

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

2375 Northside Drive, Suite.100, San Diego, CA 92108  
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<http://www.waterboards.ca.gov/sandiego/>

Clean Water Act Section 401 Water Quality Certification  
and Waste Discharge Requirements  
for Discharge of Dredged and/or Fill Materials

**PROJECT: Coronado Cays Channel Berm Maintenance Project**  
**Certification Number R9-2014-0025**  
**WDID: 9 000002698**

Reg. Meas. ID: 395101 Place ID: 804217 Party ID: 355707 Person ID: 545473
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**APPLICANT: City of Coronado**  
**1825 Strand Way**  
**Coronado, CA 92118**

**ACTION:**

<input type="checkbox"/> Order for Low Impact Certification	<input type="checkbox"/> Order for Denial of Certification
<input checked="" type="checkbox"/> Order for Technically-conditioned Certification	<input type="checkbox"/> Waiver of Waste Discharge Requirements
<input checked="" type="checkbox"/> Enrollment in SWRCB GWDR Order No. 2003-017-DWQ	<input type="checkbox"/> Enrollment in Isolated Waters Order No. 2004-004-DWQ

**PROJECT DESCRIPTION**

An application dated February 19, 2014 was submitted by the City of Coronado (hereinafter Applicant), for Water Quality Certification pursuant to section 401 of the Clean Water Act (33 U.S.C. § 1341) for the proposed Coronado Cays Channel Berm Maintenance Project (Project). The Applicant has also applied for a Rivers and Harbors Act section 10 Letter of Permit from the United States Army Corps of Engineers for the Project (USACE File No. SPL-2014-00103-SAS).

The Project is located within the City of Coronado, San Diego County, California in San Diego Bay adjacent to five Coronado Cays properties. The Project center reading is located at latitude 32.625847 and longitude -117.132865. The Applicant has paid all required fees for this Certification in the amount of \$3,255.00. On February 26, 2014, the San Diego Water Board provided public notice of the Project application pursuant to California Code of Regulations, title 23, section 3858 by posting information describing the Project on the San Diego Water Board's web site and providing a period of twenty-one days for public review and comment. No comments were received.

The Applicant proposes to place 150 cubic yards of clean coarse sand fill with minimal fines along the base of 171 linear feet of headwall at five locations within the Coronado Cays. The fill is needed to restore the buttress berm profile that supports the headwall and prevent structural failure. The sand will be placed immediately adjacent to the headwall and will not extend any farther than 6 feet from the headwall at the time of installation. There may be short-term additional migration of material during settlement that is not expected to extend any farther than 10 feet from the headwall. The Applicant will use a silt curtain to restrict any potential increases in turbidity outside of the immediate work area. The Applicant will visually monitor the area outside the silt curtain for signs of turbidity. If turbidity is observed outside the silt curtain, the Applicant will stop, slow, or modify the work effort to reduce turbidity levels and repair or correct the dislocation of gaps in the silt curtain, if needed, before re-commencing work. The Applicant will maintain a spill response kit in order to respond to any accidental discharge of fuel or other petroleum product into the marine environment. The berm restoration will not result in any loss of waters of the United States and/or State and will not change the function, purpose, or use of the berm beyond that originally intended. The Project is expected to take up to 2 months to complete.

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1. Definitions
2. Project Figures and Plans

## I. STANDARD CONDITIONS

Pursuant to section 3860 of title 23 of the California Code of Regulations, the following three standard conditions apply to all water quality certification actions:

- A. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the Water Code and chapter 28, article 6 (commencing with title 23, section 3867), of the California Code of Regulations.
- B. This Certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Certification application was filed pursuant to California Code of Regulations title 23, section 3855 subdivision (b), and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
- C. This Certification action is conditioned upon total payment of any fee required under title 23, chapter 28 (commencing with section 3830) of California Code of Regulations and owed by the applicant.

## II. GENERAL CONDITIONS

- A. **Term of Certification.** Water Quality Certification No. R9-2014-0025 (Certification) shall expire upon a) the expiration or retraction of the Clean Water Act section 404 (33 U.S.C. §1344) permit issued by the U.S. Army Corps of Engineers for this Project, or b) five (5) years from the date of issuance of this Certification, whichever occurs first.
- B. **Duty to Comply.** The Applicant must comply with all conditions and requirements of this Certification. Any Certification noncompliance constitutes a violation of the Water Code and is grounds for enforcement action or Certification termination, revocation and reissuance, or modification.
- C. **General Waste Discharge Requirements.** The requirements of this Certification are enforceable through Water Quality Order No. 2003-0017-DWQ, *Statewide General Waste Discharge Requirements for Discharges of Dredged or Fill Material that have Received State Water Quality Certification* (Water Quality Order No. 2003-0017-DWQ). This provision shall apply irrespective of whether a) the federal permit for which the Certification was obtained is subsequently retracted or is expired, or b) the Certification is expired. Water Quality Order No. 2003-0017-DWQ is accessible at:

[http://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/generalorders/gowdr401regulated\\_projects.pdf](http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/generalorders/gowdr401regulated_projects.pdf).

- D. Project Conformance with Application.** All water quality protection measures and BMPs described in the application and supplemental information for water quality certification are incorporated by reference into this Certification as if fully stated herein. Notwithstanding any more specific conditions in this Certification, the Applicant shall construct, implement and comply with all water quality protection measures and BMPs described in the application and supplemental information. The conditions within this Certification shall supersede conflicting provisions within the application and supplemental information submitted as part of this Certification action.
- E. Project Conformance with Water Quality Control Plans or Policies.** Notwithstanding any more specific conditions in this Certification, the Project shall be constructed in a manner consistent with the Basin Plan and any other applicable water quality control plans or policies adopted or approved pursuant to the Porter Cologne Water Quality Act (Division 7, commencing with Water Code Section 13000) or section 303 of the Clean Water Act (33 U.S.C §1313.).
- F. Project Modification.** The Applicant must submit any changes to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of this Certification, to the San Diego Water for prior review and written approval. If the San Diego Water Board is not notified of a significant change to the Project, it will be considered a violation of this Certification.
- G. Certification Distribution Posting.** During Project construction, the Applicant must maintain a copy of this Certification at the Project site. This Certification must be available at all times to site personnel and agencies. A copy of this Certification shall also be provided to any contractor or subcontractor performing construction work, and the copy shall remain in their possession at the Project site.
- H. Inspection and Entry.** The Applicant must allow the San Diego Water Board or the State Water Resources Control Board (State Water Board), and/or their authorized representative(s) (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents as may be required under law, to:
1. Enter upon the Project or Compensatory Mitigation site(s) premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Certification;
  2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Certification;
  3. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Certification; and
  4. Sample or monitor, at reasonable times, for the purposes of assuring Certification compliance, or as otherwise authorized by the Clean Water Act or Water Code, any substances or parameters at any location.

- I. **Enforcement Notification.** In the event of any violation or threatened violation of the conditions of this Certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under State law. For purposes of section 401(d) of the Clean Water Act, the applicability of any State law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Certification.
- J. **Certification Actions.** This Certification may be modified, revoked and reissued, or terminated for cause including but not limited to the following:
1. Violation of any term or condition of this Certification;
  2. Monitoring results indicate that continued Project activities could violate water quality objectives or impair the beneficial uses of San Diego Bay or its tributaries;
  3. Obtaining this Certification by misrepresentation or failure to disclose fully all relevant facts;
  4. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
  5. Incorporation of any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

The filing of a request by the Applicant for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Certification condition.

- K. **Duty to Provide Information.** The Applicant shall furnish to the San Diego Water Board, within a reasonable time, any information which the San Diego Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Certification or to determine compliance with this Certification.
- L. **Property Rights.** This Certification does not convey any property rights of any sort, or any exclusive privilege.
- M. **Petitions.** Any person aggrieved by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with the California Code of Regulations, title 23, sections 3867 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Certification. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

### III. CONSTRUCTION BEST MANAGEMENT PRACTICES

- A. **Approvals to Commence Construction.** The Applicant shall not commence Project construction until all necessary federal, State, and local approvals are obtained.
- B. **Silt Curtain Deployment.** The Applicant shall deploy and maintain a continuous length of silt curtain to trap sediment that may become suspended outside of the immediate Project work area. The bottom of the silt curtains must be weighted with ballast weights or rods affixed to the base of the fabric to resist the natural buoyancy of the silt curtain fabric and lessen its tendency to move in response to currents. Where feasible and applicable, the floating silt curtains must be anchored and deployed from the surface of the water to just above the substrate. The silt curtain must be monitored for damage, dislocation or gaps and must be immediately repaired where it is no longer continuous or where it has loosened. The silt curtain must restrict any resulting surface visible turbidity plume to the Project work area and must control and contain the migration of re-suspended sediments at the water surface and at depth.

### IV. PROJECT IMPACTS AND COMPENSATORY MITIGATION

- A. **Project Impacts and Compensatory Mitigation.** Unavoidable Project impacts to San Diego Bay within the Coronado Watershed must not exceed 0.039 acre (171 linear feet).
- B. **Eelgrass Impacts and Mitigation.** The Applicant shall conduct pre-construction survey(s) for *Caulerpa taxifolia* and eelgrass not more than one year prior to the start of in-water activities. The pre-construction survey(s) shall be completed by a qualified biologist in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP) and provided to the San Diego Water Board prior to the start of in-water activities. The eelgrass survey must be conducted during an appropriate index period, as determined by a qualified biologist (i.e., a period representing maximum eelgrass coverage), and must include both aerial and density characterization of the beds. If eelgrass is found on the Project site during the pre-construction survey, a post-construction survey must be performed by a qualified biologist within 30 days following project completion to quantify any unanticipated losses to eelgrass habitat. Impacts must then be determined from a comparison of pre- and post-construction survey results. Any Impacts to eelgrass must be mitigated through conformance with the SCEMP, which defines the mitigation ratio and other requirements to achieve mitigation for significant eelgrass impacts. If required following the post-construction survey, the SCEMP defined mitigation must be developed; approved by the San Diego Water Board, U.S. Army Corps of Engineers and National Marine Fisheries Service; and implemented to offset losses to eelgrass. Surveys conducted during eelgrass dormancy will not be accepted.

## V. MONITORING AND REPORTING REQUIREMENTS

- A. **Final Project Completion Report.** The Applicant must submit a Final Project Completion Report to the San Diego Water Board **within 30 days of completion of the Project.** The final report must include the following information:
1. Date of construction initiation;
  2. Date of construction completion; and
  3. As-built drawings of the Project, no bigger than 11"X17".
- B. **Reporting Authority.** The submittal of information required under this Certification, or in response to a suspected violation of any condition of this Certification, is required pursuant to Water Code section 13267 and 13383. Civil liability may be administratively imposed by the San Diego Water Board for failure to submit information pursuant to Water Code sections 13268 or 13385.
- C. **Electronic and Paper Media Documents.** The Applicant must submit all reports and information required under this Certification in both hardcopy (paper) and electronic format. The preferred electronic format for each report submission is one file in PDF format that is also Optical Character Recognition (OCR) capable. All paper and electronic documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Certification No. R9-2014-0025:PIN 804217.
- D. **Document Signatory Requirements.** All applications, reports, or information submitted to the San Diego Water Board must be signed as follows:
1. For a corporation, by a responsible corporate officer of at least the level of vice president.
  2. For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
  3. For a municipality, or a State, federal, or other public agency, by either a principal executive officer or ranking elected official.
  4. A duly authorized representative may sign applications, reports, or information if:
    - a. The authorization is made in writing by a person described above.
    - b. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
    - c. The written authorization is submitted to the San Diego Water Board Executive Officer.



If such authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the Project, a new authorization satisfying the above requirements must be submitted to the San Diego Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative.

- E. **Document Certification Requirements.** All applications, reports, or information submitted to the San Diego Water Board must be certified as follows:

*"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."*

- F. **Document Submittal Address.** The Applicant must submit reports required under this Certification, or other information required by the San Diego Water Board, to:

Executive Officer  
California Regional Water Quality Control Board  
San Diego Region  
Attn: 401 Certification No. R9-2014-0025:PIN 804217  
2375 Northside Drive, Suite 100  
San Diego, California 92108

## VI. NOTIFICATION REQUIREMENTS

- A. **Twenty Four Hour Non-Compliance Reporting.** The Applicant shall report any noncompliance which may endanger health or the environment. Any such information shall be provided orally to the San Diego Water Board within **24 hours** from the time the Applicant becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Applicant becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The San Diego Water Board, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
- B. **Anticipated Noncompliance.** The Applicant shall give advance notice to the San Diego Water Board of any planned changes in the Project or the Compensatory Mitigation project which may result in noncompliance with Certification conditions or requirements.

C. **Transfers.** This Certification is not transferable in its entirety or in part to any person or organization except after notice to the San Diego Water Board in accordance with the following terms:

1. **Transfer of Property Ownership:** The Applicant must notify the San Diego Water Board of any change in ownership of the Project area. Notification of change in ownership must include, but not be limited to, a statement that the Applicant has provided the purchaser with a copy of the Section 401 Water Quality Certification and that the purchaser understands and accepts the certification requirements and the obligation to implement them or be subject to liability for failure to do so; the seller and purchaser must sign and date the notification and provide such notification to the San Diego Water Board **within 10 days of the transfer of ownership.**
2. **Transfer of Mitigation Responsibility:** Any notification of transfer of responsibilities to satisfy the mitigation requirements set forth in this Certification must include a signed statement from an authorized representative of the new party (transferee) demonstrating acceptance and understanding of the responsibility to comply with and fully satisfy the mitigation conditions and agreement that failure to comply with the mitigation conditions and associated requirements may subject the transferee to enforcement by the San Diego Water Board under Water Code section 13385, subdivision (a). Notification of transfer of responsibilities meeting the above conditions must be provided to the San Diego Water Board **within 10 days of the transfer date.**

Upon properly noticed transfers of responsibility, the transferee assumes responsibility for compliance with this Certification and references in this Certification to the Applicant will be interpreted to refer to the transferee as appropriate. Transfer of responsibility does not necessarily relieve the Applicant of this Certification in the event that a transferee fails to comply.

D. **Discharge Commencement.** The Applicant must notify the San Diego Water Board in writing **at least 5 days prior to** the start of Project construction.

## VII. CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE

- A. The City of Coronado is the Lead Agency under the California Environmental Quality Act (CEQA) (Public Resources Code section 21000, et seq.) section 21067, and CEQA Guidelines (California Code of Regulations, title 14, section 15000 et seq.) section 15367, and has determined that the Project is categorically exempt.<sup>1</sup>
- B. The San Diego Water Board is a Responsible Agency under CEQA (Public Resources Code section 21069; CEQA Guidelines section 15381). The San Diego Water Board has independently determined that the Project is categorically exempt because the Project consists of maintenance of existing structures to restore structural stability for the purpose of public safety and does not expand the existing use of the structures.<sup>2</sup>

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<sup>1</sup> 14 CCR section 15301

<sup>2</sup> 14 CCR section 15301

- C. As a Responsible Agency under CEQA, the San Diego Water Board will file a Notice of Exemption in accordance with CEQA Guidelines section 15062.

### VIII. SAN DIEGO WATER BOARD CONTACT PERSON

Lisa Honma, Environmental Scientist  
California Regional Water Quality Control Board, San Diego Region  
2375 Northside Drive, Suite 100  
San Diego, California 92108  
Telephone: 619-521-3367  
Email: [Lisa.Honma@waterboards.ca.gov](mailto:Lisa.Honma@waterboards.ca.gov)

### IX. WATER QUALITY CERTIFICATION

I hereby certify that the proposed discharge from the **Coronado Cays Channel Berm Maintenance Project** (Certification No. R9-2014-0025) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Board Order No. 2003-0017-DWQ, "*Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have Received State Water Quality Certification (General WDRs)*," which requires compliance with all conditions of this Water Quality Certification. Please note that enrollment under Order No. 2003-017-DWQ is conditional and, should new information come to our attention that indicates a water quality problem, the San Diego Water Board may issue individual waste discharge requirements at that time.

Except insofar as may be modified by any preceding conditions, all Certification actions are contingent on (a) the discharge being limited to, and all proposed mitigation being completed in strict compliance with, the applicants' Project description and/or the description in this Certification, and (b) compliance with all applicable requirements of the Basin Plan.

I, David W. Gibson, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of Certification No. R9-2014-0025 issued on August 14, 2014.

  
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DAVID W. GIBSON  
Executive Officer  
San Diego Water Board

14 August 2014  
Date

# ATTACHMENT 1

## DEFINITIONS

**Activity** - when used in reference to a permit means any action, undertaking, or project including, but not limited to, construction, operation, maintenance, repair, modification, and restoration which may result in any discharge to waters of the State.

**Buffer** - means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

**California Rapid Assessment Method (CRAM)** - is a wetland assessment method intended to provide a rapid, scientifically-defensible and repeatable assessment methodology to monitor status and trends in the conditions of wetlands for applications throughout the State. It can also be used to assess the performance of compensatory mitigation projects and restoration projects. CRAM provides an assessment of overall ecological condition in terms of four attributes: landscape context and buffer, hydrology, physical structure and biotic structure. CRAM also includes an assessment of key stressors that may be affecting wetland condition and a "field to PC" data management tool (eCRAM) to ensure consistency and quality of data produced with the method.

**Compensatory Mitigation Project** - means compensatory mitigation implemented by the Applicant as a requirement of this Certification (i.e., applicant -responsible mitigation), or by a mitigation bank or an in-lieu fee program.

**Discharge of dredged material** – means any addition of dredged material into, including redeposit of dredged material other than incidental fallback within, the waters of the United States and/or State.

**Discharge of fill material** – means the addition of fill material into waters of the United States and/or State.

**Dredged material** – means material that is excavated or dredged from waters of the United States and/or State.

**Ecological Success Performance Standards** – means observable or measurable physical (including hydrological), chemical, and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

**Enhancement** – means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

**Establishment** – means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist. Creation results in a gain in aquatic resource area.

**Fill material** – means any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a water body.

**Isolated wetland** – means a wetland with no surface water connection to other aquatic resources.

**Mitigation Bank** – means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing mitigation for impacts authorized by this Certification.

**Preservation** - means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

**Re-establishment** - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

**Rehabilitation** - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/ historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

**Restoration** - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

**Start of Project Construction** - For the purpose of this Certification, "start of Project construction" means to engage in a program of on-site construction, including site clearing, grading, dredging, landfilling, changing equipment, substituting equipment, or even moving the location of equipment specifically designed for a stationary source in preparation for the fabrication, erection or installation of the building components of the stationary source within waters of the United States and/or State.

**Uplands** - means non-wetland areas that lack any field-based indicators of wetlands or other aquatic conditions. Uplands are generally well-drained and occur above (i.e., up-slope) from nearby aquatic areas. Wetlands can, however, be entirely surrounded by uplands. For example, some natural seeps and constructed stock ponds lack aboveground hydrological connection to other aquatic areas. In the watershed context, uplands comprise the landscape matrix in which aquatic areas form. They are the primary sources of sediment, surface runoff, and associated chemicals that are deposited in aquatic areas or transported through them.

**Water quality objectives and other appropriate requirements of State law** – means the water quality objectives and beneficial uses as specified in the appropriate water quality control plan(s); the applicable provisions of sections 301, 302, 303, 306, and 307 of the Clean Water Act; and any other appropriate requirement of State law.



City of Coronado  
Coronado Cays Channel Berm Maintenance Project  
Certification No. R9-2014-0025

**ATTACHMENT 2  
PROJECT FIGURES AND PLANS**

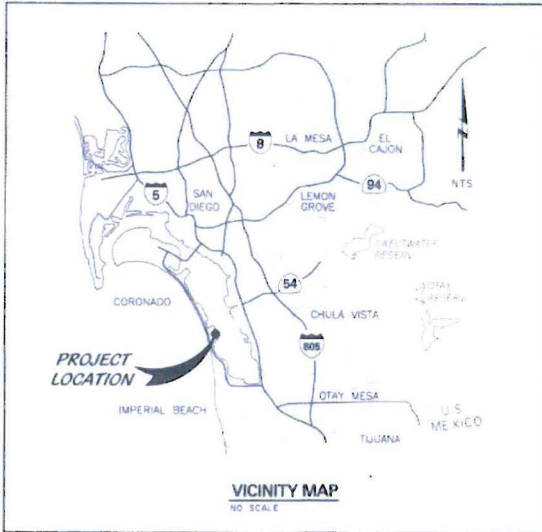
City of Coronado  
Coronado Cays Channel Berm Maintenance Project  
Certification No. R9-2014-0025

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# CORONADO CAYS

## CITY JURISDICTION CHANNEL BERM STABILIZATION



### PROJECT OVERVIEW

THE STABILITY OF THE CORONADO CAYS BULKHEADS HAS BEEN INVESTIGATED AND MONITORED BY THE CITY SINCE THE EARLY 1980'S WITH THE MOST RECENT INSPECTION SUMMARIZED IN A REPORT BY TERRACOSTA CONSULTING GROUP IN 2009. THIS SURVEY ALONG WITH PREVIOUS INVESTIGATIVE WORK FORMS THE BASIS FOR THESE GUIDELINES. ANYONE INTERESTED IN ANY ADDITIONAL BACKGROUND INFORMATION SHOULD CONTACT THE CITY OF CORONADO ENGINEERING DEPARTMENT AT (619) 522-7383

THE AREA OF THE CORONADO CAYS DEVELOPMENT WAS RECLAIMED FROM LOW-LYING COASTAL AREAS STARTING IN THE EARLY 1980'S BY CONSTRUCTING AN ANCHORED CONCRETE SHEET-PILE BULKHEAD AND BY PLACING FILL SOILS BEHIND THE BULKHEAD. THE DESIGN OF THE SHEET-PILE BULKHEAD CALLED FOR A 16-FOOT SHEET PILE EMBEDDED 4-INCHES INTO A 22-INCH-HIGH CAP EXTENDING FROM ELEVATION +10 FEET TO -7.5 FEET (MLW DATUM). FROM OUR REVIEW AND DISCUSSIONS WITH CITY STAFF, WE UNDERSTAND THAT THE CONTRACTOR HAD THE OPTION OF USING EITHER 16 OR 18.5-FOOT LONG SHEET PILES. THE USE OF BOTH 16 AND 18.5-FOOT LONG SHEET PILES WAS CONFIRMED BY FIELD MEASUREMENTS.

FROM LIMITED FIELD MEASUREMENTS, THE CORONADO CAYS BERMS ARE DIVIDED INTO THREE AREAS GENERALLY AREAS DEFINED ON THESE DRAWINGS AS "A" AND "C" CORRESPOND TO AREAS WHERE 16-FOOT LONG SHEET PILES WERE LIKELY INSTALLED. AREAS DEFINED AS "B" CORRESPOND TO AREAS WHERE 18.5-FOOT LONG SHEET PILES WERE LIKELY INSTALLED.

THE ORIGINAL DESIGN CALLED FOR A PASSIVE SOIL BERM EXTENDING FROM ELEVATION +1 FOOT AT THE BASE OF THE BULKHEAD TO ELEVATION -8 FEET AT THE CHANNEL BOTTOM, AT A SLOPE INCLINATION OF 3:1 (H:V) BECAUSE THE CHANNEL BOTTOM WAS DESIGNED AS A FLAT CROSS SECTION, DREDGED TO ELEVATION -8 FEET, THE PASSIVE SOIL BERMS FRONTING THE BULKHEADS PLAY AN IMPORTANT ROLE IN THE LONG-TERM STABILITY OF THE BULKHEAD.

NEARLY 40 YEARS LATER, IT APPEARS THAT THE MAJORITY OF THE BERMS ARE FLATTER THAN THE ORIGINAL DESIGN. MOREOVER, IT IS APPARENT THAT PROP WASH FROM VESSELS BACKING INTO DOCKS HAS CONTRIBUTED TO THE DISPLACEMENT OF BERM MATERIAL, RESULTING IN LOCALIZED AREAS OF REDUCED LATERAL SUPPORT FOR THE BULKHEADS. THE SEVERITY OF THIS PROBLEM BECAME APPARENT IN LATE DECEMBER 1998, WHEN A BULKHEAD FAILED IN THE VICINITY OF 37 AND 39 GREEN TURTLE ROAD, ASSOCIATED WITH PROP WASH DISPLACEMENT OF BERM SEDIMENTS. IN SUBSEQUENT INVESTIGATIONS, BULKHEAD STABILITY WAS REASSESSED, REAFFIRMING THE IMPORTANCE OF THE PASSIVE SOIL BERMS FRONTING THE BULKHEADS. ALONG WITH THE NEED FOR A PERIODIC MARINE INSPECTION PROGRAM DESIGNED TO INVENTORY THE HEIGHT OF THE BERMS AND HENCE THE PASSIVE RESISTANCE PROVIDED TO THE BERMS, ALONG WITH A VISUAL INSPECTION OF THE INTEGRITY OF THE VERTICAL SHEET-PILE BULKHEADS, INCLUDING THE WATER-TIGHT JOINTS SEPARATING THE BULKHEADS. THE RESULTS OF THE MOST RECENT HYDROGRAPHIC SURVEY INDICATE THAT CERTAIN AREAS THROUGHOUT THE CORONADO CAYS WATERWAYS HAVE BERM ELEVATIONS BELOW AN ACCEPTABLE LEVEL TO ADEQUATELY SUPPORT THE LATERAL FORCES WITH AN ADEQUATE MARGIN OF SAFETY. AND VIRTUALLY IN ALL CASES BELOW THE ORIGINAL DESIGN BERM CONFIGURATION.

IN RECOGNITION OF THIS PROBLEM, THE CITY HAS PROPOSED THESE GUIDELINES FOR RESTORATION OF THESE LOW BERM AREAS, INCLUDING GUIDELINES FOR DEFINING THE LOWEST ALLOWABLE BERM CONFIGURATION, BELOW WHICH BERM MAINTENANCE WOULD BE RECOMMENDED.



### SHEET INDEX

- 1 TITLE, LOCATION MAP & PROJECT OVERVIEW
- 2 OVERALL SITE PLAN - IMAGE
- 3 REPAIR AREA 1
- 4 REPAIR AREA 2
- 5 REPAIR AREA 3
- 6 REPAIR AREAS 4 & 5
- 7 CROSS SECTIONS 1 THROUGH 7
- 8 SPECIFICATIONS & DETAILS



CITY OF CORONADO, CALIFORNIA  
ENGINEERING AND PROJECT DEVELOPMENT DEPARTMENT

APPROVED BY: \_\_\_\_\_ BY DATE: \_\_\_\_\_ APPROVED BY: \_\_\_\_\_  
COMMUNITY DEVELOPMENT \_\_\_\_\_ DIRECTOR OF ENGINEERING & PROJECT DEVELOPMENT \_\_\_\_\_  
DATE: \_\_\_\_\_

**TERRACOSTA CONSULTING GROUP**  
ENGINEERS AND GEOLOGISTS  
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SAN DIEGO, CA 92123 18581 573-6900



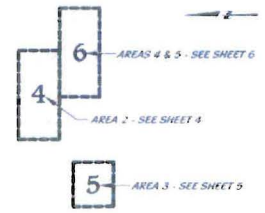
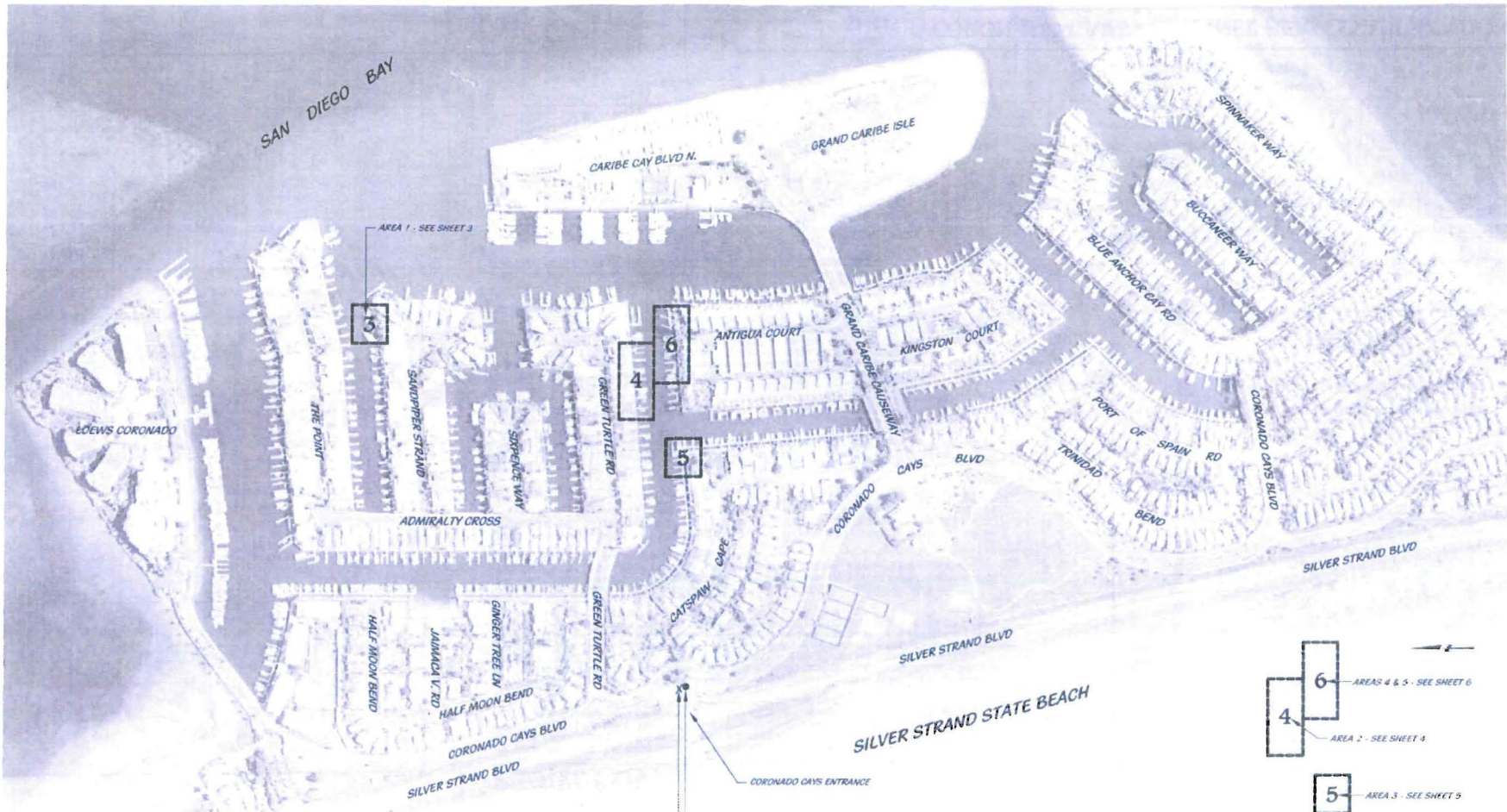
REVISION	DATE	PLAN NUMBER
		M-453
		DATE: 2-7-14

DATE: 2-7-14

SCALE: 0 1/2" = 1'

**CORONADO CAYS - CHANNEL BERM STABILIZATION**

SHEET TITLE: TITLE, LOCATION MAP & PROJECT OVERVIEW



**SHEET INDEX**  
NOT TO SCALE



OLD CITY OF CORONADO BENCH MARK #12 (14.77' HIGH) 10" IN TOP OF CURB  
CIVIL ISLAND AT MAIN ENTRANCE

CITY OF CORONADO BENCH MARK NO. 211 (16.694' ABOVE BB) 3" BENCH MARK LOCATED IN TOP OF CURB

**OVERALL SITE PLAN**  
APPROXIMATE SCALE 1"=150'

**4** APPROXIMATE LIMITS OF REPAIR AREA DEPICTED ON SHEET 4 OF THESE PLANS

CITY OF CORONADO, CALIFORNIA ENGINEERING AND PROJECT DEVELOPMENT DEPARTMENT			
APPROVED BY	BY	DATE	APPROVED BY
COMMUNITY DEVELOPMENT			DIRECTOR OF ENGINEERING & PROJECT DEVELOPMENT
			DATE

**TERRACOSTA CONSULTING GROUP**  
ENGINEERS AND GEOLOGISTS  
3890 MURPHY CANYON ROAD, SUITE 206  
SAN DIEGO, CA 92123 8581 373 8900



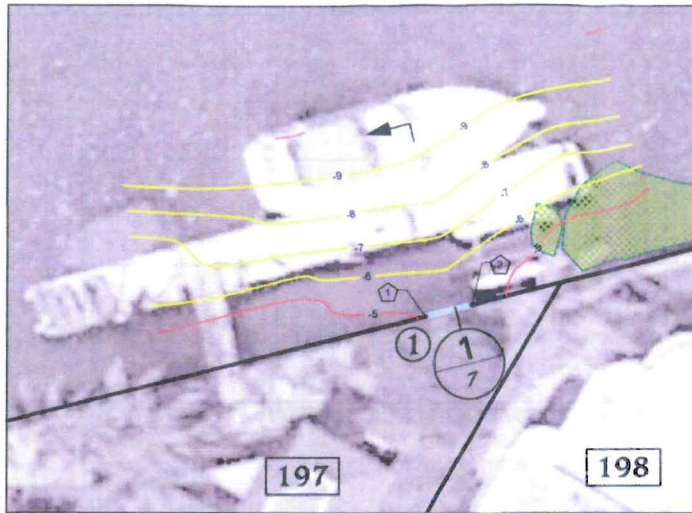
REVISION	DATE	PLAN NUMBER
		<b>M-453</b>
		DATE: 2-1-14

SCALE
0 1/2 1









**CORONADO CAYS - CHANNEL BERM STABILIZATION**

SHEET TITLE: **OVERALL SITE PLAN - IMAGE**

SHEET NO. **2**  
OF 8

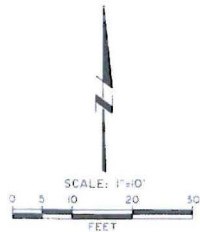


**LEGEND**

-  EXISTING INTERMEDIATE CONTOUR (1-FOOT INTERVAL, MEAN SEA LEVEL) (PER 1975 SDRSD M.2)
-  EXISTING INDEX CONTOUR (5-FOOT INTERVAL, MEAN SEA LEVEL) (PER 1975 SDRSD M.2)
-  REPAIR LOCATION DESIGNATION
-  LOT NUMBER
-  CROSS SECTION NUMBER
-  SHEET NUMBER
-  COORDINATE LOCATION INDICATING END OF BERM MAINTENANCE INFILL. SEE COORDINATE TABLE ON THIS DRAWING.
-  INDICATES LOCATION OF PROPOSED BERM MAINTENANCE INFILL.
-  APPROXIMATE LIMITS OF EELGRASS AS SURVEYED MAY 3, 2012 BY MERKEL & ASSOCIATES.

**REPAIR AREA 1 - LOT 197, SANDPIPER STRAND**

SCALE 1" = 10'



REPAIR COORDINATES			
LOCATION	POINT NO.	NORTHING	EASTING
1	1	1809747.16	8290060.41
	2	1809749.10	8290068.17

HORIZONTAL COORDINATES SHOWN ARE NAD 83

REPAIR QUANTITIES	
LOCATION	ESTIMATED VOLUME
1	5 CUBIC YARDS

CONTRACTOR SHALL DISTRIBUTE FILL VOLUME EVENLY BETWEEN THE IDENTIFIED COORDINATES FOR EACH OF THE DESIGNATED AREAS.


**EELGRASS NOTE**

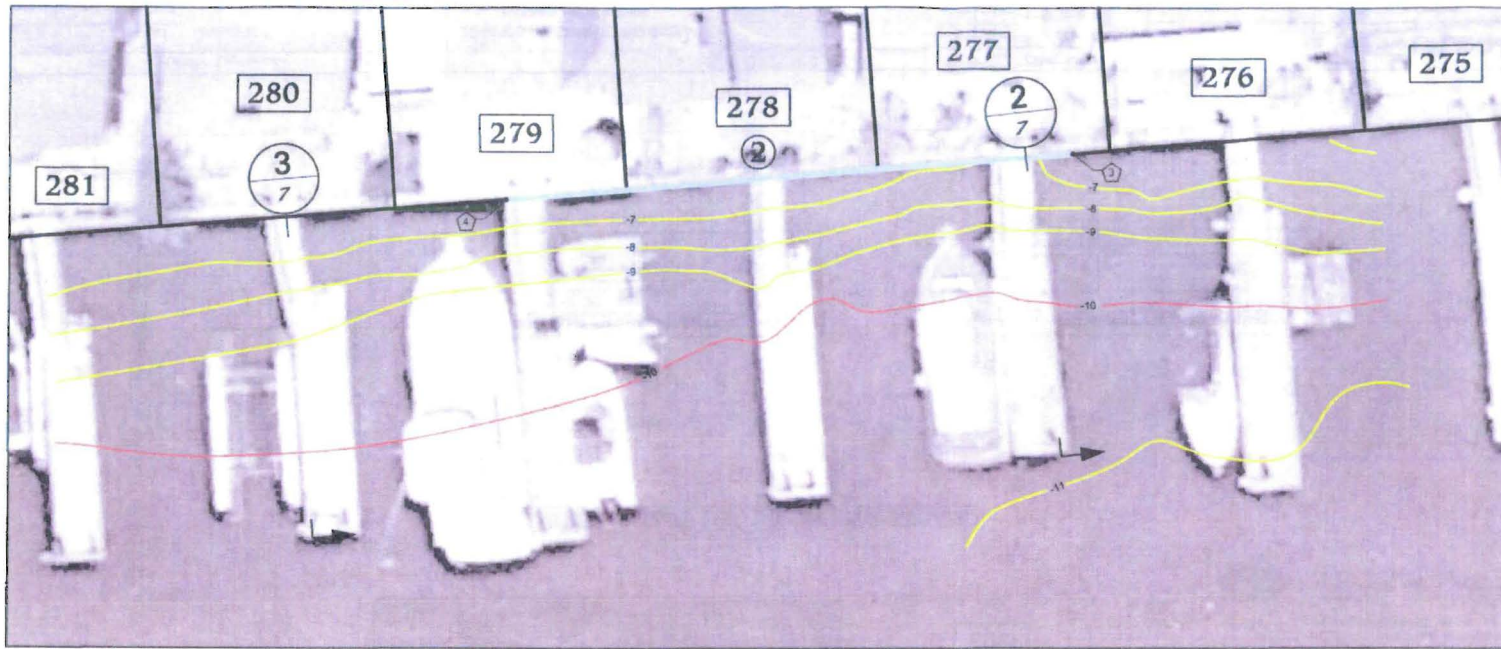
TO THE MAXIMUM EXTENT PRACTICABLE, CONTRACTOR SHALL PROTECT IN-PLACE AND MINIMIZE IMPACTS TO THE EXISTING EELGRASS BEDS THAT ARE LOCATED IN THE VICINITY OF THE PROPOSED MAINTENANCE INFILL REPAIR AREAS.

**NOTE:**

UNDERLYING IMAGE IS APPROXIMATE AND IS FOR REFERENCE PURPOSES ONLY. IMAGE HAS NOT BEEN ORTHO-RECTIFIED TO MATCH THE FIELD SURVEY DATA.



CITY OF CORONADO, CALIFORNIA ENGINEERING AND PROJECT DEVELOPMENT DEPARTMENT		 <b>TerraCosta</b> CONSULTING GROUP	REVISION DATE	PLAN NUMBER <b>M-453</b> DATE: 2-2-14	<b>CORONADO CAYS - CHANNEL BERM STABILIZATION</b> SHEET NO.	<b>3</b> <small>of 8</small>
APPROVED BY: _____ COMMUNITY DEVELOPMENT	BY: _____ DATE: _____		APPROVED BY: _____ WRITER OF INSTRUMENTAL A PROJECT DEVELOPMENT DATE: _____	<b>CORONADO CAYS - REPAIR LOCATIONS</b>		



**LEGEND**

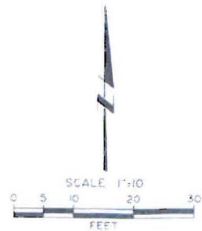
- EXISTING INTERMEDIATE CONTOUR, 1-FOOT INTERVAL, MEAN SEA LEVEL (PER 1975 SDRSO M-12)
- EXISTING INDEX CONTOUR, 5-FOOT INTERVAL, MEAN SEA LEVEL (PER 1975 SDRSO M-12)
- REPAIR LOCATION DESIGNATION
- LOT NUMBER
- CROSS SECTION NUMBER
- SHEET NUMBER
- COORDINATE LOCATION INDICATING END OF BERM MAINTENANCE INFILL, SEE COORDINATE TABLE ON THIS DRAWING
- INDICATES LOCATION OF PROPOSED BERM MAINTENANCE INFILL
- APPROXIMATE LIMITS OF EELGRASS, AS SURVEYED MAY 31, 2012 BY MERKEL & ASSOCIATES

**REPAIR AREA 2 - LOT 277 THROUGH 279, GREEN TURTLE**

SCALE: 1" = 10'

**NOTE:**

UNDERLYING IMAGE IS APPROXIMATE AND IS FOR REFERENCE PURPOSES ONLY. IMAGE HAS NOT BEEN ORTHO RECTIFIED TO MATCH THE FIELD SURVEY DATA.



REPAIR COORDINATES			
LOCATION	POINT NO.	NORTHING	EASTING
2	3	1808642.75	6289834.93
	4	1808638.10	6289740.24

HORIZONTAL COORDINATES SHOWN ARE NAD 83

REPAIR QUANTITIES	
LOCATION	ESTIMATED VOLUME
2	85 CUBIC YARDS

CONTRACTOR SHALL DISTRIBUTE FILL VOLUME EVENLY BETWEEN THE IDENTIFIED COORDINATES FOR EACH OF THE DESIGNATED AREAS.

**EELGRASS NOTE**

TO THE MAXIMUM EXTENT PRACTICABLE, CONTRACTOR SHALL PROTECT IN PLACE AND MINIMIZE IMPACTS TO THE EXISTING EELGRASS BEDS THAT ARE LOCATED IN THE VICINITY OF THE PROPOSED MAINTENANCE INFILL REPAIR AREAS.



CITY OF CORONADO, CALIFORNIA  
ENGINEERING AND PROJECT DEVELOPMENT DEPARTMENT

APPROVED BY: \_\_\_\_\_ BY: \_\_\_\_\_ DATE: \_\_\_\_\_

COMMUNITY DEVELOPMENT

DIRECTOR OF ENGINEERING & PROJECT DEVELOPMENT

DATE: \_\_\_\_\_

**TERRACOSTA CONSULTING GROUP**  
ENGINEERS AND GEOLOGISTS  
2690 MURPHY CANYON ROAD, SUITE 200  
SAN DIEGO, CA 92123 8581 573 6900



REVISIONS

NO.	DATE	DESCRIPTION

PLAN NUMBER  
**M-453**

DATE: 2-7-14

**CORONADO CAYS - CHANNEL BERM STABILIZATION**

**CORONADO CAYS - REPAIR LOCATIONS**

SHEET NO.  
**4**

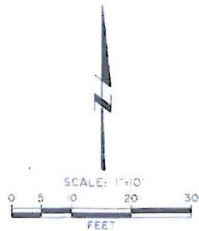
OF 8



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**REPAIR AREA 3 - LOT 411, CATSPA W CAPE**

SCALE: 1" = 0'



**LEGEND**

- EXISTING INTERMEDIATE CONTOUR, 1-FOOT INTERVAL, MEAN SEA LEVEL (PER 1975 SDP5D M-21)
- EXISTING INDEX CONTOUR, 5-FOOT INTERVAL, MEAN SEA LEVEL (PER 1975 SDP5D M-21)
- REPAIR LOCATION DESIGNATION
- LOT NUMBER
- CROSS SECTION NUMBER
- SHEET NUMBER
- COORDINATE LOCATION INDICATING END OF BERM MAINTENANCE INFILL, SEE COORDINATE TABLE ON THIS DRAWING
- INDICATES LOCATION OF PROPOSED BERM MAINTENANCE INFILL
- APPROXIMATE LIMITS OF EELGRASS, AS SURVEYED MAY 31, 2012 BY MERKEL B ASSOCIATES

**REPAIR COORDINATES**

LOCATION	POINT NO.	NORTHING	EASTING
3		1808411.21	6289445.42
		1808413.12	6289469.34

**REPAIR QUANTITIES**

LOCATION	ESTIMATED VOLUME
3	21 CUBIC YARDS

CONTRACTOR SHALL DISTRIBUTE FILL VOLUME EVENLY BETWEEN THE IDENTIFIED COORDINATES FOR EACH OF THE DESIGNATED AREAS.

**EELGRASS NOTE**

TO THE MAXIMUM EXTENT PRACTICABLE, CONTRACTOR SHALL PROTECT IN-PLACE AND MINIMIZE IMPACTS TO THE EXISTING EELGRASS BEDS THAT ARE LOCATED IN THE VICINITY OF THE PROPOSED MAINTENANCE INFILL REPAIR AREAS.



CITY OF CORONADO, CALIFORNIA  
ENGINEERING AND PROJECT DEVELOPMENT DEPARTMENT

APPROVED BY: \_\_\_\_\_ BY: \_\_\_\_\_ DATE: \_\_\_\_\_ APPROVED BY: \_\_\_\_\_

COMMUNITY DEVELOPMENT

DIRECTOR OF ENGINEERING & PROJECT DEVELOPMENT

DATE: \_\_\_\_\_

**TERRACOSTA CONSULTING GROUP**  
ENGINEERS AND GEOLOGISTS  
3890 MURPHY CANYON ROAD, SUITE 200  
SAN DIEGO, CA 92123 16581 573-6900



REVISION	DATE

PLAN NUMBER  
**M-453**

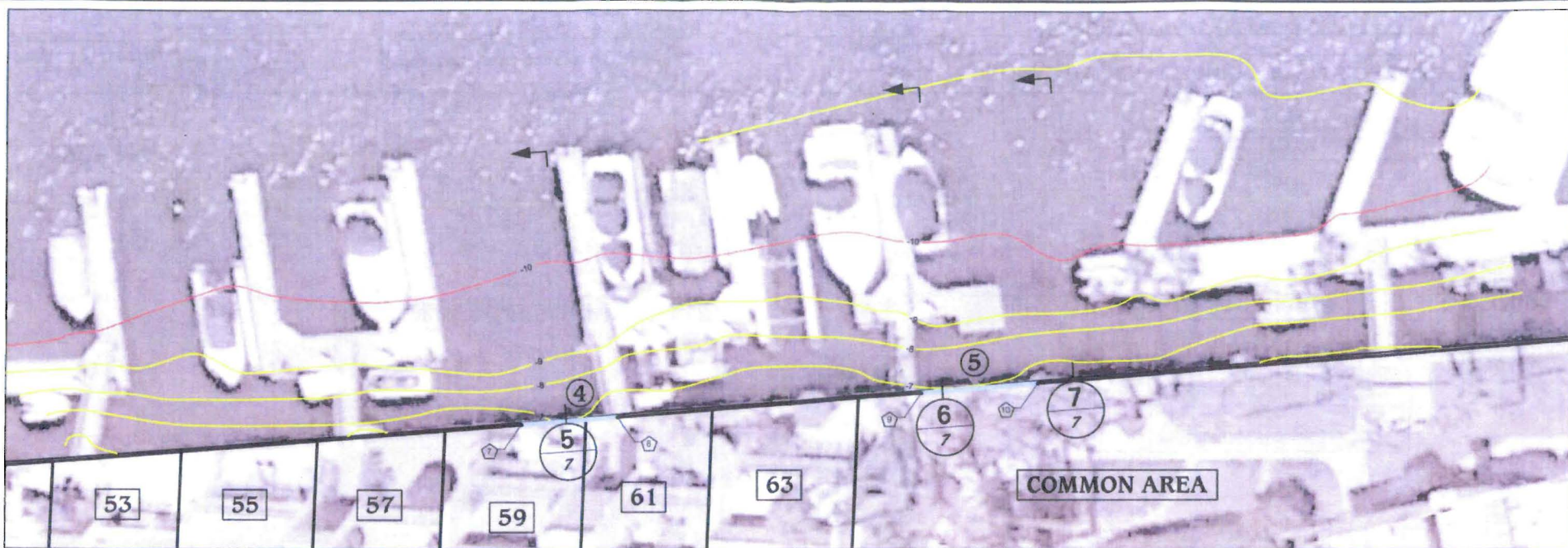
DATE: 2-7-14

0 1/2 1

**CORONADO CAYS - CHANNEL BERM STABILIZATION**

SHEET TITLE  
**CORONADO CAYS - REPAIR LOCATIONS**

SHEET NO.  
**5**  
OF 8



**NOTE:**  
 UNDERLYING IMAGE IS APPROXIMATE AND IS FOR REFERENCE PURPOSES ONLY. IMAGE HAS NOT BEEN ORTHO RECTIFIED TO MATCH THE FIELD SURVEY DATA.

**REPAIR AREA 4 & 5 - LOTS 59, 61 & COMMON AREA, ANTIGUA COURT**

SCALE 1" = 10'

**LEGEND**

- EXISTING INTERMEDIATE CONTOUR, 1-FOOT INTERVAL, MEAN SEA LEVEL (PER 1975 SORSO M-12)
- EXISTING INDEX CONTOUR, 5-FOOT INTERVAL, MEAN SEA LEVEL (PER 1975 SORSO M-12)
- REPAIR LOCATION DESIGNATION
- LOT NUMBER
- CROSS SECTION NUMBER
- SHEET NUMBER
- COORDINATE LOCATION INDICATING END OF BERM MAINTENANCE INFILL. SEE COORDINATE TABLE ON THIS DRAWING.
- INDICATES LOCATION OF PROPOSED BERM MAINTENANCE INFILL
- APPROXIMATE LIMITS OF EELGRASS AS SURVEYED MAY 3, 2012 BY MERKEL & ASSOCIATES

**REPAIR COORDINATES**

LOCATION	POINT NO.	NORTHING	EASTING
4	7	1808446.08	8289879.95
	8	1808447.70	8289899.88
5	9	1808452.75	8289962.42
	10	1808454.69	8289986.34

HORIZONTAL COORDINATES SHOWN ARE NAD 83

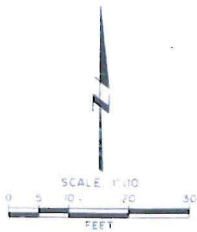
**REPAIR QUANTITIES**

LOCATION	ESTIMATED VOLUME
4	18 CUBIC YARDS
5	71 CUBIC YARDS

CONTRACTOR SHALL DISTRIBUTE FILL VOLUME EVENLY BETWEEN THE IDENTIFIED COORDINATES FOR EACH OF THE DESIGNATED AREAS.

**EELGRASS NOTE**

TO THE MAXIMUM EXTENT PRACTICABLE, CONTRACTOR SHALL PROTECT IN-PLACE AND MINIMIZE IMPACTS TO THE EXISTING EELGRASS BEDS THAT ARE LOCATED IN THE VICINITY OF THE PROPOSED MAINTENANCE INFILL REPAIR AREAS.



CITY OF CORONADO, CALIFORNIA  
 ENGINEERING AND PROJECT DEVELOPMENT DEPARTMENT

APPROVED BY: \_\_\_\_\_ BY: \_\_\_\_\_ DATE: \_\_\_\_\_

COMMUNITY DEVELOPMENT

APPROVED BY: \_\_\_\_\_

DIRECTOR OF ENGINEERING & PROJECT DEVELOPMENT

DATE: \_\_\_\_\_

**TERRACOSTA CONSULTING GROUP**  
 ENGINEERS AND GEOLOGISTS  
 3890 MURPHY CANYON ROAD, SUITE 200  
 SAN DIEGO, CA 92123 (858) 573-6900



REVISION	DATE

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**M-453**

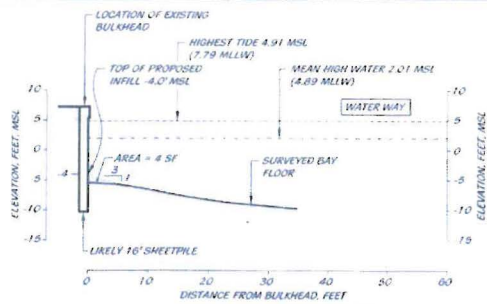
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**CORONADO CAYS - CHANNEL BERM STABILIZATION**

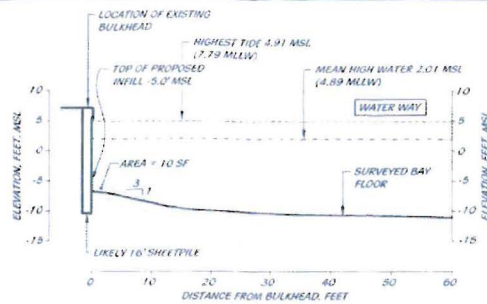
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**CORONADO CAYS - REPAIR LOCATIONS**

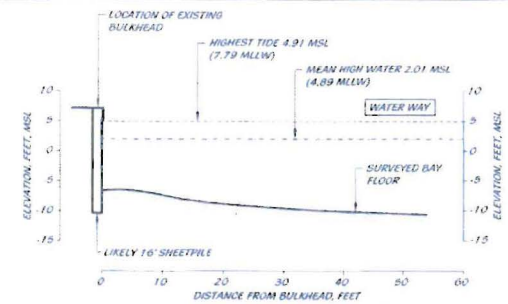
SHEET NO.  
**6**  
 OF 8



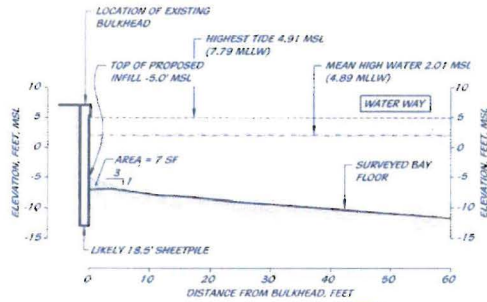
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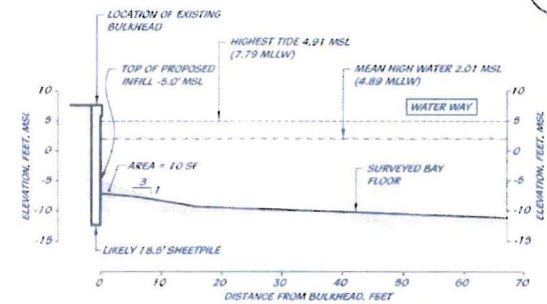
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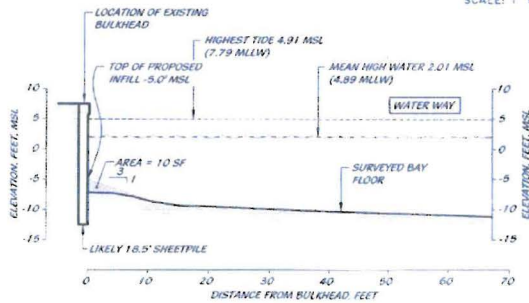
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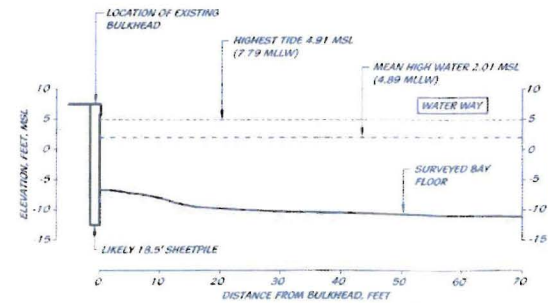
**CROSS SECTION 4**  
SCALE: 1" = 10'



**CROSS SECTION 5**  
SCALE: 1" = 10'



**CROSS SECTION 6**  
SCALE: 1" = 10'



**CROSS SECTION 7**  
SCALE: 1" = 10'



CITY OF CORONADO, CALIFORNIA ENGINEERING AND PROJECT DEVELOPMENT DEPARTMENT	
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DATE:	

**TERRACOSTA CONSULTING GROUP**  
ENGINEERS AND GEOLOGISTS  
3890 MURPHY CANYON ROAD, SUITE 200  
SAN DIEGO, CA 92123 858 573-8900

**TerraCosta**  
Consulting Group

PROJECT NO. \_\_\_\_\_ DATE: \_\_\_\_\_  
M-453  
DATE: 2-2-14  
SHEET NO. \_\_\_\_\_

**CORONADO CAYS - CHANNEL BERM STABILIZATION**

**CORONADO CAYS - CROSS SECTIONS**

# BERM RECONSTRUCTION

## PART 1 - GENERAL

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE GUIDELINES, SPECIFICATIONS AND THE CITY OF CORONADO MUNICIPAL CODE.

### STANDARD SPECIFICATIONS

1 STANDARD SPECIFICATIONS FOR PUBLIC WORKS  
CONSTRUCTION (GREENBOOK), 2013 EDITION, ADOPTED  
DECEMBER 4, 2012.

**1.01 THE REQUIREMENT:** THE WORK OF THIS SECTION INCLUDES ALL EARTHWORK REQUIRED FOR CONSTRUCTION OF THE WORK. SUCH EARTHWORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FURNISHING, LOADING, TRANSPORTING, AND POSITIONING IN ITS FINAL LOCATION ALL MATERIALS WET AND DRY AS REQUIRED FOR THE PURPOSES OF COMPLETING THE WORK SPECIFIED IN THE CONTRACT DOCUMENTS AND SHALL ALSO INCLUDE, BUT NOT BE LIMITED TO, THE TEMPORARY REMOVAL OF DOCKS AS NECESSARY, AND UTILITIES TO ALLOW FILL PLACEMENT INCLUDING REPLACEMENT OF ALL DOCKS AND UTILITIES AT THE COMPLETION OF WORK TO THEIR PRE-REMOVAL CONDITIONS.

**1.02 REFERENCE CODES AND STANDARDS:** THE CONTRACTOR SHALL COMPLY WITH ANY PROJECT REQUIREMENTS OF THE SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD, THE CALIFORNIA COASTAL COMMISSION, AND THE ARMY CORPS OF ENGINEERS. ANY MONITORING, TESTING, AND REPORTING REQUIREMENTS THAT MAY BE REQUIRED BY THESE AGENCIES ARE INCORPORATED INTO THIS CONTRACT. OBTAIN CLEAN AIR PERMIT FOR EQUIPMENT AND HAVE EQUIPMENT INSPECTED BY THE COAST GUARD. EARTHWORK AND MATERIALS SHALL BE IN ACCORDANCE WITH SECTIONS 200 AND 300 OF THE STANDARD SPECIFICATIONS, INCLUDING REGIONAL AND CITY SUPPLEMENT AMENDMENTS (SSPWC), THE SAN DIEGO REGIONAL STANDARD DRAWINGS, 2013 EDITION (ADOPTED DECEMBER 4, 2012), AND THE CITY OF CORONADO MUNICIPAL CODES, EXCEPT AS MODIFIED HEREIN.

**1.03 INSPECTION:** THE CONTRACTOR WILL KEEP A RECORD OF WORK PERFORMED. AT THE REQUEST OF THE CITY OF CORONADO OR ITS REPRESENTATIVES, BOATS, BOATMEN, LABORERS, AND MATERIALS NECESSARY FOR INSPECTING AND SURVEYING THE WORK SHALL BE PROVIDED BY THE CONTRACTOR.

## PART 2 - PRODUCTS

**2.01 FILL MATERIALS:** FILL MATERIALS SHALL BE FREE OF DEBRIS, ROOTS, WOOD, SCRAP MATERIAL, VEGETABLE MATTER, OR OBJECTIONABLE MATERIALS. FILL SHALL BE CLEAN SAND AND SHALL MEET WITH THE FOLLOWING GRADATION.

2.01.1 SAND: SAND SHALL BE CLEAN SAND CONFORMING TO THE GRADATION AS FOLLOWS:

SIEVE NO. SIZE	SIZE	% PASSING SIEVES BY WEIGHT
3/8"	#50mm	100
4"	4.75mm	90-100
8"	2.36mm	85-95
16"	1.180mm	70-80
30"	0.600mm	40-50
50"	0.300mm	10-20
100"	0.150mm	0-10
200"	0.075mm	0-3

THIS GRADATION CONFORMS TO THE REQUIREMENTS FOR MORTAR SAND ACCORDING TO SECTION 200-1.5.5 OF THE SSPWC.

**2.02 FILL:** FILL MATERIALS SHALL BE IMPORTED MATERIALS CONFORMING TO THE GENERAL REQUIREMENTS SPECIFIED ABOVE. FAILURE TO MEET THE MINUS 200 SIEVE SIZE REQUIREMENT WILL RESULT IN AUTOMATIC REJECTION.

## PART 3 - EXECUTION

### 3.01 FILL

**3.01.1 DEFINITIONS:** FILL MATERIAL SHALL BE AN IMPORTED SAND CONFORMING TO THE GRADATION REQUIREMENTS OF PARAGRAPH 2.01 HEREIN.

**3.02 FILL PLACEMENT:** FILL MATERIAL SHALL BE PLACED AS SHOWN ON THE CONTRACT DRAWINGS. IT IS ANTICIPATED THAT FILL WILL BE PLACED BY SOME MECHANICAL MEANS AT THE DISCRETION OF THE CONTRACTOR. NO SUBGRADE PREPARATION OR COMPACTION OF FILL IS REQUIRED. IT IS ANTICIPATED THAT THE CONTRACTOR'S PERSONNEL WILL PROVIDE AT LEAST SOME HAND GRADING WITH SHOVELS, RAKES AND OTHER TOOLS WHILE TRAVERSING THE UPPER PORTION OF THE BERM ADJACENT TO THE BULKHEAD.

### 3.03 FINISH OPERATIONS

**3.03.1 PLACING OF FILL MATERIALS:** SHALL BE AT THE LOCATIONS AND RATIOS INDICATED ON THESE DRAWINGS. EXISTING GRADES WHICH ARE TO REMAIN BUT ARE DISTURBED BY CONTRACTOR'S OPERATIONS SHALL BE GRADED AND RESTORED TO ORIGINAL GRADES AND CONDITIONS.

**3.04 EARTHWORK OPERATIONS:** PRIOR TO THE START OF OPERATIONS, THE CONTRACTOR SHALL SUBMIT A SCHEDULE TO THE CITY. THE SCHEDULE SHALL MEET ANY SPECIFIC TIME REQUIREMENTS REQUIRED BY ANY OF THE VARIOUS AGENCY PERMITS.

**3.04.1 INTERFERENCE WITH NAVIGATION:** MINIMIZE INTERFERENCE WITH THE USE OF CHANNELS AND PASSAGES. THE ENGINEER WILL DIRECT THE SHIFTING OR MOVING OF CONTRACTOR'S BARGES AND WORK VESSELS OR THE INTERRUPTION OF THE CONTRACTOR'S OPERATIONS TO ACCOMMODATE THE MOVEMENT OF VESSELS AND FLOATING EQUIPMENT, IF NECESSARY.

**3.04.2 LIGHTS:** EACH NIGHT BETWEEN SUNSET AND SUNRISE AND DURING PERIODS OF RESTRICTED VISIBILITY, PROVIDE LIGHTS FOR FLOATING PLANS, PIPELINES, RANGES, AND MARKERS. ALSO, PROVIDE LIGHTS FOR BUOYS THAT COULD ENDANGER OR OBSTRUCT NAVIGATION. WHEN NIGHT WORK IS IN PROGRESS, MAINTAIN LIGHTS FROM SUNSET TO SUNRISE FOR THE OBSERVATION OF THE CONSTRUCTION OPERATIONS. LIGHTING SHALL CONFORM TO UNITED STATES COAST GUARD REQUIREMENTS FOR VISIBILITY, COLOR, AND WEATHER CONDITIONS. ALL WORK DONE OUTSIDE NORMAL WORKING HOURS (7:00 AM TO 7:00 PM) MUST BE AUTHORIZED AND CONDITIONED UNDER A NOISE VARIANCE FROM THE CITY OF CORONADO.

**3.04.3 STAKES, RANGES, GAUGES, AND LINES:** FURNISH, SET, AND MAINTAIN STAKES, RANGES, BUOYS, AND MARKERS AS NEEDED TO DEFINE THE WORK AND TO FACILITATE INSPECTION. ESTABLISH AND MAINTAIN STAKES, RANGES, GAUGES AND LINES IN LOCATIONS OBSERVABLE FROM EACH PART OF THE WORK SO THAT THE DEPTH AND PLACEMENT MAY BE DETERMINED. THE CITY OF CORONADO HAS HORIZONTAL AND VERTICAL CONTROL AVAILABLE AS INDICATED FOR THE SETTING OF RANGES, GAUGES, AND BUOYS.

**3.04.3.1:** THERE SHALL BE NO DISCHARGE OF EFFLUENT FROM, OR OVERFLOW OF, FILL MATERIALS INTO THE BAY. THE CONTRACTOR SHALL SUBMIT A PLAN DESCRIBING PROCEDURES OR PROVISIONS TO BE USED OR DEPLOYED IN THE DESIGNATED AREAS TO MEET THIS REQUIREMENT FOR APPROVAL PRIOR TO THE INITIATION OF THE WORK.

**3.04.3.2:** DURING THE WORK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR AND ENSURE THAT THE OPERATIONS SATISFY THE REGULATORY REQUIREMENTS. TURBIDITY LEVELS MUST BE MONITORED BY THE CONTRACTOR AND MAINTAINED WITHIN PERMITTED LEVELS. IF THESE REQUIREMENTS ARE NOT MET, THE OPERATIONS SHALL BE IMMEDIATELY STOPPED AND APPROPRIATE REMEDIAL MEASURES OR PROCEDURES SHALL BE IMPLEMENTED BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE. NO OPERATION CAN BE RESUMED UNTIL THE REGULATORY REQUIREMENTS ARE MET.

**3.04.4 SAFETY OF STRUCTURES:** THE PROSECUTION OF WORK SHALL ENSURE THE STABILITY OF GUIDE PILES, DOCKS AND BULKHEADS LYING ON OR ADJACENT TO THE SITE OF THE WORK. INsofar AS STRUCTURES MAY BE JEOPARDIZED BY THE CONTRACTOR'S OPERATIONS, ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

**3.04.5 PROJECT COMPLETION:** AT PROJECT COMPLETION, CONTRACTOR SHALL PROMPTLY REMOVE ANY EQUIPMENT, MATERIALS AND OBSTRUCTIONS UTILIZED TO PERFORM THE WORK.

**3.05 INSPECTION AND TESTING:** DURING FILLING OPERATIONS, THE CONTRACTOR SHALL ALLOW THE CITY ACCESS TO THE PROJECT AND PROVIDE ANY NEEDED ASSISTANCE FOR INSPECTION AND TESTING PURPOSES.

**3.05.1:** THE CONTRACTOR SHALL ALLOW REGIONAL WATER QUALITY CONTROL BOARD STAFF OR THEIR DESIGNATED REPRESENTATIVE ACCESS TO THE PROJECT SITE AND PROVIDE ANY NEEDED ASSISTANCE FOR INSPECTION AND SAMPLING PURPOSES.

**3.06 NOTIFICATIONS:** THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AT LEAST TWO (2) WEEKS PRIOR TO START OF ANY ACTIVITY. THE NOTIFICATION SHALL INCLUDE THE FOLLOWING INFORMATION: 1) THE LOCATION OF THE WORK SITE, 2) THE SIZE AND TYPE OF EQUIPMENT THAT WILL BE PERFORMING THE WORK, 3) NAME AND RADIO CALL SIGNS FOR WORKING VESSELS, IF APPLICABLE, 4) TELEPHONE NUMBERS FOR ON-SITE CONTACT WITH PROJECT ENGINEERS, 5) THE SCHEDULE FOR COMPLETING THE PROJECT. WHEN THE FILLING IS COMPLETED, THE CONTRACTOR SHALL SEND A COPY OF THE POST SURVEY DRAWINGS TO THE CITY ENGINEER.

### 3.07 MEASUREMENT AND PAYMENT

**3.07.1 FILL MATERIAL:** THE CONTRACT UNIT PRICE BID FOR FILL MATERIAL SHALL INCLUDE FULL COMPENSATION FOR ALL GRADING, SHAPING, OR CONSOLIDATING. THE QUANTITIES USED IN DETERMINING PAYMENT FOR FILL SHALL BE THOSE OF THE COMPLETED FILLS WITHIN THE LIMITS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, BASED ON CERTIFIED MATERIAL WEIGHT SLIPS TO DETERMINE MATERIAL QUANTITIES PLACED.

**3.07.2 POST-CONSTRUCTION SURVEY:** THE CONTRACTOR SHALL PERFORM A HYDROGRAPHIC BATHYMETRIC SURVEY AT THE COMPLETION OF BERM FILL MATERIAL PLACEMENT SHOWING THE NEW SOUNDINGS AND SUBMIT DRAWINGS TO THE ENGINEER PRIOR TO THE ACCEPTANCE OF WORK. THE DRAWINGS SHALL BE SIGNED AND STAMPED BY A LICENSED LAND SURVEYOR OR CIVIL ENGINEER.

## MAINTENANCE INFILL DATA TABLE

PLAN AREA DESIGNATION	LOT NUMBER	STREET NAME	APPLICABLE CROSS SECTION	PROPOSED INFILL LENGTH	PROPOSED INFILL VOLUME, (c.y.)
1	197	SANDPIPER STRAND	1	8'	5
2	277/278/279	GREEN TURTLE RD	2 & 3	95'	85
3	411	CATSPAW CAPE	4	24'	21
4	59	ANTIGUA CT	5	20'	18
5	COMMON AREA	ANTIGUA CT	6 & 7	24'	21
TOTAL:				171'	150

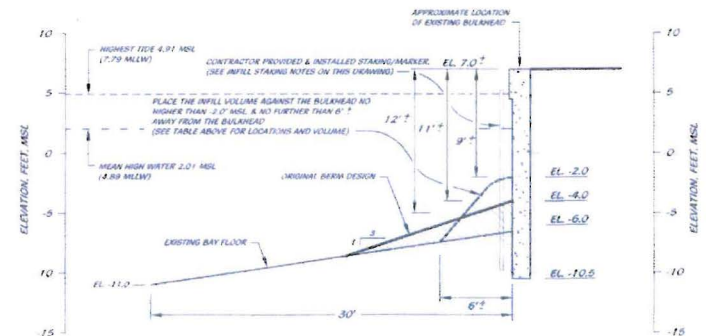
PROJECT TOTAL, (150 c.y./171 ft.) : 0.88 CUBIC YARDS PER LINEAL FOOT

## INFILL STAKING NOTES

- CONTRACTOR SHALL PROVIDE AND PLACE MARKERS ADJACENT TO THE BULKHEAD AT BOTH ENDS OF THE PROPOSED INFILL AREAS. AT THE NAD 83 NORTHINGS AND EASTINGS INDICATED ON THESE DRAWINGS.
- MARKERS UTILIZED SHALL BE SUFFICIENTLY VISIBLE DURING HIGH TIDES.
- MARKERS SHALL REMAIN IN PLACE UNTIL OTHER THE CITY OR THE ENGINEER OF RECORD APPROVES THEIR REMOVAL.

## INFILL PLACEMENT NOTES

- CONTRACTOR MAY PLACE EACH OF THE DESIGNATED INFILL AREAS VOLUME UP AGAINST THE BULKHEAD NO HIGHER THAN 2.0' MSL.
- ALL INFILL SHALL BE FILLED WITHIN 6" OF THE BULKHEAD.



## PROPOSED GENERALIZED LOW BERM - CROSS SECTION

(FOR A BERM ELEVATION BELOW -6 FEET MSL FOR AREAS 'A' AND 'C' AND BELOW -7 FEET MSL FOR AREA 'B')  
SCALE 1:10 (HORIZ & VERT.)

**NOTE:**  
CONTRACTOR IS ADVISED THAT THIS PROJECT INVOLVES WORK IN A FLUCTUATING MARINE Tidal ENVIRONMENT AND TO TAKE DUE PRECAUTIONS AND CARE IN ANTICIPATING PROBLEMS THAT MAY ARISE THEREFROM. ALL WORK SHALL BE IN CONFORMANCE WITH ALL REGULATORY AGENCY PERMITS.



CITY OF CORONADO, CALIFORNIA  
ENGINEERING AND PROJECT DEVELOPMENT DEPARTMENT  
APPROVED BY: \_\_\_\_\_ BY DATE: \_\_\_\_\_ APPROVED BY: \_\_\_\_\_  
COMMUNITY DEVELOPMENT DIRECTOR OF ENGINEERING & PROJECT DEVELOPMENT  
DATE: \_\_\_\_\_

**TERRACOSTA CONSULTING GROUP**  
ENGINEERS AND GEOLOGISTS  
4456 MURPHY CANYON ROAD, SUITE 100  
SAN DIEGO, CA 92123 (858) 513-6900



PROJECT NUMBER: M-453  
DATE: 2-2-14  
SCALE: 1/2" = 1'

**CORONADO CAYS - CHANNEL BERM STABILIZATION**  
BERM RECONSTRUCTION - NOTES & DETAILS

SHEET NO. 8  
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