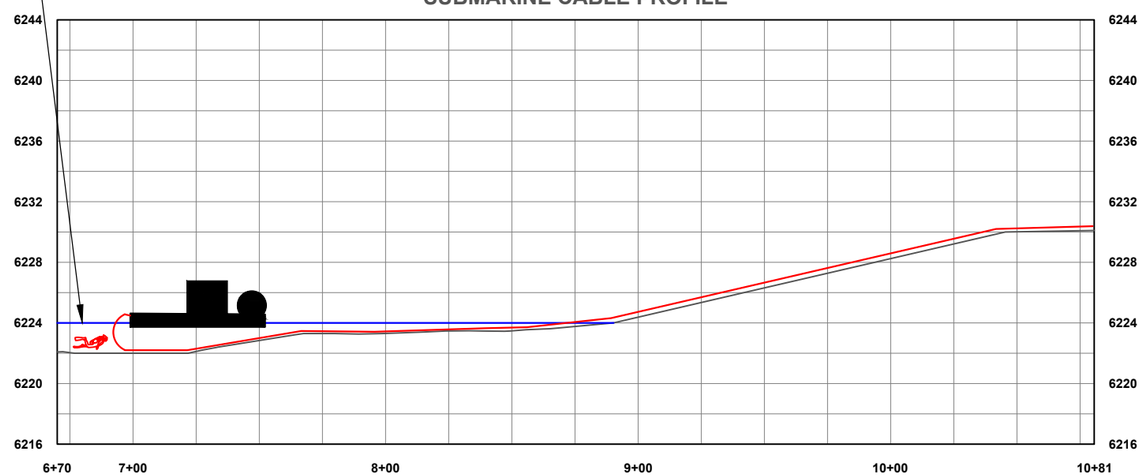
DATE: 4/19/2022

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CURRENT LAKE ELEVATION
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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

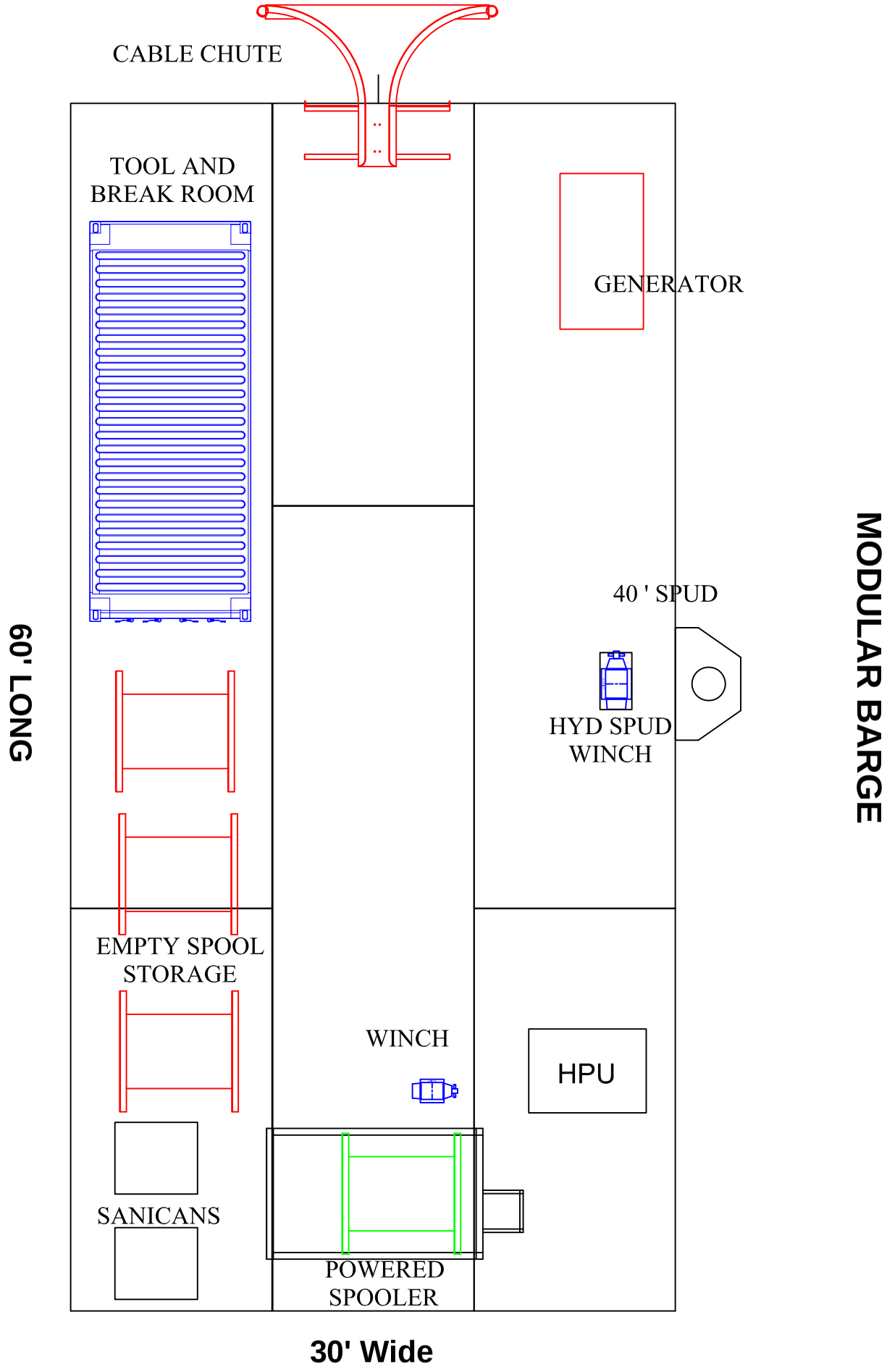
PROJECT NO.: A020LET

DATE: 4/19/2022

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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

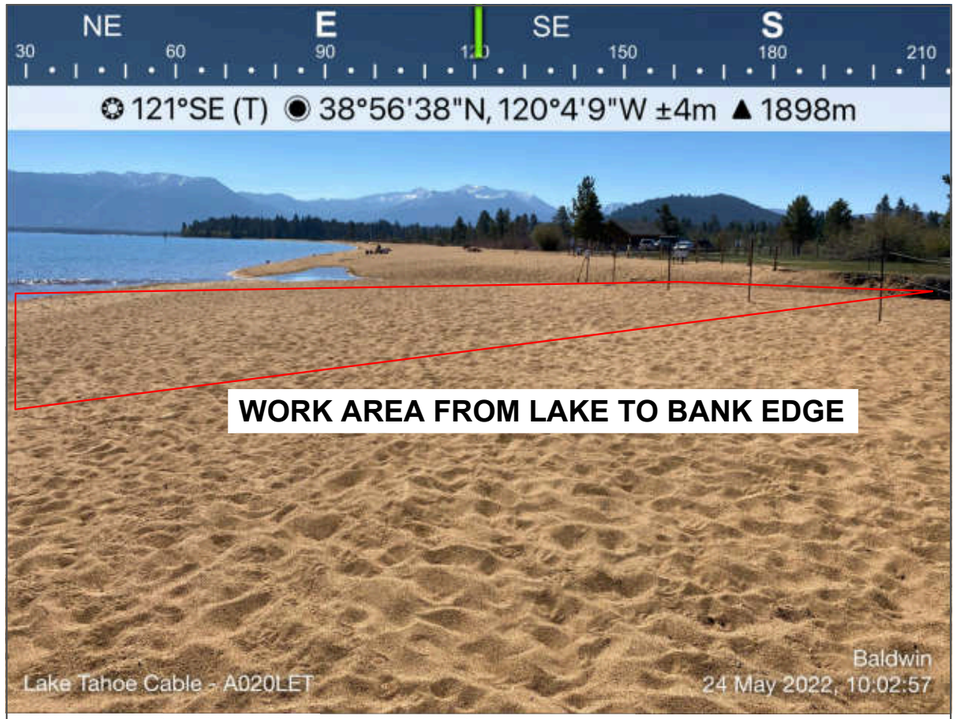


FIGURE 1A. BALDWIN BEACH WORK AREA

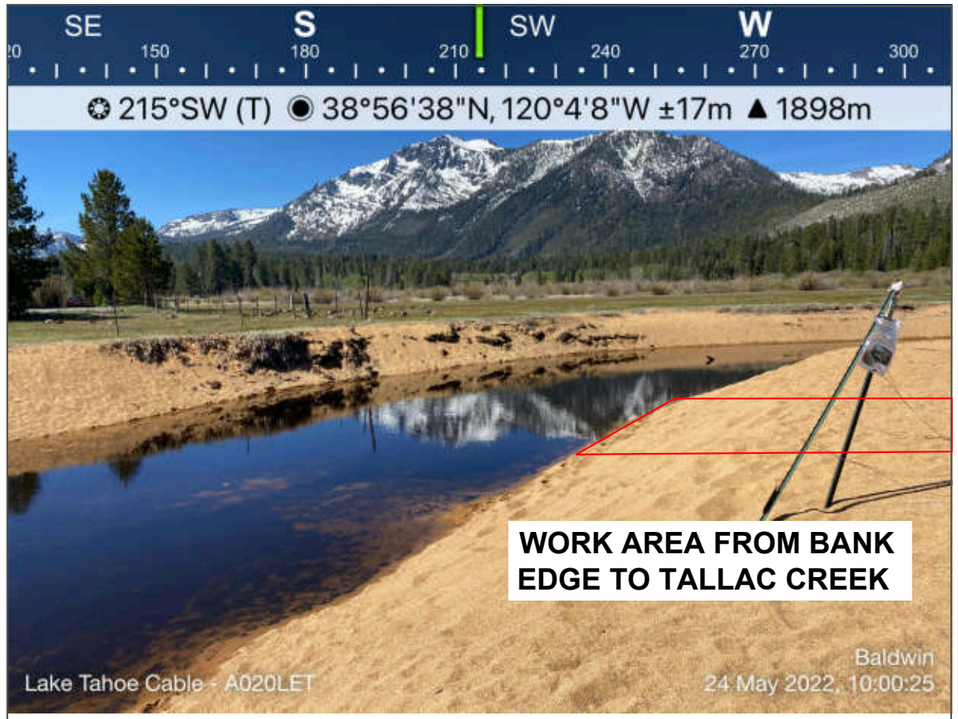


FIGURE 1B. BALDWIN BEACH WORK AREA AND TALLAC CREEK

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 mini excavator to enter and exit the work site. The cable will be exposed using an mini 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 exposed by mini excavator 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.

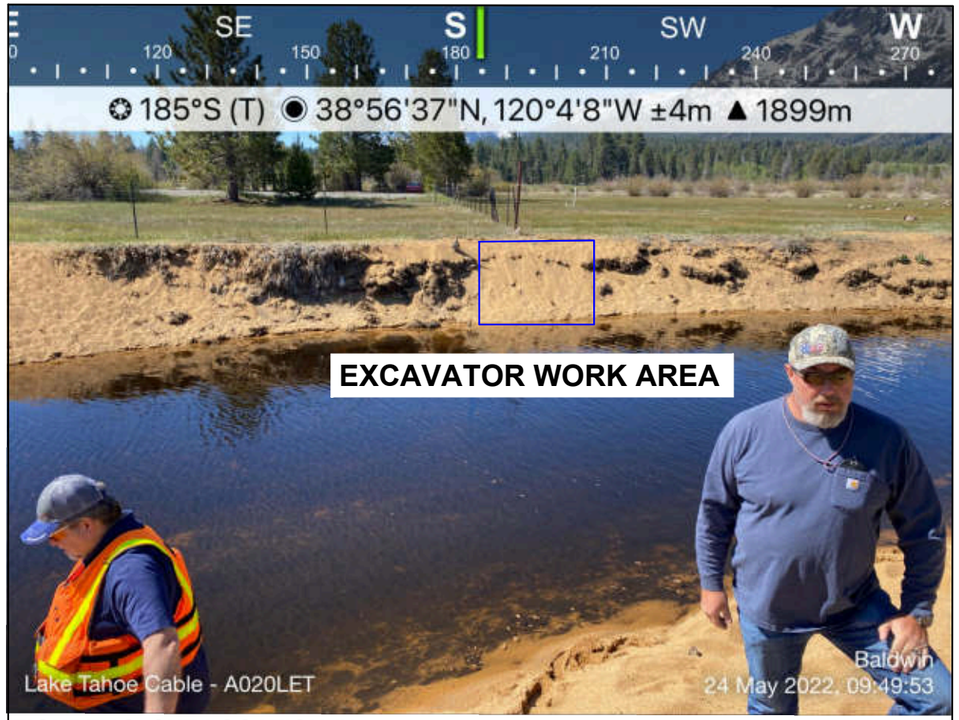


FIGURE 1C. CUT LOCATION #1

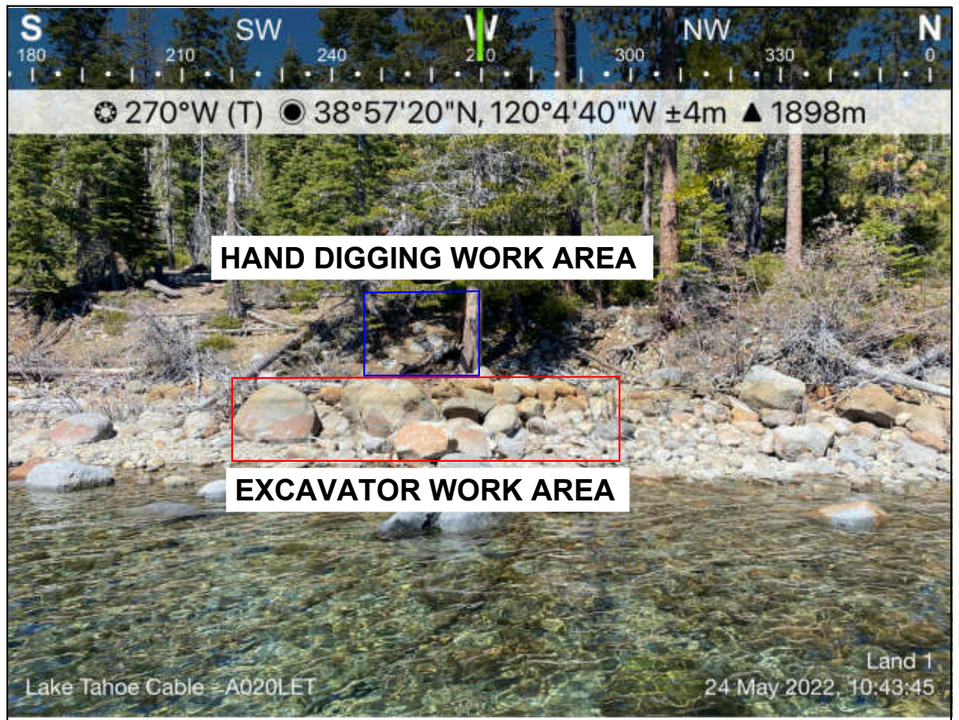


FIGURE 2. CABLE CUT LOCATION #2

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.

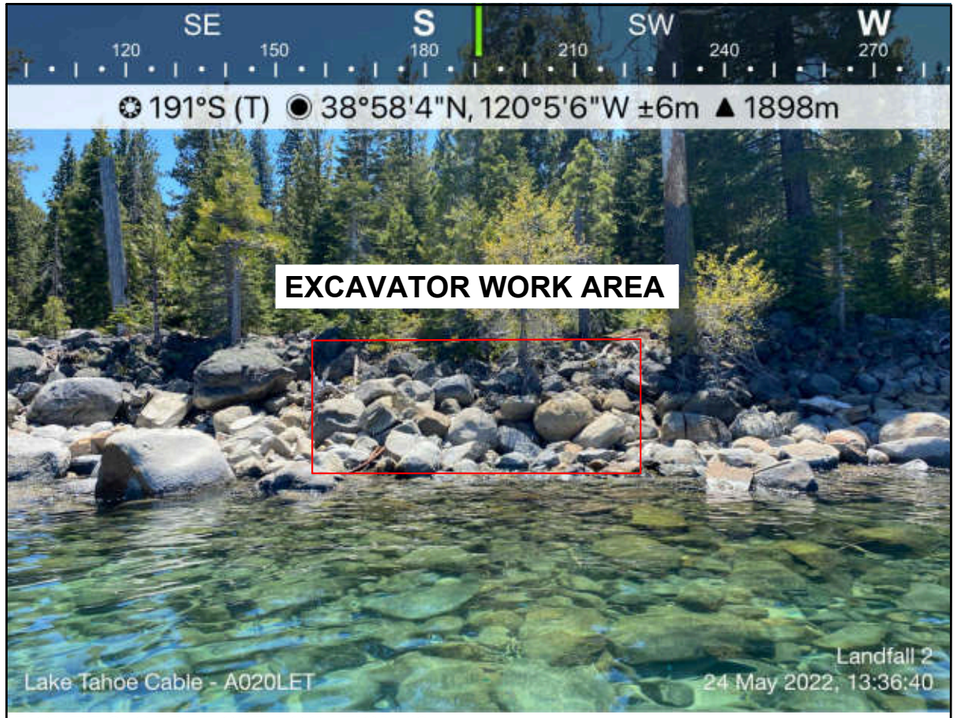


FIGURE 3. CABLE CUT LOCATION #3

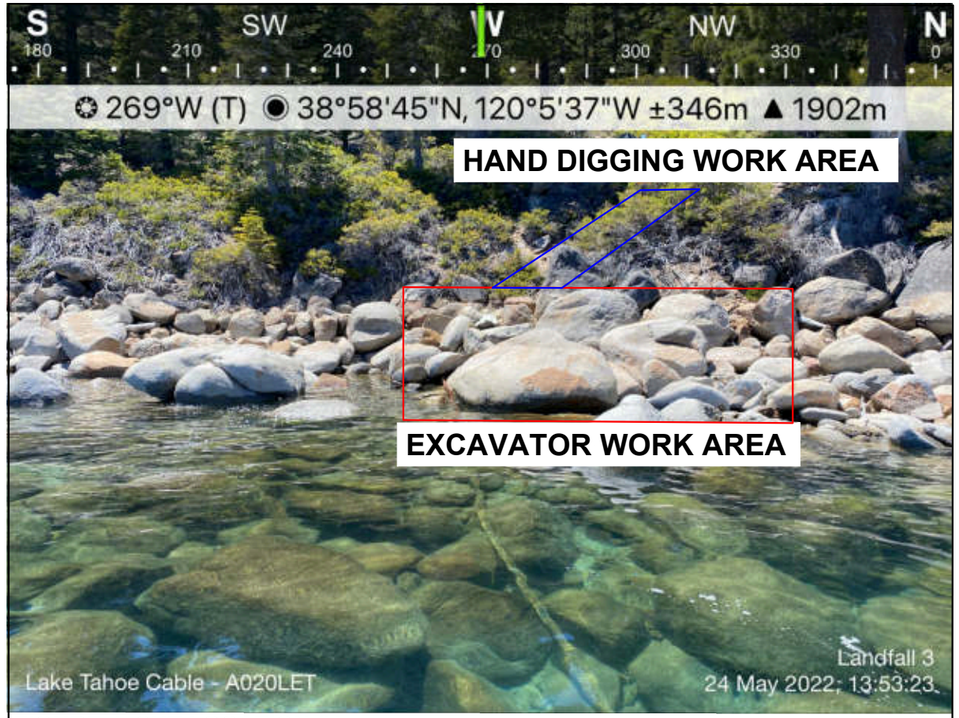


FIGURE 4. CUT LOCATION #4

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.

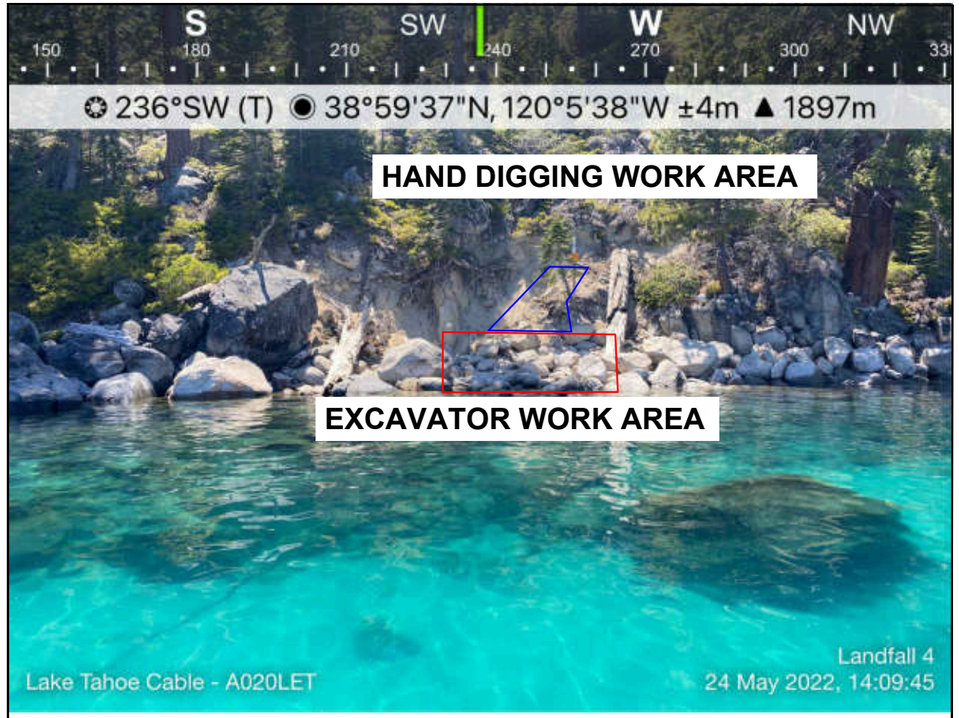


FIGURE 5. CUT LOCATION #5

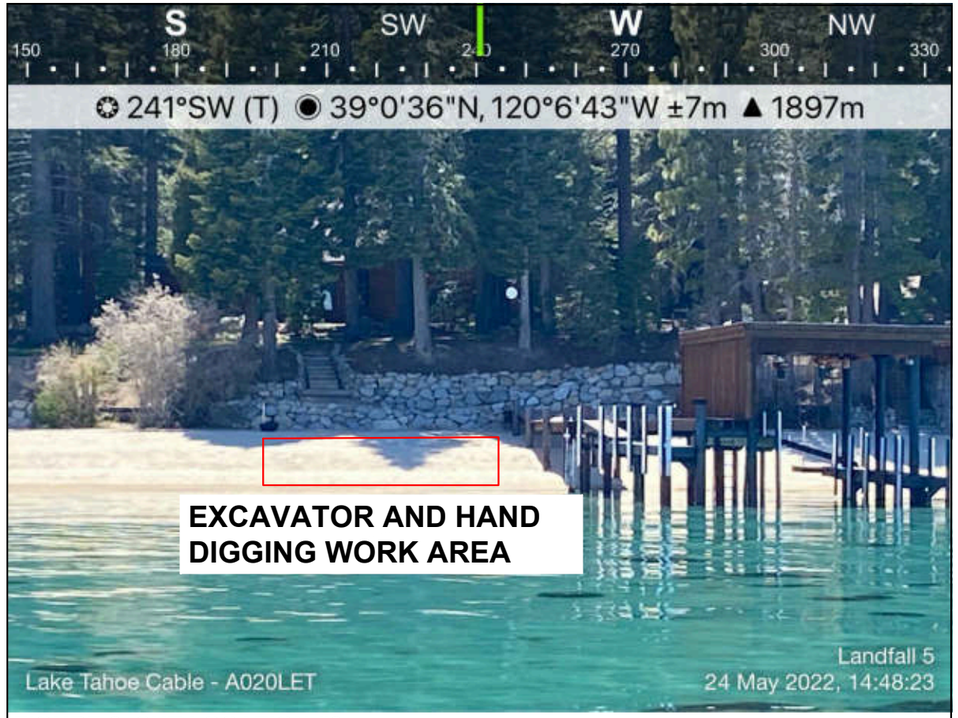


FIGURE 6. CUT LOCATION #6

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.

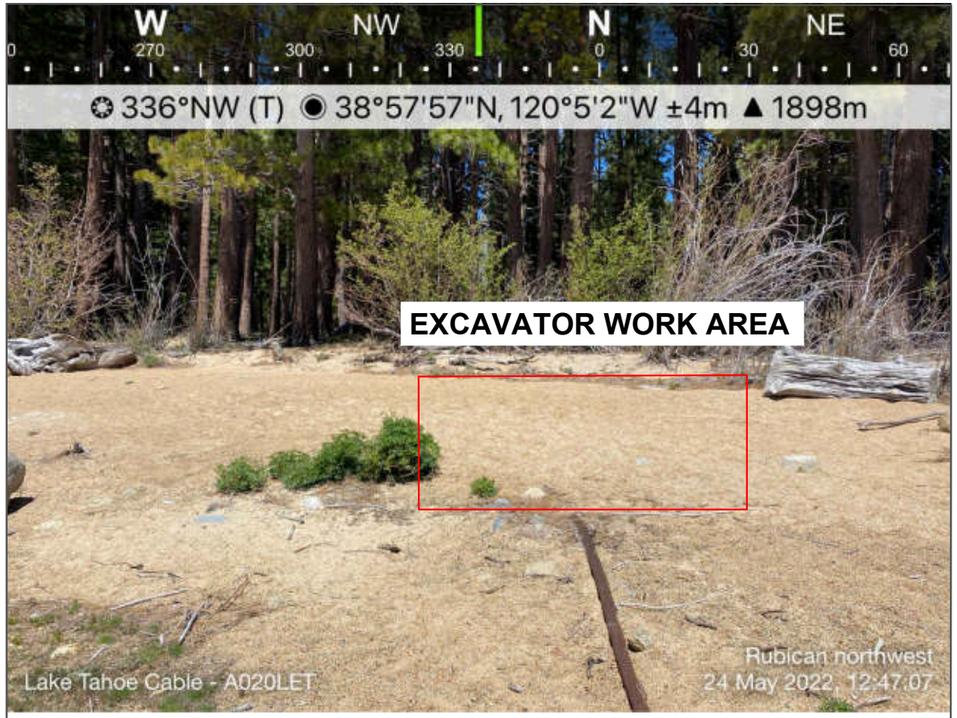


FIGURE 7. CUT LOCATION A

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:

June 2022

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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.

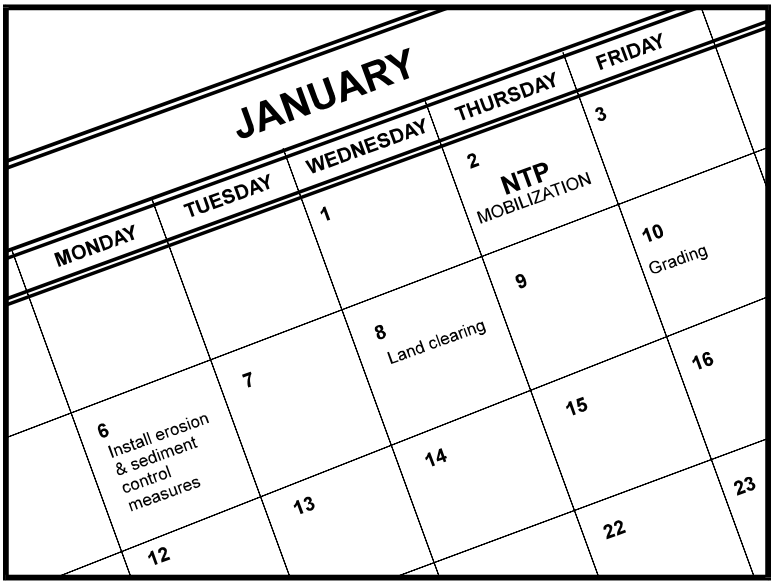
These inspections shall continue until the Project is deemed complete.

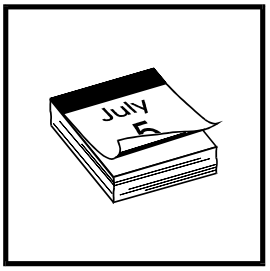
APPENDIX A

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.

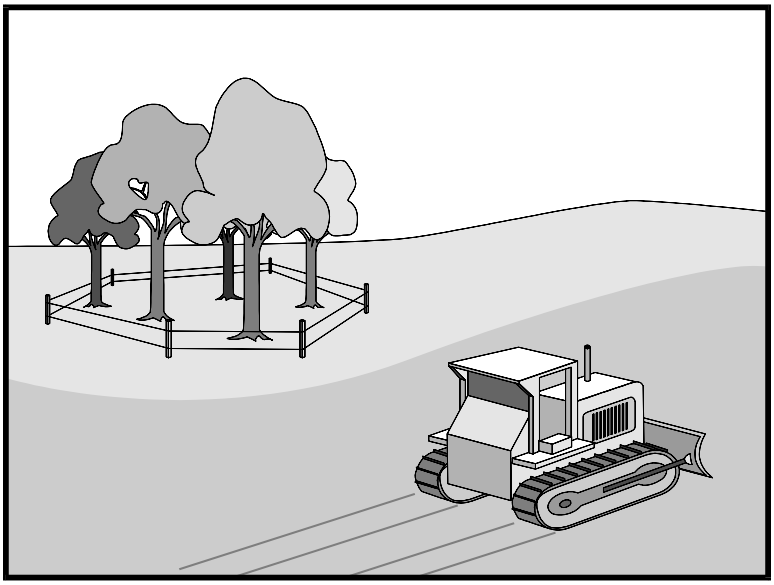
- Schedule shall also include dates for significant long-term operations or activities that may have planned non-storm water discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, bridge cleaning, etc.
- Schedule work to minimize 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.

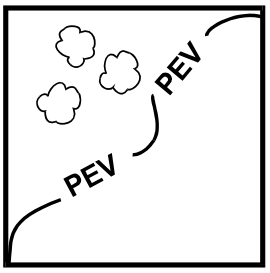
Maintenance and Inspection

- 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

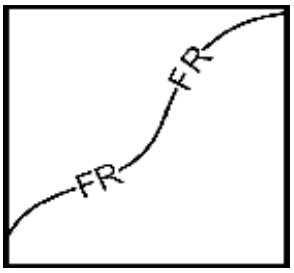
During construction, the limits of disturbance shall remain clearly marked at all times. Irrigation or maintenance of existing vegetation shall conform to the requirements in the landscaping plan. If damage to protected trees still occurs, maintenance guidelines described below shall be followed:

- 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.

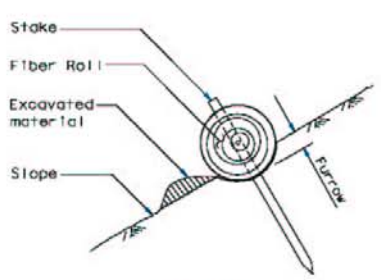
Removal

- 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

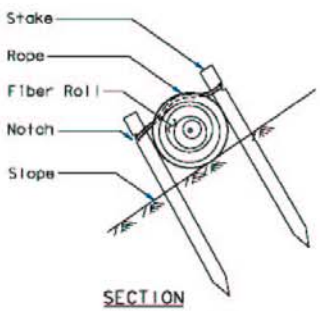
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- Inspect fiber rolls when rain is forecast. Perform maintenance as needed or as required by the RE.
- Inspect fiber rolls following rainfall events and a least daily during prolonged rainfall. Perform maintenance as needed or as required 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

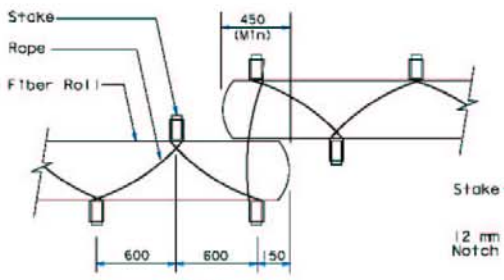


SECTION

TEMPORARY FIBER ROLL
(TYPE 1)

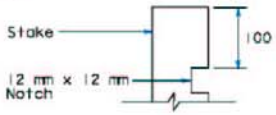


SECTION



PLAN

TEMPORARY FIBER ROLL
(TYPE 2)

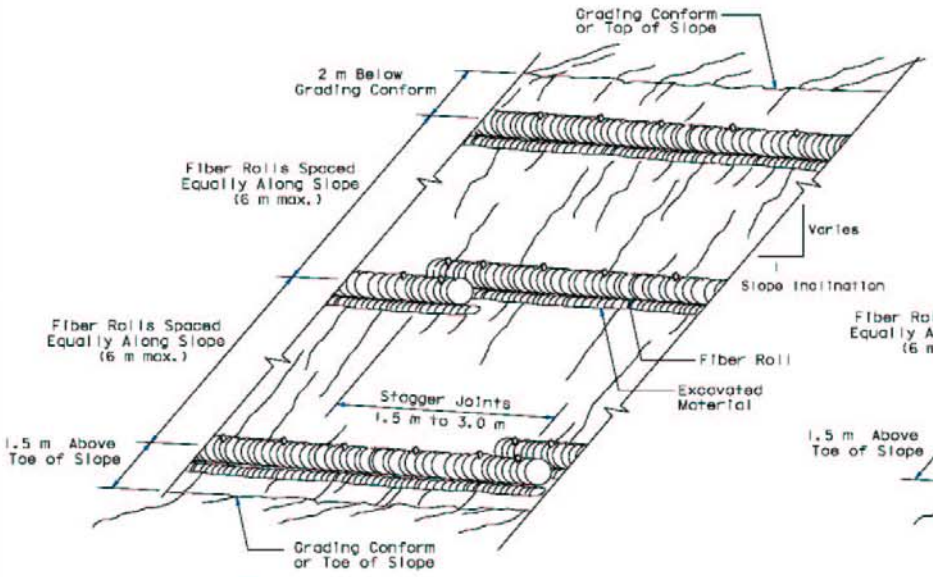


ELEVATION

NOTCH DETAIL

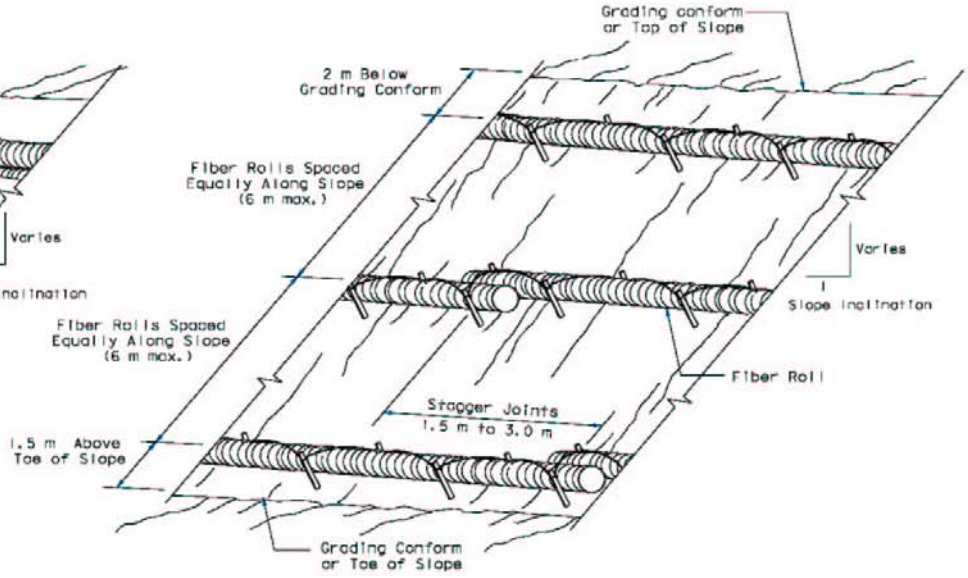
NOTE

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



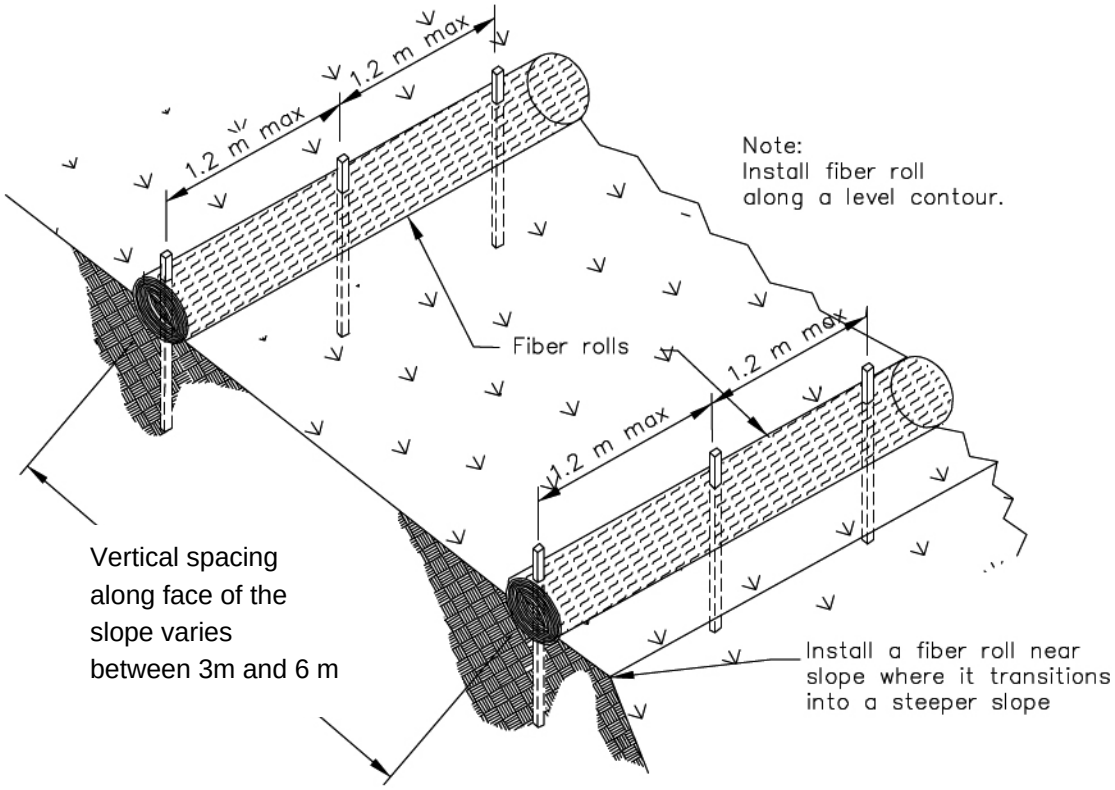
PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 1)



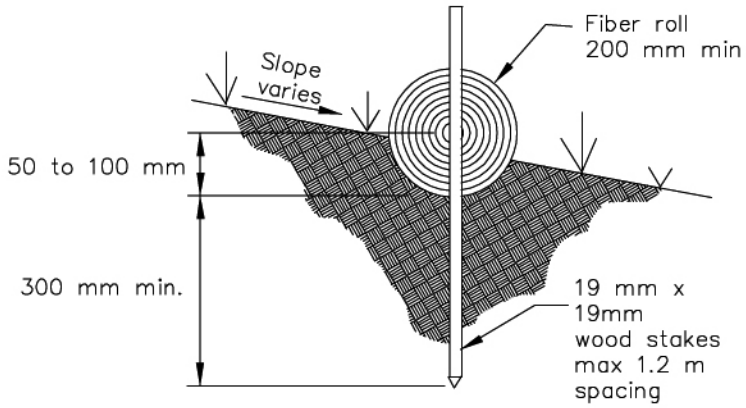
PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 2)



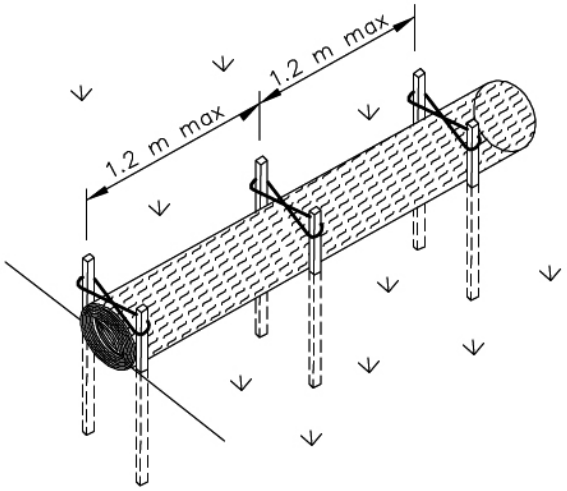
TYPICAL FIBER ROLL INSTALLATION

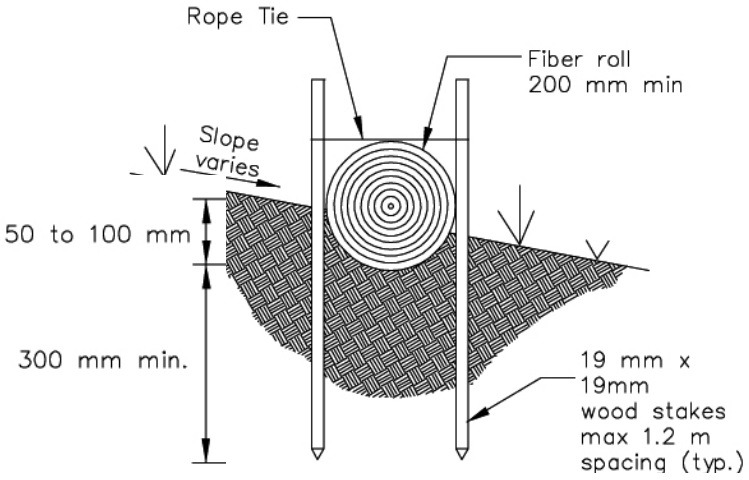
N.T.S.



ENTRENCHMENT DETAIL

N.T.S.





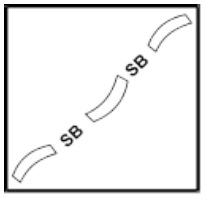
OPTIONAL ENTRENCHMENT DETAIL

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.

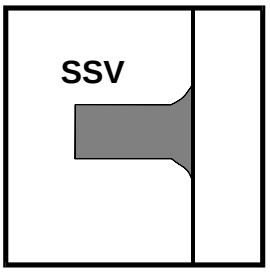
SWPPP or WPCP

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.

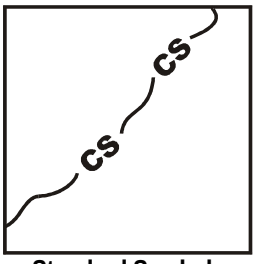
Maintenance and Inspection

- ■ 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.

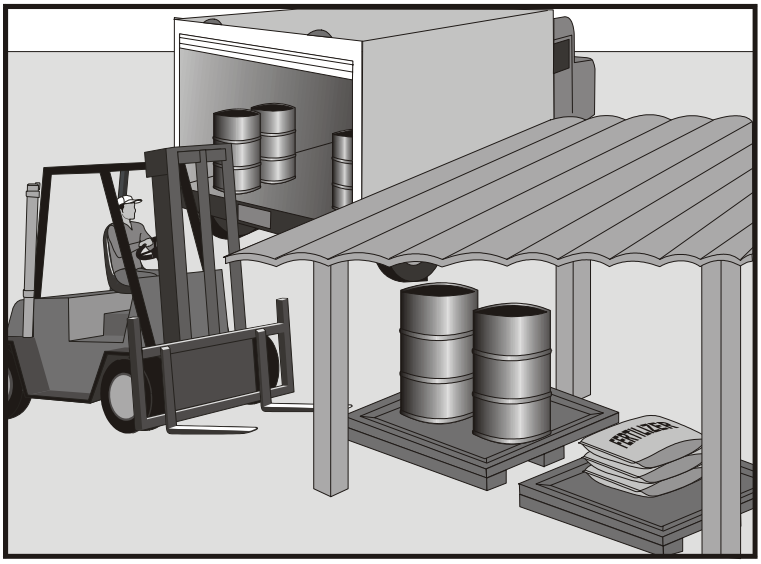
- Stockpiles of "cold mix" shall be placed on and covered with plastic or comparable material prior to the onset of precipitation.

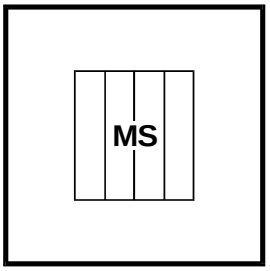
Maintenance and Inspections

- 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

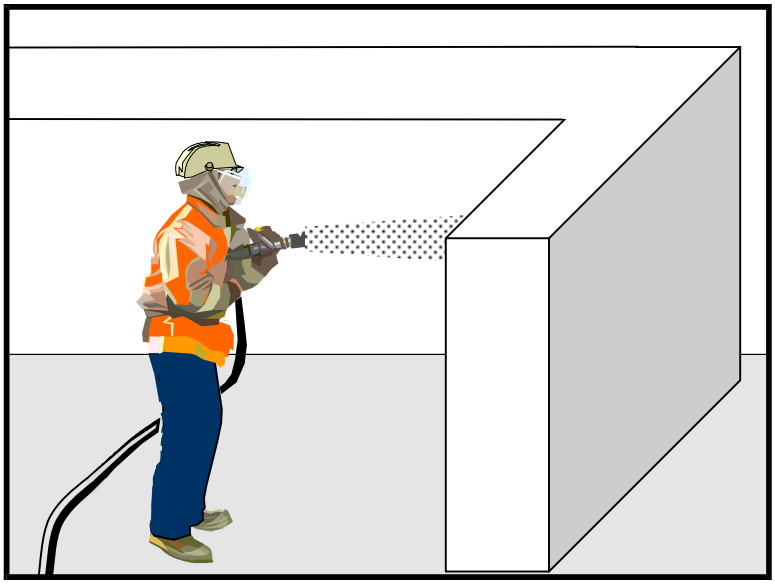
- Contain and clean up any spill immediately.
- If significant residual materials remain on the ground after construction is complete, properly remove and dispose any hazardous materials or contaminated soil.
- See BMP WM-4, "Spill Prevention and Control", for spills of chemicals and/or hazardous materials.

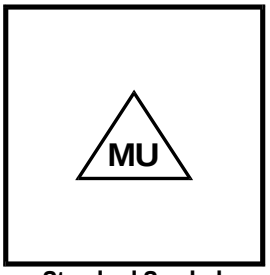
Maintenance and Inspection

- 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.

Limitations

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

Standards and Specifications

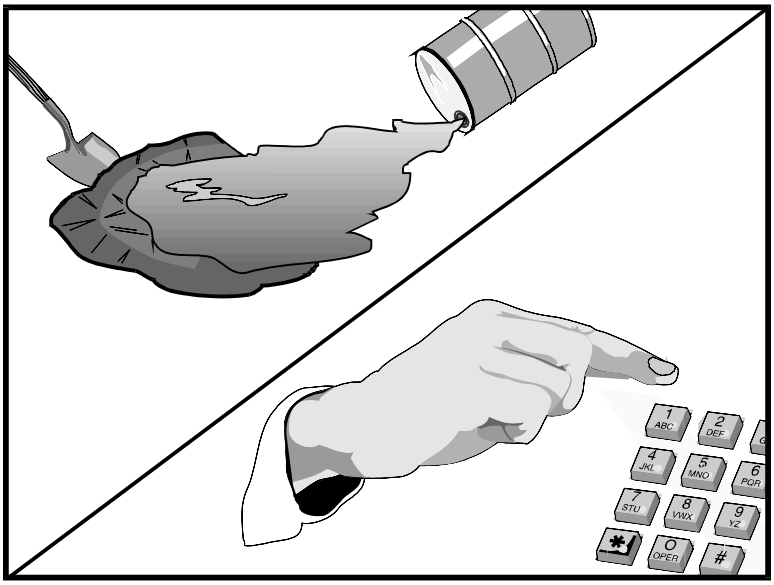
- Material Safety Data Sheets (MSDS) shall be supplied to the Resident Engineer (RE) for all materials.
- Latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, may be disposed of with other construction debris.
- Do not 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.

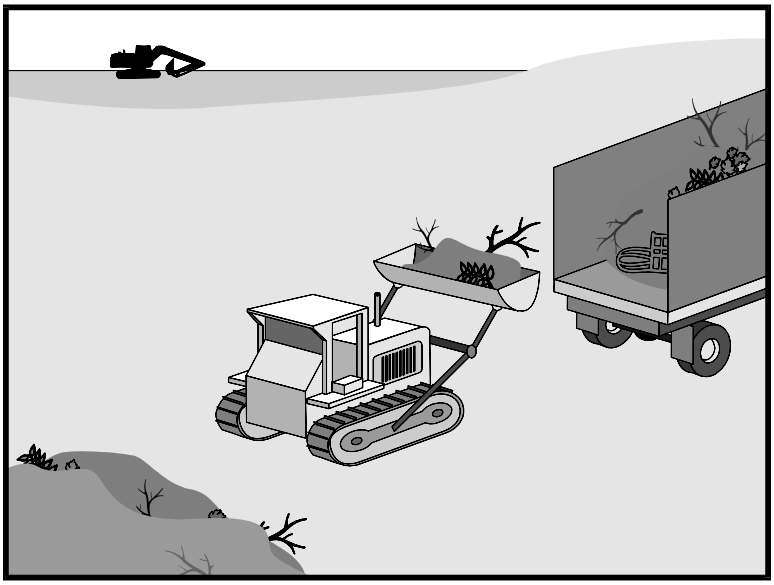
Maintenance and Inspection

- 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.

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Solid Waste Management

WM-5



SWM

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.

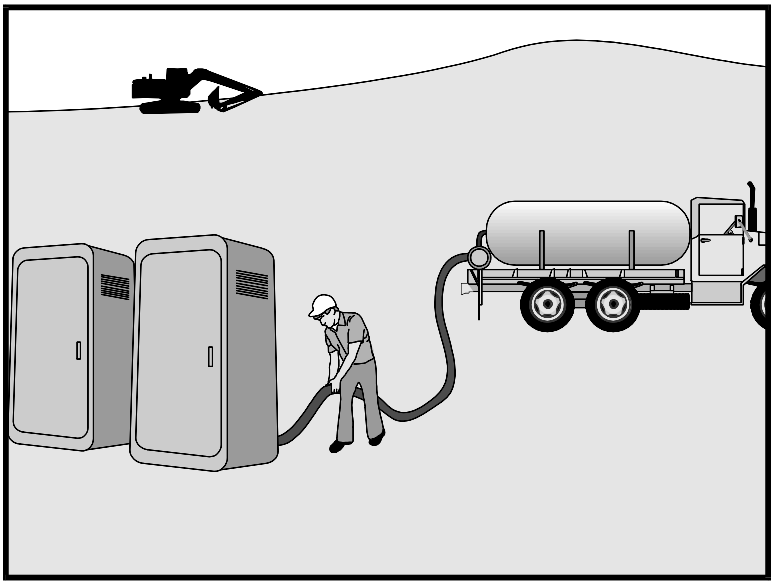
Copy of the hazardous waste manifests shall be provided to the RE.

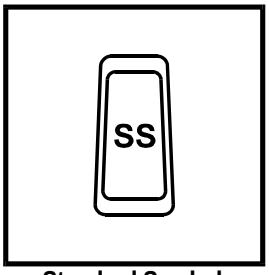
SWPPP or WPCP

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.

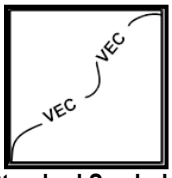
Maintenance and Inspection

- 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.

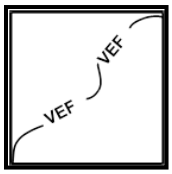
SWPPP or WPCP

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.