CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

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F14a

December 6, 2016

To: Coastal Commissioners and Interested Persons

From: Alison Dettmer, Deputy Director
Joseph Street, Environmental Scientist

Subject: **Addendum to 9-16-0490 – Southern California Edison**

This addendum provides proposed revisions to the staff report. These revisions do not change staff's recommendation that the Commission conditionally **approve** the coastal development permit.

Proposed Revisions to the Staff Report
The proposed revisions below are recommended findings and will be incorporated into relevant portions of the staff report as adopted findings. Additions are shown below in **bold underline** and deletions in ~~strikethrough~~.

Page 5, Special Condition 1:

1. **State Lands Commission Lease Approval**. PRIOR TO ~~PERMIT ISSUANCE~~ **THE COMMENCEMENT OF CONSTRUCTION**, the Applicant shall submit documentation of the approval of a lease amendment from the California State Lands Commission (CSLC) for the proposed project. If this lease approval results in the need for changes to the project as approved by the Commission, the Applicant shall notify the Commission's Executive Director of the required changes. No changes to the approved project shall occur without a Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

Page 12, Section IV.B, Other Agency Approvals:

California State Lands Commission

SCE currently holds a lease from the California State Lands Commission (CSLC) for the use of state tidelands, encompassing the existing saltwater well field (Lease No. PRC 8330.1). The current lease expires on June 30, 2022. On December 22, 2015, SCE applied for an amendment to the existing lease that would cover the proposed project (**Exhibit 2**). CSLC staff is currently reviewing SCE's lease amendment application, and has stated its intention to **rely on the Coastal Commission's adopted findings for the subject CDP to fulfill its environmental review obligation under CEQA. As a result, the CSLC will not** act on ~~the~~ **SCE's lease amendment** application **until** after the Coastal Commission has approved the subject CDP.

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Staff Report:	11/23/16
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STAFF REPORT: REGULAR CALENDAR

Application No.:	**9-16-0490**
Applicant:	**Southern California Edison Company**
Location:	State Lease 8330.1; Dump Road and Quarry Road near East End Quarry, Santa Catalina Island, Los Angeles County
Project Description:	Repair and expand existing shoreline riprap following wave damage by placing approximately 1225 tons (817 cubic yards) of additional rip-rap material both above and below the mean high tide line.
Staff Recommendation:	Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

Southern California Edison Company (SCE) proposes repair and expand the existing shoreline riprap currently protecting two saltwater intake wells, near the East End Quarry, at Jewfish Point, Santa Catalina Island, Los Angeles County (**Exhibit 1**). SCE owns and operates a desalination plant at the Pebbly Beach Generating Station (PBGS), approximately one mile north of the project site, which serves as a primary source of fresh water for the nearby City of Avalon. The intake wells, which draw seawater water from the shallow surficial aquifer beneath the project site, are the sole source of water for the desalination plant. In August of 2014, a high wave event related to Hurricane Marie caused significant erosion and damage to the existing riprap and

artificial fill bluff on which the saltwater wells are located. The proposed project would repair this damage and reinforce the existing fill and riprap by placing approximately 1,225 tons (817 cubic yards) of new rock within two large erosion areas (and several minor scars) along approximately 115-feet of the shoreline adjacent to the saltwater well pad (**Exhibits 3, 5**). The new riprap would be placed on top of and within the footprint of the pre-existing riprap, avoiding new encroachment onto seafloor habitats.

The key Coastal Act issues raised by this project are exposure to natural hazards and the potential for impacts to shoreline processes, natural landforms, marine resources, sensitive species, public access and recreation, and visual resources. **Special Conditions 3** and **4**, which require SCE to monitor and maintain the new riprap in its approved state, would ensure the stability and structural integrity of the proposed structure, and minimize hazards from erosion and flooding over the life of the project. In order to avoid long-term disruption of natural shoreline processes and impacts to coastal landforms, Commission staff also recommends **Special Condition 2**, which links the length of authorization of the new riprap to the life of the development it would protect (the saltwater intake wells), and requires SCE to submit a new CDP or CDP amendment application to (a) remove the shoreline protection when the saltwater wells are no longer present (or no longer require armoring) or (b) re-authorize the shoreline protection if the wells are redeveloped.

The proposed project has the potential to adversely affect seafloor habitats, marine mammals, fish and marine water quality, as well as several sensitive terrestrial species. To avoid and minimize impacts, Commission staff recommends several conditions designed to protect marine habitats and sensitive species. These include **Special Condition 6**, which limits the placement of new riprap to the footprint of the pre-existing structure, avoiding encroachment onto seafloor habitat; **Special Condition 7**, which requires the protection of Garibaldi fish during its breeding and rearing season; and **Special Condition 8**, which requires SCE to submit a Sensitive Species Protection Plan for the protection of marine mammals and sensitive terrestrial species during project construction. **Special Conditions 9** and **10** require SCE to submit plans and enact measures to protect against the discharge of hazardous and non-hazardous substances into the marine environment.

The project site is located on a private dirt road at the extreme southeastern end of Catalina Island, along an artificial fill shoreline with no extant beach. As a result, public use of the area is minimal, aside from some limited recreational boating and diving in the offshore areas. No marine construction activities are proposed, and as noted above, **Special Condition 6** would assure that no expansion of the shoreline protection into offshore areas would occur. The new riprap would be sourced from the adjacent East End Quarry, and would thus be very similar in visual appearance to the existing, quarry-derived rock and fill at the site. As noted above, **Special Condition 2** would prevent the alteration of natural landforms over the long-term.

As conditioned, staff recommends the Commission find the project consistent with Coastal Act Sections 30210, 30220, 30221, 30230, 30231, 30232, 30240, 30251, and 30253.

Commission staff recommends **approval** of coastal development permit application 9-16-0490, as conditioned.

TABLE OF CONTENTS

APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit 9-16-0490 subject to conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in approval of the permit amendment as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of Commissioners present.

Resolution:

The Commission hereby approves the Coastal Development Permit 9-16-0490 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the amended development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by SCE or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and SCE to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **State Lands Commission Lease Approval**. PRIOR TO PERMIT ISSUANCE, the Applicant shall submit documentation of the approval of a lease amendment from the California State Lands Commission (CSLC) for the proposed project. If this lease approval results in the need for changes to the project as approved by the Commission, the Applicant shall notify the Commission's Executive Director of the required changes. No changes to the approved project shall occur without a Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

2. **Shoreline Structure Authorization**. This CDP authorizes the proposed shoreline protection structures (consisting of approximately 1225 tons of new riprap placed within voids on the existing fill slope) pursuant to the following terms:

   A. **Expiration**. This authorization expires when: (1) the existing saltwater wells (i) are redeveloped as defined in subsection B below, (ii) are no longer present, or (iii) no longer require shoreline armoring; or (2) the State Lands Commission lease amendment required under **Special Condition 1** expires, whichever occurs first. Prior to the expiration of the permit and/or in conjunction with redevelopment of the property, the Permittee shall apply for a new CDP or amendment to this CDP, to remove the shoreline protection structures or to modify the terms of authorization.

   B. **Redevelopment Definition**. For the purposes of this permit, redevelopment shall be defined as: (1) Additions of new saltwater intake wells, or (2) demolition or replacement of one or more of the existing saltwater intake wells.

3. **Long-Term Monitoring Program.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit for review and written approval by the Executive Director a long-term monitoring plan for the permitted shoreline protection structures (riprap). The purpose of the plan is to monitor and identify damage or changes to the structures such that repair and maintenance can be completed in a timely manner to maintain the structural integrity and stability of the structures, minimize hazards, and avoid further encroachment of the structure on the seafloor. The monitoring plan shall incorporate, but not be limited to, the following:

   a) An evaluation of the current condition and performance of the riprap fill, addressing any migration or movement of rock which may have occurred on the site and any significant weathering or damage to the riprap that may adversely impact its future performance.

   b) Measurements to determine settling or seaward movement of the riprap. Changes in the seafloor profile at the toe of the slope shall be noted and the potential impact of these changes on the effectiveness of the riprap evaluated.

c) Recommendations on any necessary maintenance needs, changes or modifications to the riprap to assure its continued function and to assure no encroachment beyond the permitted toe.

d) An agreement that the Permittee shall apply for a coastal development permit within 90 days of submission of the report required in subsection c. for any necessary maintenance, repair, changes or modifications to the project recommended by the report. Upon receipt of that CDP, the Permittee shall comply with any conditions of that CDP and shall implement the repairs or other changes authorized under such CDP.

The above-cited monitoring information shall be summarized in a report prepared by a licensed engineer familiar with shoreline processes and submitted to the Executive Director for review and written approval. The report shall be submitted to the Executive Director after each winter storm season, but prior to May 1st of each year starting with May 1, 2018. Monitoring shall continue throughout the life of the revetment or until the revetment is removed or replaced under a separate coastal development permit.

The Permittee shall undertake development in accordance with the approved monitoring program. Any proposed changes to the approved program shall be reported to the Executive Director. No changes to the program shall occur without a Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

4. **Future Maintenance.** The applicant shall maintain the riprap in its approved state. Any change in the design of the riprap or future additions or reinforcement beyond exempt maintenance, as defined in Section 13252 of Title 14 of the California Code of Regulations, to restore the structures to their original condition will require a coastal development permit. However, in all cases, if after inspection, it is apparent that repair and maintenance is necessary, the applicant shall contact the Executive Director to determine whether a coastal development permit or an amendment to this permit is legally required, and, if required, shall subsequently apply for a coastal development permit or permit amendment for the required maintenance.

5. **Assumption of Risk.** By acceptance of this permit, the applicant acknowledges and agrees to the following:

a) The applicant acknowledges and agrees that the site may be subject to hazards from liquefaction, storm waves, surges, erosion, landslide, flooding, and wildfire.

b) The applicant acknowledges and agrees to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development.

c) The applicant unconditionally waives any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards.

d) The applicant agrees to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

6. **Limits of Development.** This permit authorizes the repair and reinforcement of the artificial fill and riprap shoreline protection at the saltwater intake wells located within State Lease PRC 8330.1, as described in the project description of this staff report and as clarified and modified by these conditions. No fill beyond that described in the proposed project plans, within the footprint of the existing rock fill, shall be placed without additional CDP authorization from this Commission, including fill as a result of future repair or maintenance, enhancement, reinforcement, or any other activity affecting the existing shoreline protection structure. The following requirements shall also apply:

   A. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit, for the review and approval of the Executive Director, two copies of the Final Project Plans, substantially conforming with the plans, titled "Site Plans," and "PBGS Salt Water Well Survey", submitted to the Commission as a part of the CDP application, and demonstrating that no new riprap will be placed outside the footprint of the existing rock fill. The Plans shall be drawn to scale, shall include both plan and cross-sectional views, and shall identify the elevations, relative to NAVD88 or other recognized datum, of the toe and top of the new riprap along each cross-section.

   B. WITHIN 30 DAYS OF CONSTRUCTION COMPLETION, the Permittee shall submit to the Executive Director two copies of the As-Built Plans showing the final configuration of the project.

   C. Submitted plans shall be drawn to scale, shall include both plan and cross-sectional views, and shall identify the elevations, relative to NAVD88 or other recognized datum, of the toe and top of the new riprap along each cross-section.

7. **Garibaldi Protection.** To the extent feasible, project construction shall be scheduled outside of the breeding and spawning season for Garibaldi fish, beginning March 1 through July 31st. If scheduling outside of this period is not possible, prior to beginning project construction, and at the beginning of each work week until project completion or until July 31st, whichever comes first, the Permittee shall have a qualified biologist conduct a survey of the project site to determine presence of Garibaldi in any life stage. If the biologist determines that any Garibaldi breeding or spawning activity is occurring and/or that juvenile Garibaldi are present in or adjacent to the project site, then no project activities shall occur below the water line until after July 31st. The Permittee shall have the biologist prepare inspection reports after each Garibaldi survey, and shall provide copies of such reports to the Executive Director.

8. **Sensitive Species Protection.** PRIOR TO THE COMMENCEMENT OF CONSTRUCTION the Permittee shall prepare a Sensitive Species Protection Plan for review and approval by the Executive Director. The Permittee shall implement the Plan during all construction activities. The Plan shall include the following elements:

(a) Prior to the start of construction, the Permittee shall provide awareness training to all Project-related personnel on the types of sensitive marine and terrestrial wildlife that could be encountered in the Project area and the types of activities that have the most potential for adverse affecting the animals.

(b) A qualified biological observer shall be present at the project site during all project construction activities to monitor for the presence of sensitive marine and terrestrial species. The Plan shall identify any scenarios that require additional observers and, in these cases, make recommendations as to where they should be placed to ensure complete coverage of the surrounding marine and terrestrial environments.

(c) The observer(s) shall have the appropriate safety and monitoring equipment adequate to conduct their activities (including night-vision equipment, if applicable).

(d) The observer(s) shall have the authority to temporarily halt any project activity that could result in harm to a marine mammal other special status species, and to suspend those activities until the animals have left the area.

(e) For marine monitoring purposes, the observer(s) shall establish a 200-foot radius avoidance zone around the project site for the protection marine mammals (i.e., harbor seals and sea lions). The observer(s) shall closely monitor any marine mammal entering within the avoidance zone, and shall temporarily suspend any project activities which could result in harm to the animal until it has left the area. If any "take" involving harassment or harm to a marine mammal occurs, the observer shall immediately notify the Executive Director, NMFS and any other required regulatory agency.

(f) For terrestrial monitoring purposes, the observer(s) shall establish an avoidance zone that encompasses the entire active project construction site and no less than a 100-foot radius around the saltwater wells. If a sensitive species enters within the avoidance zone, the observer(s) shall temporarily suspend project construction activities until the animal has left the area.

(g) Within 72 hours of the commencement of construction, the biological observer(s) shall conduct a pre-construction survey of the project site and surrounding area for the presence of nesting birds and potential Island fox dens. If nesting birds and/or active fox dens are observed within the pre-defined avoidance zone, no construction may occur until nesting activity and den occupancy has ceased. If nesting birds or active fox dens are observed outside the avoidance zone but within the surrounding area, the nest and den sites shall be monitored during construction activities for signs of disturbance.

(h) The Plan shall include best management practices (BMPs) to discourage the use of the project site by Island foxes. The BMPS shall include, but are not limited to, proper disposal of all trash and debris, covering of all holes and water sources, and daily site inspections to (i) ensure that the work area does not contain areas where foxes could become trapped, and (ii) ascertain that no foxes were trapped overnight.

(i) A final report summarizing the results of monitoring activities shall be submitted to the Executive Director no more than 90 days following completion of project construction. The report shall include: (a) an evaluation of the effectiveness of monitoring protocols

and (b) reporting of (i) marine mammal and other wildlife sightings (species and numbers); (ii) any wildlife behavioral changes; and (iii) any project delays or cessation of operations due to the presence in the project area of sensitive wildlife species subject to protection.

9. **Stormwater Runoff and Erosion Control**. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit a Project-specific Stormwater Runoff and Erosion Control Plan to the Executive Director for review and approval. The Plan shall describe all structural and non-structural measures the Permittee will implement to avoid and minimize erosion and stormwater-related impacts during construction activities. The Plan shall identify measures the Permittee will implement to store and/or contain materials, soils, and debris originating from the project in a manner that precludes their uncontrolled entry and dispersion into nearby waters or habitat areas. Any debris that inadvertently enters coastal waters or waters shall be removed immediately. The Plan will identify Best Management Practices (BMPs) that will be implemented during project activities to prevent erosion and excessive sedimentation and to protect coastal waters and upland habitats from stormwater runoff associated with project activities.

10. **Spill Prevention and Response.** PRIOR TO THE COMMENCMENT OF CONSTRUCTION, the Permittee shall submit a Project-specific Spill Prevention and Response Plan to the Executive Director for review and approval. The applicant and its contractors shall be trained in and adhere to the emergency procedures and spill prevention and response measures specified in the Plan during all project operations. The Plan shall include, at a minimum: 1) preventative measures the Permittee will implement to avoid spills of oil, fuel or other hazardous materials; 2) response and contingency measures that will be implemented in the event of a spill or leak; 3) identification of the location of spill response equipment and response times for deployment; 4) identification of the worst-case spill scenario and demonstration that adequate spill response equipment will be available on-site.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

Background

Southern California Edison (SCE) owns and operates the Pebbly Beach Generating Station (PBGS) on the eastern shore of Catalina Island, approximately one mile south of the City of Avalon (**Exhibit 1**). The PBGS provides single source power generation for Catalina Island as well as a local storage site for gas that is supplied through Catalina Island's gas distribution network. SCE also operates a desalination plant at the PBGS to supplement surface and ground water sources for Catalina Island.

The Pebbly Beach desalination plant was authorized by the Commission under CDP No. E-89-003 in September of 1989, and was constructed in 1990. As originally constructed, the plant was supplied by wells located within the PBGS grounds, drawing saltwater from the shallow, saline aquifer underlying the Pebbly Beach area. After an extended period of disuse during the 1990s, when a series of wet winters bolstered the island water supply and eliminated the need for

desalinated water, SCE restarted the plant in 2003. At this time, SCE also replaced the existing intake wells, which were discovered to have been contaminated with benzene, MTBE and other contaminants resulting from past leaks and diesel-generation operations in and around PBGS. The new intake wells were constructed at a site approximately one mile south of the PBGS, near the Connolly-Pacific "East End Quarry" operation at Jewfish Point (**Exhibit 1**). The Commission authorized the construction of the new supply wells (and associated water line and electrical equipment) under CDP waiver No. 5-02-155-W. In June 2015, in the midst of worsening drought conditions, the Commission approved a CDP amendment (No. E-89-003-A1) allowing SCE to install a secondary desalination unit capable of extracting additional fresh water from the discharge brine of the existing facility. This retrofit increased the fresh water production capacity of the plant by approximately 150,000 gallons per day (GPD), from 202,000 to 350,000 GPD, without increasing the amount of salt water drawn from the intake wells.

Depending on the season and the availability of other surface and groundwater supplies, the Pebbly Beach desalination facility provides up to 80% of the water supply for the City of Avalon. The importance of the desalination plant is magnified during periods of drought, when other rainfall-dependent water sources are reduced. SCE reports that the Island's primary reservoir was at just 11% of capacity as of September 2016; the City of Avalon is currently under Stage 3 rationing, which requires 40-50% reductions in water usage. Thus, the continued viability of the saltwater intake wells is of particular importance under present conditions.

Existing Conditions

The existing saltwater intake wells were installed in 2002 on an artificial bluff within previously-filled state tidelands (**Exhibit 2**). The twin wells, which were drilled to a depth of approximately 75 feet below ground, are set within a 10-foot by 22-foot concrete pad and surrounded by an 8-foot high chain link fence. The well pad lies approximately five feet from the edge of the fill slope, at an elevation of approximately 24 feet above the North American Vertical Datum of 1988 (NAVD88), which at this location, during the current tidal epoch, is approximately nine below the mean higher high water (MHHW) level (**Exhibit 5**).

The present shoreline configuration at the project site is the result of approximately 80 years of quarry operations. Beginning in the 1930s, rock, gravel and sand derived from the quarry were placed over the natural shoreline and in state tidelands, creating a wedge of fill over a seaward-sloping bedrock surface (see **Exhibit 4**). At the project site, fill was placed in order to create a level surface for an access road, parking lot, entry gate, offices and shops associated with the quarry operation. The composition of the fill area is variable, but in general appears to consist of a thick layer of rocks, boulders and cobbles within a sand matrix, overlain by a thinner layer consisting primarily of sand and gravel. A schematic cross-section of the fill wedge in the area of the saltwater wells is shown in **Exhibit 4**, p. 2; the layering of the fill is also apparent in photographs of the erosion areas shown in **Exhibit 3**. The amount and elevation of exposed fill rock along the shoreline also varies. On shoreline in front of the intake wells, the rock fill appears to extend from below -15 feet NAVD88 to an elevation of approximately +10 feet NAVD88, at or above the mean higher high water level (MHHW). The shoreline rock is thought to be contiguous with and an extension of the fill materials further inland, but has, in effect, functioned as a riprap revetment protecting the saltwater wells and other inland structures.

Existing Danger from Erosion
On August 27, 2014, ten to twelve foot waves associated with Hurricane Marie, a Category 5 Pacific hurricane which caused extreme high waves from Central America to Southern California, struck the southeastern shore of Catalina Island. The storm waves resulted in extensive erosion damage of the fill and riprap immediately adjacent to the saltwater wells. SCE's *Site Inspection Report and Erosion Damage Mitigation Recommendations* (SCE 2015) describes two major erosion areas on either side of the well pad site (see **Exhibits 3** and **5**). Within the larger of the two failure areas, a 20-foot thick layer of unconsolidated sand, gravel and smaller rocks and cobbles was removed, and the resulting void extends approximately 40 feet inland from the former shoreline. At present, the edge of the well pad lies approximately 10 feet from the edge of the larger, eastern eroded area, and about 25 feet from the western eroded area. The *Site Inspection Report* notes that the loose, unconsolidated sands, gravels and cobbles making up the upper portions of the fill slope are highly susceptible to erosion, and that the near vertical scarps of the recently eroded areas are unstable and could erode further even in the absence of large waves (e.g., due to gravity or surface runoff). Waves of similar magnitude to the August 2014 event, such as could occur during another East Pacific hurricane, have the potential to result in additional erosion and slope failure that could undermine the saltwater intake wells and render them inoperable. Although large hurricanes and tropical storms producing waves that affect the east side of Catalina Island are relatively rare, there have been two such events in past 20 years (Van Horsen 2016), and others are highly likely to occur in the future. Additionally, some modeling studies suggest that global warming could result in an increased frequency of large El Niño events (Cai et al. 2015), which, based on the historical association between El Niño and East Pacific hurricanes, could result in a higher incidence of hurricane-related impacts in Southern California (P. Barnard, USGS, pers. comm.).

Proposed Project
SCE proposes to protect the salt water well field from future high wave events by installing approximately 1,225 tons (817 cubic yards) of riprap material along eroded portions of the artificial fill and riprap (**Exhibit 5**). Most of the new riprap would be placed within two large eroded areas on either side of the well pad; the area immediately in front of the wells, which suffered only minor damage during the storm, would also be reinforced with new rock.

Prior to rock placement, all sharp and pointed rocks would be leveled or removed. At least one layer of durable, non-woven filter fabric would be placed along the eroded areas and anchored at the top of the slope. Sand bags would be placed over the fabric to eliminate voids between the fabric and the underlying fill slope. The eroded areas would then be filled with core stones (8 to 10 inch diameter boulders with at least 30% 24-inch boulders) and then capped with 4- to 5-foot diameter armor rocks (**Exhibit 5**). The rocks would be placed individually using heavy equipment (crane, clam-shell or other suitable machinery) situated at the top of the slope. No dumping of rocks would occur, and no heavy equipment would be operated within intertidal or marine areas. Open joints between the rocks would be filled with spalls, and the top of the reconstructed slope in the eroded areas would be capped with an 18-inch layer of cement grout. The new riprap would be sourced from the adjacent quarry, and all needed equipment and other materials are already available at the quarry. No additional staging areas would be needed.

The riprap would be placed on top of a "floor" of existing rock fill, within the footprint of the pre-existing fill slope. The new riprap would extend from below the mean high tide to the top of the slope at +24 feet NAVD88 (**Exhibit 5**). The new riprap would extend to higher elevations than in the pre-existing structure, essentially replacing sandy fill with rock. SCE estimates that 281 cubic yards of the new riprap would be below the highest astronomical tide mark (about +11.2 feet NAVD88), with the remainder at higher elevations. With the proposed repairs, SCE estimates that the life of the shoreline protection structures at the well site would be approximately 50 years.

Project construction would begin immediately upon receiving the necessary permits and approvals (see Section IV.B, below), mostly likely between December 2016 and March 2017. SCE expects to complete the work within approximately three weeks.

B. Other Agency Approvals

California State Lands Commission

SCE currently holds a lease from the California State Lands Commission (CSLC) for the use of state tidelands, encompassing the existing saltwater well field (Lease No. PRC 8330.1). The current lease expires on June 30, 2022. On December 22, 2015, SCE applied for an amendment to the existing lease that would cover the proposed project (**Exhibit 2**). CSLC staff is currently reviewing SCE's lease amendment application, and has stated its intention to act on the application after the Coastal Commission has approved the subject CDP.

Los Angeles Regional Water Quality Control Board (RWQCB)

The RWQCB regulates pollutant discharges into receiving waters in the project area. On October 19, 2016, the RWQCB issued a Clean Water Act Section 401 Water Quality Certification for the proposed project.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (ACOE) has regulatory authority over the proposed project under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344). On September 28, 2016, the ACOE conditionally certified the proposed project under Nationwide Permit No. 13 (Bank Stabilization), contingent upon the issuance of a Coastal Zone Management Act (CZMA) consistency certification. Pursuant to Section 307(c)(3)(A) of the CZMA, any applicant for a required federal permit to conduct an activity affecting any land or water use or natural resource in the coastal zone must obtain the Commission's concurrence in a certification to the permitting agency that the project will be conducted consistent with California's approved coastal management program. The subject coastal development permit (9-16-0490) will serve as Commission review of the project under the CZMA.

C. Project Alternatives

As part of its proposal, and in response to Commission staff queries, SCE evaluated several alternatives to the proposed project. These included the following: (a) relocating the saltwater intake wells to a different location; (b) replacing the saltwater wells with an alternative seawater intake technology; (c) constructing a different shoreline protective device, such as a concrete seawall, to protect the wells from erosion; and (d) a no action alternative.

Relocation Alternatives
Based on information submitted by SCE in its CDP application, the number of potential sites for relocating the saltwater wells within a reasonable distance of the existing desalination plant is extremely limited, in large part due to the rugged topography and geological characteristics of the project vicinity. Along the entire southeastern shore of Catalina Island, there are only three flat, coastal locations underlain by unconsolidated, permeable sediments supporting a shallow surficial aquifer with direct hydraulic connectivity to the ocean (Van Horsen 2016). Two miles north of the project site, the City of Avalon is underlain by Quaternary alluvium and beach deposits which may contain shallow, saline groundwater. However, even if the hydrogeology proved to be favorable, the Avalon shoreline is heavily developed and supports many private and public uses that could be adversely affected by the construction of new intake wells. It is likely that, even if determined to be feasible, locating intake wells in Avalon would have greater impacts on coastal resources (e.g., public access, recreation, visual resources) than the proposed project.

The second potential location, at Pebbly Beach, was the original site of the saltwater intake wells when the desalination plant was first constructed in the early 1990s. However, as noted above, the saltwater wells were relocated in 2002 due to the discovery of extensive hydrocarbon groundwater contamination at the original well site. In its alternatives analysis (SCE 2016b), SCE states:

> *After over 15 years of active and passive remediation … there is still dissolved MTBE, TAME, TBA, and LNAPL free product detected [i]n the water table across the entire Pebbly Beach coastal region … Though significant improvement has resulted during remediation, water from the Pebbly Beach aquifer contains this contamination and therefore would not be suitable for groundwater beneficial uses.*

Due to the existing groundwater contamination at the Pebbly Beach site and the incomplete status of remediation efforts, relocating the saltwater intake wells to this site is not a feasible alternative.

The third relocation alternative would be to move the wells further inland on the narrow coastal plain adjacent to the current well site. Like Pebbly Beach, the Jewfish Point area is underlain by recent beach deposits, slope alluvium, and/or unconsolidated fill materials (Van Horsen 2016), and the surficial aquifer here has proven to have sufficient connectivity to the ocean to support the existing wells for over a decade. However, as in Avalon and Pebbly Beach, the area is significantly constrained by existing development, most notably the active quarry operation (i.e., excavated areas, heavy equipment operations, leach fields, fuel tanks) occupying all of the southern portion of the site. The presence of the access road and several Connolly-Pacific buildings immediately inland of the existing wells would also limit potential new well locations. Even if a suitable inland location could be found (such as within the parking areas across the access road from the existing wells), SCE reports that subsurface conditions would likely make an inland well infeasible (SCE 2016b). As shown by the drilling logs compiled during the installation of the existing wells, the productive zone even at the existing well site is relatively narrow, consisting of only 12 - 15 feet of rock, cobble, and sand fill before hitting impermeable

bedrock (Thor 2002). Due to the slope of the underlying bedrock at the site, the layer of fill and alluvium falling below sea level (which defines the productive zone) narrows moving inland, significantly reducing the potential of achieving productive saltwater intake from inland wells (see **Exhibit 4**). Based on these constraints, relocating the saltwater intake wells inland at the current site is a not a feasible alternative.

Alternative Intake Technology
Technological alternatives to the existing saltwater wells include the construction of alternative intakes to convey seawater to the desalination facility. These could take the form of open ocean screened intakes and/or subsurface intakes beneath the seafloor, each of which could supply seawater to the desalination plant while eliminating the need for the existing wells, and thus the proposed project. However, the open intake alternative would have substantially greater environmental impacts, particularly on marine habitats and organisms, than the proposed project. Open water intakes are known to entrain large numbers of marine organisms, including phytoplankton, zooplankton, fish eggs, and larvae, with cascading effects on marine food chains and ecosystems. Open intake construction would also result in the fill of coastal waters and the disturbance of seafloor habitats. A subsurface intake would not result in operational impacts such as entrainment, but depending on the type of subsurface intake used, could result in construction-related impacts. For example a beach intake gallery or seafloor intake gallery would result in disturbance of the seafloor, which in this area includes areas of more sensitive hard bottom and rocky habitat. These habitat features suggest that other subsurface intake options, such as a slant well or horizontal directionally-drilled ("HDD") well may not be feasible due to the presence of subsurface rocky structures and limited subsurface permeability. Consequently, using an alternative intake at this location would likely either be infeasible or would result in greater adverse environmental effects. Based on these considerations, the proposed project is environmentally superior to these alternatives.

Shoreline Protection Alternatives
Installing an alternative shoreline protective device, such as a sheet pile or concrete seawall, to protect the saltwater intake wells from wave impacts and erosion would likely be feasible. However, these structural alternatives would not result in lesser environmental impacts, and might, depending on construction requirements, result in greater impacts, than the proposed project. The construction of a vertical seawall at the project site would likely require the removal and disposal of some of the existing rock fill, as well as the construction of a stable foundation, either of which may require the use of heavy equipment in the intertidal zone, with potentially significant effects on seafloor habitats. Even if seawall construction could be carried out from the top of the fill slope, it would not result in reduced environmental effects in comparison to the proposed project because the project does not involve any additional encroachment upon seafloor habitats. SCE may replace the rip-rap with a seawall in the future due to rising sea level and climate change, but does not believe that a new structure is necessary at this time. Thus, a seawall alternative would not be environmentally superior to the proposed project.

No Project Alternative
SCE considered a "no project" alternative, however, as discussed above, this would allow the continued deterioration of the fill slope and riprap and expose the wells to erosion and damage

during future high wave events. This could require the desalination facility to cease operations, potentially endangering a major component of the water supply for the City of Avalon.

Based on these considerations, the Commission finds that the proposed project is necessary to protect the existing threatened structures, and that the proposed project would be the least environmentally-damaging feasible alternative.

D. HAZARDS & SHORELINE PROCESSES

Coastal Act Section 30253 states, in relevant part:

> *New development shall do all of the following:*
>
> *(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

The proposed project is intended to repair and reinforce an existing artificial fill slope and riprap revetment that were significantly damaged and eroded by extreme high waves associated with Hurricane Marie in August of 2014. Approximately 1225 tons (817 cubic yards) of new riprap sourced from the nearby East End Quarry will be placed within two eroded areas on either side of the existing saltwater intake well pad, and in other, smaller areas in front of the well pad where the fill slope and revetment were weakened (**Exhibit 5**). The placement of rip-rap will not contribute to erosion or geologic instability of the shoreline or nearshore zone, but will instead serve to protect against further erosion of the artificial fill and undermining of the saltwater intake wells supplying the Pebbly Beach Desalination Plant. Because there is no extant beach at the project site, and because placement of riprap will occur from the top of the fill slope and no equipment will be used in the intertidal zone, no adverse changes to natural shoreline features or the seafloor will result. In addition, the coastal bluffs up- and down-shore of the project site will not be altered and the geologic stability of bluff areas will be maintained.

SCE states in its hazards assessment (Van Horsen 2016, as revised by SCE 2016c) that the project -- in terms of fill height, slope and rock size -- has been designed to take into account the current range of wave conditions at the site and future sea level rise over the projected 50-year design life of the riprap repairs. The maximum wave height estimated for the project site is on the order of 12 feet, based on observations during hurricane-related high wave events in 1997 and 2014. A high wave event of this magnitude occurring during an average high tide (MHHW = +8.9 feet NAVD88) could result in wave run-up to an elevation of approximately +20 feet NAVD88 at the project site.[1] During an extreme high tide event (+11.2 feet NAVD88, 1% annual probability of exceedance), wave runup could reach approximately +22 feet NAVD88. To evaluate future sea level rise, SCE applies a long-term historical average rate from Los Angeles

[1] Based on site characteristics, SCE has estimated a site-specific wave runup coefficient of 0.93 times the deepwater wave height (Van Horsen 2016).

Harbor of + 1 mm/year, yielding an estimate of two inches of sea level rise over the 50-year life of the proposed repairs. This approach neglects both the documented acceleration in sea level rise in recent decades (e.g., Watson et al. 2015) and the consensus that future rates of sea level rise will greatly exceed historical rates (NRC 2012). Following the Commission's adopted Sea Level Rise Policy Guidance, which recommends the use of the sea level rise projections contained in the 2012 National Research Council report *Sea-Level Rise for the Coasts of California, Oregon and Washington: Past, Present, and Future*, staff estimates that sea level could rise by 7 – 36 inches (0.6 – 3 feet) by 2066. Under a high scenario of sea level rise, combined with extreme high tide water level and an extreme wave event, maximum wave runup at the project site during its 50-year design life could exceed +25 feet NAVD88, which would overtop the riprap and fill slope. These calculations highlight the fact that the project site will continue to be vulnerable to high water levels and extreme wave conditions that have the potential to cause further structural damage to the fill slope and riprap revetment, potentially threatening the stability of the well pad and the functionality of the intake wells.

In order to assure the stability and structural integrity of the proposed project, and minimize the risk of future damage and erosion due to high wave events, the Commission is including the following special conditions: (a) **Special Condition 3**, which requires SCE to develop and implement a long-term monitoring plan to periodically inspect the fill slope and riprap, and identify damage or changes to these structures requiring maintenance and repair; and (b) **Special Condition 4**, which requires SCE to maintain the project structures in their approved state.

The Commission is also requiring in **Special Condition 5** that by accepting this permit the applicant (a) acknowledges and agrees that the site may be subject to hazards from liquefaction, storm waves, surges, erosion, landslide, flooding, and wildfire; (b) acknowledges and agrees to assume the risks to the applicant and the property of injury and damage from such hazards in connection with this permitted development; (c) unconditionally waives any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (d) agrees to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

Shoreline Processes & Landforms

As described previously, the existing shoreline at the project site consists entirely of artificial fill, deposited on top of the natural shoreline and into state tidelands over the course of several decades. The position of the natural shoreline relative to the existing, artificial shoreline is unknown, but at the project site, a 100 to 200 foot wide flat area of fill and slope alluvium separates the natural slope (which has itself been cut and altered in many places) from the shore. As a result, natural shoreline processes have been halted at this location. The proposed placement of new riprap would fill several eroded areas in the existing fill and reinforce the basal layer of rock fill that functions as a shoreline revetment, but would not independently prevent natural bluff erosion and the addition of bluff-derived sand to the littoral cell. Thus, on its own, the project would not interfere with natural shoreline processes to the detriment of the site or surrounding area, or alter natural landforms along bluffs and cliffs.

However, the placement of new riprap would prevent or slow the erosion of the artificial fill covering the natural shoreline, and thus over the long-term, would prevent or delay the resumption of natural shoreline processes if the proposed project were permitted to remain in place beyond the period it is needed to protect the existing saltwater intake wells. In the future, it is conceivable that the saltwater wells will be relocated or removed, the existing quarry closed, and the site restored. Under this scenario, the presence of the proposed project would interfere with the restoration of the natural coastline. It would alter the natural evolution of the cliffs immediately behind the filled area, and would prevent sand and sediment from the natural erosion of these cliffs from entering the local littoral cell, with potential indirect effects on nearby shorelines.

In order to assure that the proposed project does not result in future adverse impacts to natural shoreline processes and landforms, the Commission is including **Special Condition 2**, which limits the term of this CDP to the life of the existing saltwater wells, and requires SCE to apply for a new CDP or CDP amendment to remove the proposed shoreline protection structures when the wells and associated structures are no longer present or no longer require protection.

As designed and conditioned, the Commission finds that the proposed project is consistent with Coastal Act Section 30253.

E. MARINE RESOURCES AND WATER QUALITY

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Coastal Act Section 30232 states:

> *Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

SCE proposes to reinforce and repair an existing riprap revetment and fill slope that was substantially eroded during a high wave event in August 2014. The repairs would include the placement of new riprap in two large voids in the fill slope, as well as reinforcement of intact but damaged portions of the existing revetment along a 115-foot stretch of shoreline. Construction activities, including the use of heavy equipment at the top of the fill slope and the placement of riprap in coastal waters below the mean high tide line, have the potential to adversely affect several marine resources, including intertidal species and habitats, marine wildlife, and water quality.

Seafloor Habitats
Previous surveys have identified a number of sensitive marine habitats along the southeastern shore of Catalina Island, including kelp forest, eelgrass beds, and rocky seafloor (e.g., De Wit 2004; Tennant 2007). As shown in **Exhibit 2**, a strip of kelp and/or other marine macroalgae occurs immediately offshore of the saltwater well site, and both natural and artificially-placed hard substrate habitats occur along the shore at this location. The placement of new riprap in these areas could bury, damage or disturb sensitive marine habitats and the species that depend on them. However, SCE has stated that the proposed placement of new riprap would occur only on top of existing riprap, within the footprint of the pre-existing revetment and fill slope (**Exhibit 5**), and that no new areas of seafloor habitat would be filled. A recent biological survey indicate that no kelp or significant marine vegetation occur within the intact or eroded areas of the revetment (Keane Biological Consulting (KBC) 2016), but that the existing riprap is encrusted with barnacles and other benthic invertebrates common to the upper intertidal and splash zones. The proposed placement of riprap would result in the burial of some artificial rocky intertidal habitat within the eroded areas, but would also provide new substrate for intertidal organisms to recolonize from surrounding areas.

In order to assure that no new encroachment onto sensitive seafloor habitats occurs as a result of the proposed project, the Commission is including **Special Condition 6**, which prohibits the placement of new riprap outside of the footprint of the pre-existing rock fill, and further, requires SCE to submit, prior to project construction, final project plans documenting the locations and elevations of the existing rock fill and demonstrating that the new riprap would be placed within the existing footprint. No fill beyond that described in the project plans, within the footprint of the existing rock fill, shall be placed without additional CDP authorization. In addition, the Commission is including **Special Conditions 3**, which requires SCE to develop and implement a long-term plan to monitor the status and condition of the riprap and identify needed maintenance, and **Special Condition 4**, which requires SCE to maintain the riprap in its permitted state. Taken together, these special conditions will minimize the potential for the proposed riprap fill to encroach onto seafloor habitats over the life of the project.

Marine Wildlife
SCE's biological resources assessment (KBC 2016) did not provide detailed information on fish species occurring in the project area. However, a previous surveys of the riprap shoreline about a mile north of the project site, at Pebbly Beach, observed Garibaldi (*Hypsypops rubicundus*), a state protected fish that lives in shallow, rocky shoreline habitats, in and around the riprap (Padre Associates 2004; Tennant 2007). These surveys also noted the presence of kelp bass, senorita,

and other fish in nearshore waters adjacent to the revetment. Being mobile, adult Garibaldi and other fish species are expected to avoid the project area during construction, and thus are not likely to be affected by the placement of the new riprap along the shoreline. However, if the riprap were placed during the breeding season (March through July), young Garibaldi that take refuge in the interstitial spaces of the existing rocks could be affected. SCE proposes to carry out the project over the course of approximately three weeks between December 2016 and March 2017. If the project were conducted during the latter part of this time window, or if the project were delayed, riprap placement could overlap with the Garibaldi breeding season. In order protect Garibaldi during the sensitive juvenile life stages, the Commission is including **Special Condition 7**, which requires SCE to avoid project activities during the Garibaldi breeding season, from the beginning of March through the end of July, to the maximum extent feasible. If work during this period becomes necessary, SCE shall retain a qualified marine biologist to conduct pre-construction surveys (once per week, while project activities continue) of the project area to determine the presence Garibaldi. If breeding or spawning activity is observed, or if juvenile Garibaldi are found to occur within the project area, no project activities below the water line may occur until after the end of the breeding season.

Seal Rocks, the site of well-known harbor seal (*Phoca vitulina*) and California sea lion (*Zalophys californianus*) rookeries, is located approximately 1.2 miles south of the project site. Breeding for these marine mammals generally occurs between May and August. Due to the proximity of Seal Rocks, harbor seals and sea lions are likely to be present in or near the project area during construction.[2] In order to avoid the potential for the harm or harassment of these protected species, the Commission is including **Special Condition 8**, which requires SCE to develop and implement a Sensitive Species Protection Plan, including measures to protection marine mammal species that may occur in the project area. Specifically, the Plan must provide for the establishment of a 200-foot radius marine safety zone around the project site that will monitored for the presence of marine mammals by a qualified marine observer, who shall have the authority to temporarily suspend project activities in the event that a marine mammal enters the safety zone and is at risk of harm. Noise generated by project activities (e.g., heavy equipment operation, rock placement) may result in temporary avoidance of the area by marine mammals, but would not be of great enough intensity to injure individual animals or to disturb the Seal Rocks rookeries.

A number of seabird species, including western gulls and double-breasted cormorants, are known to inhabit the project vicinity (Tennant 2007) and may use areas offshore the project site for foraging. The project site itself does not provide suitable habitat for seabird nesting, and no known seabird nesting sites occur in the project vicinity. Noise created during the operation of heavy equipment and the placement of riprap could discourage the use of the site by seabirds, but this effect would be temporary and would cease upon project completion. As described below in Section IV.E, **Special Condition 8** requires SCE to conduct pre-construction surveys for nesting birds within the project area, and to delay the start of construction until after the nesting season if active nests are found. These measures will ensure that adverse impacts to nesting seabirds are avoided.

[2] A single California sea lion was observed approximately 200 feet offshore of the project site during the September 2016 biological survey (KBC 2016).

Water Quality

The proposed project would occur in and adjacent to the open coastal waters of the Gulf of Santa Catalina, and could adversely affect water quality and marine biota as a result of increased erosion and sedimentation related to construction activities and the accidental release of oil, fuel or other hazardous materials from project vehicles and equipment. The operation of heavy equipment and vehicles on the bare ground of the artificial fill adjacent to the project has the potential to result in increased erosion and the discharge of sediments to coastal waters, particularly during storm water runoff. SCE has received a Section 401 Water Quality Certification from the Los Angeles Regional Water Quality Control Board that will address potential water quality impacts from the project. To further ensure that impacts associated with stormwater runoff and erosion are minimized, **Special Condition 9** requires SCE to submit a Stormwater Runoff and Erosion Control Plan to the Executive Director for review and approval that identifies Best Management Practices to control erosion and stormwater runoff from the project site.

The proposed project involves the use of vehicles and heavy equipment (e.g., loader, excavator, crane, concrete truck, pumps) during the placement of new riprap and pouring of concrete, presenting a risk of the accidental discharge or spill of oil, fuel, or other hazardous substances that, if allowed to reach the ocean, could harm coastal water quality or marine organisms. In its CDP application materials, SCE proposed several best management practices (BMPs) to prevent and minimize the potential for oil and hazardous substance spills. These BMPS included preventative steps such as regular maintenance and inspection of project vehicles and equipment, the use of drip pans beneath project equipment, and the storage of fuels and hazardous chemicals within secondary containment away from the shoreline. SCE also indicated that vehicle and equipment refueling would occur at least 100 feet from the shoreline, at the site of the active quarry operation. However, SCE did not describe how it would respond to and minimize any spills that do occur. In order to minimize the potential for accidental spills or leaks, and to assure that any spills that do occur are properly mitigated, the Commission is including **Special Condition 10**, which requires SCE to submit, for the review and approval of the Executive Director, a project-specific Spill Prevention and Response Plan (SPRP). In addition to listing the BMPs that will be implemented to minimize the risk of spills and leaks, the SPRP shall describe procedures for responding to leaks or spills, identify the locations of spill response equipment, identify worst-case spill scenarios and demonstrate that adequate spill response equipment is available for each, and include a plan for training workers in spill prevention and response.

Conclusion

For the reasons discussed above, the Commission finds that the proposed project, as conditioned by **Special Conditions 3 - 10**, will be carried out in a manner that maintains marine resources and sustains the biological productivity and quality of coastal waters and protects against the spillage of hazardous substances into the marine environment, and is therefore consistent with Coastal Act Sections 30230, 30231 and 30232.

F. ENVIRONMENTALLY SENSITIVE HABITAT AREAS & SENSITIVE SPECIES

Coastal Act Section 30240 states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption or habitat values, and only uses dependent on those resources shall be allowed in those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitats and recreation areas.*

The saltwater well site and project work area is located on an unvegetated shoreline bluff composed of artificial fill materials, and is immediately adjacent to support facilities for a large quarry operation, including parking areas, an access road, and several buildings (**Exhibit 2**). The immediate project area is largely devoid of terrestrial vegetation; only a few non-native weeds were found within the work area during a September 2016 biological survey (Keane Biological Consulting (KBC) 2016). Several areas of sensitive vegetation, including coastal sage scrub and island chaparral, occur on the slopes inland of the project site, but are at least 150 feet away from the well pad. Two federally-listed, endangered wildlife species, the bald eagle (*Haliaeetus leucocephalus*) and the Santa Catalina Island fox (*Urocyon littoralis catalinae*) have the potential to occur on or near the project site (KBC 2016). Two known bald eagle nesting locations occur approximately 1.3 and 2 miles from the project site, both of which are likely to be active during the breeding season (February through July). Bald eagles could also traverse the project area during foraging or dispersal. Other nesting birds protected by the Migratory Bird Treaty Act may also occur in the project vicinity. The developed and largely barren areas immediately surrounding the project site do not provide suitable habitat for the Island fox, but there is some potential that individual foxes (which are known to be highly curious) could enter the work area, particularly at night, and be exposed to harm during construction activities.

In order to avoid the potential for injury to or disturbance of listed species and nesting birds, the Commission is including **Special Condition 8**, which requires SCE to develop and implement a Sensitive Species Protection Plan, and incorporates into this permit the recommendations of SCE's biological consultant (see KBC 2016) as well as other protective measures. The Plan, to be submitted to the Executive Director for review and approval prior to the start of construction, shall include the following provisions to protect sensitive terrestrial species: (1) appointment of a qualified biologist to oversee the implementation of the Plan, and with the authority to halt construction if wildlife are in danger of harm; (2) a pre-construction surveys of the project site and surrounding area to ensure that (i) bald eagle, Island fox and nesting birds are not present, and (ii) no potential Island fox dens are present on the project site; (4) BMPs to discourage use of the site by foxes; (5) daily site inspections to ensure that the workspace is left without any areas where foxes could get trapped; and (6) on-site monitoring during construction activities to prevent harm to any sensitive species entering the construction area. With the implementation of these measures, the potential for impacts to sensitive terrestrial wildlife species would be minimized.

As conditioned, the Commission finds that the proposed project will avoid significant disruption of environmentally sensitive habitat areas and species, and is thus consistent with Coastal Act Section 30240.

G. PUBLIC ACCESS, RECREATION AND VISUAL RESOURCES

Coastal Act Section 30210 states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act Section 30220 states:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Coastal Act Section 30221 states in part:

> *Oceanfront land suitable for recreational use shall be protected for recreational use and development …*

Coastal Act Section 30251 states:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

Public Access and Recreation

The proposed project site is located at the extreme southeastern end of Catalina Island, along a private dirt road ("Dump Road") leading to the East End Quarry. The shoreline in the project area is composed of artificial fill and riprap, with little or no sandy beach. As a result of these factors, public use of the area is extremely limited, with no onshore recreational activities available. Recreational boating and fishing may occur offshore of the project site, and nearby Jewfish Point and the East End are recognized locations for recreational diving.

As shown in **Exhibit 5**, the new riprap would be placed primarily above the mean high water mark within eroded areas of the pre-existing fill, and would not extend the footprint of the fill/revetment farther seaward. Furthermore, as previously conditioned, the placement of new riprap on the pre-existing fill shoreline would not result in additional beach encroachment, hinder natural bluff erosion, or reduce shoreline sand supply, and thus would not directly or indirectly impact beach recreation at the site or in the surrounding area. Heavy equipment used in placing the new rock would be operated from the top of the bluff; no offshore activities are proposed that would interfere with boating, diving or other marine recreation in the area.

Visual Resources and Alteration of Natural Landforms
The proposed project would result in the expansion of the existing shoreline revetment at the project site, primarily through the placement of new riprap within eroded areas in the shoreline on either side of the seawater intake wells. However, because the shoreline at this location consists entirely of artificial fill, no natural landforms will be altered during construction. As discussed above in Section IV.D, over the long-term, the presence of shoreline protective structures at the project site could impede the restoration of natural shoreline processes at this heavily-altered site, and thus interfere with the natural evolution of landforms (cliffs, bluffs) that lie behind the areas of artificial fill. **Special Condition 2**, which limits the term of this CDP to the life of the existing saltwater wells, and requires SCE to apply for a new CDP or CDP amendment to remove the proposed shoreline protection structures when the saltwater wells and associated structures are no longer present or no longer require protection, would ensure that no such long-term impacts would occur.

The riprap used in the proposed repairs will be sourced from the adjacent East End Quarry, and thus will be very similar, if not identical, in color and quality to the existing rock and fill at the site. As a result, the new riprap will be visually compatible with the existing revetment and artificial fill, and will not substantially alter views to and along the shoreline in the project area.

Conclusion
For these reasons, the Commission finds that the proposed project, as conditioned, would be consistent with the public access, recreation and visual resources policies of the Coastal Act.

H. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096 of Title 14 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The preceding coastal development permit findings discuss the relevant coastal resource issues with the proposal related to the protection of marine resources and public access, and the permit conditions identify appropriate modifications to avoid and/or lessen any potential for adverse impacts to said resources.

As such, there are no additional feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse environmental effects which approval of the proposed project, as conditioned, would have on the environment within the meaning of CEQA. Thus, if so conditioned, the proposed project will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A)

Appendix A: Substantive File Documents

***Coastal Development Permits and Application Materials**:*

Adopted Findings for Coastal Development Permit No. E-89-003

Adopted Findings for Coastal Development Permit No. E-07-007

Application and Application File for Coastal Development Permit No. 9-16-0490

Coastal Development Permit Immaterial Amendment No. E-89-003-A1

Coastal Development Permit De Minimis Waiver No. 5-02-155-W

Key Correspondence:

Southern California Edison (2016a). Letter from X. Ouyang, SCE, to J. Street, CCC, "Re: Coastal Development Permit Application #9-16-0490 – Catalina Island Quarry Seawater Wells RipRap Repair Project," November 8, 2016.

Southern California Edison (2016b). Letter from X. Ouyang, SCE, to J. Street, CCC, "Re: Coastal Development Permit Application #9-16-0490 – Catalina Island Quarry Seawater Wells RipRap Repair Project," November 10, 2016.

Southern California Edison (2016c). E-mail from X. Ouyang, SCE, to J. Street, CCC "RE: Coastal Development Permit Application #9-16-490 – Catalina Island Quarry Seawater Wells RipRap Repair Project 2nd Data Request Response", November 13, 2016.

Other References & Resources:

Cai, W., A. Santoso, G. Wang, S.-W. Yeh, S.-I. An, K. Cobb, M. Collins, E. Guilyardi, F.-F. Jin, J.-S. Kug, M. Lengaigne, M.J. McPhaden, K. Takahashi, A. Timmermann, G. Vecchi, M. Watanabe and L. Wu (2015). ENSO and greenhouse warming. *Nature Geoscience* DOI: 10.1038/NCLIMATE2743

California Coastal Commission (2015). *California Coastal Commission Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits*. Adopted August 12, 2015.

Keane Biological Consulting (KBC) (2016). *Habitat Assessment, Catalina Quarry Seawater Wells Riprap Repair Project*. Prepared for Southern California Edison, September 15, 2016.

National Research Council (NRC) (2012). *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. The National Academy Press, Washington, D.C., 202 pp.

Thor, D. (2002). Well #1 and #2 Borehole Logs, Pebbly Beach Saltwater Wells, [Parsons Geological Consulting], November 19, 2002.

Phan, C. (2015). *PBGS Salt Water Well Survey Plan-View and Cross-Sections*, Connolly Pacific Co. Marine Contractors, October 5, 2015.

Southern California Edison (2015). *Site Inspection Report and Erosion Damage Mitigation Recommendations, Salt Water Well at Quarry, Pebbly Beach Generating Station*. Prepared by the SCE Power Production Engineering Civil/Structural/Geotechnical Group, September 17, 2015.

Tennant, P. (2007). *Pebbly Beach Rip-Rap Slope Stabilization Project Biological Survey Report*, prepared for Southern California Edison, June 1, 2007.

Van Horsen (2016). *Response to California Coastal Commission Comments: Engineering Geology Report Items (a) thru (b), Coastal Resources Impact Item 9a, Assessment of Tsunami Inundation Potential*. Prepared for Southern California Edison, October 24, 2016.

Watson, C.S., N.J. White, J.A. Church, M.A. King, R.J. Burgette, B. Legresy (2015). Unabated global mean sea-level rise over the satellite altimeter era. *Nature Climate Change* 5: 565-568.

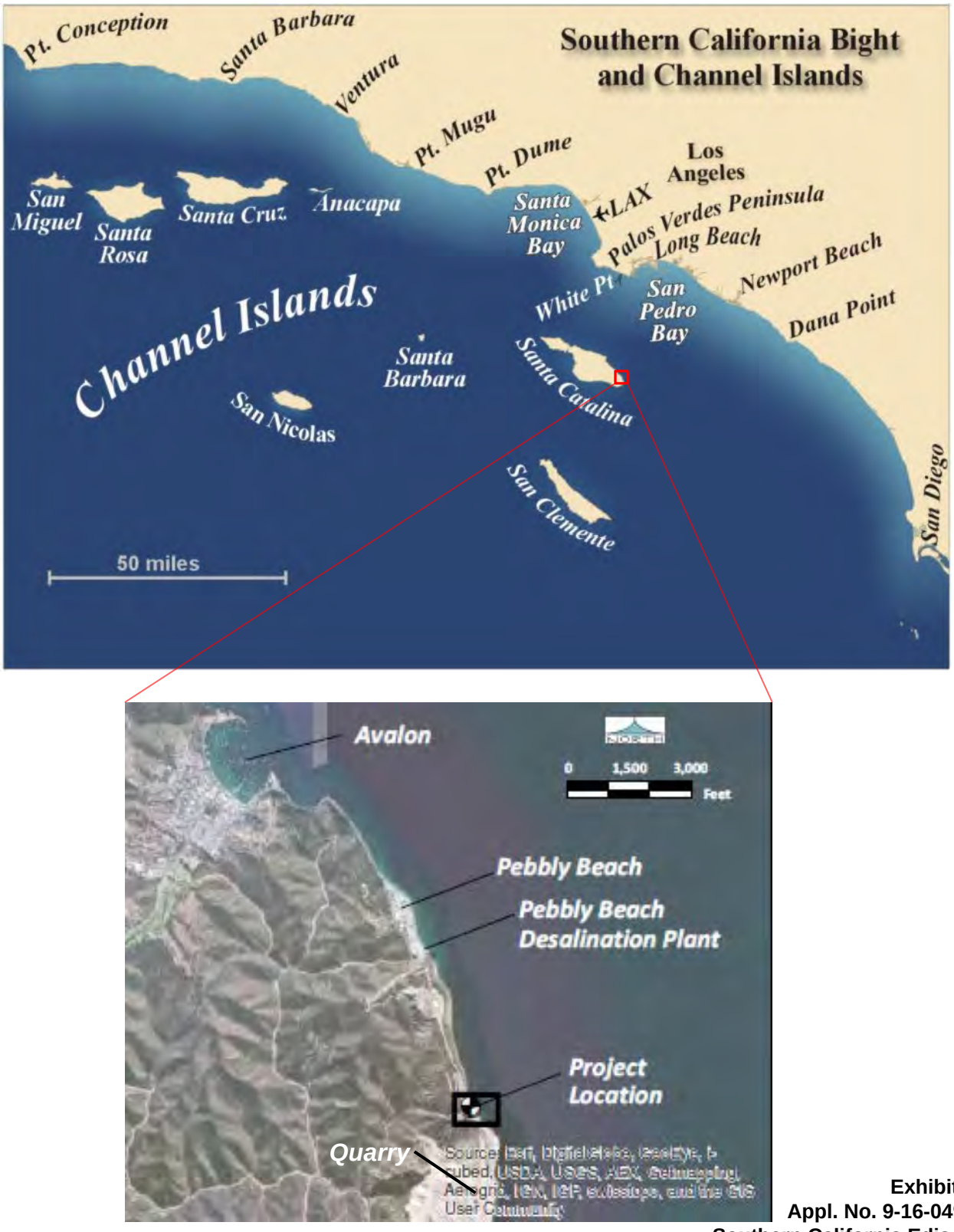
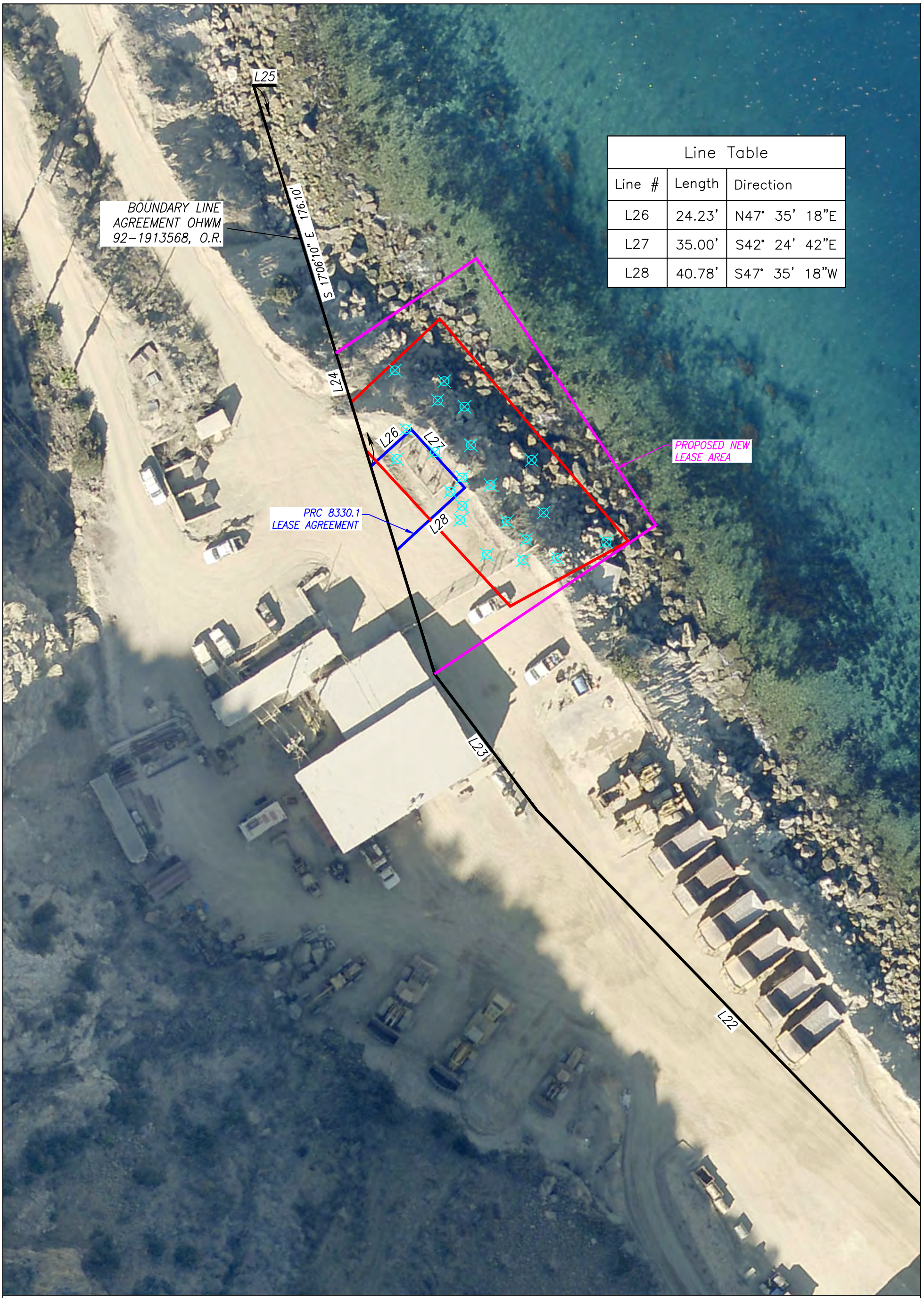


Exhibit 1
Appl. No. 9-16-0490
Southern California Edison
Project Location
Page 1 of 2

Figure 2. Close-up aerial map of Project Area showing proximity to existing quarry.



Line Table		
Line #	Length	Direction
L26	24.23'	N47° 35' 18"E
L27	35.00'	S42° 24' 42"E
L28	40.78'	S47° 35' 18"W

0 20 40 80

SCALE IN FEET

NAD 27, ZONE 7

N

Exhibit 2
Application No. 9-16-0490
Southern Caifornia Edison
Project Site - Prior Condition

SHEET 1 OF 1

Photo 7: 2013 Bird's-Eye View of the Site
(Source: Microsoft® Bing Map)

Photo 8: Shoreline View of the Site
(Photo taken on October 2015)

Exhibit 3
Application No. 9-16-0490
Southern California Edison
Project Site -- Present Condition
Page 1 of 2

In August 2014, Hurricane Marie created significant erosion around SCE's salt water wells site. Photos 1 to 3 illustrate the eroded areas observed during the August 31, 2015 site inspection.

Photo 1: Eroded area located at East of the Salt Water Well Site (Photo taken on August 31, 2015)

Photo 2: Erosion at West Side of Wells (Aug. 2015)

Photo 3: Erosion at East Side of Wells (Aug. 2015)

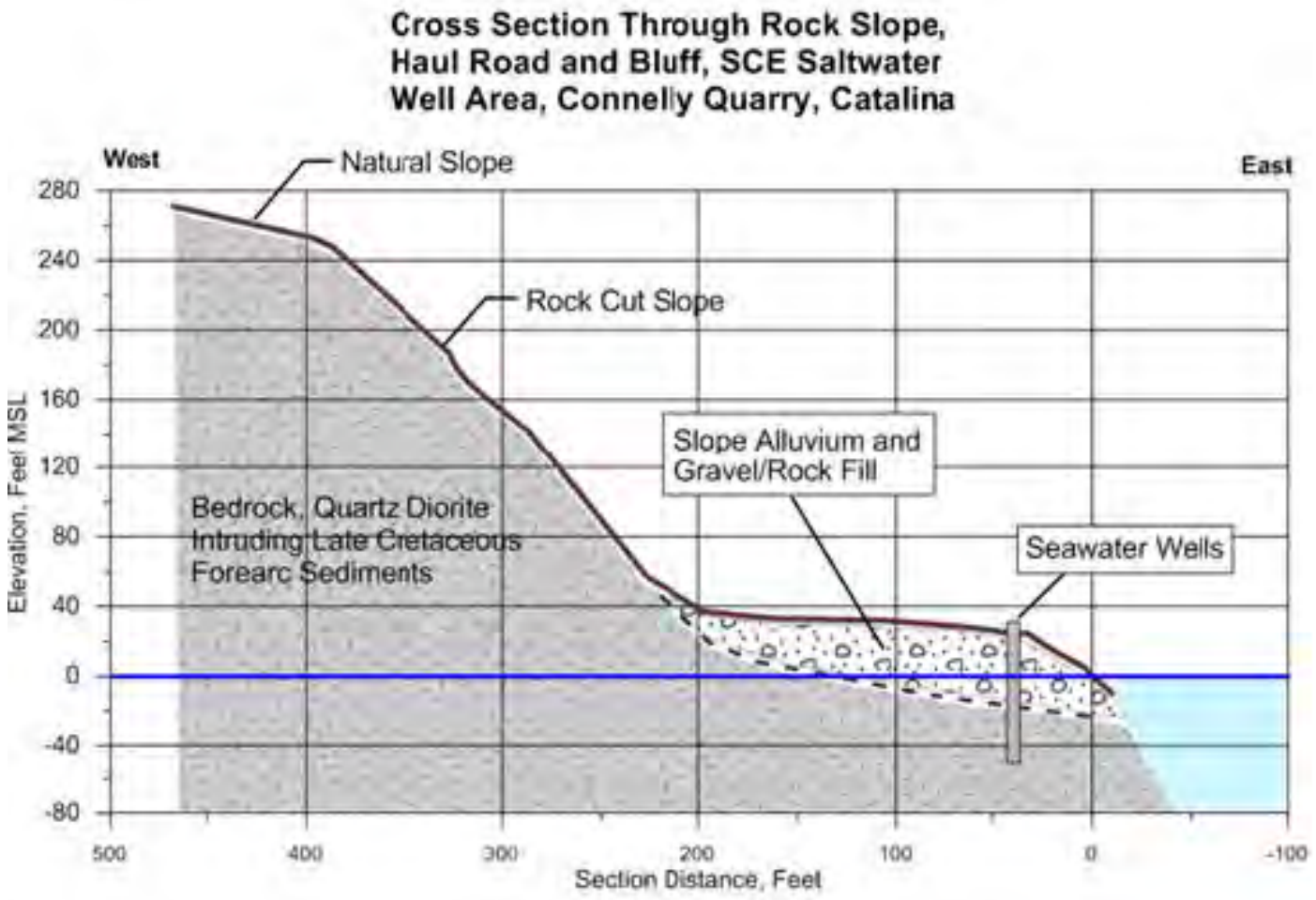
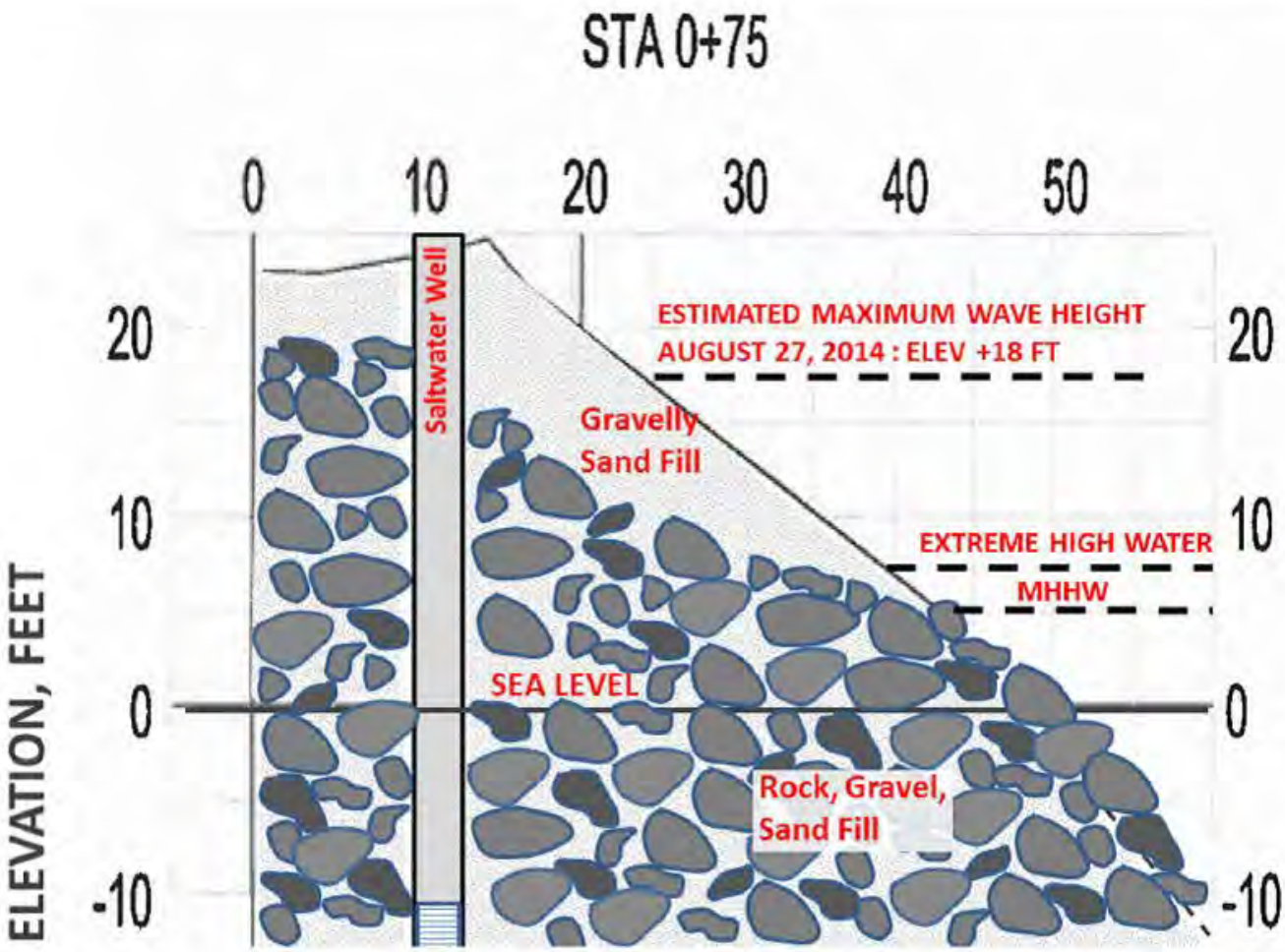


Exhibit 4
Application No. 9-16-0490
Southern California Edison
Site Cross Sections



NOTES:

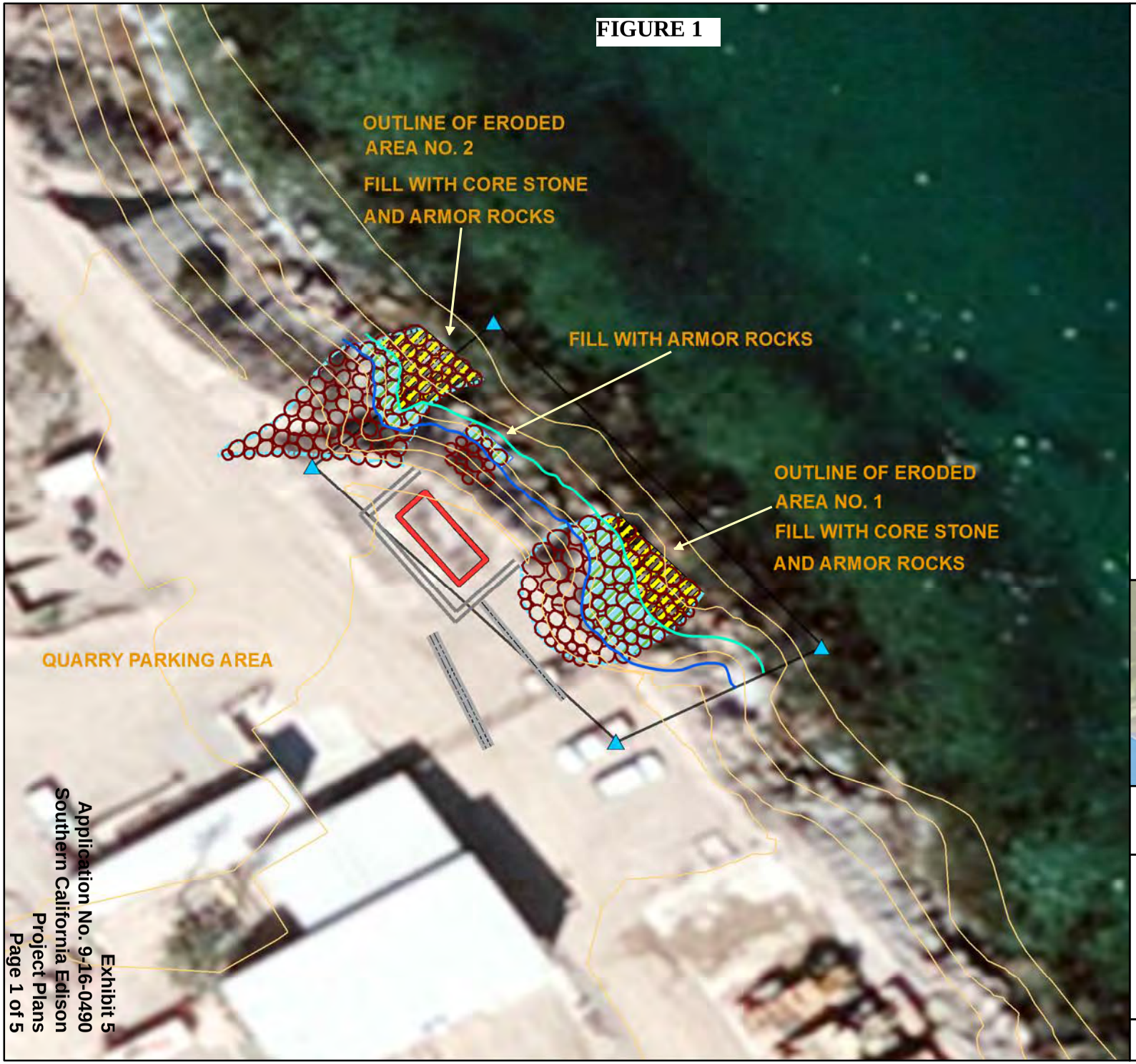
Diagram shows approximate distribution of materials in slope at SCE Saltwater Wells, Pebbly Beach Quarry. Section view is northwest towards Avalon.

Topography from photogrammetric survey by Connolly Pacific, 2015

Surface and subsurface features shown are based on SCE geotechnical engineer's Inspection of damage, August 31, 2015, and from Parsons report of saltwater well construction, 2003.

During August 31, 2015 inspection SCE geotechnical engineers Zaid Ahmad and Ming Chi noted that large rip rap armor rocks extended from below water line up to approximately Mean Higher High Water (MHHW), and were intact. Observed slope failures occurred due to erosion of predominantly gravelly sand fill above Armor stone that was not protected from high waves.

FIGURE 1



Quarry Seawater Wells Survey

Overview Map

Legend

- Survey Area Corners
- Highest Tide Line - 11.75 ft.
- Mean High Water - 8.58 ft.
- Topographic Line
- Eroded Areas
- Existing Soil Berm
- Fiber Rolls
- Saltwater Well
- Rock Fill Areas
- Between Highest Tide & Mean High Water (~0.018 acres)
- Mean High Water - Seaward (~0.016 acres)
- Survey Area

0 10 20 40 Feet

1 in = 42 feet

Date: 6/29/2016
File Name: Quarry_SeawaterWellSurvey_20160606_v5.mxd
Version #: 5
Created By: Gavin Jenkins
Real Properties Geospatial Analysis

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Exhibit 5
Application No. 9-16-0490
Southern California Edison
Project Plans
Page 1 of 5

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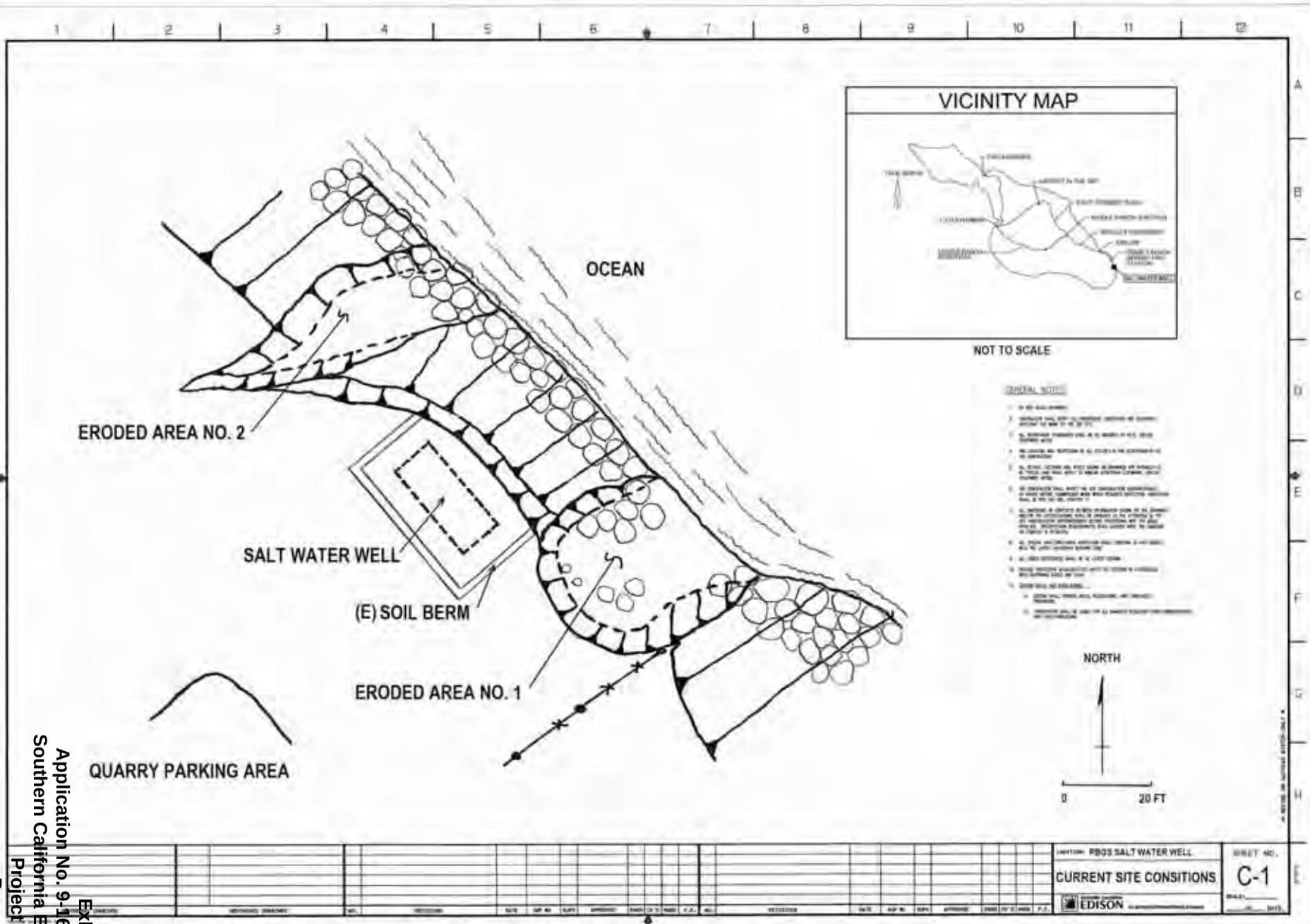


Exhibit 5
Application No. 9-16-0490
Southern California Edison
Project Plans
Page 2 of 5

Exhibit 5
Application No. 9-16-0490
Southern California Edison
Project Plans
Page 3 of 5

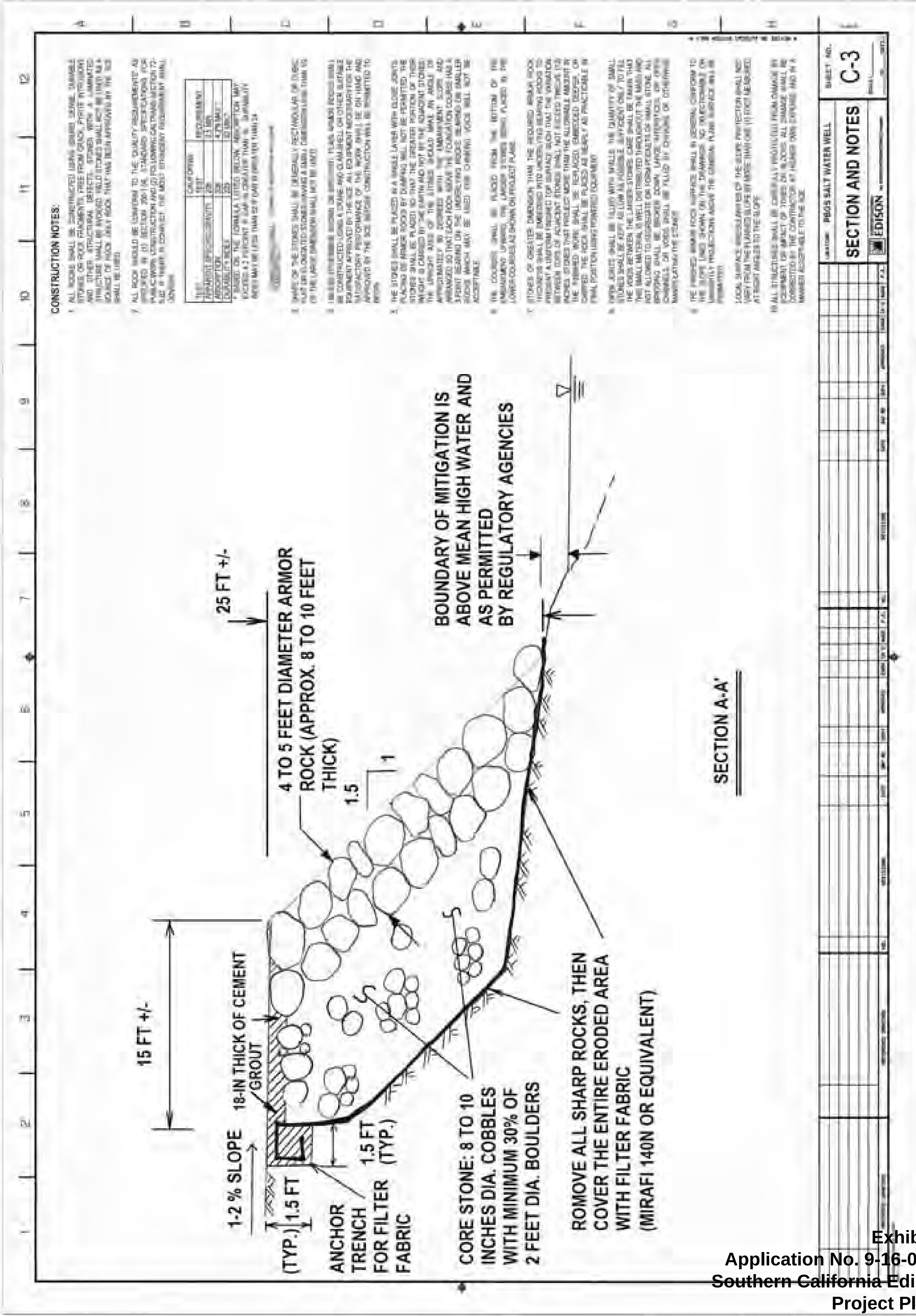
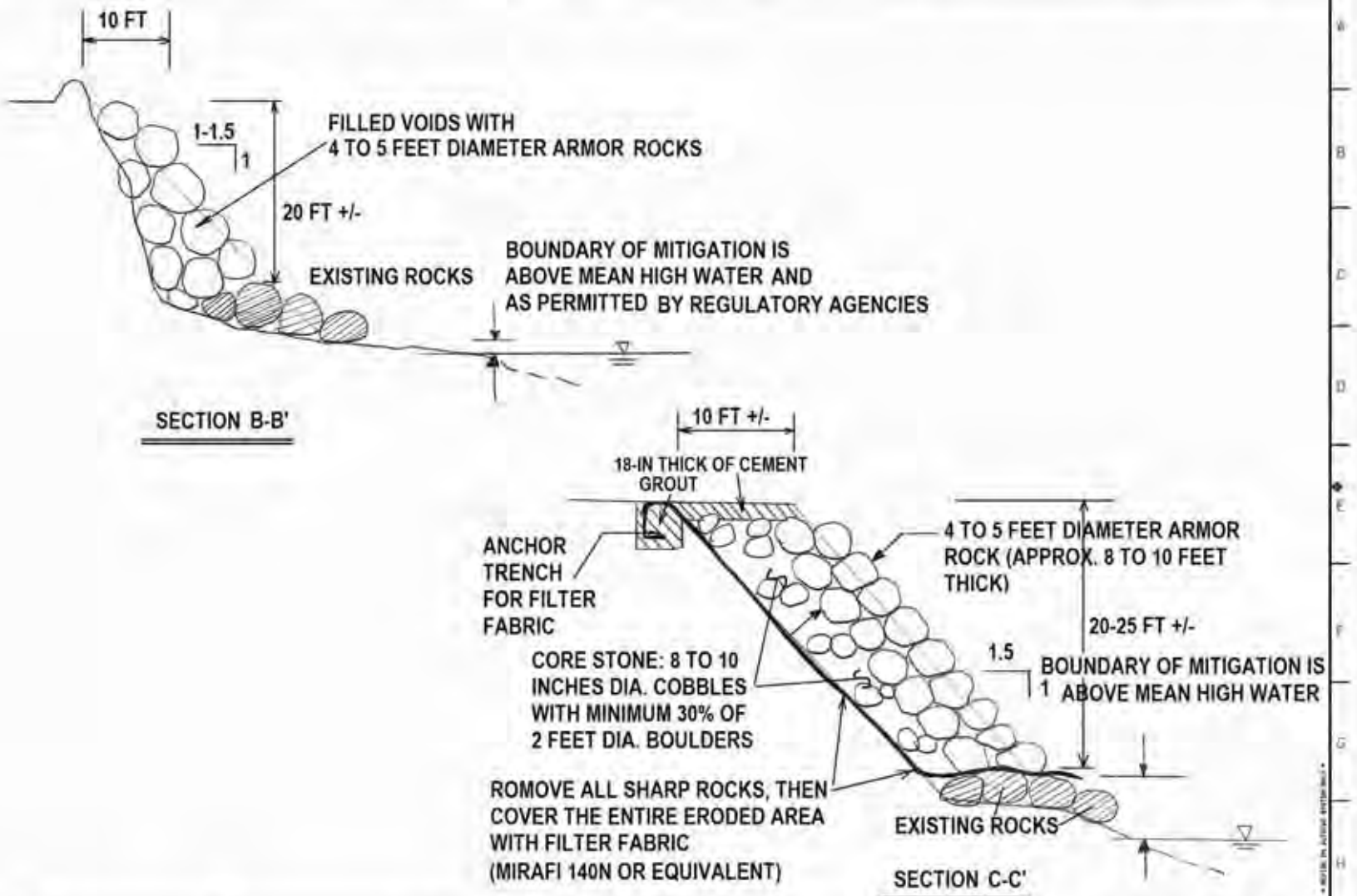


Exhibit 5
Application No. 9-16-0490
Southern California Edison
Project Plans
Page 4 of 5


10 FT
1-1.5
1
FILLED VOIDS WITH
4 TO 5 FEET DIAMETER ARMOR ROCKS
20 FT +/-
EXISTING ROCKS
BOUNDARY OF MITIGATION IS
ABOVE MEAN HIGH WATER AND
AS PERMITTED BY REGULATORY AGENCIES
SECTION B-B'
10 FT +/-
18-IN THICK OF CEMENT
GROUT
ANCHOR
TRENCH
FOR FILTER
FABRIC
4 TO 5 FEET DIAMETER ARMOR
ROCK (APPROX. 8 TO 10 FEET
THICK)
20-25 FT +/-
1.5
1
BOUNDARY OF MITIGATION IS
ABOVE MEAN HIGH WATER
CORE STONE: 8 TO 10
INCHES DIA. COBBLES
WITH MINIMUM 30% OF
2 FEET DIA. BOULDERS
ROMOVE ALL SHARP ROCKS, THEN
COVER THE ENTIRE ERODED AREA
WITH FILTER FABRIC
(MIRAFI 140N OR EQUIVALENT)
EXISTING ROCKS
SECTION C-C'
PG&E SALT WATER WELL
SECTIONS
EDISON
SHEET NO.
C-4