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STAFF REPORT

Date: May 19, 2022

To: TRPA Hearings Officer

From: TRPA Staff

Subject: Bogart Shoreline Protective Structure Reconstruction, 4676 North Lake Boulevard, Carnelian Bay, California, Assessor's Parcel Number (APN) 115-070-010, TRPA File Number ERSP2022-0088

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 an approximately 150-foot-long shoreline protective structure consisting of primarily two rockery retaining walls. The eroding bluff requires stabilization to restore and stabilize the eroded site, including slope reduction, reduced erosion and bluff recession, and establishment of native vegetation at a short height upland (landward) of the mean high-water mark. The inclusion of two small rockery retaining walls, 3 to 4 feet high, uphill from the shoreline is proposed to make the bluff more acceptive to new and stable native riparian vegetation. To do this, both the erosion and the steepness of the slope needs to be reduced by constructing two small retaining walls with a shallow (3H:1V) soil bench between them. These retaining walls are intended to reduce erosion into the lake from the upland, while not encroaching into the lake.

The lower rockery retaining wall will be reconstructed above the mean high-water mark at Elevation 6,230 feet. The bottom retaining wall will provide uphill protection against wave action at high lake levels. This retaining wall will be sloped at 1 horizontal to 3 vertical (1H:3V) and will be permeable. The existing slope will be flattened from about 1H:1V to 2H:1V presently to between 3H:1V and 4H:1V as allowed by the ground at the top of the lower rockery wall at about Elevation 6,233 to 6,234 feet. The upper rockery retaining wall will support soil and allow for greater width of the middle bench for vegetative establishment. Rockery retaining walls are essential to provide adequate stability and protection of topsoil for re-establishment of appropriate native vegetation per the landscape/revegetation plan on steep slopes for this project. The revetment will maintain and improve the existing soil and rock materials, providing visual screening, and upholding the character of the Lake Tahoe shoreline.

No other improvements are proposed. The property has a TRPA water quality Best Management Practice Certificate (BMP Certificate No. 12864).

Site Description:

The site is developed with a single-family dwelling and there is an existing deteriorating shoreline protective structure along the bluff. The existing site conditions are shown in the attached photos (See Attachment C). The shoreline near the residence is generally rocky with limited or no sand or gravel. The natural bottom particles consist of boulders, generally 1 to 3 feet in diameter. There is minimal sand or gravel either exposed in or within the interstices of the cobbles. The observed natural boulders are expected to be essentially immobile except during the largest storms. While the cobble-size particles may have some potential to move during moderate storms, it is not expected that this would result in either significant volume of material or travel that might be classified as littoral drift for a body of water the size and associated wave energy of Lake Tahoe.

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 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. Land Use/Plan Area Statement: The project site is in the Cedar Flat 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: The site is mapped as Shorezone Tolerance District 5, which is characterized as armored granite 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 5:

1. Permitted development or continued use may be conditioned upon installation and maintenance of vegetation to stabilize backshore areas and protect existing cliffs from accelerated erosion.
2. Projects shall not be permitted in the backshore and upland 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.
3. Access to shoreline shall be restricted from the upland to stabilized access ways which minimize the impact to the backshore.

Construction access is proposed entirely from land and confined to the upland property via temporary travel accessways with the disturbed areas restored with appropriate site measures and revegetation after the rockery retaining wall construction activity is completed. All construction wastes will be collected and disposed of at the nearest approved dumpster or sanitary landfill site. Temporary material staging and storage will be on paved surfaces.

The excavation associated with the retaining walls is not expected to exceed a maximum of 5 feet in depth. If the proposed excavation is determined to be deeper than this initial depth, the appropriate TRPA excavation waiver will be processed for approval. Conventional construction equipment is anticipated at this time. The area of disturbance associated with construction is expected to be contained to the minimum amount necessary (i.e. 12 feet or less around perimeter of development envelope and access points) to ensure the site remains stable during construction and disturbance is minimized to the most reasonable extent possible.

Required Actions:

Staff recommends the Hearings Officer take the following actions, based on the staff report:

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 please contact Paul Nielsen at pnielsen@trpa.gov.

Attachments:

- A. Required Findings
- B. Draft Permit
- C. Site Photographs
- D. Project Plans
- E. Photo Simulations
- F. Landscape Plans

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. 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 site is mapped as Shorezone Tolerance District 5, which is characterized as armored granite 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 stabilize backshore areas and protect existing cliffs from accelerated erosion. Projects shall not be permitted in the backshore and upland 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. Access to shoreline shall be restricted from the upland to stabilized access ways which minimize the impact to the backshore. Lake access will be via a stabilized pathway integrated into the revetment. The purpose of the project is to protect the existing eroded terrace from further erosion. A comprehensive landscape plan is proposed (see Attachment F) 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. 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 reconstructed revetment will be approximately 140 linear feet in length. The new revetment will consist of boulders 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 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. 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 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) 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 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) 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 final permit approval, the permittee shall 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.

Construction access is proposed entirely from land and confined to the upland property via the existing travel accessways. All construction wastes will be collected and disposed of at the nearest approved dumpster or sanitary landfill site. Temporary material staging and storage will be on paved surfaces.

- (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 comments received were related to the required permits from the applicable agencies with jurisdiction over the project. The applicant is currently working with those agencies to obtain the necessary permits prior to construction.

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 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. 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) 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.

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, January 25, 2022) prepared for the project.

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

- (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

PROJECT DESCRIPTION: Shoreline Protective Structure Reconstruction APN: 115-070-010

PERMITTEE: Haley Bogart FILE #: ERSP2022-0088

COUNTY/LOCATION: 4676 North Lake Boulevard, Carnelian Bay, Placer County, California

Having made the findings required by Agency ordinances and rules, the TRPA Hearings Officer approved the project on May 26, 2022, 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 26, 2025, 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 115-070-010
FILE NO. ERSP2022-0088

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 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 reconstruction of a shoreline protective structure consisting of ~~The~~ inclusion of two small rockery retaining walls, typically 3 to 4 feet high, along approximately 150-linear feet along and located uphill from the shoreline is authorized. The steepness of the slope need will be reduced by constructing two small retaining walls with a shallow (3H:1V) soil bench between them. These retaining walls are intended to reduce erosion into the lake from the upland, while not encroaching into the lake.

A bottom rockery retaining wall will be constructed primarily above the mean high-water mark at Elevation 6,230 feet. The bottom retaining wall will provide uphill protection against wave action at high lake levels. This retaining wall will be sloped at 1 horizontal to 3 vertical (1H:3V) and will be permeable. The existing slope will be flattened from about 1H:1V to 2H:1V presently to between 3H:1V and 4H:1V as allowed by the ground at the top of the lower rockery wall at about Elevation 6,233 to 6,234 feet. No other improvements are authorized. The property has a TRPA Best Management Practice certificate (Certificate #12864).

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 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 re-

suspended 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 15th 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

EXISTING SHORELINE BELOW HOUSE

RED PLASTIC CUPS AT ELEVATION 6230' - TOE OF EXISTING & PROPOSED ROCKERY WALL

 Reno Tahoe Geo Associates, Inc. P.O. Box 18449 CONSULTING CIVIL ENGINEERS TEL (775)853-9100 Reno, Nevada 89511 FAX (775)853-9199	SITE PHOTOS	PLATE
	SITE STABILIZATION DESIGN 4676 N LAKE BLVD, TAHOE CITY APN: 115-070-010	6
JOB # <u>20144.001</u> APPR: <u>JWP</u> DATE: <u>02/11/21</u>	PLACER COUNTY	CALIFORNIA

J:\2020\20144.001 - 4676 North Lake Blvd\Drawings and Plans\Civil Drawings-plates.dwg 1/24/22



LAKESHORE, NORTH OF HOUSE

DAMAGED & DEAD VEGETATION PRESENT DUE TO WAVE EROSION
PIERS AND STEPS ARE JUST BEYOND EDGE OF THIS PROPERTY



Reno Tahoe Geo Associates, Inc.

P.O. Box 18449
Reno, Nevada 89511

CONSULTING CIVIL ENGINEERS

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

SITE PHOTOS

SITE STABILIZATION DESIGN
4676 N LAKE BLVD, TAHOE CITY
APN: 115-070-010

PLATE

7

JOB # 20144.001 APPR: JWP DATE: 02/11/21

PLACER COUNTY

CALIFORNIA

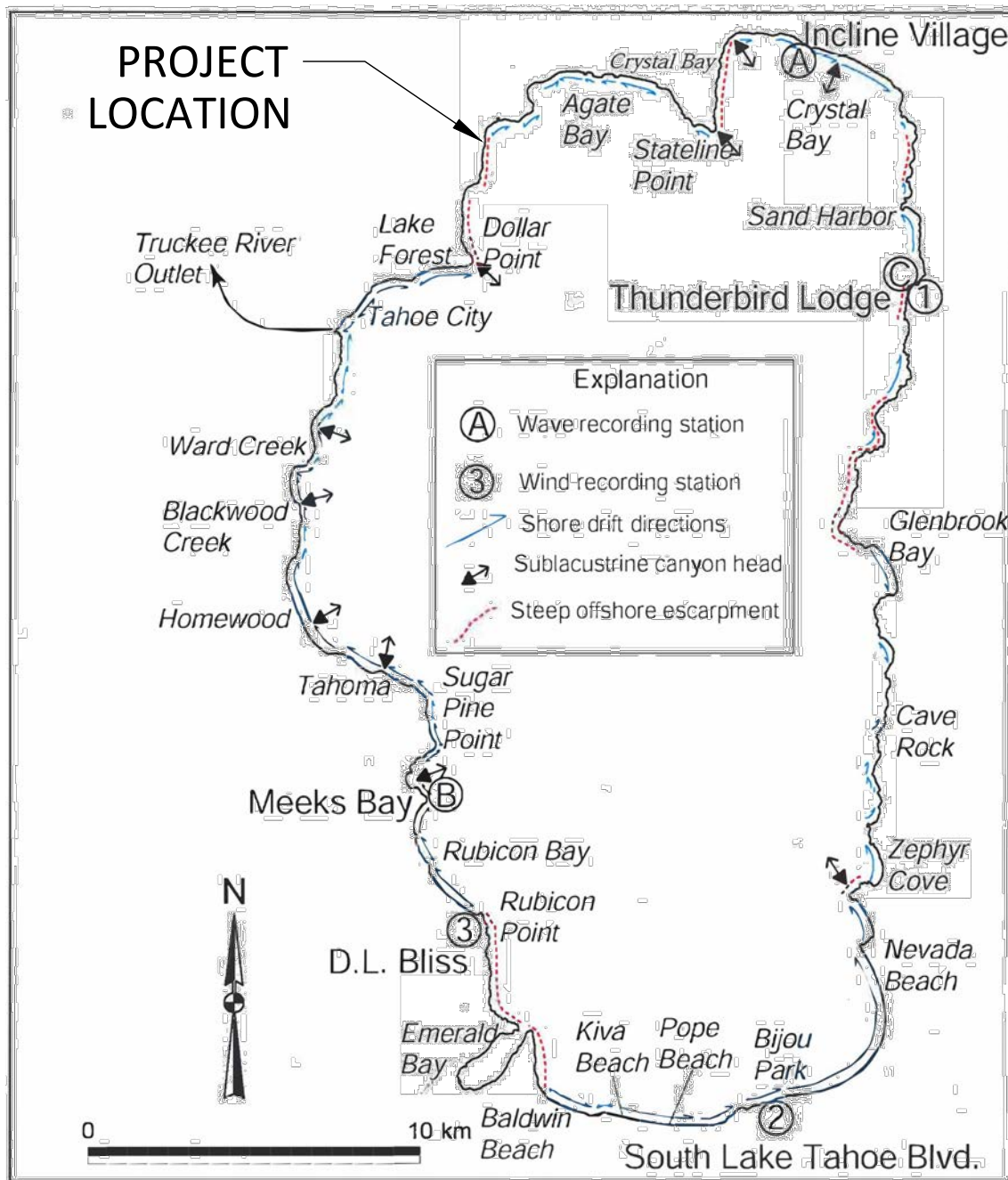


Figure 1-3. Map of Lake Tahoe showing dominant shore drift directions, locations of sublacustrine canyon heads, steep offshore escarpments, wave recording stations, wind recording stations, and locations mentioned in the report. Both the sublacustrine canyon heads and steep offshore escarpments are probably barriers to littoral drift. Data used to construct this figure are from Orme (1971), Osborne et al. (1985), and observations made during the course of this study.

Attachment D

Project Plans

Attachment E

Photo Simulations

Attachment F

Landscape Plans