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STAFF REPORT

Date: May 16, 2019

To: TRPA Hearings Officer

From: TRPA Staff

Subject: Ward Shoreline Protective Structure, 3300 Edgewood Drive, Placer County, California;
Assessor's Parcel No: 093-094-008; TRPA File No: ERSP2018-1577

Proposed Action:

Hearings Officer action on the proposed project and related findings (Attachment A) based on this staff summary and the draft permit (Attachment B).

Staff Recommendation:

Staff recommends the Hearings Officer make the required findings and approve the project subject to the special conditions in the draft permit.

Project Description:

The applicant proposes to construct a shoreline protective structure to stabilize the shoreline in front of the residence to prevent further erosion. The project includes the installation of 1.5 – 2 feet diameter boulders and several larger boulders that will be 3 – 4 feet in diameter to help attenuate wave energy. The back of the revetment will be backfilled with cobble and topped with soil to create planting pockets. The revetment will extend to lake bottom elevation 6,226 feet. The proposed work will be accomplished using an amphibious barge with the use of an excavator that will place the boulders. A turbidity curtain will be in place during construction if required due to high water conditions. All required permanent water quality best management practices for the residence and associated improvement will be installed as part of the project. No other development on the property is proposed.

Site Description:

The project area is a developed 14,774 sq. ft. residential parcel in Dollar Point. The site contains a single-story residence constructed in 1960. The site is verified land capability classes 1b, 1c and 3 and is well vegetated with trees and shrubs. The shorezone is comprised of sand and cobbles which is considered feed and escape fish habitat. An approximately four-foot-high wall is located along the shoreline and undercutting has occurred below the wall footing causing cracks in the wall and a few stones are missing from the face of the wall. The existing wall is considered in fair condition by the consulting engineer. Surrounding land uses are single-family residential. A sewer line is in the shorezone at lake bottom elevation 6,222.5 feet.

Issues:

The proposed project involves a special use determination for the shoreline protective structure and therefore requires Hearing Officer review in accordance with Chapter 2, Subsection 2.2.2. of the TRPA Code. The project issues and others are discussed in the following staff analysis:

Staff Analysis:

- A. Environmental Documentation: The applicant has completed an Initial Environmental Checklist (IEC) in order to assess the potential environmental impacts of the project. No significant environmental impacts were identified, and staff has concluded that the project will not have a significant adverse effect on the environment. A copy of the completed IEC will be made available at the Hearings Officer hearing and at the TRPA offices.
- B. Scenic Quality: This project will stabilize the backshore by placing a sloping revetment in front of the existing vertical rock wall located at the toe of the slope. The project will improve the visual character of the site by screening the existing wall with natural materials that include boulders, cobbles and vegetation.
- C. Land Use/Plan Area Statement: The project is located in the Dollar Point Residential Subdistrict of the Tahoe Basin Area Plan. The Land Use Classification is Residential, and shoreline protective structures are accessory to the primary residential use. Shoreline protective structures are listed as a special use. Agency staff reviewed the Area Plan and determined the project is consistent with the applicable planning statement, planning considerations and special policies.
- D. Shorezone Tolerance District/Construction Methodology: The subject parcel is in Shorezone Tolerance District 2 which states in part, "Tolerance District 2 is typically volcanic and morainic debris shorezones with slopes of 30 percent or over and alluvial soils at nine to 30 percent slopes. Potential for disturbance in the nearshore is high as is the potential for erosion and cliff collapse in the backshore." The purpose of the proposed project is to protect the existing slope from long term erosion. Projects within this Tolerance District are required to access the shoreline along stabilized areas to minimize any potential impacts to the backshore. The site will be accessed from the lake using an amphibious barge.

Required Actions:

Staff recommends the Hearings Officer:

- 1) Approve the findings contained in this staff summary and a mitigated finding of no significant environmental effect.
- 2) Approve the project, based on the staff summary, subject to the conditions contained in the attached Draft Permit.

Attachments:

- A. Required Findings
- B. Draft Permit
- C. Project Plans

Attachment A

Required Findings

Required Findings:

The following is a list of the required findings as set forth in Chapters 4, 21, 60, 80, 81, 84, and 85 of the TRPA Code. Following each finding, Agency staff has indicated if there is sufficient evidence contained in the record to make the applicable findings or has briefly summarized the evidence on which the finding can be made.

1. Chapter 4 – Required Findings:

- (a) The project is consistent with and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and maps, the Code and other TRPA plans and programs.

There is no evidence in the file or record showing that the proposed project will have an adverse effect on the Land Use, Transportation, Conservation, Recreation, Scenic Quality Public Service and Facilities, or Implementation sub-elements of the Regional Plan. The subject parcel is in Shorezone Tolerance District 2 which states in part, "Tolerance District 2 is typically volcanic and morainic debris shorezones with slopes of 30 percent or over and alluvial soils at nine to 30 percent slopes. Potential for disturbance in the nearshore is high as is the potential for erosion and cliff collapse in the backshore." The purpose of the proposed project is to protect the existing slope from long term erosion. Projects within this Tolerance District are required to access the shoreline along stabilized areas to minimize any potential impacts to the backshore. The purpose of the project is to reduce erosion. The project as conditioned conforms with and will promote implementation of the Regional Plan.

- (b) The project will not cause the environmental threshold carrying capacities to be exceeded.

TRPA staff has completed the "Project Review Conformance Checklist and Article V (g) Findings" in accordance with Section 4.4.2 of the TRPA Code of Ordinances. All responses contained on said checklist indicate compliance with the environmental threshold carrying capacities. Also, the applicant has completed an Initial Environmental Checklist (IEC) which is supported by a report prepared by a geotechnical engineer. No significant environmental impacts were identified, and staff has concluded that the project will not have a significant effect on the environment. A copy of the completed checklist and IEC will be made available at the Hearings Officer hearing and at TRPA.

- (c) Wherever federal, state, or local air and water quality standards apply for the Region, the strictest standards shall be attained, maintained, or exceeded pursuant to Article V (d) of the TPRA Compact.

The project as conditioned, will comply with all applicable air and water quality standards for the region. The project as designed will enhance water quality values through improved shoreline stability and reduced erosion.

2. Chapters 21 and 81 – Special Use Findings.

- (a) The project, and the related use, is of such a nature, scale, density, intensity and type to be appropriate for the project area, and the surrounding area.

The proposed project is an appropriate use for the project area. The proposed revetment is designed to utilize native materials to reduce erosion in the backshore. Shoreline protective structures are listed as a special use in the Area Plan. Properties in the vicinity also have similar revetments located in the shorezone. Based on the analysis contained in the administrative record and the IEC, the proposed project is an appropriate use for the project area.

- (b) The project, and the related use, will not injure or disturb the health, safety, environmental quality, enjoyment of property, or general welfare of persons or property in the neighborhood, or in the region.

The proposed project is designed to reduce impacts to water quality and enhance the beneficial use and enjoyment of the property by the property owner. The project as designed will inhibit further erosion. The proposed project includes several components to ensure the structure will not cause significant erosion or modification of the foreshore or on adjacent properties. To minimize wave energy reflecting off the existing small vertical wall the project is designed with as a sloping rock revetment. The dynamic revetment will eliminate wave reflection during all but the highest lake levels, and the cobbles on the bottom will reduce the depth of scour. The project, as designed, will not cause any significant long-term impacts to the environment or to other property in the vicinity or region and will meet the engineering standards for Lake Tahoe.

- (c) The project, and the related use, will not change the character of the neighborhood, detrimentally affect or alter the purpose of any applicable plan area statement, community, redevelopment, specific, or master plan.

The proposed project will help stabilize the backshore and existing partially destabilized wall. The project is not expected to affect or change the character of the neighborhood and does not affect or alter the purpose of the applicable plan area statement which lists shoreline protective structures as a permissible special use. The project as designed and conditioned is compatible with, and will not adversely affect, the residential character of the surrounding neighborhood. The project design will include natural earth tone materials that enhance scenic threshold values for the project area.

3. Chapter 60.4 Best Management Practice Requirements and 60.4.9 Maintenance of BMPs:

BMPs shall be maintained to ensure their continued effectiveness. The revetment is intended to reduce long term erosion and protect water quality. All required permanent water quality best management practices for the residence and associated improvements will be installed as part of the project.

4. Chapter 80 – Shorezone Findings:

- (a) Significant Harm: The project will not adversely impact littoral processes, fish spawning habitat, backshore stability, or on-shore wildlife habitat, including waterfowl nesting areas.

The proposed shoreline protective treatment is designed to protect the shoreline from the continued effects of erosion and therefore will not have negative effects on wildlife habitat. There are no known waterfowl nesting areas in the area and the area is not fish spawning habitat. The area is considered fish feed and escape habitat and the rock revetment will provide equal or superior feed and escape habitat. Temporary ground disturbance during construction will occur both landward and lakeward of the high-water line of Lake Tahoe. However, the project will include the use of temporary BMPs as necessary to protect water quality and fish feed and escape habitat.

- (b) Accessory Facilities: There are sufficient accessory facilities to accommodate the project.

The proposed shoreline protective structure is an accessory use to the existing single-family residence on the property.

- (c) Compatibility: The project is compatible with existing shorezone and lakezone uses or structures on, or in the immediate vicinity of, the littoral parcel; or that modifications of such existing uses or structures will be undertaken to assure compatibility.

Shoreline protective structures are permissible uses in the applicable Area Plan. The proposed sloping rock revetment as designed and conditioned, will be compatible with existing shorezone and lakezone uses in the immediate vicinity.

- (d) Use: The use proposed in the foreshore or nearshore is water dependent.

The project is in the backshore and foreshore but not the nearshore. The proposed shoreline protective structure will armor the backshore of the project area from continued effects of soil erosion and wave erosion. The project by its nature is water dependent and involves a dynamic slope rock revetment. The portion of the project that will extend into the foreshore is designed to receive and not inhibit full wave run up and dissipate wave energy. The project design is intended to effectively reduce wave energy in a manner that will maintain littoral drift through the site.

- (e) Hazardous Materials: Measures will be taken to prevent spills or discharges of hazardous materials.

Hazardous materials will not be used during construction. As a condition of permit approval, the permittee will provide an emergency spill prevention plan to be implemented for any emergency associated with leaking equipment.

- (f) Construction: Construction and access techniques will be used to minimize disturbance to the ground and vegetation.

The geotechnical engineer developed a construction sequence and methodology that describes construction and access techniques as well as temporary BMPs. Access to the site will be from an amphibious barge and all heavy equipment will operate from the barge. All existing vegetation will be protected during construction.

- (g) Navigation and Safety: The project will not adversely impact navigation or create a threat to public safety as determined by those agencies with jurisdiction over a lake's navigable waters.

The location of the proposed slope stabilization project is within the backshore and will not affect navigation or create a threat to public safety within Lake Tahoe as the water in the vicinity of the project is too shallow for boating.

- (h) Other Agency Comments: TRPA has solicited comments from those public agencies having jurisdiction over the nearshore and foreshore and all such comments received were considered by TRPA, prior to action being taken on the project.

The project was reviewed by the Interagency Shorezone Review Committee and no issues were raised by any of the responsible agencies. As a condition of final approval, the applicant shall comply with any and all requirements of all applicable agencies having jurisdiction over the project.

5. Chapter 84 - Shoreline Protective Structure Findings:

- (a) Structures in the backshore or environmental threshold values will be enhanced by the construction and maintenance of the protective structures.

The project as designed is expected to enhance TRPA's environmental thresholds for water quality and scenic resources. The project is also expected to enhance the stability of the backshore and eliminating the effects of current and future erosion. Specifically, the project includes natural earth tone materials to enhance scenic threshold values.

- (b) The protection of structures in the backshore or the enhancement of environmental threshold values more than offset the adverse environmental effects of the construction and maintenance of the shoreline protective structures.

An analysis of the current site conditions as conducted by Reno Tahoe Geo Associates concluded "The stone shoreline protection wall is cracking and is undermined in several locations. If continuously subjected to strong wave action, especially associated with storms and strong winds, backshore soil behind the wall will continue to erode beneath and around the wall into the lake causing the wall to fail. Failures will allow erosion of the nearshore soil, and possible undermining and damage to the existing residence footings." The installation of the shoreline protective structure will more than offset any temporary adverse environmental effects during the construction phase. The positive

benefits of the final project design enhance water and scenic quality through use of natural materials that will prevent future erosion and slope instability.

- (c) Each protective structure has been designed to be sloping and permeable; provided, however, that this finding is not necessary if TRPA concurrently makes the findings required under subparagraph 84.14.2.A.

The shoreline protective structure is designed to be sloping and permeable.

- (d) A sloping permeable revetment is not feasible.

Not Applicable. The sloping permeable revetment is engineered and designed by Jonathan Pease, a registered profession engineer, of Reno Tahoe Geo Associations and is considered a feasible viable permanent solution.

- (e) The alternative structure will not cause significant erosion or modification of the foreshore.

An alternative structure is not proposed.

- (f) Each protective structure has been designed so that backshore erosion on adjacent properties will not be accelerated as a result of the erection of the protective structure.

The shoreline protective structure is designed to avoid acceleration of backshore erosion within the project area and adjacent properties. The applicant's engineer prepared a geotechnical report (RTGA, September 20, 2018) for the project that provides justification for the proposed design. The report notes the instability of the existing wall and erosion at the toe of the wall. The design is considered an effective solution to mitigate wave forces and long-term erosion.

6. Chapter 84 - 84.14.2

Shoreline Protective Structure Design and Construction Standards

Design and construction standards are met and addressed in RTGA's referenced report. In summary:

As cited in the findings for section 4 Chapter 84, section e, the selected preferred design is a sloping permeable revetment. The protective structure design, by the nature of construction material of boulders and cobbles, meets the design criteria for a sloping permeable revetment. The design promotes backshore stability without reflecting wave energy on to adjacent properties. The design and construction standards in section 84.14 have been met as noted in the engineering design report.

7. Chapter 85 - Findings for Erosion Control and Similar Projects:

- (a) The project, program, or facility is necessary for environmental protection.

The project involves construction of shoreline protection, which consists of a dynamic rock revetment to protect against erosion. An analysis of the current site conditions as conducted by Reno Tahoe Geo Associates concluded "The stone shoreline protection wall is cracking and is undermined in several locations. If continuously subjected to strong wave action, especially associated with storms and strong winds, backshore soil behind the wall will continue to erode beneath and around the wall into the lake causing the wall to fail. Failures will allow erosion of the nearshore soil, and possible undermining and damage to the existing residence footings." The positive benefits of the final project design enhance water and scenic quality through use of natural materials that will prevent future erosion and slope instability.

- (b) There is no reasonable alternative, which avoids or reduces the extent of encroachment in the backshore.

The proposed project will address erosion within the backshore and thus encroachment into the backshore cannot be avoided. The project design and construction methodology prescribes the minimum encroachment necessary to inhibit further degradation of the backshore. Without this work, erosion and slope instability will continue.

Attachment B

Draft Permit

Draft Permit

PROJECT DESCRIPTION: New shoreline protective structure APN: 093-094-008

PERMITTEE: Ward Executive Trust FILE #: ERSP2018-1577

COUNTY/LOCATION: Placer / 3300 Edgewater Drive, Dollar Point

Having made the findings required by Agency ordinances and rules, the TRPA Hearings Officer approved the project on May 23, 2019, subject to the standard conditions of approval attached hereto (Attachments Q and S) and the special conditions found in this permit.

This permit shall expire on May 23, 2022, without further notice unless the construction has commenced prior to this date and diligently pursued thereafter. Diligent pursuit is defined as completion of the project within the approved construction schedule. The expiration date shall not be extended unless the project is determined by TRPA to be the subject of legal action, which delayed or rendered impossible the diligent pursuit of the permit.

NO DEMOLITION, CONSTRUCTION OR GRADING SHALL COMMENCE UNTIL:

- (1) TRPA RECEIVES A COPY OF THIS PERMIT UPON WHICH THE PERMITTEE(S) HAS ACKNOWLEDGED RECEIPT OF THE PERMIT AND ACCEPTANCE OF THE CONTENTS OF THE PERMIT;
- (2) ALL PRE-CONSTRUCTION CONDITIONS OF APPROVAL ARE SATISFIED AS EVIDENCED BY TRPA’S ACKNOWLEDGEMENT OF THIS PERMIT;
- (3) THE PERMITTEE OBTAINS APPROPRIATE COUNTY PERMIT. TRPA’S ACKNOWLEDGEMENT MAY BE NECESSARY TO OBTAIN A COUNTY PERMIT. THE COUNTY PERMIT AND THE TRPA PERMIT ARE INDEPENDENT OF EACH OTHER AND MAY HAVE DIFFERENT EXPIRATION DATES AND RULES REGARDING EXTENSIONS; AND
- (4) A TRPA PRE-GRADING INSPECTION HAS BEEN CONDUCTED WITH THE PROPERTY OWNER AND/OR THE CONTRACTOR.

TRPA Executive Director/Designee

Date

PERMITTEES’ ACCEPTANCE: I have read the permit and the conditions of approval and understand and accept them. I also understand that I am responsible for compliance with all the conditions of the permit and am responsible for my agents’ and employees’ compliance with the permit conditions. I also understand that if the property is sold, I remain liable for the permit conditions until or unless the new owner acknowledges the transfer of the permit and notifies TRPA in writing of such acceptance. I also understand that certain mitigation fees associated with this permit are non-refundable once paid to TRPA. I understand that it is my sole responsibility to obtain any and all required approvals from any other state, local or federal agencies that may have jurisdiction over this project whether or not they are listed in this permit.

Signature of permittee(s) _____ Date _____

(PERMIT CONTINUED ON NEXT PAGE)

APN 093-094-008
FILE NO. ERSP2018-1577

SECURTIY INFORMATION

Project Security Posted (1): Amount \$10,000.00 Type ___ Paid _____ Receipt No. _____

Project Security Admin. Fee: Amount \$200.00 Paid _____ Receipt No. _____

(1) See Special Condition 3. E, below.

Required plans determined to be in conformance with approval: Date: _____

TRPA ACKNOWLEDGEMENT: The permittee has complied with all pre-construction conditions of approval as of this date:

TRPA Executive Director/Designee

Date

SPECIAL CONDITIONS

1. This permit authorizes the construction of a shoreline protective structure to stabilize the shoreline in front of the residence to prevent further erosion. The project includes the installation of 1.5 – 2 feet diameter boulders and several larger boulders that will be 3 – 4 feet in diameter to help attenuate wave energy. The back of the revetment will be backfilled with cobble and topped with soil to create planting pockets. The revetment will extend to lake bottom elevation 6,226 feet. The proposed work will be accomplished using an amphibious barge with the use of an excavator that will place the boulders. A turbidity curtain will be in place during construction if required due to high water conditions. The location of the sewer line shall be identified at the time of the pre-grade inspection. All required permanent water quality best management practices for the residence and associated improvement will be installed as part of the project. No other development on the property is proposed.
2. The Standard Conditions of Approval listed in Attachments Q and S shall apply to this permit.
3. Prior to permit acknowledgement, the following conditions of approval must be satisfied:
 - A. The permittee shall submit a final projected construction completion schedule to TRPA prior to acknowledgment. Said schedule shall include completion dates for each item of construction.
 - B. The permittee shall submit a final construction sequence and methodology plan.

- C. The permittee shall provide an emergency spill prevention plan to be implemented for emergencies associated with leaking construction equipment and in the event the sewer line is breached during construction. The plan shall require absorbent sheets/pads to be available within the project area. A contact list of all emergency response agencies shall always be available at the project site during construction.
 - D. The permittee shall submit authorization from the property owner located to the west of the project site for the portions of work extending into the adjacent shorezone area or the project plans shall be revised to eliminate all proposed improvements in the adjacent shorezone areas.
 - E. The security required under Standard Condition A.3 of Attachment Q shall be \$10,000.00. Please see Attachment J, Security Procedures, for appropriate methods of posting the security. The security will be released once BMPs are installed and a BMP certificate is issued.
 - F. The permittee shall submit three sets of final construction drawings and site plans.
4. To the maximum extent allowable by law, the permittee agrees to indemnify, defend, and hold harmless TRPA, its Governing Board, its Planning Commission, its agents, and its employees (collectively, TRPA) from and against any and all suits, losses, damages, injuries, liabilities, and claims by any person (a) for any injury (including death) or damage to person or property or (b) to set aside, attack, void, modify, amend, or annul any actions of TRPA. The foregoing indemnity obligation applies, without limitation, to any and all suits, losses, damages, injuries, liabilities, and claims by any person from any cause whatsoever arising out of or in connection with either directly or indirectly, and in whole or in part (1) the processing, conditioning, issuance, or implementation of this permit; (2) any failure to comply with all applicable laws and regulations; or (3) the design, installation, or operation of any improvements, regardless of whether the actions or omissions are alleged to be caused by TRPA or the permittee. TRPA reserves the right to retain its own attorney.
- Included within the permittee's indemnity obligation set forth herein, the permittee agrees to pay all fees of TRPA's attorneys and all other costs and expenses of defenses as they are incurred, including reimbursement of TRPA as necessary for any and all costs and/or fees incurred by TRPA for actions arising directly or indirectly from issuance or implementation of this permit. The permittee shall also pay all costs, including attorneys' fees, incurred by TRPA to enforce this indemnification agreement. If any judgment is rendered against TRPA in any action subject to this indemnification, the permittee shall, at its expense, satisfy and discharge the same.
- 5. It is the permittee's responsibility to receive authorization and/or obtain any necessary permits from other responsible agencies for the proposed project.
 - 6. Best practical control technology shall be employed to prevent earthen materials from being re-suspended or transported to adjacent lake waters as a result of construction activities.
 - 7. Disturbance of lakebed materials shall be the minimum necessary. The removal of rock materials from Lake Tahoe outside of the scope of this permit is prohibited.

8. All rock material (gravel, cobble, and/or boulders) imported to the site for use in the shoreline construction area shall be thoroughly washed and shall be free of any silt and clay material.
9. The discharge of petroleum products, construction waste and litter (including sawdust), or earthen materials to the surface waters of the Lake Tahoe Basin is prohibited. All surplus construction waste materials shall be removed from the project and deposited only at approved points of disposal.
10. Grading and excavation is prohibited at any time of the year during periods of precipitation and for the resulting period when the site is covered with snow or is saturated, muddy or unstable.
11. Any normal construction activities creating noise in excess to the TRPA noise standards shall be considered exempt from said standards provided all such work is conducted between the hours of 8:00 A.M. and 6:30 P.M.
12. For the authorized construction area landward of the high-water line, the site shall be winterized in accordance with the provisions of Attachment Q by October 15th of each construction season.
13. The shoreline protective structure shall be maintained in a condition consistent with the approved project plans in perpetuity.
14. All Best Management Practices shall be maintained in perpetuity to ensure effectiveness which may require BMPs to be periodically reinstalled or replaced. Prior to release of the project security all existing water quality BMPs shall be maintained and/or reinstalled to ensure effectiveness.
15. All excavated materials shall be hauled away from the site to a legally acceptable location.
16. The turbidity curtain, if required to be installed, shall not be removed until the waters within the curtain meet all applicable water quality standards.
17. Any change to the project requires approval (except for TRPA exempt activities) of a TRPA plan revision permit prior to the changes being made to any element of the project (i.e. structural modifications, coverage, scenic, grading, BMPs, etc.). Failure to obtain prior approval for modifications may result in monetary penalties and removal of the unapproved elements.

END OF PERMIT

Attachment C

Project Plans

SHORELINE REVETMENT REPAIR PROJECT 3300 EDGEWATER DRIVE, TAHOE CITY, PLACER COUNTY, CALIFORNIA APN-093-094-008

OWNER'S INFORMATION:

OWNER: EDWARD WARD
ADDRESS: 50 VIA BELARDO APT4
GREENBRAE CA 94904-2238

PROJECT ADDRESS: 3300 EDGEWATER DRIVE
TAHOE CITY, PLACER COUNTY, CALIFORNIA 96140

PROJECT APN: 093-094-008

PROJECT INFORMATION:

THE PROJECT INVOLVES REPAIR AND SCENIC MITIGATION OF A DAMAGED SHORELINE WALL USING NEW BOULDER REVETMENTS TO DISRUPT WAVE ENERGY AND DIMINISH POTENTIAL FOR WAVE IMPACT AT HIGH LAKE LEVEL. THE PROJECT WILL PROTECT AGAINST LAKEFRONT EROSION & SEDIMENT TRANSPORT, PROVIDE WATER QUALITY PROTECTION, AND PROTECT THE EXISTING HILLSIDE AGAINST WAVES AT HIGH LAKE LEVEL.

THE PROJECT DOES NOT INVOLVE ADDITION TO STRUCTURES OR CHANGES IN COVERAGE.

ALL WORK WILL BE IN THE BACKSHORE.

GENERAL NOTES:

- A CURSORY INVESTIGATION INDICATES THAT NEAR SURFACE SOILS IN THE PROJECT VICINITY ARE COMPOSED OF COARSE SANDS, GRAVELS, COBBLES, AND BOULDERS, AND SHALLOW BEDROCK.
- THE CONTRACTOR SHALL ATTENTIVELY EXAMINE THE SITE IN SUCH A MANNER THAT HE CAN CONFIRM EXISTING SURFACE CONDITIONS WITH THOSE PRESENTED IN PROJECT DOCUMENTS. HE SHALL SATISFY HIMSELF THAT THE QUANTITY OF EXPOSED MATERIALS AND SUBSURFACE SOIL OR ROCK DEPOSITS HAVE BEEN SATISFACTORILY REPRESENTED IN THE PROJECT DRAWINGS. ANY DISCREPANCIES THAT MAY BE OF PRIOR KNOWLEDGE TO THE CONTRACTOR THAT IS REVEALED THROUGH HIS INVESTIGATION SHALL BE MADE AVAILABLE TO THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE PROJECT DOCUMENTS PRIOR TO CONSTRUCTION.
- THE WORK IN THIS CONTRACT INCLUDES ALL ON-SITE WORK DESCRIBED ON THESE DRAWINGS, DESCRIBED IN THE SPECIFICATIONS, OR REASONABLY IMPLIED.
- THE CONTRACTOR SHALL SUBMIT PHOTOGRAPHS OR ACTUAL SAMPLES OF ALL MATERIALS TO BE USED ON THE SITE TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO USE OF SUCH MATERIALS.
- THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE OF HIS INTENTION TO COMMENCE WORK AND 24 HOURS FOR ALL SURVEYING AND INSPECTION DURING CONSTRUCTION TO THE:

OWNER: DR. EDWARD WARD
TEL (415) 827-7984

LEAD AGENCY: TAHOE REGIONAL PLANNING AGENCY
TEL (775) 588-4547

PERMIT CONSULTANT: ABIGAIL EDWARDS
KAUFMAN-EDWARDS PLANNING AND CONSULTING
TEL (530) 546-4402

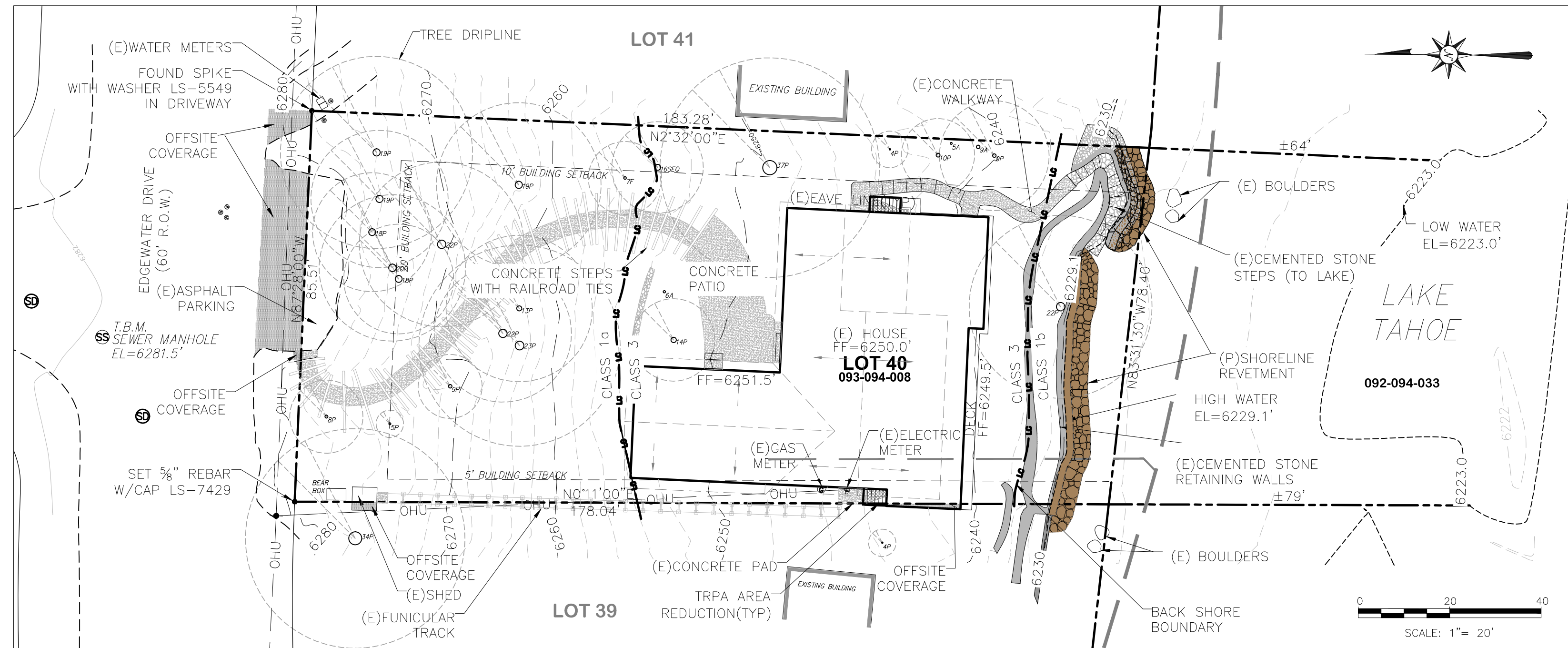
ENGINEER: MARVIN E. DAVIS & ASSOCIATES, INC./ RENO
TAHOE GEO ASSOCIATES, INC
TEL (775) 853-9100

CONTRACTOR SHALL KEEP THE SAME PARTIES INFORMED REGARDING THE PROGRESS OF WORK, PARTICULARLY THE STOPPING/ RE-STARTING OF WORK DUE TO UNFORESEEABLE CIRCUMSTANCES.

- ALL TEMPORARY BMP'S MUST BE IN PLACE PRIOR TO START OF DEMOLITION AND/OR CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL SUPPLEMENTAL PERMITS AND FEES REQUIRED FOR CONSTRUCTION, NOT OBTAINED BY THE OWNERS.
- THE CONTRACTOR SHALL PURSUE THE WORK IN A CONTINUOUS AND DILIGENT MANNER, CONFORMING TO ALL PERTINENT SAFETY REGULATIONS, TO INSURE A TIMELY COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE

OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

- THE CONTRACTOR SHALL, AT ALL TIMES DURING CONSTRUCTION, PROTECT FROM DAMAGE EXISTING IMPROVEMENTS ON AND AROUND THE SITE, INCLUDING, BUT NOT LIMITED TO, THE RESIDENCE, DOCK, PAVEMENT, LANDSCAPING, AND ALL UTILITIES. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE REPAIR OF ANY IMPROVEMENTS (EXISTING AND PROPOSED) DAMAGED THROUGHOUT THE COURSE OF CONSTRUCTION.
- CONSTRUCTION SHALL BE PERFORMED FROM THE SHORE. THE CONTRACTOR SHALL SUBMIT A DETAILED WRITTEN DESCRIPTION OF HIS PROPOSED WORK METHODS WITH SHOP DRAWINGS, AS NECESSARY, TO THE OWNER FOR APPROVAL PRIOR TO COMMENCING WORK.
- ALL BOULDERS AND ROCK MATERIALS SHALL BE CLEANED OF SILT OR SEDIMENT PRIOR TO DELIVERY TO SITE. CHIPPING OR SPLITTING OPERATIONS ON BOULDERS SHALL BE AT LEAST 10 FEET FROM SHORELINE ON A SURFACE WHERE DUST CAN BE REMOVED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING UNDERGROUND SERVICE ALERT FOR LOCATIONS OF ALL UNDERGROUND FACILITIES PRIOR TO ANY EXCAVATIONS AND FOR THE PROTECTION AND REPAIR OF ANY DAMAGE TO THEM. A 48-HOUR NOTICE IS REQUIRED PRIOR TO CONSTRUCTION. UNDERGROUND SERVICE ALERT (U.S.A.): 811
- ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RE-VEGETATED IN ACCORDANCE WITH THE TRPA HANDBOOK OF BEST MANAGEMENT PRACTICES AND LIVING WITH FIRE, LAKE TAHOE BASIN, CURRENT EDITION.
- WHERE THE REMOVAL OF ANY VEGETATION IS IN QUESTION, THE CONTRACTOR SHALL PROTECT THE AREA UNTIL A DECISION BY THE OWNER CAN BE MADE. IF ANY TREES ARE SCARRED, THEY SHALL BE IMMEDIATELY REPAIRED WITH AN APPROVED TREE SEALANT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING AND SHORING PROCEDURES AND CONFORM TO THE LATEST O.S.H.A. OR OTHER RELEVANT SAFETY REQUIREMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DAILY REMOVAL OF ALL CONSTRUCTION MATERIALS SPILLED ON PAVED STREETS, ONSITE AND OFFSITE. STREETS SHALL BE WASHED AS NECESSARY.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES EMERGENCY ACCESS TO THE PROJECT SITE, TO THE SATISFACTION OF THE FIRE DEPARTMENT.
- CONSTRUCTION ACCESS WILL BE PERMITTED BEGINNING MAY 1 AND CONTINUE UNTIL OCTOBER 15.
- TEMPORARY PARKING FOR THE PROJECT RELATED VEHICLES SHALL BE EXISTING PAVED SURFACES, EXISTING COMPACTED ROAD SHOULDERS, OR IN THE AREA DESIGNATED ON THE APPROVED PLAN SET.
- NO ROCK OUTCROPS OR BOULDERS SHALL BE MOVED OR DISTURBED DURING THE CONSTRUCTION PROCESS.
- CONTRACTOR SHALL PROTECT ALL EXISTING BMP'S OR REPAIR TO ORIGINAL STANDARDS, IF DAMAGED.



SITE MAP

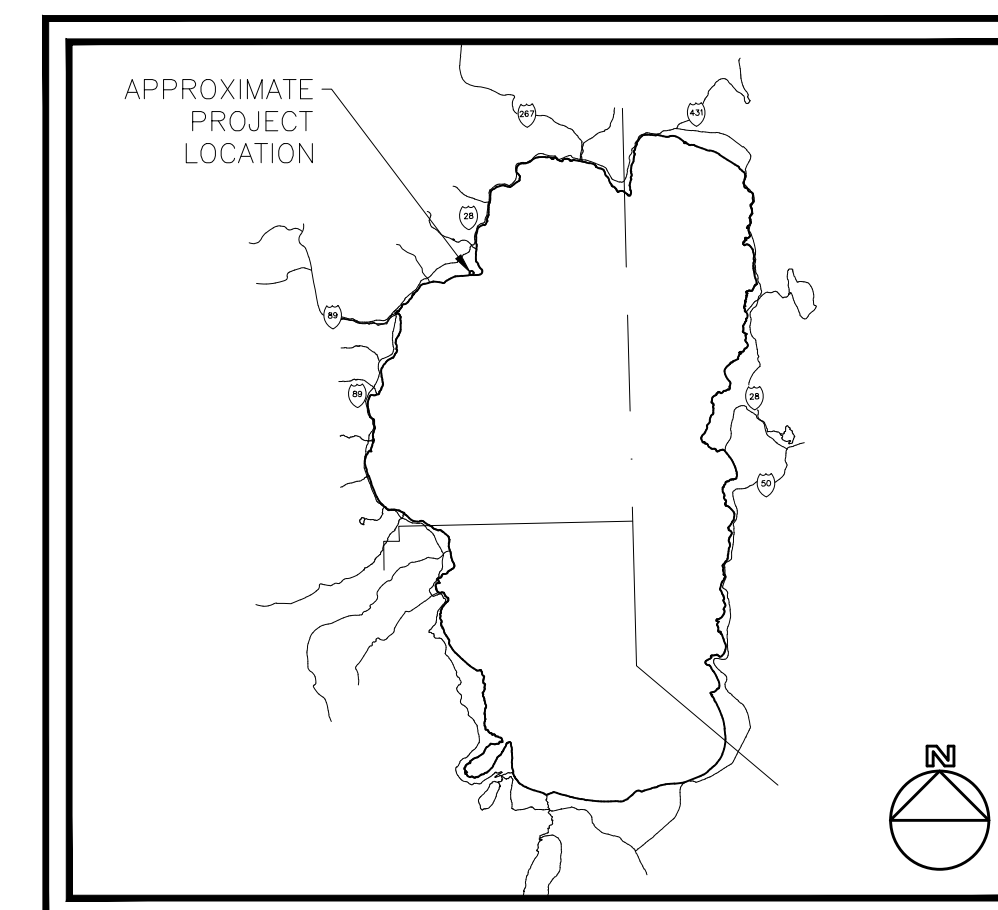
SCALE: 1"=20'

TRPA SPECIAL CONDITIONS:

- WORK SHALL BE ACCOMPLISHED IN SUCH A MANNER TO MINIMIZE DISTURBANCE OF ONSITE SOILS OR STIRRING UP SEDIMENT IN LAKE TAHOE. THE CONTRACTOR SHALL PROPERLY INSTALL AND MAINTAIN SILTATION CONTROL DEVICES, IF IN THE OPINION OF THE OWNER OR REGULATORY AGENCY, THERE IS A POSSIBILITY OF SILTATION OF LAKE TAHOE WATERS DUE TO CONSTRUCTION ACTIVITIES.
- FERTILIZER USE ON THE PROPERTY SHALL BE MANAGED TO INCLUDE THE APPROPRIATE TYPE OF FERTILIZER, RATE, AND FREQUENCY OF THE APPLICATION TO AVOID RELEASE OF EXCESS NUTRIENTS AND MINIMIZE USE OF FERTILIZER.
- NO TREES SHALL BE REMOVED OR TRIMMED FOR VIEW ENHANCEMENT PURPOSES WITHOUT PRIOR WRITTEN APPROVAL.
- THE ADEQUACY OF ALL BMP'S AS SHOWN ON THE CONSTRUCTION PLANS SHALL BE CONFIRMED AT THE TIME OF THE TRPA PRE-GRADING INSPECTION. ANY REQUIRED MODIFICATIONS, AS DETERMINED BY TRPA, SHALL BE INCORPORATED INTO THE PROJECT PERMIT AT THAT TIME.
- ALL EXISTING DISTURBED AREAS, AND AREAS DISTURBED BY CONSTRUCTION ACTIVITY, SHALL BE REVEGETATED WITH VEGETATION SPECIES IN ACCORDANCE WITH THE TRPA HANDBOOK OF BEST MANAGEMENT PRACTICES.
- NO SPRAY PAINTING WILL BE CONDUCTED AS PART OF THIS PROJECT.
- THE USE OF THE TRIBUTYL TIN FOR THIS PROJECT IS PROHIBITED.
- THE DISCHARGE OF PETROLEUM PRODUCTS, CONSTRUCTION WASTE AND LITTER, OR EARTHEN MATERIALS (EXCEPT FOR BOULDER, COBBLE, AND GRAVEL MATERIAL REQUIRE FOR REPAIR OF THE REVETMENTS) TO THE SURFACE WATERS OF LAKE TAHOE IS PROHIBITED.
- ALL SURPLUS CONSTRUCTION MATERIALS AND CONSTRUCTION WASTE MATERIALS SHALL BE REMOVED FROM THE PROJECT AND DEPOSITED ONLY AT APPROVED LOCATIONS.
- ALL CONSTRUCTION AND GRADING ACTIVITIES WILL ADHERE TO THE STANDARDS FOUND IN CHAPTERS 62 AND 63 OF THE TRPA CODE OF ORDINANCES.
- THE CONTRACTOR SHALL NOT STORE CONSTRUCTION MATERIALS ON THE BEACH OR IN THE BACKSHORE, EXCEPT FOR BOULDER AND COBBLE MATERIAL TO BE USED IN THE REPAIR OF THE REVETMENTS.
- CONTRACTOR SHALL PROTECT BOLE AND ROOTS OF EXISTING TREES BETWEEN ELEV. 6232 AND 6236. THE BOLES SHALL BE PROTECTED WITH WOOD PLANKING THAT IS STRAPPED OR TIED IN PLACE.
- NO CONTAINERS OF FUEL, PAINT, OR OTHER HAZARDOUS MATERIALS MAY BE STORED ON THE PIER OR SHORELINE.

ABBREVIATIONS:

A.C.	ASPHALT CONCRETE
±	APPROXIMATE
CONC	CONCRETE
CONST	CONSTRUCT
CONT	CONTOUR
CY	CUBIC YARDS
ELEV	ELEVATION
(E)	EXISTING
E.G.	EXISTING GRADE
FG	FINISHED GRADE
FT	FOOT
IE	INVERT ELEVATION
MDA	MARVIN E DAVIS & ASSOCIATES, INC.
O.C.	ON CENTER
(P)	PROPOSED
PL	PROPERTY LINE
REF	REFERENCE
R.O.W	RIGHT OF WAY
TOEW	TOP OF (E) WALL
TYP	TYPICAL
W/	WITH



VICINITY MAP

NTS

ENGINEER:

TEL (775)853-9100
FAX (775)853-9199



P.O. Box 18449
Reno, Nevada 89511

PLANNER/PERMITTING:

ABIGAIL EDWARDS
KAUFMAN-EDWARDS PLANNING & CONSULTING
530-546-4402 OFFICE

LEGEND:

	PROPERTY LINE
	TREE (P-PINE, A-ASPEN)
	EXISTING
	PROPOSED
	EXISTING GRADE
	TURBIDITY CURTAIN (TEMP BMP)
	CONSTRUCTION FENCE
	TREE PROTECTION
	EXISTING STONE MASONRY LAKEFRONT WALL
	LAND CAPABILITY

SHEET LIST:

T1.0 TITLE SHEET
C1.0 REVETMENT PLAN AND TEMPORARY BMPS
C2.0 DETAILS

APPROXIMATE CUT VOLUME : 0 CY
APPROXIMATE FILL VOLUME UPHILL FROM 6229.1' CONTOUR: 0 CY
APPROXIMATE FILL VOLUME DOWNSLOPE FROM 6229.1' CONTOUR: 75 CY
(REVETMENT & FISH HABITAT BOULDERS)

REV.	DATE	BY	APP'D

Marvin E. Davis & Associates, Inc.
CONSULTING CIVIL ENGINEERS

TEL (775)853-9100
FAX (775)853-9199

TITLE SHEET
SHORELINE REVETMENT DESIGN
3300 EDGEWATER DRIVE
TAHOE CITY

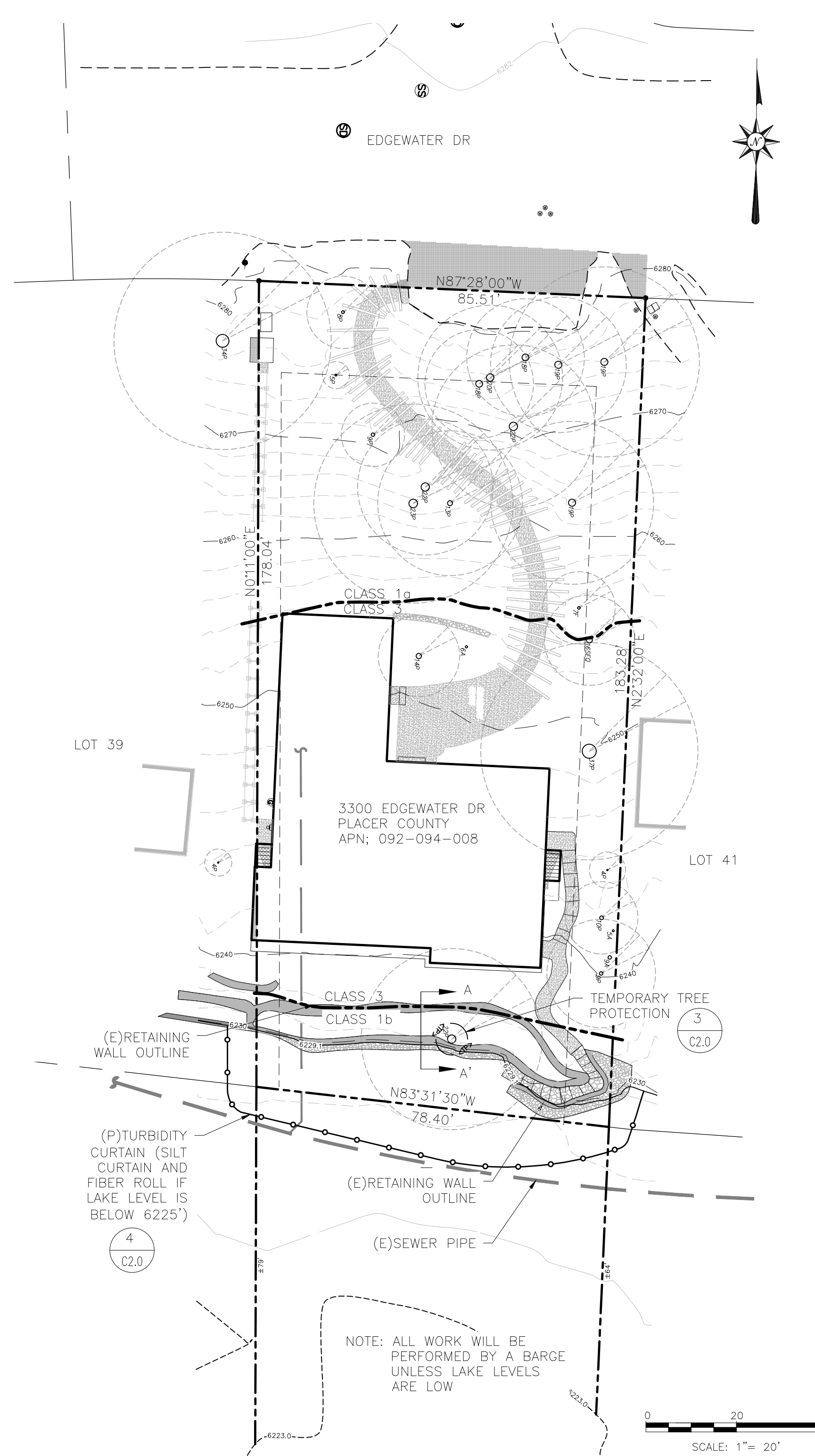
PLACER COUNTY
CALIFORNIA



DATE: 10/04/2018
JOB NUMBER: 1863.001
DESIGNED BY: JWP
DRAWN BY: FMP
CHECKED BY: JWP

SHEET
T1.0





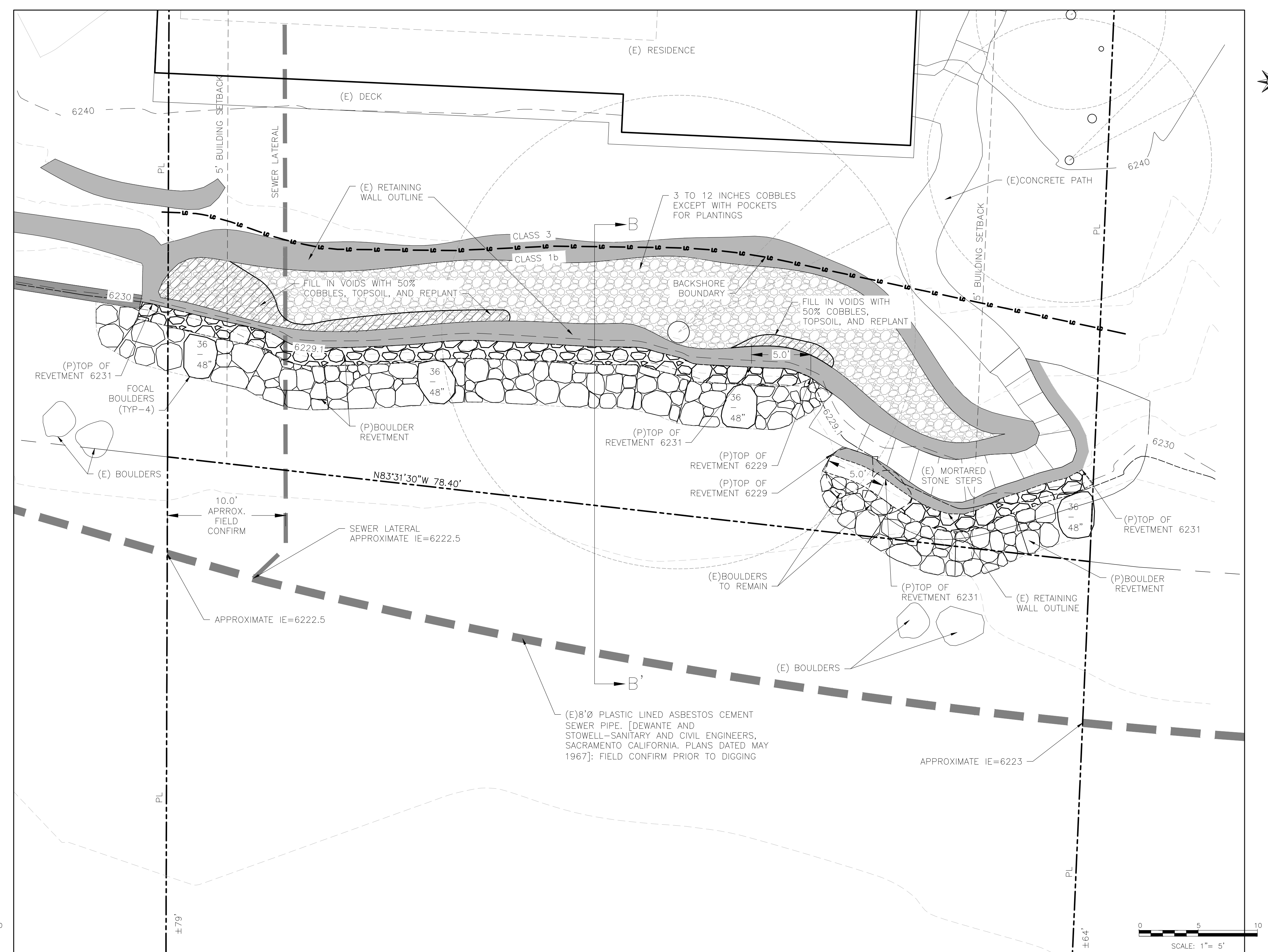
B TEMPORARY BMP PLAN
C1.0 SCALE: 1"=20'

PARCEL AREA: 9,878 SF

ALLOWABLE COVERAGE:

5,993 SF OF CLASS 1a @ 1%	=	60.0 SF
790 SF OF CLASS 1b @ 1%	=	8.0 SF
7,991 SF OF CLASS 3 @ 5%	=	400.0 SF
TOTAL:		468.0 SF

	EXISTING COVERAGE			TOTAL
	CLASS 1a	CLASS 1b	CLASS 3	
RESIDENCE			3,366 SF	3,366 SF
SHED	17 SF			17 SF
ASPHALT PARKING AREA	277 SF			277 SF
CONCRETE STEPS	370 SF		60 SF	430 SF
CONCRETE PATIO			424 SF	424 SF
CONCRETE PAD			22 SF	22 SF
CONCRETE PATH TO LAKE		16 SF	169 SF	185 SF
CEMENTED STONE STAIRS TO LAKE		85 SF		85 SF
DECK/STAIR INCLUDE TRPA REDUCTION			24 SF	24 SF
ADJOINING ASPHALT DRIVEWAY	6 SF			6 SF
TOTAL	670 SF	101 SF	4,065 SF	4,836 SF



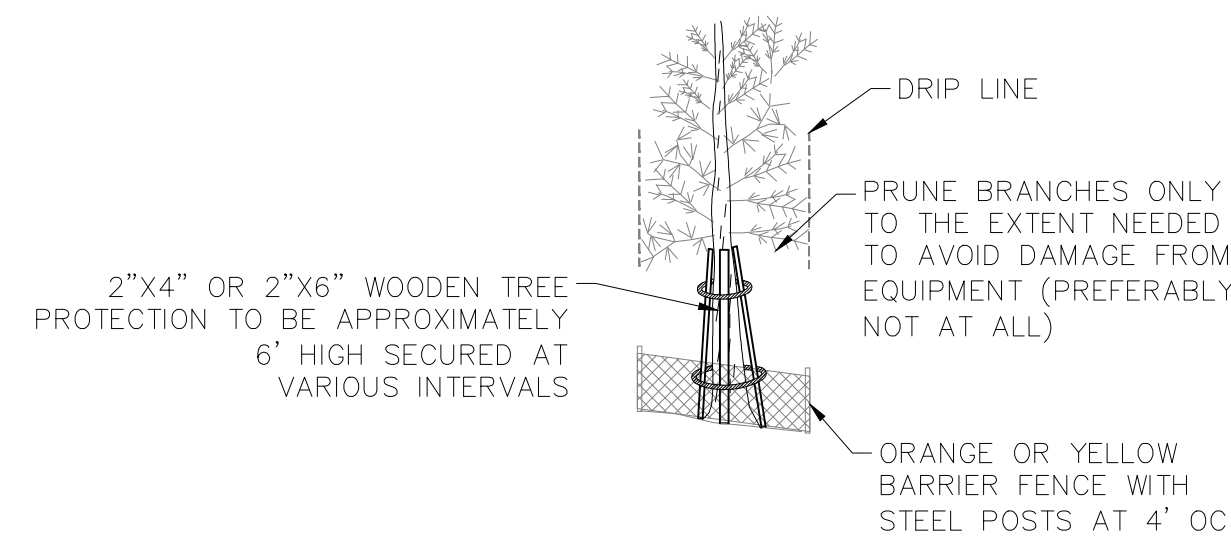
A IMPROVEMENT PLAN
C1.0 SCALE: 1"=5'

	PROPOSED COVERAGE			
	CLASS 1a	CLASS 1b	CLASS 3	TOTAL
RESIDENCE			3,366 SF	3,366 SF
SHED	17 SF			17 SF
ASPHALT PARKING AREA	277 SF			277 SF
CONCRETE STEPS	370 SF		60 SF	430 SF
CONCRETE PATIO			424 SF	424 SF
CONCRETE PAD			22 SF	22 SF
CONCRETE PATH TO LAKE		16 SF	169 SF	185 SF
CEMENTED STONE STAIRS TO LAKE		85 SF		85 SF
DECK/STAIR INCLUDE TRPA REDUCTION			24 SF	24 SF
ADJOINING ASPHALT DRIVEWAY	6 SF			6 SF
TOTAL	670 SF	101 SF	4,065 SF	4,836 SF

LEGEND:

- PROPERTY LINE
- TREE
- EXISTING
- PROPOSED
- EXISTING GRADE
- INDIVIDUAL LARGE BOULDERS (4' TYP)
- TURBIDITY CURTAIN (TEMP BMP)
- CONSTRUCTION FENCE
- SILT FENCE
- TOP BOULDERS IN REVETMENT

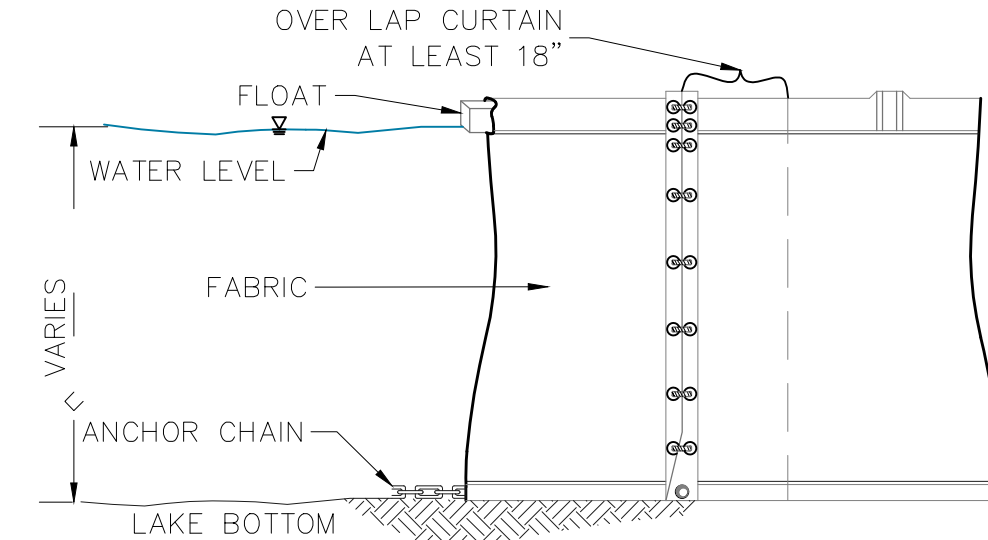
BY: APP'D					
REV. DATE					
 Marvin E. Davis & Associates, Inc. CONSULTING CIVIL ENGINEERS P.O. Box 18449 Reno, Nevada 89511 TEL (775)853-9100 FAX (775)853-9199					
REVETMENT PLAN SHORELINE REVETMENT DESIGN 3300 EDGEWATER DRIVE TAHOE CITY					
CALIFORNIA PLACER COUNTY					
DATE: 10/04/2018					
JOB NUMBER: 1840.001					
DESIGNED BY: JWJP					
DRAWN BY: FMP					
CHECKED BY: JWJP					
SHEET					
C1.0					



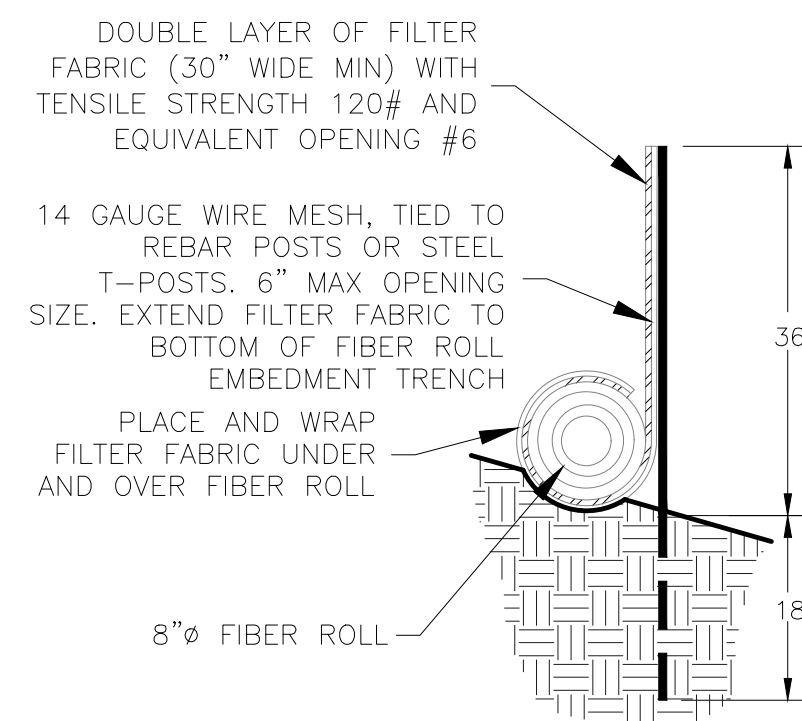
NOTE:
TREE PROTECTION MAY BE REQUIRED AT ADDITIONAL LOCATIONS IDENTIFIED BY THE OWNER OR ENGINEER

3
C2.0 TEMPORARY TREE PROTECTION
NTS

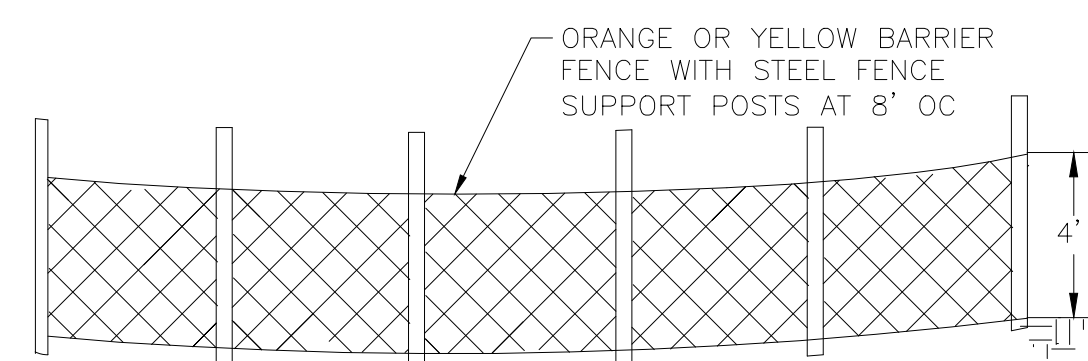
NOTE:
TURBIDITY CURTAIN SPECIFICATIONS TO BE DETERMINED BY ENGINEER AND/OR CONTRACTOR. INSTALLATION OF TURBIDITY CURTAIN SHALL BE APPROVED BY TRPA COMPLIANCE INSPECTOR PRIOR TO CONSTRUCTION



4
C2.0 TURBIDITY CURTAIN DETAIL
NTS



5
C2.0 TEMPORARY EROSION CONTROL FENCE
1"=1'

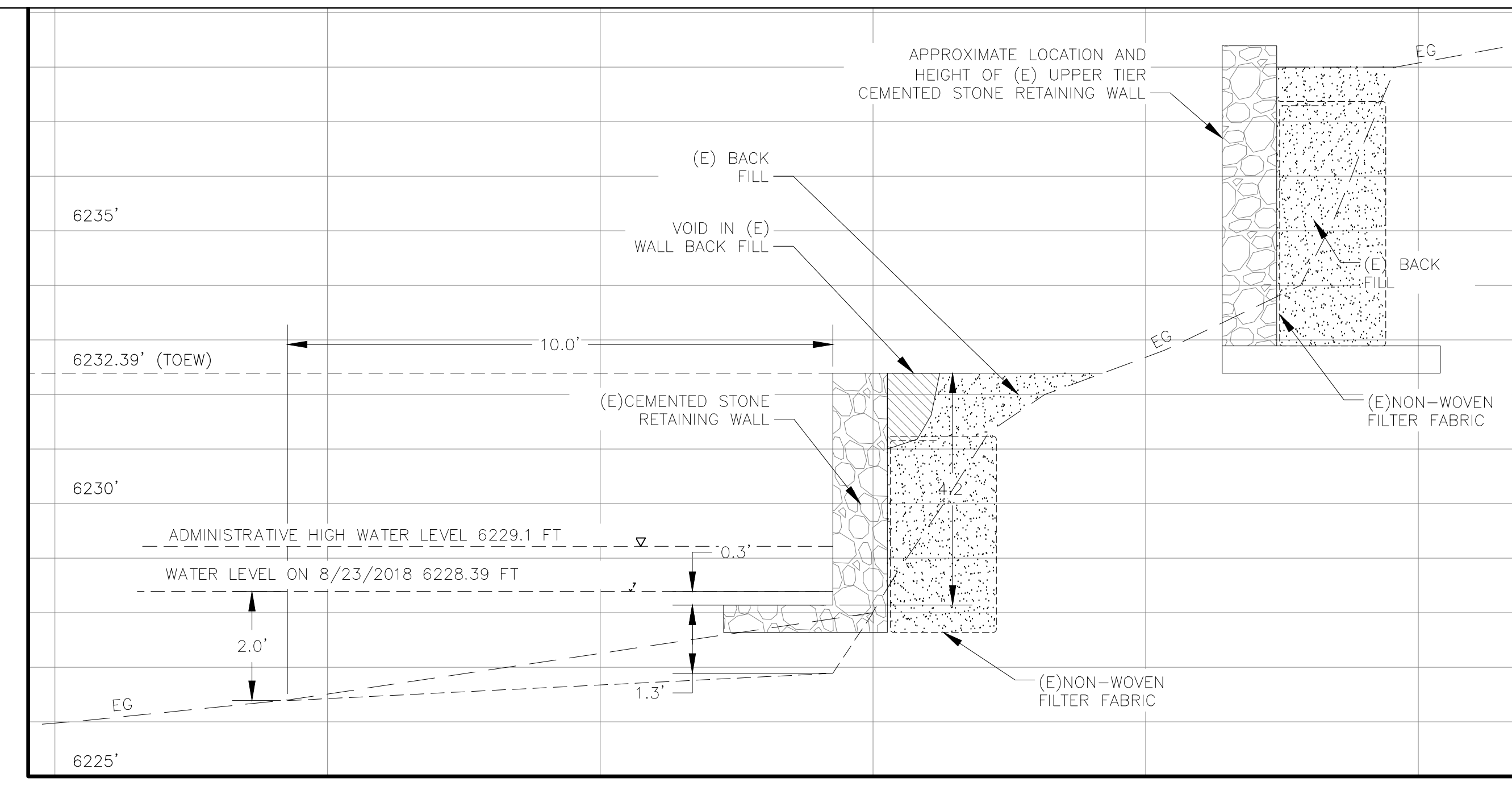


6
C2.0 TEMPORARY CONSTRUCTION FENCE
NTS

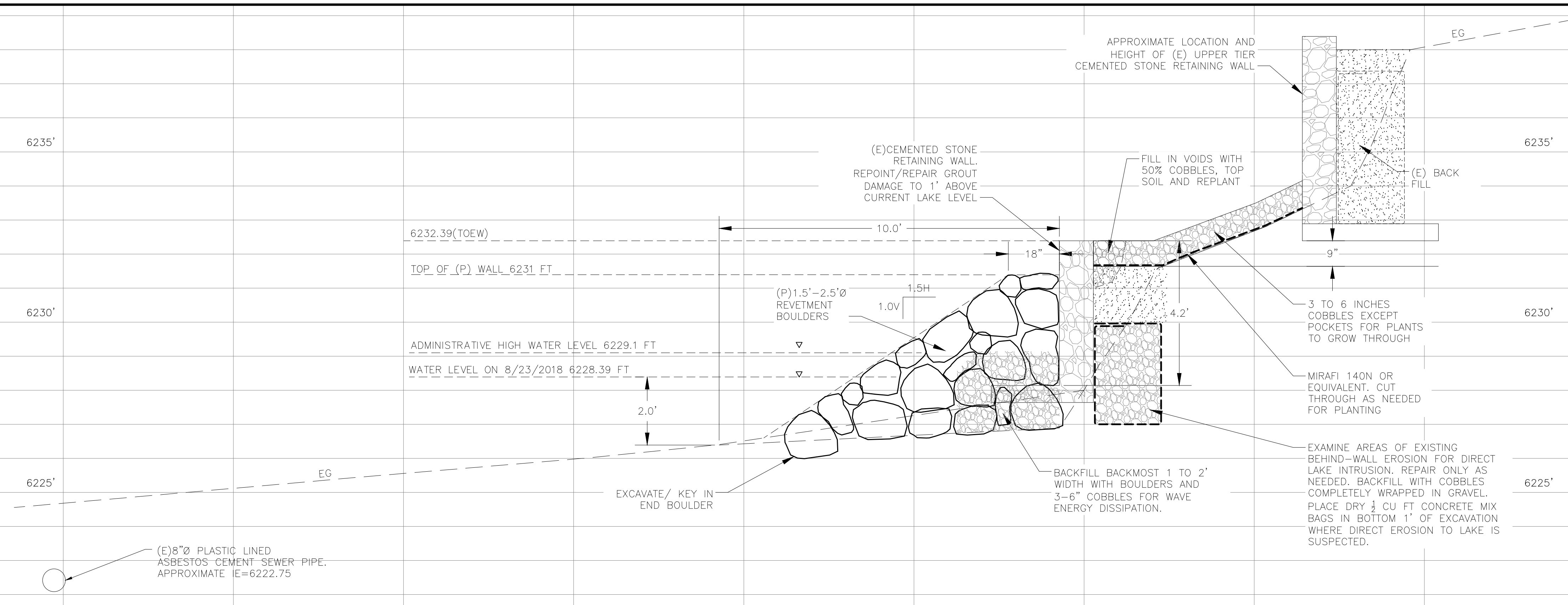
BOULDER REVETMENT NOTES:

- ALL ROCK MATERIALS (BOULDERS AND COBBLES) SHALL BE DURABLE, CLEAN, DARK GRAY OR GRAY-BROWN IN COLOR, FINE-GRAINED BASALT OR ANDESITIC ROCK MATCHING ADJACENT OUTCROPS ON SHORELINE.
- DEEPLY WEATHERED, LAMINAR, OR FRACTURED STONE SHALL NOT BE USED.
- ROUNDED BOULDERS MAY BE RESHAPED BY SPLITTING. BOULDERS WITH VISIBLE CRACKS SHALL NOT BE USED. ALL BOULDERS SHALL HAVE A MINIMUM SPECIFIC GRAVITY OF 2.5. CAPPING BOULDERS MAY BE CUT OR SPLIT TO FIT TOP OF WALL. ABOUT 1/4 OF TOP OF WALL LOCATIONS, EXISTING CONCRETE WALL SHALL BE CHIPPED DOWN TO KEY IN CAP BOULDERS.
- ALL BOULDERS GREATER THAN 2.5 FEET IN DIAMETER MAY BE ROUNDED TO SUB-ROUNDED.
- BOULDERS 1.5 TO 2.5 FEET IN DIAMETER USED IN REVETMENT AND COBBLES SHOULD BE SUBANGULAR TO SUBROUNDED.
- REVETMENT STONE SHALL BE VARIABLE IN SIZE AND SHALL BE PLACED SO AS TO:
 - TIP INTO THE SHORELINE AT AN ANGLE OF BETWEEN 3° TO 30°;
 - PROVIDE AN IRREGULAR UNDULATING SHORELINE FACE AND TOP;
 - LOCATIONS OF LARGER VS. SMALLER ROCK ARE SCHEMATIC IN NATURE TO PROVIDE A VARIABLE APPEARANCE
 - FRONT OF REVETMENT SHALL BE 1.5H:1V OR FLATTER
- PLACING OF BOULDERS BY DUMPING WILL NOT BE PERMITTED.
- ROCKS SHALL BE PLACED SO AS TO AVOID CONTINUOUS JOINT PLANES IN EITHER VERTICAL OR LATERAL DIRECTIONS.
- TYPICAL ROCK WEIGHTS:

APPROX. WEIGHT (LBS.)	APPROX. DIAMETER
200-700	18-28"
700-2000	28-36"
2000-4000	36-48"
4000-6000	48-54"
6000-8000	54-60"
- CHINK VOID BETWEEN BOULDERS >1' IN DIMENSION WITH 4-12 INCH COBBLES. CHINK SPARINGLY IN UPPER 1 TO 2 FEET OF REVETMENT TO PROVIDE A LESS EVEN REVETMENT FACE.
- THIS SHORELINE PROTECTION PLAN DESIGN AND CONSTRUCTION SHALL BE SUBJECT TO APPROVAL BY TRPA.
- THE SHORELINE PROTECTION PLAN CONSTRUCTION SHALL BE OBSERVED AND APPROVED BY THE DESIGN ENGINEERS.



1
C2.0 EXISTING PROFILE A-A'
1"=2'



2
C2.0 PROPOSED REVETMENT PROFILE B-B'
1"=2'

BACKSHORE REVETMENT NOTES:

- ALL BOULDER MATERIAL NOTES ARE APPLICABLE TO BACKSHORE BOULDER REVETMENTS
- ABOUT 1/3 OF BOULDERS TO BE EMBEDDED IN HAND-EXCAVATED HOLES WITH AT LEAST 1/3 OF THE STONE MASS BELOW THE EXISTING SURFACE
- CLEAN COBBLE AND BOULDER MATERIALS EXCAVATED TO BE REUSED AS BACKFILL. DIRTY ROCK OR BROKEN CONCRETE SHOULD BE LOADED IN CLOSABLE CONTAINERS AND REMOVED.

BY	APP'D	
REV.	DATE	
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