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#### STAFF REPORT

Date: March 31, 2022

To: TRPA Hearings Officer

From: TRPA Staff

Subject: Peters Shoreline Protective Structure, 3220 Edgewater Drive, Tahoe Vista, California,

Assessor's Parcel Number (APN) 093-072-045, TRPA File Number ERSP2020-1782

#### Proposed Action:

Hearings Officer action on the proposed project and related findings 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 project involves the reconstruction of a shoreline protective structure utilizing rock riprap and rockery walls. Modifications relate to increased safety, stability, improved vegetation, and erosion control of the bluff face. To upgrade the stability and performance of the existing masonry retaining/lake walls and to reduce erosion potential of the shore area and the lakeward portion of the house slope, excavation and minor terracing and an improved/refurbished shoreline revetment is proposed. The existing slope will be flattened to no steeper than 1.5H:1V in the bottom portion (slightly above the wave runup zone) and will be flattened to 3H:1V in the upper slopes. There will be a new level bench at about Elevation 6,234 to 6,237 feet which will have a significant amount of planted vegetation which will provide screening for the upper 8 to 10 feet of the slope face.

There will be a variety of rockery walls between two and five feet high to provide for grade breaks and allow for the more level vegetated benches. Where feasible, these walls have been laid back at 1H:1V rock slopes, which was requested by TRPA to limit vertical elements. Boulders ranging in size from 1.5 to 4 feet in diameter, many of which are existing on-site, will be reused.

The proposed reconstructed revetment will be approximately 80 linear feet in length and approximately 15-17 feet high. Stone steps will be integrated into the design to replace the existing pathway that provides access to the shoreline. The previous path/steps will be reduced in steepness and will be bedded with pervious gravel materials to improve infiltration. There will be no increase in land coverage. The proposed revetment will be located outside of the existing sanitary sewer easement.

The proposed revetment will minimize environmental impacts by not excavating significantly below current ground level within the wave dissipation zone. The upper-level improvements would allow for reduction in slope angles and decreased erosion potential, with greater potential for infiltration and stabilization of water-carried sediments and would provide for screening with vegetation on the shallower slopes and benches. The proposed improvements would limit lakeshore erosion, dissipate wave energy, and decrease sediment entering Lake Tahoe. The revetment will maintain and improve the existing soil and rock materials, providing visual screening, and upholding the character of the Lake Tahoe shoreline.

#### Site Description:

The existing site conditions are shown in the attached photos (See Attachment C). The site is developed with a single-family dwelling. The existing bluff is approximately 15 feet high from Lake Tahoe highwater level, and 15 to 17 feet from the bottom of the underwater slope. During some years, there is a gravel beach that extends above the maximum lake level (Elevation 6,229 to 6,230 feet); other years, such as 2019, the beach washes out and the shoreline is composed of 1 to 2-foot boulders at about Elevation 6,227 to 6,228 feet. The boulders at wave break level to about elevation 6,231 feet appear to be mostly 1.5 to 2.5 feet in diameter but are slightly steeper than 1.25H:1V. Above elevation 6,231 feet, the slope varies from 2H:1V to 1.25H:1V and previous slope covering/erosion protection include some areas with1-foot-diameter rounded boulders, and other areas with 1.5 to 2.5-foot-diameter boulders.

A sewer line is located at the base of the bluff below the high water level. There is a sanitary sewer manhole about 5 feet lakeward of the highwater line in the middle of the lot that is partly protected by a wire gabion to prevent erosion behind it. There is an existing stone path which descends from the lawn areas above to slightly above the manhole, where it makes a switchback to the west to the shoreline. The top of slope is dominated by two 24-inch-diameter pine stumps that are more than half undercut by erosion. There is a steep bluff (up to 0.5H:1V) below the stump at the centerline of the lot and below a flagstone patio at the west edge of the lot.

#### 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. <u>Environmental Documentation</u>: The applicant 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. <u>Land Use/Plan Area Statement</u>: The project site is in the Dollar Point Subdistrict of the Placer County Area Plan. The Land Use Classification is Residential. The proposed shoreline protective structure is accessory to the primary residential use and the revetment is designed to reduce the effects of erosion. Agency staff reviewed the Area Plan and determined the project is consistent with the applicable planning statement, planning considerations and special policies.

C. Shorezone Tolerance District/Construction Methodology: Shorezone characteristics is Tolerance District 4 that is assigned to volcanic rock shorelines with moderate potential for erosion. The potential for erosion increases where colluvium of volcanic debris is present and stony, sandy loams lie on 15 to 30 percent slopes; on morainic debris shorezone with high erosion potential above the shoreline; and alluvial shorezone where the shoreline is characterized by steep, crumbling cliffs with continuing erosion problems.

The following development standards are applicable to Shorezone Tolerance District 4:

- A. Permitted development or continued use may be conditioned upon installation and maintenance of vegetation to stabilized backshore areas and protect existing cliffs from accelerated erosion.
- B. Projects shall not be permitted in the backshore unless TRPA finds such project is unlikely to require the cliff area to be mechanically stabilized or that the project will not accelerate cliff crumbling, beach loss, or erosion.
- C. Access to shoreline shall be restricted to stabilized access ways which minimize the impact to the backshore.
- D. Access to buoys shall be designed to cause the least possible environmental harm to foreshore and backshore.

Equipment will access the site via a barge due to the limited access for construction equipment. Only pre-cleaned offsite boulders or onsite boulders will be used. Hand work may be required for installing chinking rock. It may be necessary to install a turbidity curtain in the lake around the work area if the lake level is high, or a silt curtain on the beach if the lake is below Elevation 6228 feet. All boulder materials will be individually placed by machine, not dumped, to minimize disturbance to the lake bottom and to avoid excess turbidity. Existing boulders will be re-used to the extent possible. However, new boulders will be brought to the site as needed. All imported boulders and cobbles will be washed free of sediment prior to delivery to the site.

#### **Required Actions:**

Staff recommends the Hearings Officer take the following actions, based on the staff report and evidence in the record:

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

#### **Contact Information:**

For questions on this agenda item, please contact Paul Nielsen, TRPA Planner, at pnielsen@trpa.gov.

#### Attachments:

- A. Required Findings
- B. Draft Permit
- C. Site Photographs
- D. Project Plans
- E. Landscape and Erosion Control Plan

### Attachment A

**Required Findings** 

#### **Required Findings**

The following is a list of the required findings as set forth in Chapters 4, 21, 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. <u>Chapter 4 – Required Findings</u>:

(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. Shorezone characteristics is Tolerance District 4 that is assigned to volcanic rock shorelines with moderate potential for erosion. The potential for erosion increases where colluvium of volcanic debris is present and stony, sandy loams lie on 15 to 30 percent slopes; on morainic debris shorezone with high erosion potential above the shoreline; and alluvial shorezone where the shoreline is characterized by steep, crumbling cliffs with continuing erosion problems. Permitted development or continued use may be conditioned upon installation and maintenance of vegetation to stabilized backshore areas and protect existing cliffs from accelerated erosion. The purpose of the project is to protect the existing eroded terrace from further erosion. A comprehensive landscape plan is proposed (see Attachment E) which will ensure the project is consistent with the TRPA scenic resources program and will not have an adverse effect on the applicable scenic threshold.

(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 was reviewed by TRPA staff. 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. <u>Chapters 21 and 81 Special Use Findings.</u>
  - (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 reconstructed revetment will be approximately 80 linear feet in length 15-17 feet high. The new revetment will consist of boulders 1.5 to 4 feet in diameter to deflect and dissipate wave energy on the bank. The new revetment should reduce coherent wave reflection which will reduce potential for on and off-site site erosion. 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 project as designed will inhibit further erosion which will benefit on and off-site environmental conditions. The proposed project includes several components to ensure the structure will not cause significant erosion or modification of the foreshore on the property or adjacent properties. The existing stone walls and partially destabilized steep backshore bluff can be displaced and further destabilized by wave action.

(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 improvements are consistent with the configuration, size and location of the previously existing deteriorating shoreline protective structure and is in keeping with the general character of the shoreline. The proposed project will help stabilize the backshore slope that is partially eroded. 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.

#### 3. <u>Chapter 80 – Shorezone Findings</u>:

(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 project will include the use of temporary BMPs as necessary to protect water quality.

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

The proposed shoreline erosion protection provided by the rock revetment is an accessory use to the upland residential use.

(c) <u>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.</u>

Shoreline protective structures are permissible uses in the applicable area plan. The proposed rock revetment as designed and conditioned, will be compatible with existing shorezone and lakezone uses in the immediate vicinity. The design of the project will ensure access along the shoreline is maintained.

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

The proposed shoreline erosion protection will armor the backshore of the project area from continued effects of soil erosion and wave erosion. The design is water dependent. The project design is intended to effectively reduce wave energy.

(e) <u>Hazardous Materials: Measures will be taken to prevent spills or discharges of hazardous materials.</u>

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

(f) <u>Construction: Construction and access techniques will be used to minimize disturbance</u> to the ground and vegetation.

Equipment will access the shoreline area along the north property boundary line from the driveway of the property which will ensure short term impacts to erosion, water quality and vegetation are avoided.

(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 of the property, above the highwater line and will not affect navigation or create a threat to public safety within Lake Tahoe.

(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.

TRPA solicited comments from public agencies with jurisdiction in the lake. The California State Lands Commission (CSLC) express concerns that the revetment would impact pedestrian access in the public trust easement area. Based on these concerns the project was redesigned to ensure public access along the shoreline would not be impeded by the proposed shoreline protective structure. Although the structure does extent into a portion of the public trust, the elements below the highwater line are flat and will not impede the ability of pedestrians to traverse the shoreline laterally along the shoreline during periods of high water. The CSLC supports the redesigned structure and requested that signage be placed on either site of the revetment to identify the "designated public passageway."

- 5. <u>Chapter 84 Shoreline Protective Structure Findings:</u>
  - (a) <u>Structures in the backshore or environmental threshold values will be enhanced by the</u> construction and maintenance of the protective structures.

The proposed improvements will limit lakeshore erosion, dissipate wave energy, and decrease sediment entering Lake Tahoe. The revetment will provide benefits while maintaining and improving the existing soil and rock materials and upholding the character of the shoreline.

(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.

The proposed shoreline protective structure will stabilize the shoreline that has experienced erosion due to wave action. The goals of the project are to increase shoreline stability that will minimize erosion and sediment transport into the lake.

(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 84.7.1.B.

The shoreline protective structure is designed to be sloping and permeable in the area identified as the wave run up zone (up to elevation 6233.2 at full lake level). The purpose for the revetment is to restore the slope and shoreline as closely as possible to the optimum slope at equilibrium based on the material sizes.

(d) <u>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.</u>

As designed, the protective structure will not cause any significant long-term impacts to the environment as documented in the geotechnical engineer's report (Reno Tahoe Geo Associates, Inc, February 8, 2022) prepared for the project.

- 6. <u>Chapter 85 Findings for Erosion Control and Similar Projects:</u>
  - (a) The project, program, or facility is necessary for environmental protection.

The applicant proposes to construct a shoreline protective structure to stabilize the shoreline that has experienced erosion due to wave action. The goals of the project are to increase safety, stability, vegetative cover, and shoreline stability. The design of the rock revetment is intended to increase revegetation success and reduce wave energy that will minimize erosion and sediment transport into the lake.

(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 prescribe 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**

<u>PROJE</u>	CT DESCRIPTION:	New shoreline protective stru	ıcture	<u>APN</u> : 093-072-045			
<u>PERMI</u>	TTEE:	Stephen Peters		FILE #: ERSP2020-1782			
COUN	COUNTY/LOCATION: 3220 Edgewater Drive, Tahoe Vista, Placer County, California						
the pro	oject on April 7, 2022	equired by Agency ordinances , subject to the standard cond the special conditions found ir	itions of approval				
prior to project project	o this date and dilige t within the approved	April 7, 2025, without further routly pursued thereafter. Dilige disconstruction schedule. The expension be the subject of legal and ermit.	nt pursuit is defind xpiration date sha	ed as completion of the all not be extended unless the			
NO DEI	TRPA RECEIVES A CO	CTION OR GRADING SHALL COM DPY OF THIS PERMIT UPON WHIC MIT AND ACCEPTANCE OF THE	CH THE PERMITTEE	• •			
(2)	ACKNOWLEDGEMENT OF THIS PERMIT;						
(3)	NECESSARY TO OBTA	TAINS APPROPRIATE COUNTY PE AIN A COUNTY PERMIT. THE COU ACH OTHER AND MAY HAVE DIF IONS; <u>AND</u>	JNTY PERMIT AND	THE TRPA PERMIT ARE			
(4)	A TRPA PRE-GRADIN THE CONTRACTOR.	ng inspection has been cone	OUCTED WITH THE	PROPERTY OWNER AND/OR			
TRPA E	executive Director/De	esignee	 Date				
them. I respon the pro transfe mitigat sole re	also understand that sible for my agents' apperty is sold, I remain of the permit and notion fees associated wisponsibility to obtain a	have read the permit and the collam responsible for compliance and employees' compliance with a liable for the permit conditions of tifies TRPA in writing of such actifies the permit are non-refundable any and all required approvals for this project whether or not the supermit are non to the project whether or not the supermit are not the project whether or not the supermit are not the supermit and the supermit are not the supermit are not the supermit and the supermit are not the superm	e with all the condition the permit condition in the suntil or unless the ceptance. I also until once paid to TR from any other state	itions of the permit and am ons. I also understand that if e new owner acknowledges the nderstand that certain IPA. I understand that it is my e, local or federal agencies			
Signatu	ure of permittee(s)		Date_				
		(PERMIT CONTINUED OI	N NEXT PAGE)				

AGENDA ITEM NO. V.A

#### APN 093-072-045 FILE NO. ERSP2020-1782

Security Posted (1): Amount \$1,000.00 Posted	Type	Receipt No
Security Administrative Fee (2): Amount \$	Paid	Receipt No
Notes: (1) See Special Condition 3.D, below. (2) See TRPA Filing Fee Schedule.		
Required plans determined to be in conformance w	ith approval: Date:	
TRPA ACKNOWLEDGEMENT: The permittee has comapproval as of this date:	plied with all pre-cons	truction conditions of
TRPA Executive Director/Designee	 Date	

#### **SPECIAL CONDITIONS**

1. This permit authorizes the reconstruction of a shoreline protective structure utilizing rock riprap and rockery walls. The existing slope will be flattened to no steeper than 1.5H:1V in the bottom portion (slightly above the wave runup zone) and will be flattened to 3H:1V in the upper slopes. There will be a new level bench at about Elevation 6,234 to 6,237 feet which will have a significant amount of replanted vegetation which will provide screening for the upper 8 to 10 feet of the slope face. There will be a variety of rockery walls between 2 and 5 feet high to provide for grade breaks and allow for the more level vegetated benches. Boulders ranging in size from 1.5 to 4 feet in diameter, many of which are existing on-site, will be reused.

The proposed reconstructed revetment will be approximately 80 linear feet in length and approximately 15-17 feet high. Stone steps will be integrated into the design to replace the existing pathway that provides access to the shoreline. The previous path/steps will be reduced in steepness and will be bedded with pervious gravel materials to improve infiltration. There will be no increase in land coverage. The proposed revetment will be located outside of the existing sanitary sewer easement and a landscape plan is proposed which will ensure the project is consistent with the TRPA scenic resources program.

- 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.
  - 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. 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 security required under Standard Condition I.B. of Attachment Q shall be \$1,000.00. The security shall not be released until TRPA determines the project was constructed and BMPs installed in accordance with the permit.
- E. The permittee shall submit details for the "public designated passageway" signage required by the California State Lands Commission letter dated January 10, 2022. The signage shall not exceed four square feet in area and shall not be illuminated.
- F. The permittee shall submit final construction drawings and landscape plan.
- 4. All landscaping and native vegetation shall be maintained in perpetuity in a condition consistent with this approval. The use of fertilizer in the backshore is prohibited.
- 5. The project shall be constructed in accordance with the recommendations of the approved construction methodology plan.
- 6. To the maximum extent allowable by law, the Permittee agrees to indemnify, defend, and hold harmless TRPA, its Governing Board (including individual members), its Planning Commission (including individual members), 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, administrative appeal, 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 Permittee.

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. TRPA will have the sole and exclusive control (including the right to be represented by attorneys of TRPA's choosing) over the defense of any claims against TRPA and over their settlement, compromise, or other disposition. 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.

- 7. It is the permittee's responsibility to receive authorization and/or obtain any necessary permits from other responsible agencies for the proposed project.
- 8. Any and all temporary soil stockpiles shall be appropriately covered with tarps and contained by temporary erosion control fences and/or coir logs with gravel bags.
- 9. Best practical control technology shall be employed to prevent earthen materials from being resuspended or transported to adjacent lake waters as a result of construction activities.
- 10. Disturbance of lakebed materials the removal of rock materials from Lake Tahoe is prohibited.
- 11. All employee construction vehicles shall be parked on existing paved surfaces.
- 12. 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.
- 13. 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.
- 14. Grading and excavation is prohibited at any time of the year during periods of precipitation and for the resulting period of time when the site is covered with snow or is saturated, muddy or unstable.
- 15. 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.
- 16. 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 15<sup>th</sup> unless a grading season exception is granted.
- 17. The shoreline protective structure shall be maintained in a condition consistent with the approved project plans in perpetuity.
- 18. 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.
- 19. All excavated materials shall be hauled away from the site to a legally acceptable location.
- 20. 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.

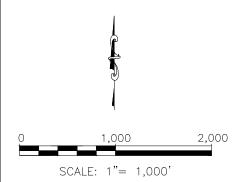
#### **END OF PERMIT**

### Attachment C

Site Photographs



VICINITY MAP



SOURCE: GOOGLE MAPS, ACCESSED AUGUST, 2019.

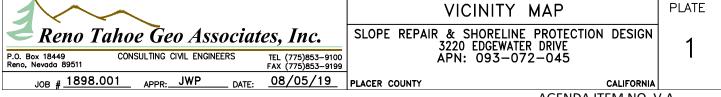




PHOTO 1: SUBJECT PROPERTY IS TO THE RIGHT OF PADDLE BOARD TO RETAINING WALL, SUMMER 2018.



PHOTO 3: SAME SHORELINE AS ABOVE WITH SAND BEACH WASHED OUT, JUNE 2019.



PHOTO 2: OVERSTEEPENED & ROUNDED ROCK SLOPE HAS EXPERIENCED FAILURES, SUMMER 2018.



PHOTO 4: UNDERCUT STUMP AT TOP OF BLUFF, SUMMER 2018. NOTE SOIL LOSS UNDER UPHILL SIDE.

	SITE PHOTOS	PLATE
Reno Tahoe Geo Associates, Inc.	SLOPE REPAIR & SHORELINE PROTECTION DESIGN 3300 EDGEWATER DRIVE	7
P.O. Box 18449 CONSULTING CIVIL ENGINEERS TEL (775)853-916 Reno, Nevada 89511 FAX (775)853-916	0 APN: 093-094-008	)
JOB # 1898.001 APPR: JWP DATE: 08/05/19	PLACER COUNTY CALIFORNIA	
	AGENDA HEMINI	J. V.A

Attachment D

**Project Plans** 

# 3220 EDGEWATER DRIVE

# SLOPE REPAIR AND SHORELINE PROTECTION

TAHOE CITY, CALIFORNIA APN: 093-072-045

## OWNER'S INFORMATION:

OWNER: STEPHEN PETERS ADDRESS: 7495 SHELBORNE DR GRANITE BAY CA 95746

PROJECT ADDRESS: 3220 EDGEWATER DRIVE TAHOE CITY, PLACER COUNTY, CALIFORNIA 96145

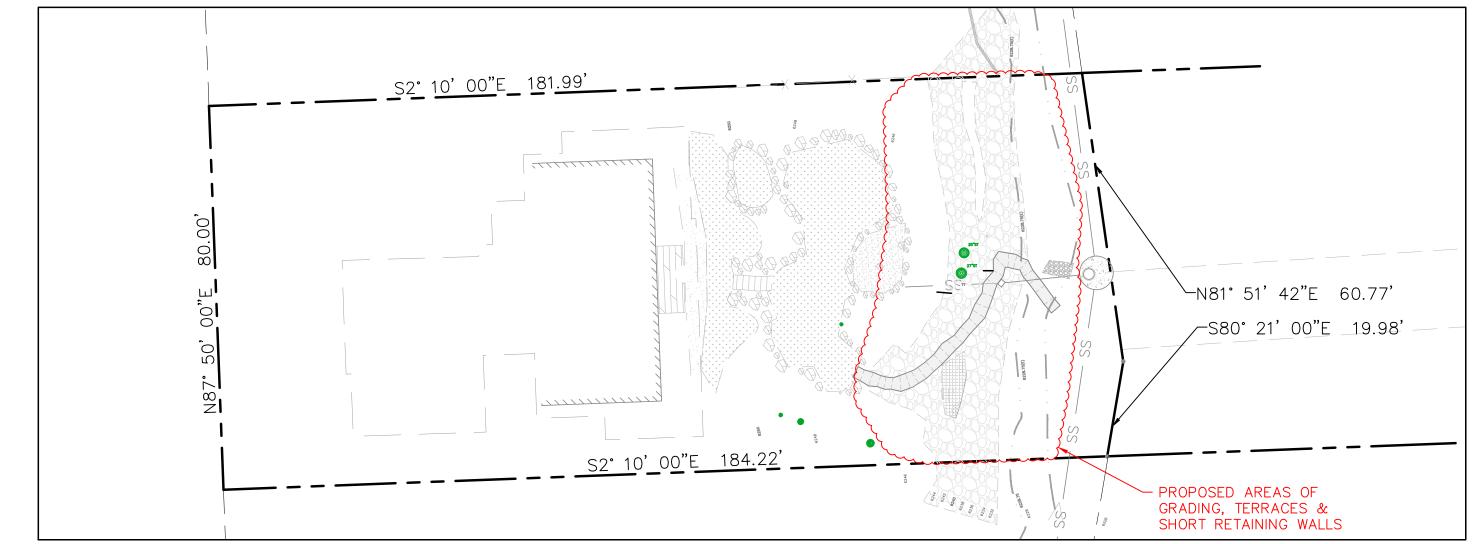
PROJECT APN: 093-072-045

## PROJECT INFORMATION:

THE PROJECT INVOLVES REPAIR AND SCENIC MITIGATION OF A STEEPENED SHORELINE SLOPE USING NEW BOULDER REVETMENTS TO DISRUPT WAVE ENERGY AND DIMINISH POTENTIAL FOR WAVE IMPACT AT HIGH LAKE LEVEL. THE SLOPE ABOVE WAVE LEVEL IS AROUND 1H:1V AND WILL BE BENCHED AND FLATTENED TO 1.5H:1V OR SHALLOWER WITH ROCKERY RETAINING WALLS TO REDUCE EROSION AND SEDIMENT TRANSPORT TO LAKE TAHOE.

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

ALL WORK WILL BE IN THE BACKSHORE.



# SCALE: 1"=20'

## GENERAL NOTES:

- 1. A CURSORY INVESTIGATION INDICATES THAT NEAR SURFACE SOILS IN THE PROJECT VICINITY ARE COMPOSED OF COARSE SANDS, GRAVELS, COBBLES, AND BOULDERS, AND SHALLOW BEDROCK.
- 2. 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 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.
- 3. THE WORK IN THIS CONTRACT INCLUDES ALL ON-SITE WORK DESCRIBED ON THESE DRAWINGS, DESCRIBED IN THE SPECIFICATIONS, OR REASONABLY IMPLIED.
- 4. 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
- 5. 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

OWNER: STEPHEN PETERS TEL (415) 827-7984

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

PERMIT CONSULTANT: WYATT OGILVY OGILVY CONSULTING TEL (530) 583-5800

ENGINEER: RENO TAHOE GEO ASSOCIATES, INC TEL (775) 853-9100

UTILITY CONSULTANT: TONY LALIOTIS TAHOE CITY PUBLIC UTILITY DISTRICT EMAIL TLALIOTIS@TCPUD.ORG

TEL (530) 583-3796

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

- 6. ALL TEMPORARY BMP'S MUST BE IN PLACE PRIOR TO START OF DEMOLITION AND/OR CONSTRUCTION.
- 7. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL SUPPLEMENTAL PERMITS AND FEES REQUIRED FOR CONSTRUCTION, NOT OBTAINED
- 8. 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.
- 9. 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.
- 10. 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 MPROVEMENTS (EXISTING AND PROPOSED) DAMAGED THROUGHOUT THE COURSE OF CONSTRUCTION.
- 11. CONSTRUCTION SHALL BE PERFORMED FROM THE SHORE OR BARGE. 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.
- 12. 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.
- 13. 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
- 14. 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
- 15. 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.
- 16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING OR OTHER RELEVANT SAFETY REQUIREMENTS.
- 17. 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.
- 18. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES EMERGENCY ACCESS TO THE PROJECT SITE, TO THE SATISFACTION OF THE FIRE DEPARTMENT.
- 19. CONSTRUCTION ACCESS WILL BE PERMITTED BEGINNING MAY 1 AND CONTINUE UNTIL OCTOBER 15.
- 20. 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 37. ADEQUATE ADVANCE NOTIFICATION MUST BE PROVIDED TO TCPUD,
- 21. NO ROCK OUTCROPS OR BOULDERS SHALL BE MOVED OR DISTURBED DURING THE CONSTRUCTION PROCESS.
- 22. CONTRACTOR SHALL PROTECT ALL EXISTING BMP'S OR REPAIR TO ORIGINAL STANDARDS, IF DAMAGED.
- 23. 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.
- 24. 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.
- 25. NO TREES SHALL BE REMOVED OR TRIMMED FOR VIEW ENHANCEMENT PURPOSES WITHOUT PRIOR WRITTEN APPROVAL.
- 26. 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.
- 27. 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.
- 28. NO SPRAY PAINTING WILL BE CONDUCTED AS PART OF THIS PROJECT.
- 29. THE USE OF THE TRIBUTYLTIN FOR THIS PROJECT IS PROHIBITED.
- 30. 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.
- 31. ALL SURPLUS CONSTRUCTION MATERIALS AND CONSTRUCTION WASTE MATERIALS SHALL BE REMOVED FROM THE PROJECT AND DEPOSITED ONLY AT APPROVED LOCATIONS.
- 32. ALL CONSTRUCTION AND GRADING ACTIVITIES WILL ADHERE TO THE STANDARDS FOUND IN CHAPTERS 62 AND 63 OF THE TRPA CODE OF ORDINANCES.
- AND SHORING PROCEDURES AND CONFORM TO THE LATEST O.S.H.A. 33. 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.
  - 34. CONTRACTOR SHALL PROTECT BOLE AND ROOTS OF EXISTING TREES. THE BOLES SHALL BE PROTECTED WITH WOOD PLANKING THAT IS STRAPPED OR TIED IN PLACE.
  - 35. NO CONTAINERS OF FUEL, PAINT, OR OTHER HAZARDOUS MATERIALS MAY BE STORED ON THE PIER OR SHORELINE.
  - 36. CONTRACTOR TO PROVIDE PLAN FOR REVIEW BY TCPUD FOR PROTECTION OF EXISTING SEWER LINE FROM IMPACTS OR BOTTOM DISTURBANCE FROM BARGE ACCESS OR EQUIPMENT.
  - SO THAT SEWER CAN BE VIDEOED PRIOR TO AND AFTER CONSTRUCTION.
  - 38. POTHOLE AND DETERMINE DEPTH OF SEWER LATERAL TO PROPERTY. SUBMIT REVISED LAYOUT IF IS WITHIN A FOOT OF GROUND SURFACE. AIR TEST REPLACEMENT LATERAL PER TCPUD STANDARDS.
  - 39. CONTRACTOR TO PAY FOR TCPUD PERMIT IF SEWER LATERAL TO BE REPLACED.

## ABBREVIATIONS:

A.C	C. AS	PHALT CONCRETE	
		PROXIMATE	
		CK OF WALL	
	NC CC		
		NSTRUCT	
	NT CO		
		BIC YARDS	
	ELI		
	EX		
E.G	;. EX	ISTING GRADE	
		NISHED GRADE	
	FE		
		/ERT ELEVATION	
NTS	5 NO	T TO SCALE	
(P)	PR	OPOSED	
		OPERTY LINE	
REF	f RE	FERENCE	
R.C	).W RIC	SHT OF WAY	
RT(	ga rei	NO TAHOE GEO ASSOCIATI	ES
SS	SA	NITARY SEWER	
SSI	MH SA	NITARY SEWER MANHOLE	
TCF	PUD TAH	HOE CITY PUBLIC UTILITY	DISTRIC
TO	EW TO	P OF (E) WALL	
	⊃ TY		
TW	TO	P OF WALL	
W/	, WI	TH	



## ENGINEER:



P.O. Box 18449 Reno, Nevada 89511

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

## PLANNER/PERMITTING:

WYATT OGILVY OGILVY CONSULTING P.O.BOX 6315, TAHOE CITY, CA 96145 (530) 583-5800 OFFICE

PROPERTY LINE ADJACENT PROPERTY LINE BACKSHORE BOUNDARY LINE (P) TREE AS NOTED (E) ROCK (E) CONTOURS (1' & 5') (P) CONTOURS (1' & 5') (E) RESIDENCE (E) WOOD DECK

(P) RETAINING WALL

ROCK/BOULDERS/COBBLES

(P) STONE STEPS

(E) LAWN

T1.0 TITLE SHEET C1.0 TEMPORARY BMP PLAN C2.0 IMPROVEMENT PLAN C3.0 SECTIONS & REVETMENT DETAIL C4.0 DETAILS C4.1 DETAILS

APPROXIMATE CUT VOLUME ABOVE 6229.1' CONTOUR	180 0
APPROXIMATE FILL VOLUME UPHILL FROM 6229.1' CONTOUR	0 0
APPROXIMATE CUT VOLUME DOWNSLOPE FROM 6229.1' CONTOUR	0 0
APPROXIMATE FILL VOLUME DOWNSLOPE FROM 6229.1' CONTOUR (REVETMENT & FISH HABITAT BOULDERS)	32 0

NO COVERAGE IS PROPOSED TO BE ASSIGNED FOR ROCKERY RETAINING WALLS OR NATURAL STONE PATH. NO CHANGES IN COVERAGE ARE INCLUDED IN THIS PROJECT.

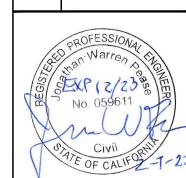


Know what's **below. Call 811** before you dig.

Tahoe Geo Associates, ONSULTING CIVIL ENGINEERS Reno

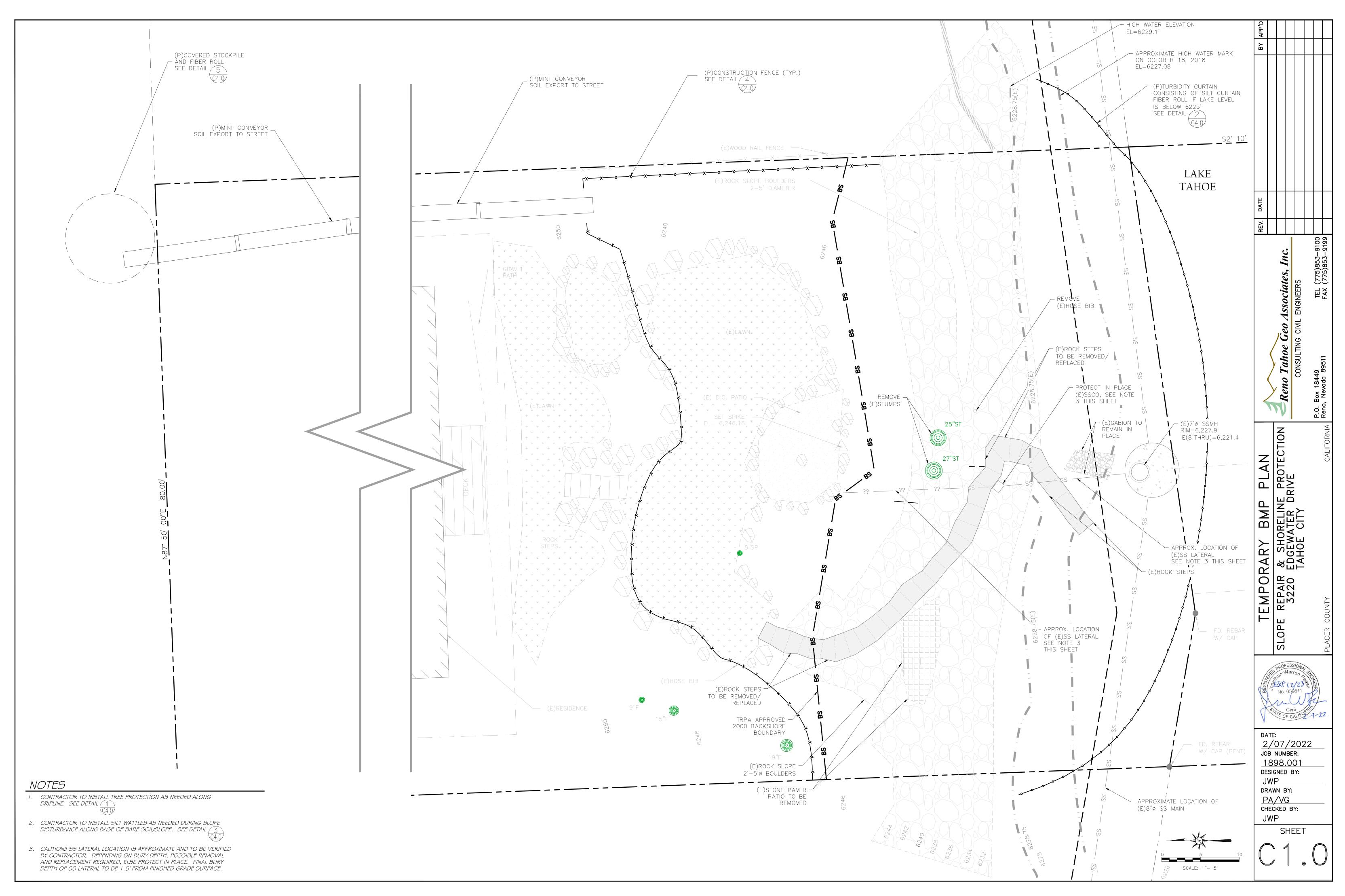
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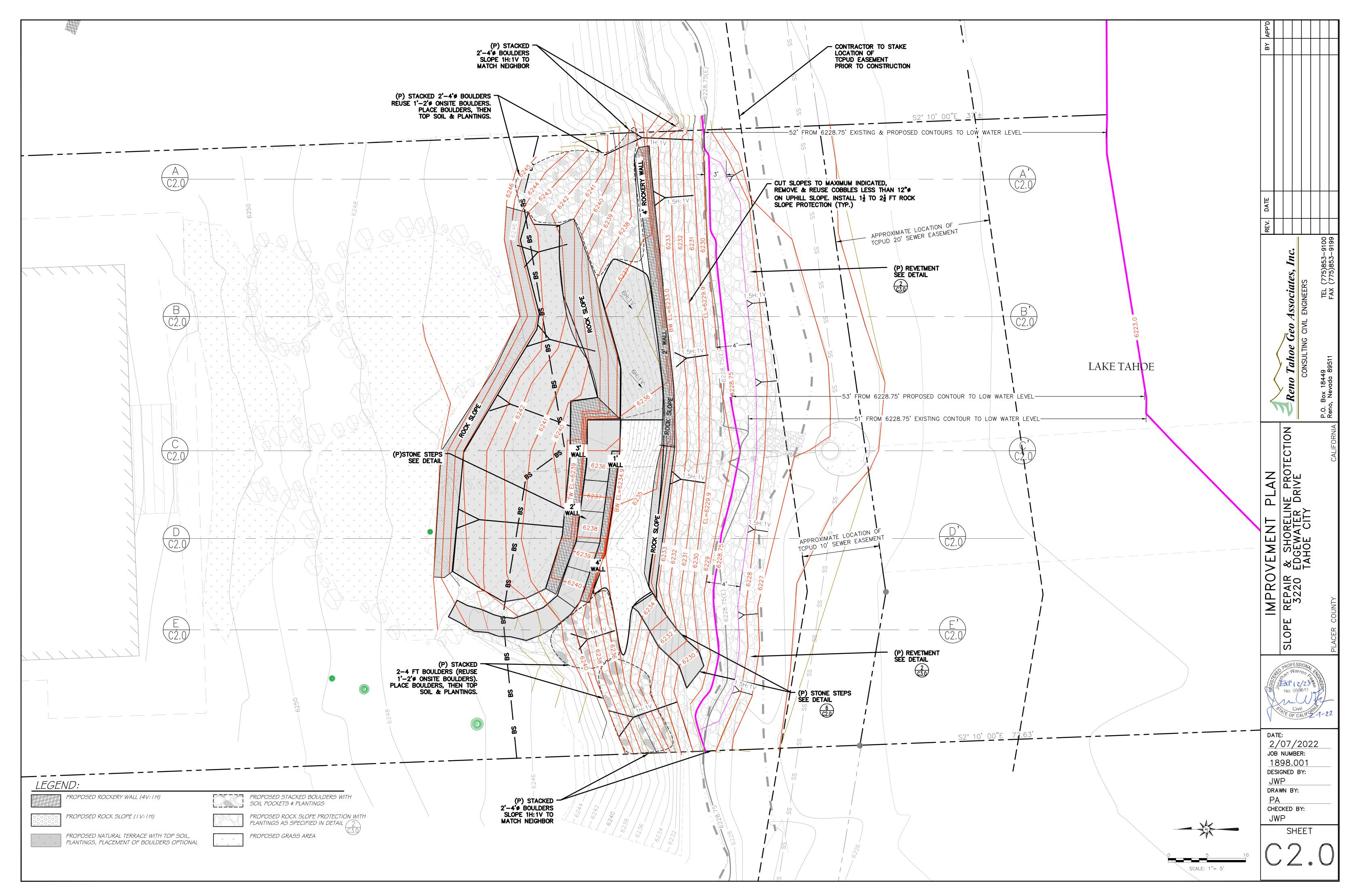
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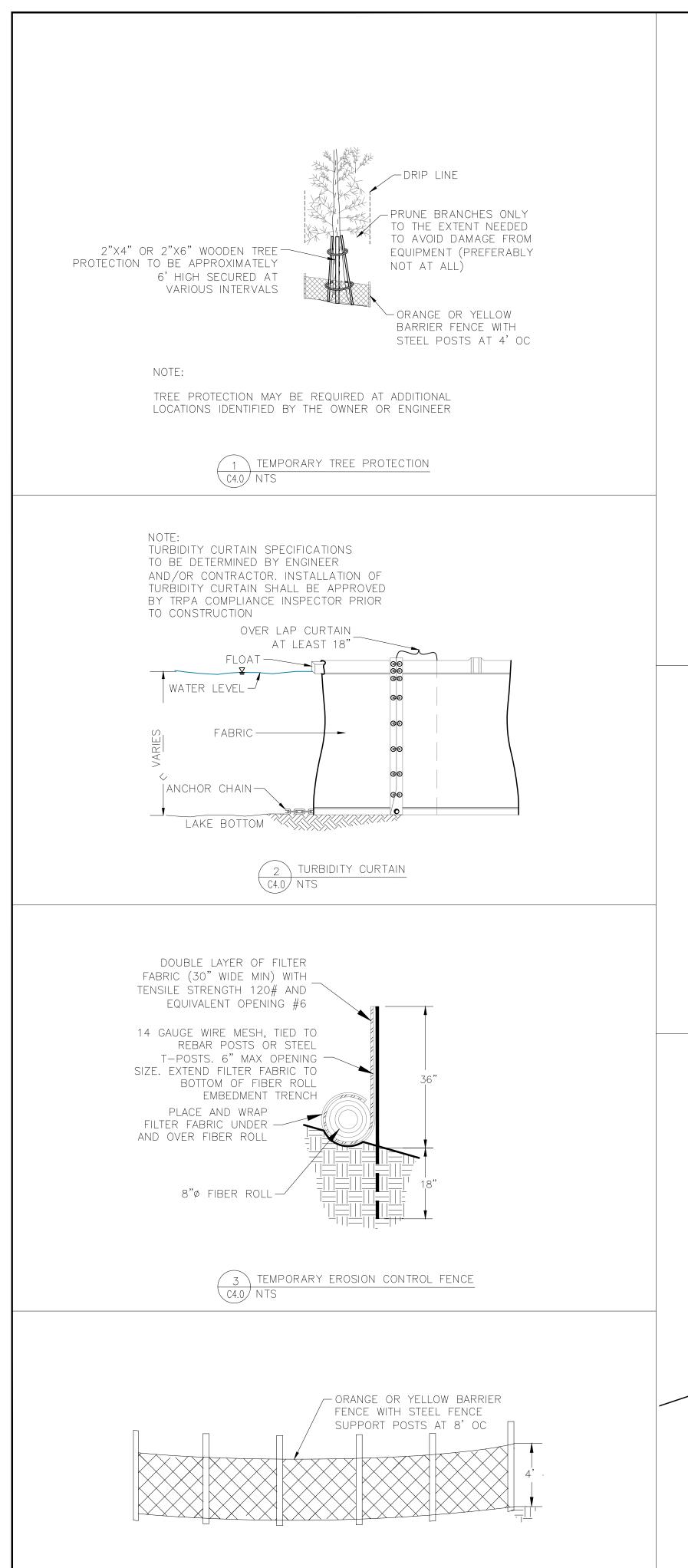


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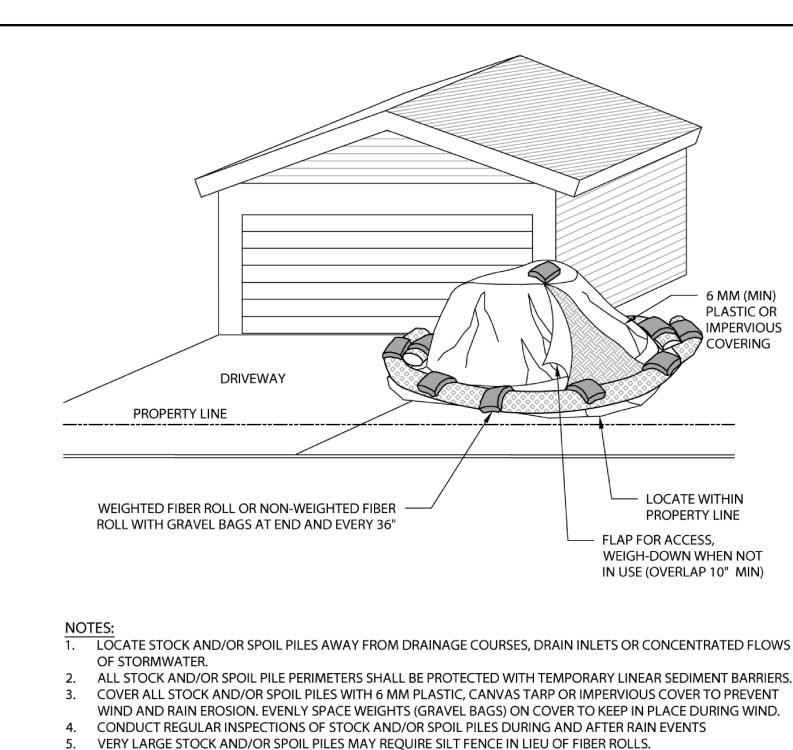
> JWP SHEET





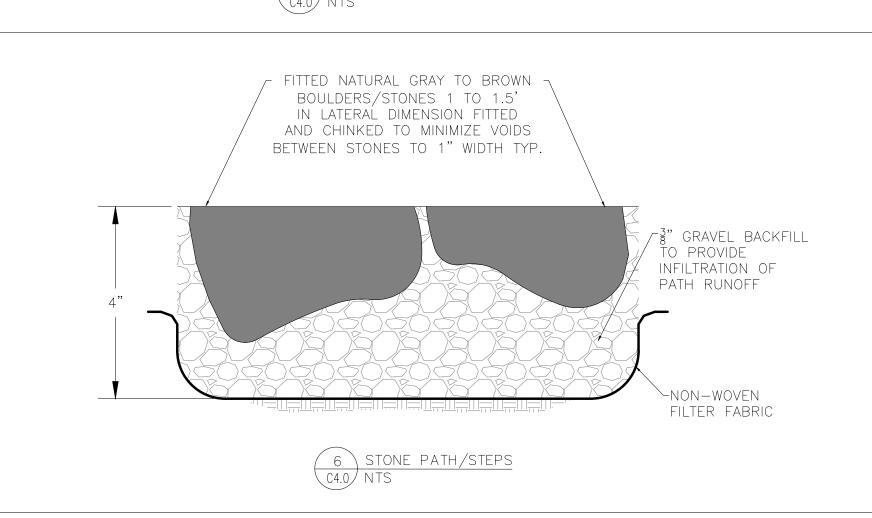


4 TEMPORARY CONSTRUCTION FENCE

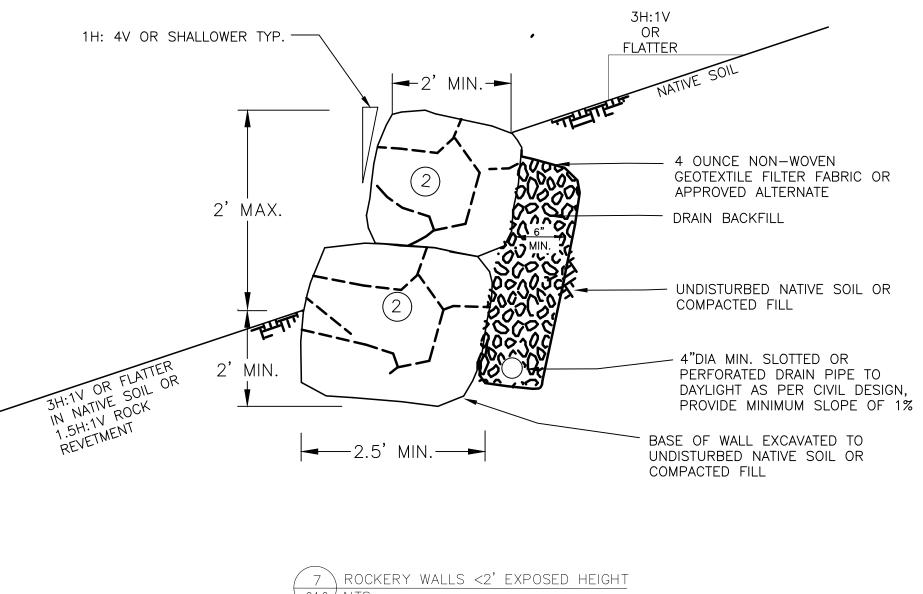


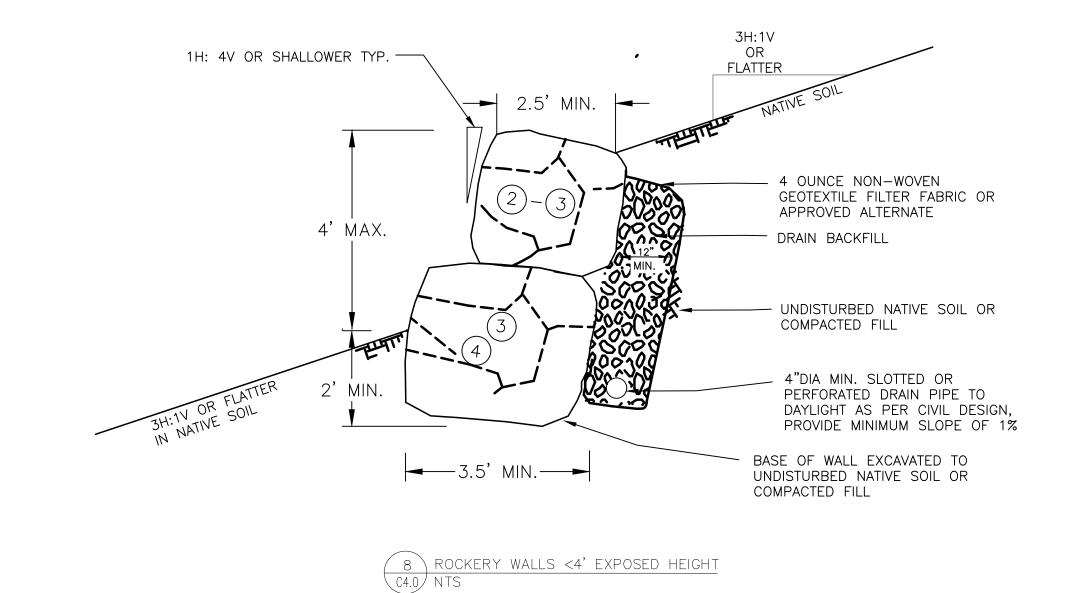
REMOVE SPOIL PILES FROM CONSTRUCTION SITE AS SOON AS POSSIBLE.

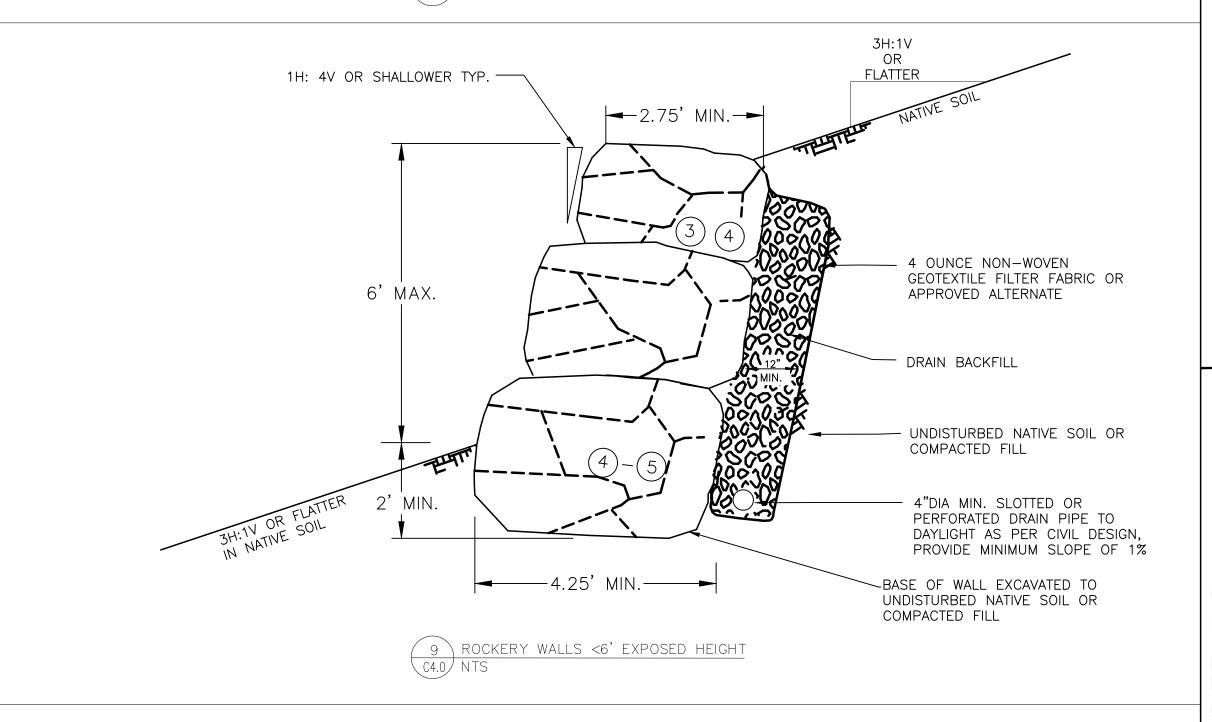
7. STOCK/SPOIL PILES MUST BE STORED WITHIN THE APPROVED STAGING AREA.



\ STOCKPILE MANAGEMENT







ROCKERY WALL NOTES

1. ROCKS SHALL BE PLACED IN SUCH A MANNER SO AS TO AVOID CONTINUOUS JOINT PLANES IN EITHER VERTICAL OR HORIZONTAL DIRECTIONS.

HORIZONTAL BOULDER CONTACT SURFACES SHALL SLOPE TOWARD THE SLOPE BEING SUPPORTED.
 EACH ROCK SHALL BEAR ON TWO OR MORE ROCKS BELOW IT, WITH AT LEAST THREE POINT, COMPETENT AND STABLE CONTACTS (TWO IN FRONT AND ONE IN BACK). THE OUTERMOST POINT OF CONTACT BETWEEN AN

UPPER AND LOWER ROCK SHALL BE WITHIN 6—INCHES OF THE AVERAGE ROCKERY FACE.

4. THE ROCKS USED SHALL BE OF NON—FRACTURED COMPETENT BEDROCK, SUCH AS BASALT AND GRANITE, AND ANGULAR TO SUB—ROUNDED IN SHAPE. 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.

5. ALL ROCKS, INCLUDING BASE ROCKS, SHALL BE PLACED WITH THE LONGEST ROCK DIMENSION PERPENDICULAR TO THE FACE OF THE ROCKERY WALL. THE SECOND LARGEST DIMENSION SHALL BE PARALLEL TO THE ROCKERY FACE.

6. VOIDS BETWEEN ROCKS SHALL BE MINIMIZED. ROCKS WITH SHAPES THAT CREATE VOIDS WITH A DIMENSION GREATER THAN 12-INCHES SHALL BE PLACED ELSEWHERE TO OBTAIN A BETTER FIT.

7. VOIDS GREATER THAN 6-INCHES SHALL BE CHINKED (FILLED) WITH SMALLER ROCKS. NON-STRUCTURAL CHINKING ROCKS SHALL NOT BE LOOSE OR ABLE TO BE MOVED BY HAND AFTER CONSTRUCTION IS COMPLETE AND SHALL NOT PROVIDE BEARING SUPPORT FOR OVERLYING ROCKS.

8. THE ROCK SIZES CAN VARY WITHIN THE RANGES INDICATED SO LONG AS THE OTHER CONSTRUCTION NOTES ARE ADHERED TO. BASE ROCK WIDTHS MAY VARY WITHIN 6-INCHES OF SPECIFIED SIZES. TWO OR MORE CONSECUTIVE BASE ROCKS SHALL NOT BE PLACED WITH A WIDTH LESS THAN SPECIFIED.

9. CAPPING ROCKS SHALL WEIGH AT LEAST 200 POUNDS AND SHALL NOT BE MOVEABLE BY HAND. CAP ROCKS NOT MEETING THESE REQUIREMENTS SHALL BE GROUTED OR GLUED IN PLACE.

10. ROCKS SHALL NOT BE LOOSE OR ABLE TO BE MOVED BY A PRY BAR

.\_\_\_\_

AFTER ROCKERY WALL COMPLETION.

11. THE SLOPES ABOVE AND BEHIND THE ROCKERY WALLS MAY VARY BUT SHALL BE EQUAL TO OR BE FLATTER THAN INDICATED ON THE DETAILS.

12. DRAIN MATERIAL SHALL CONSIST OF 2—INCH TO 6—INCH CLEAN, ANGULAR, WELL—GRADED CRUSHED STONE, QUARRY SPALLS, OR OTHER MATERIAL APPROVED BY THE SOILS ENGINEER. CRUSHED ROCK SHALL

BE CAPPED WITH AT LEAST 6-INCHES TO 12-INCHES (SEE DETAILS) OF

INFILTRATION OF SURFACE WATER BEHIND THE WALL.

13. THE BATTER ON THE FACE OF THE WALL SHALL BE 1:4

(HORIZONTAL: VERTICAL) OR FLATTER.

14. FILL SHALL BE MOISTURE CONDITIONED AND COMPACTED TO 90% RELATIVE COMPACTION ACCORDING TO ASTM TEST METHOD D-1557. DRAIN ROCK SHALL BE PLACED IN LIFTS OF 12 INCHES OR LESS, SPREAD AND COMPACTED TO MINIMIZE VOIDS.

SOIL OVER GEOTEXTILE AT THE GROUND SURFACE TO PREVENT

15. DRAIN ROCK SHALL BE PLACED IN LIFTS OF 12 INCHES OR LESS, SPREAD AND DENSIFIED TO NON-YIELDING.
16. AT LEAST 25 PERCENT OF THE STONES SHALL EXTEND TO THE ENTIRE WIDTH OF THE WALL WITH THE REAR OF THE ROCKS ALIGNED IN A

VERTICAL OR NEAR VERTICAL PLANE.

17. DETAILS ARE SCHEMATIC AND REPRESENT TYPICAL ROCK SIZES AT

VARIOUS INTERVALS.

18. CONTRACTORS SHALL SUBMIT AN ARCHITECTURAL RENDERING OR

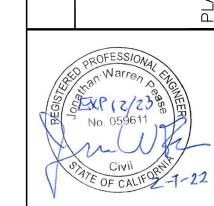
PHOTOGRAPHS OF PREVIOUSLY BUILT ROCKERY WALLS TO OBTAIN OWNERS APPROVAL OF GENERAL APPEARANCE PRIOR TO START OF ROCKERY WALL CONSTRUCTION.

19. TOE OF ROCKERY WALL SHALL HAVE EMBEDMENT INDICATED ON DIAGRAM AT TOE OF WALL. ON SLOPES, EMBEDMENT SHALL NOT REDUCE BELOW O (ZERO) FEET WITHIN 4 FEET HORIZONTAL OF WALL TOE.

ROCK SIZES NOTED ON DETAILS:

SIZE AVG. WT.(LBS) NOM. DIA.(INCH)

2 200-700 18-28" 3 700-2000 28-36" 4 2000-4000 36-48" 5 4000-6000 48-54" 6 6000-8000 54-66"



Tahoe

Reno

ROTEC

SHORELINE PR EDGEWATER I TAHOE CITY

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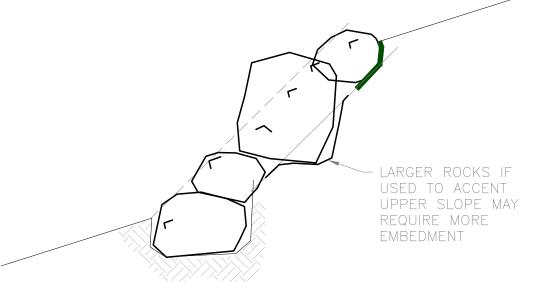
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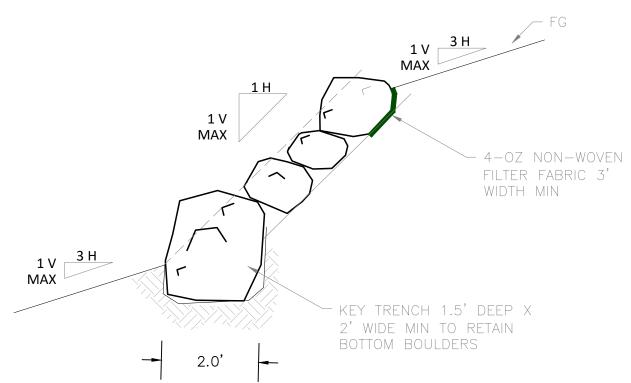
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CHECKED BY:
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9 ROCK SLOPES <6' EXPOSED HEIGHT

- 1. ALL ROCKS SHALL BE INDIVIDUALLY PLACED AND FITTED NOT DUMPED. 2. ROCKS SHALL BE PLACED IN SUCH A MANNER SO AS TO AVOID CONTINUOUS JOINT PLANES IN EITHER VERTICAL OR DIAGONAL
- 3. HORIZONTAL BOULDER CONTACT SURFACES SHALL SLOPE SLIGHTLY
- 4. THE BOTTOM ROCK ROW SHALL INCORPORATE A KEY TRENCH AT LEAST 1
- 5. EACH ROCK SHALL BEAR ON TWO OR MORE ROCKS BELOW IT AND THE SLOPE BEHIND IT WITH AT LEAST THREE POINT, COMPETENT AND STABLE CONTACTS (TWO IN FRONT AND ONE IN BACK). THE OUTERMOST POINT OF CONTACT BETWEEN AN UPPER AND LOWER ROCK SHALL BE WITHIN
- 6. THE ROCKS USED SHALL BE OF NON-FRACTURED COMPETENT BEDROCK, SUCH AS BASALT AND GRANITE, AND ANGULAR TO SUB-ROUNDED IN SHAPE. SHAPE AND STYLE OF BOULDERS TO BE AGREED UPON BY
- 7. BOULDERS WITH VISIBLE CRACKS SHALL NOT BE USED. ALL BOULDERS
- 8. THE OWNER MAY SPECIFY ROCKS OF CONSISTENT SIZE (GENERALLY 1 TO 2 FEET IN DIAMETER, BLOCKY) OR MAY SPECIFY LARGE ROCKS (GENERALLY 3 FEET EXPOSED HEIGHT) STICKING UP HIGHER WITH
- 9. VOIDS BETWEEN ROCKS SHALL BE MINIMIZED. ROCKS WITH SHAPES THAT CREATE VOIDS WITH A DIMENSION GREATER THAN 8-INCHES SHALL BE
- 10. VOIDS GREATER THAN 4-INCHES SHALL BE FILLED WITH SMALLER 2 TO 6-INCH ROCK NON-STRUCTURAL CHINKING. PRIMARY ROCKS SHALL NOT BE LOOSE OR ABLE TO BE MOVED BY HAND AFTER CONSTRUCTION
- 11. THE SLOPES ABOVE AND BEHIND THE ROCKERY WALLS MAY VARY BUT
- 13. CONTRACTORS SHALL SUBMIT AN ARCHITECTURAL RENDERING OR
- PHOTOGRAPHS OF PREVIOUSLY BUILT ROCKERY WALLS TO OBTAIN OWNERS APPROVAL OF GENERAL APPEARANCE PRIOR TO STARTING WORK.

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

DETAILS	SHORELINE PROTECTION Reno Tahoe G	TAHOE CITY CONSULTING	P.O. Box 18449
DETA	SLOPE & SHORELI	TAHOE	

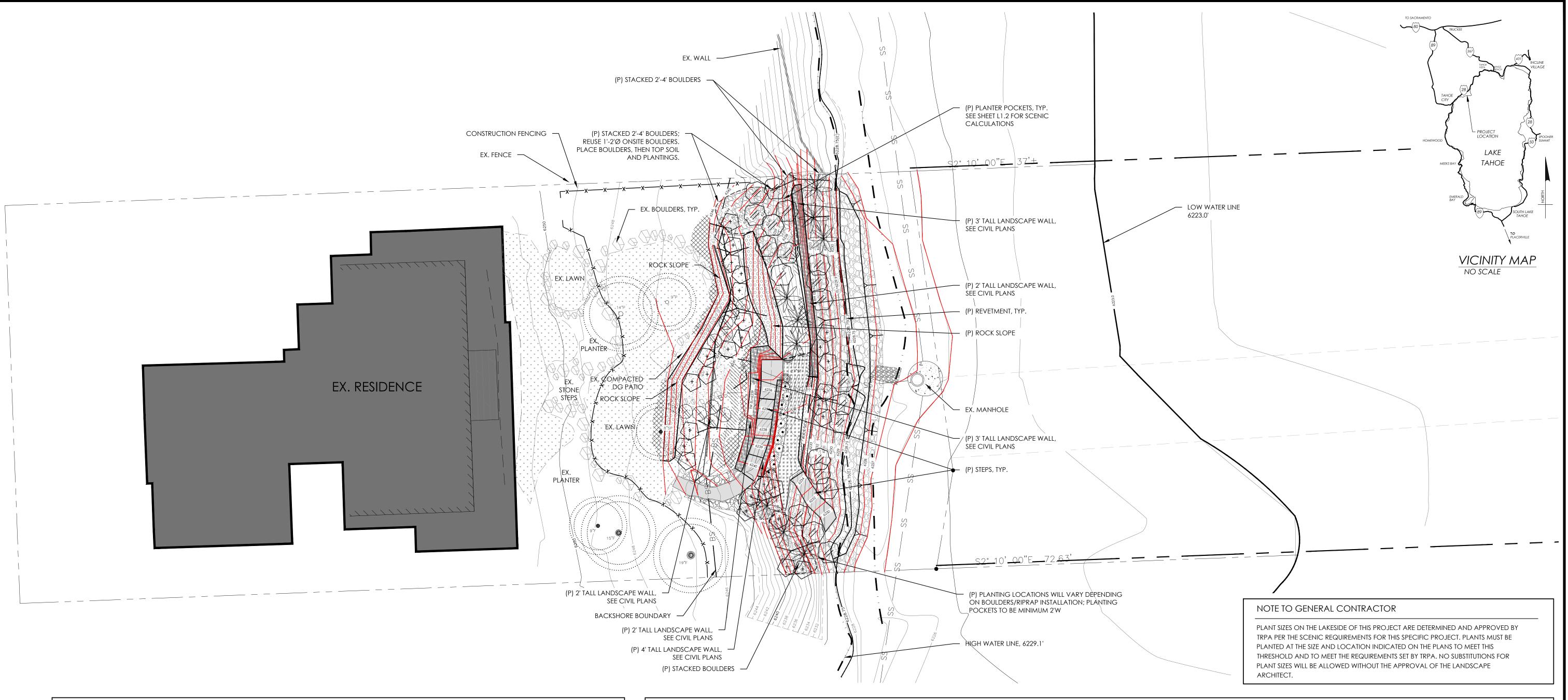
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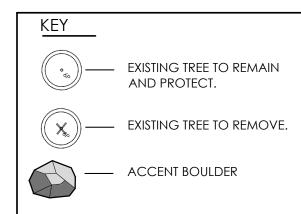
### Attachment E

Landscape and Erosion Control Plan



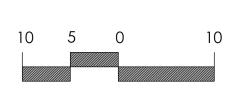
			PRELIMINARY PLANT LEGEND			
		SCIENTIFIC NAME	COMMON NAME	QTY.	PLANTED SIZE	5' GROWTH
			TREES			
(+)	SPI DEN	SPIRAEA DENSIFLORA	MOUNTAIN SPIREA	28	10-GAL, 2'W X 2'T	3'W X 3.5'T
	POT FRU	POTENTILLA FRUTICOSA	SHRUBBY CINQUEFOIL	10	10-GAL, 2'W X 2'T	3'W X 3'T
	COR SER	CORNUS SERICEA	RED TWIG DOGWOOD	20	15-GAL, 2'W X 2'T	5'W X 5'T
	SAL SCO	SALIX SCOULERIANA	SCOULER'S WILLOW	9	15-GAL, 3'W X 3'T	7'W X 7'T
	CAL ACU	CALAMAGROSTIS ACUTIFLORA	FEATHER REED GRASS	11	5-GAL, 1'W X 2'T	2'W X 4'T
			GROUNDCOVERS/VINES			
	PAR QUI	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	60	1-GAL, 20" O.C.	
	SYM MOL	SYMPHORICARPOS MOLLIS	CREEPING SNOWBERRY	25	1-GAL, 20" O.C.	2-3'W X 18''T
	TES TRA	FESTUC A TRACHYPHYLLA	'DUPAR' HARD FESCUE	104 SE		

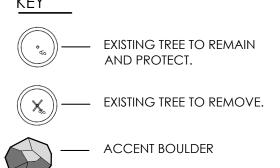
\*ALL PLANT MATERIAL IS TO COMPLY WITH THE TRPA HOME LANDSCAPING GUIDE.





SCALE: 1"=10"





## PLANTING NOTES

**PLANTING** 

PLANTS SHALL BE THE VARIETY AND SIZE SPECIFIED ON THE PLAN AND BE HEALTHY, SHAPELY AND WELL ROOTED AND CONFORM TO AMERICAN NURSERYMAN'S STANDARDS. TREES SHALL BE ABLE TO STAND STRAIGHT ON THEIR OWN WITHOUT SUPPORT. ANY CHANGES TO PLAN TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. LANDSCAPE ARCHITECT AND /OR OWNER RESERVES THE RIGHT OF REFUSAL SHOULD PLANT MATERIAL SIZE AND QUALITY BE DEEMED UNSATISFACTORY, INSPECTION BY LANDSCAPE ARCHITECT IS MANDATORY PRIOR TO ACCEPTANCE OF ALL PLANT MATERIALS. MATERIAL SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR. MATERIALS SHALL BE COMPLETELY FREE OF TRUNK, BRANCH AND BARK WOUNDS. STRUCTURE OF PLANT MATERIAL SHALL BE APPROPRIATE TO NATURAL HABIT.

- INSTALLING CONTRACTOR SHALL VERIFY PLANT QUANTITIES AND AREAS TO BE LANDSCAPED AND NOTIFY OWNER AND/OR LANDSCAPE ARCHITECT OF DISCREPANCIES.
- GRADING OF ENTIRE CONTRACT AREA SHALL BE SMOOTH AND EVEN AND SLOPE TO DRAIN. FINISH GRADES SHALL BE 1/2" BELOW ALL PAVED SURFACES. SLOPES, MOUNDS, AND SWALES SHALL HAVE NO ABRUPT CHANGE IN GRADIENT TO ASSURE A NATURAL AND PLEASING APPEARANCE.
- THE PLANTING HOLE SHALL BE DUG TWICE THE WIDTH AND TO THE SAME DEPTH OF THE CONTAINER OR ROOTBALL.
- THE PLANTING HOLE SHALL BE TESTED FOR DRAINAGE. FILL WITH WATER AND ALLOW TO DRAIN. SHOULD DRAINAGE NOT OCCUR WITHIN A FEW HOURS THE HOLE SHOULD NOT BE USED 13. AND AN ALTERNATIVE LOCATION FOR PLANT FOUND.
- ROOTBALL SHALL BE GENTLY REMOVED FROM CONTAINER AND ROOT INSPECTED PRIOR TO PLACEMENT IN THE HOLE. THE ROOT BALL SHALL BE TEASED BY PINCHING ROOTLETS LOOSE FROM WALL OF BALL TO ENCOURAGE ROOTS TO EXTEND OUTWARD. SHOULD PLANT BE ROOT BOUND THE BALL SHALL BE SCORED WITH A SHARP KNIFE VERTICALLY IN THIRDS DOWN THE ROOTBALL SIDES APPROXIMATELY 1/2 INCH DEEP AND TWO WAYS ACROSS THE BOTTOM, THE ROOTS SHALL THEN BE LOOSENED AND SPREAD TO ENCOURAGE OUTWARD 15.

- 7. PLANT SHALL BE BURIED TO STRUCTURAL ROOT DEPTH. EXCESS MATERIAL ON BALLED AND BURLAP TREES SHALL BE REMOVED. REMOVE BURLAP AND BASKETS FROM B&B TREES WITH CARE TO MAINTAIN INTEGRITY OF ROOT BALL.
- ALL TAGS SHALL BE REMOVED FROM PLANTS.
- A COMPOST OR HUMUS SHALL BE INCORPORATED AT A RATE OF SIX CUBIC YARDS PER 1000 SQUARE FEET FOR IMPROVED MOISTURE AND NUTRIENT RETENTION. COMPOST IS GENERALLY AVAILABLE AT MOST NURSERIES - KELLOGG'S 'GROW MULCH' IS RECOMMENDED. HUMUS, AVAILABLE LOCALLY IN BULK QUANTITIES, MUST BE WELL COMPOSTED TO AVOID ROOT BURN. WHEN COMPOSTED HUMUS NOT AVAILABLE, AMENDMENT SHALL BE SUFFICIENTLY NITROLIZED TO PREVENT LOCK UP OF NUTRIENTS AND ROOT BURN. CONTRACTOR TO PROVIDE SAMPLE SUBMITTAL TO LANDSCAPE ARCHITECT.
- 10. TOP SOIL SHALL BE FERTILE, FRIABLE AND FREE OF ROCKS LARGER THAN 1" DIAMETER, NOXIOUS WEED SEEDS OR EXTRANEOUS MATTER. TOP SOIL DELIVERED TO SITE SHALL HAVE ACIDITY RANGE OF PH 5.0 TO 7.0 AND SHALL CONTAIN NOT LESS THAN 15% ORGANIC MATTER.
- 11. BACKFILL MATERIAL SHALL MEET THE LEVEL OF TOP OF ROOTBALL. NEVER ALLOW NEW SOIL TO REACH PLANT STEM. BACKFILL SHALL BE PRESSED FIRMLY IN AROUND ROOTBALL.
- 12. WHEN BACKFILLING IS COMPLETE, CONSTRUCT A WATER RETENTION BERM APPROXIMATELY THREE INCHES HIGH AND TWICE THE DIAMETER OF THE ROOT BALL. SEE DETAIL.
- FILL BASIN INSIDE BERM WITH WATER AND ALLOW TO DRAIN. FILL ANY HOLES THAT APPEAR WITH ADDITIONAL BACKFILL MATERIAL. REPEAT UNTIL HOLES DO NOT APPEAR AND ALL SOIL AROUND ROOT BALL IS MOISTENED.
- 14. TOP DRESS WITH 2"-3" LOCALLY OBTAINED 1" MINUS GROUND FIR BARK IN ALL PLANTED AREAS. IN WINDIER AREAS MULCH WITH SHREDDED CEDAR BARK OR EQUAL. CONTRACTOR TO PROVIDE A SAMPLE SUBMITTAL TO LANDSCAPE ARCHITECT FOR APPROVAL.
- ONE REDWOOD STAKE OF 1-1/2" BY 1-1/2" SHALL BE ISNTALLED FOR WINTER SUPPORT OF MULTI-STEMMED SHRUBS UNTIL ADEQUATE BRANCH STRENGTH IS ATTAINED, SEE DETAIL.

- 16. ONE LODGEPOLE STAKE OF TWO INCHES DIAMETER AND 8-10 FEET IN LENGTH SHALL BE INSTALLED AT THE WINDWARD SIDE OF ALL DECIDUOUS TREES. DOUBLE STAKING WILL BE REQUIRED IN WINDIER AND HEAVY SNOW LOAD AREAS. STAKE(S) SHALL BE INSERTED INTO GROUND AT EDGE OF ROOT BALL, NEVER INTO ROOTBALL. TREE GUYING METHOD IS RECOMMENDED FOR LARGER CONIFEROUS TREES IN WINDIER LOCATIONS. SEE DETAILS.
- 17. TWO TO THREE TREE TIES OF DURABLE CONSTRUCTION SHALL BE USED PER TREE. THE RUBBER OR MORE PLIABLE PORTION OF THE TIE SHALL BE LOOPED AROUND THE TRUNK AND WIRE OR OTHER MATERIAL LOOPED AROUND THE STAKE IN A FIGURE EIGHT CONFIGURATION. THE WIRES ARE THEN TWISTED TOGETHER. SHOULD SECURING THE TIE IN PLACE BE REQUIRED, NAIL OR STAPLE THE TIE TO THE STAKE ONLY, NEVER TO THE TREE. DO NOT TIE THE TRUNK TOO TIGHTLY AGAINST THE STAKE. ALLOW SOME ROOM TO MOVE IN BREEZE SO AS TO DEVELOP CALIPER STRENGTH IN TRUNK. THE TRUNK SHALL BE UPRIGHT AND STRAIGHT. SEE DETAIL.
- 18. IN THE FALL, AFTER LEAVES HAVE DROPPED, BRANCHES OF YOUNG TREES AND SHRUBS AND THOSE CLOSE TO SNOW REMOVAL/STORAGE AREAS SHALL BE BOUND IN AN UPWARD FASHION WITH VINYL TREE TAPE OR EQUAL TO MINIMIZE BREAKAGE FROM WEIGHT AND MOVEMENT OF SNOW, SEE DETAIL. THIS PROCEDURE SHOULD BE REPEATED EACH YEAR UNTIL TREES AND SHRUBS HAVE ATTAINED SUBSTANTIAL STRENGTH AND GIRTH. UNWRAP TREES AND SHRUBS IN SPRING, BEFORE NEW LEAVES APPEAR.
- 19. ALL CHANGES TO PLANS TO BE APPROVED BY LANDSCAPE ARCHITECT.
- 20. UPON COMPLETION OF ALL PROJECT PHASES, INSTALLING CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT FOR INSPECTION AND FINAL APPROVAL.
- REGULAR MAINTENANCE PRUNING FERTILIZING, WEED, DEBRIS AND TRASH REMOVAL, REMOVE AND REPLACE ANY DEAD OR DYING PLANT MATERIAL, REPARATION OF IRRIGATION SYSTEM AS NEEDED. REPORT - PRIOR TO THE TWO YEAR ANNIVERSARY OF COMPLETION OF PROJECT A REPORT SHALL BE "PREPARED BY THE PROJECT LANDSCAPE CONTRACTOR OR LANDSCAPE ARCHITECT WHICH DOCUMENTS THE CONDITION OF THE LANDSCAPING, AND PROVIDES RECOMMENDATIONS AS TO

WHETHER ANY LANDSCAPING SHOULD BE REPAIRED REPLACED OR INSTALLED. THE RECOMMENDATIONS OF THE REPORT SHALL BECOME A PART OF AND INCORPORATED INTO THE FINAL LANDSCAPE PLAN, AND THE LANDSCAPING SHALL BE REPAIRED, REPLACED AND INSTALLED WITHIN SIX MONTHS OF THE DATE OF APPROVAL OF THE REPORT."

## SEEDING/SODDING

- SEEDING AREAS SHALL BE PREPARED BY TILLING SOIL TO A SIX INCH DEPTH REMOVING ROCK GREATER THAN FOUR INCHES IN DIAMETER FOR WILDFLOWER AND EROSION CONTROL AREAS AND TURF GRASS AREAS. SIX INCHES OF HUMUS OR COMPOST SHALL BE TILLED IN. FOR SEEDED AREAS EVENLY SPREAD TOPSOIL/MANUFACTURED SOIL ON TOP OF NATIVE
- SEEDING/SOD AREA SHALL BE RAKED OR ROLLED TO A SMOOTH SURFACE FILLING HOLES AND REMOVING ROCK AS NECESSARY. FOR TURF AREAS THIS PROCESS SHALL BE REPEATED AS NEEDED TO ATTAIN SMOOTHEST SURFACE POSSIBLE, ROLL IN TWO OVERLAPPING DIRECTIONS FOR BEST RESULTS.
- SEED SHALL THEN BE BROADCAST AT THE RATE PRESCRIBED BY SEED COMPANY OR LANDSCAPE ARCHITECT. LAWN SEEDS SHALL BE ROLLED IN AFTER BROADCASTING.
- 4. APPLY BIOSOL MIX GRANULAR FERTILIZER AT RATE RECOMMENDED.
- SEED SHALL THEN BE COVERED WITH A 1/8 TO 1/4" LAYER OF PEAT MOSS, HUMUS OR EQUAL TO RETAIN MOISTURE AND PREVENT WIND AND BIRDS FROM CARRYING SEED AWAY.
- ADEQUATE MOISTURE SHALL BE MAINTAINED IN SEEDING AREA UNTIL SEEDLINGS REACH A HEIGHT OF TWO INCHES WHEN REGULAR WATERING MAY BEGIN. FREQUENCY AND DURATION OF INITIAL WATERING WILL VARY ACCORDING TO DAILY TEMPERATURES, SUN/SHADE PERIODS, WIND, SOIL, SLOPE AND ASPECT. CONTRACTOR TO ENSURE THAT APPROPRIATE SCHEDULE IS EMPLOYED FOR THIS AREA.

Revisions:

PLANTING

PLAN

2-1-22

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AS NOTED

