

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

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

**PROJECT: 517 and 521 Pacific Avenue Project
Certification Number R9-2017-0059
WDID: 9000003162**

Reg. Meas. ID: 412304 Place ID: 833899 Party ID: 563041 & 563042 Person ID: 563039 & 563040
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**APPLICANT: Lucker Family Trust
517 Pacific Avenue
Solana Beach, CA 92075**

**Winkler Trust
1400 Maiden Lane
Del Mar, CA 92014**

ACTION:

<input checked="" type="checkbox"/> Order for Low Impact Certification	<input type="checkbox"/> Order for Denial of Certification
<input 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 March 23, 2017 was submitted by the Lucker Family Trust and Winkler Trust (hereinafter Applicants), for Water Quality Certification pursuant to section 401 of the Clean Water Act (United States Code (USC) Title 33, section 1341) for the proposed 517 and 521 Pacific Avenue Shoreline Stabilization Project (Project). The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) deemed the application to be complete on July 5, 2017. The Applicant proposes to discharge dredged or fill material to waters of the United States and/or State associated with construction activities at the Project site. The Applicants have also applied for a Clean Water Act section 404 permit from the United States Army Corps of Engineers for the Project under an individual permit (SPL-2016-00726-RRS).

The Project is located within the City of Solana Beach, San Diego County, California at 517 and 521 Pacific Avenue. The Project center reading is located at latitude 32.998074 and longitude -117.27676. The Applicants have paid all required application fees for this Certification in the amount of \$2,446.00. On an annual basis, the Applicant shall also pay all active discharge fees and post discharge monitoring fees, as appropriate¹. On July 5, 2017,

¹ The Applicant must pay an annual active discharge fee each fiscal year or portion of a fiscal year during which discharges occur until the San Diego Water Board or the State Water Resources Control Board (State Water Board) issues a Notice of Completion of Discharges Letter

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 Applicants proposes to construct a 151 ft. long, 32 ft. high, and 30-inch thick coastal bluff concrete sea wall on the beach and bluff fronting 517 and 521 Pacific Avenue. The sea wall will connect to an existing seawall to the north and an existing seawall to the south. Also, proposed is the installation of hydroseed and container plantings on the slope below the northern property. The development is located on City-owned beach and bluff face fronting two existing single-family residences. The owner of 521 Pacific Avenue owns the bluff to the toe of the bluff.

The Project will convert approximately 0.11 acres of pervious ground cover to impervious surfaces. Runoff leaving the developed Project area would be significantly greater in volume, velocity, peak flow rate, and duration than pre-development runoff from the same area without mitigation. Post-construction best management practices (BMPs) to manage and control the effects of these runoff increases will consist of increased vegetation above the seawall, storm water runoff from impervious surfaces on top of the bluff shall be directed away from the bluff edge toward the streets, and any permanent irrigation system on the subject sites that drain on or over the bluff top and face shall be removed or capped. These BMPs will be designed, constructed, and maintained to meet City of Solana Beach Low Impact Development (LID) Capture Volume and hydromodification treatment requirements.

Project construction will permanently impact 0.0086 acre (151 linear feet) of Pacific Ocean shoreline waters of the United States and/or State. The Applicants reports that the Project purpose cannot be practically accomplished in a manner which would avoid or result in less adverse impacts to aquatic resources considering all potential practicable alternatives, such as the potential for alternate available locations, designs, reductions in size, configuration or density.

The Applicant reports that compensatory mitigation for the permanent loss of 0.0086 acre of jurisdictional waters and for the expected loss of sand from preventing erosion along the seawall will be achieved through payment into a beach sand replenishment program established by the City of Solana Beach. Funds are to support the establishment, restoration, enhancement, and preservation of waters, beaches, and recreational areas as seen fit by City of Solana Beach. The funds are solely to pay for local sand replenishment projects and is not intended to fund beach operation or maintenance.

Receiving waters potentially affected by the Project are protected in accordance with water quality standards in the *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan). This Certification authorizes permanent and temporary impacts to waters of the United States

to the Applicant. The Applicant must also pay an annual post-discharge monitoring fee each fiscal year or portion of a fiscal year commencing with the first fiscal year following the fiscal year in which the San Diego Water Board or the State Water Board issued a Notice of Completion of Discharges Letter to the Applicant, but continued water quality monitoring or compensatory mitigation monitoring is required. The Applicant must pay the annual post-discharge monitoring fee each fiscal year until the San Diego Water Board or the State Water Board issues a Notice of Project Complete Letter to the Applicant. Additional information regarding fees can be found electronically at the following location: http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredgefillcalculator.xlsx

and/or State affected by the Project and requires compensatory mitigation to offset adverse impacts as described in section VI of the Certification. The temporary impacts will be restored by the Applicant to pre-Project conditions and do not include physical loss of aquatic resource area or degradation of ecological conditions.

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Attachments:

1. Definitions
2. Project Figures and Plans

The San Diego Water Board has independently reviewed the record of the Project to analyze the extent and nature of proposed Project impacts to the water quality and beneficial uses of waters of the United States and/or State and associated compensatory mitigation required to offset impacts attributed to the Project. In accordance with this Certification, the Applicant may proceed with the Project under the following terms and conditions:

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. R9-2017-0059 (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/go_wdr401regulated_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.). The Basin Plan is accessible on-line at:
- http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml
- 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, 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 the Pacific Ocean Shoreline;
 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 Resources Control Board (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 or will be provided upon request.

III. CONSTRUCTION AND POST CONSTRUCTION BEST MANAGEMENT PRACTICES

- A. **Construction Requirements.** Prior to start of Project construction, the Applicant must, as applicable, obtain coverage under, and comply with, the requirements of State Water Resources Control Board Water Quality Order No. 2009-0009-DWQ, the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity (General Construction Storm Water Permit) and any reissuance. If Project construction activities do not require coverage under the General Construction Storm Water Permit, the Applicant must develop and implement a pollution control plan, construction BMP plan, and/or erosion and sediment control plan to prevent the discharge of sediment and other pollutants during construction activities.
- B. **Post-Construction Requirements.** The Project must meet all the Post-Construction requirements of the San Diego Water Board Order No. R9-2013-0001 (and amendments) National Pollutant Discharge Elimination Systems Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4) Draining the Watersheds within the San Diego Region (Regional MS4 Permit).

IV. PROJECT IMPACTS AND COMPENSATORY MITIGATION

- A. **Project Impacts and Compensatory Mitigation.** Unavoidable Project impacts to the Pacific ocean shoreline must not exceed the type and magnitude of impacts described in the table below. At a minimum, compensatory mitigation required to offset unavoidable temporary and permanent Project impacts to waters of the United States and/or State must be achieved as described in the table below:

	Impacts (acres)	Impacts (linear ft.)	Mitigation for Impacts (acres)	Mitigation Ratio (area mitigated : area impacted)	Mitigation for Impacts (linear ft.)	Mitigation Ratio (linear feet mitigated : linear feet impacted)
Permanent Impacts						
Pacific Ocean Shoreline	0.0086	151	NA ¹	NA ¹	NA ²	NA ²
Temporary Impacts³						
Pacific Ocean Shoreline	0	0	NA	NA	NA	NA

NA – Not applicable

1. Project compensatory mitigation in the form of a fee paid into a beach sand replenishment fund established by the City of Solana Beach.
2. Compensatory mitigation is being provided by payment into a beach sand replenishment fund; therefore, compensatory mitigation for linear feet is not being calculated on a project-by-project basis.
3. All areas of temporary impacts must be restored to pre-project contours and re-vegetated with native species.

B. Mitigation Credit Purchase. Prior to the start of construction, the Applicant must provide documentation to the San Diego Water Board verifying the payment into the City of Solana Beach beach sand replenishment fund.

C. Temporary Project Impact Areas. The Applicant must restore all areas of temporary impacts and all other areas of temporary disturbance which could result in a discharge or a threatened discharge of pollutants to waters of the United States and/or State. Restoration must include grading of disturbed areas to pre-project contours and re-vegetation with native species. The Applicant must implement all necessary BMPs to control erosion and runoff from areas associated with the Project.

V. MONITORING AND REPORTING REQUIREMENTS

A. Annual Project Progress Reports. The Applicant must submit annual Project progress reports describing compliance with all requirements of this Certification to the San Diego Water Board prior to **May 1** of each year following the issuance of this Certification, until the Project has reached completion. The report must include the following information:

1. The names, qualifications, and affiliations of the persons contributing to the report;
2. The status, progress, and anticipated schedule for completion of Project construction activities;
3. A description of Project construction delays encountered or anticipated that may affect the schedule for construction completion; and
4. A description of each incident of noncompliance during the annual monitoring period and its cause, the period of the noncompliance including exact dates and times, and

if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

B. 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;
3. As-built drawings of the Project, no bigger than 11"X17"; and
4. Photo documentation of implemented post-construction BMPs and all areas of permanent and temporary impacts, prior to and after project construction. Photo documentation must be conducted in accordance with guidelines posted at http://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf. In addition, photo documentation must include Global Positioning System (GPS) coordinates for each of the photo points referenced.

C. 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.

D. Electronic Document Submittal. The Applicant must submit all reports and information required under this Certification in electronic format via e-mail to SanDiego@waterboards.ca.gov. Documents over 50 megabytes will not be accepted via e-mail and must be placed on a disc and delivered to:

California Regional Water Quality Control Board
San Diego Region
Attn: 401 Certification No. R9-2017-0059:833899:amonji
2375 Northside Drive, Suite 100
San Diego, California 92108

Each electronic document must be submitted as a single file, in Portable Document Format (PDF), and converted to text searchable format using Optical Character Recognition (OCR). All electronic documents must include scanned copies of all signature pages; electronic signatures will not be accepted. Electronic documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Certification No. R9-2017-0059:833899:amonji.

E. 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.

F. 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."

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.**
 - 3. Transfer of Post-Construction BMP Maintenance Responsibility:** The Applicant assumes responsibility for the inspection and maintenance of all post-construction structural BMPs until such responsibility is legally transferred to another entity. At the time maintenance responsibility for post-construction BMPs is legally transferred the Applicant must submit to the San Diego Water Board a copy of such documentation and must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer specifications. The Applicant must provide such notification to the San Diego Water Board **within 10 days** of the transfer of BMP maintenance responsibility.

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 Solana Beach 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 the Project is categorically exempt.
- 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 as minor alterations to land.
- 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

Alan Monji, Environmental Scientist
Telephone: 619-521-3968
Email: Alan.Monji@waterboards.ca.gov

IX. WATER QUALITY CERTIFICATION

I hereby certify that the proposed discharge from the **517 and 521 Pacific Avenue Project** (Certification No. R9-2017-0059) 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. R9-2017-0059 issued on December 8, 2017.



DAVID W. GIBSON
Executive Officer
San Diego Water Board

8 December 2017
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.

ATTACHMENT 2

PROJECT FIGURES AND PLANS

1. California Coastal Commission, Exhibit 1, Project Location.
2. California Coastal Commission, Exhibit 2, Aerial Photograph.
3. California Coastal Commission, Exhibit 1, Proposed Seawall Location Photograph.
4. California Coastal Commission, Exhibit 8, Proposed Landscaping on Existing Grogrid Photograph.
5. California Coastal Commission, Exhibit 10, Rough Approximation of Geologic Setback Line.
6. Terracosta Consulting Group, Construction Plans, Sheets 1-9.
7. David Reed Landscape Architects, Landscape Plans, Sheets 1-8.

PROJECT LOCATION



Project Location



Google Maps

EXHIBIT NO. 1
APPLICATION NO. 6-16-0281
Project Location
 California Coastal Commission

AERIAL PHOTOGRAPH



Proposed Seawall Location

EXHIBIT NO. 2
APPLICATION NO. 6-16-0281
Aerial Photo



Google Maps



PROPOSED SEAWALL LOCATION PHOTOGRAPH



- Proposed construction of a 140 ft. long, 32 ft. high, 30 in. thick seawall on the beach and bluff



PROPOSED LANDSCAPING ON EXISTING GEOGRID PHOTOGRAPH



- Proposed installation of hydroseed and container plantings on the existing geogrid slope



2002-2015 Kenneth & Gabrielle Adelman - Adelman@Adelman.COM

EXHIBIT NO. 8
APPLICATION NO. 6-16-0281
Landscaping
 California Coastal Commission

ROUGH APPROXIMATION OF GEOLOGIC SETBACK LINE (GSL)

GSL AT 517 PACIFIC AVENUE = 86 FT. FROM BLUFF EDGE
GSL AT 521 PACIFIC AVENUE = 78 FT. FROM BLUFF EDGE



Google Maps

EXHIBIT NO. 10
APPLICATION NO. 6-16-0281
GSL
 California Coastal Commission

517 & 521 PACIFIC AVENUE SHORELINE STABILIZATION PROJECT

GENERAL NOTES

- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
- NEITHER THE OWNER, NOR THE ENGINEER OF WORK WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
- THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT AND MAINTAIN THE EXISTING UTILITY SERVICES SHOWN ON THESE PLANS AND ANY OTHERS NOT OF RECORD OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO PROVIDE A MARKOUT OF ALL UTILITIES WITHIN THE AREA OF WORK PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO ENSURE THAT ALL UTILITY SERVICES WILL REMAIN FUNCTIONAL DURING THE CONSTRUCTION PERIOD.
- THE CONTRACTOR SHALL OBTAIN AND HAVE AVAILABLE ON THE JOB SITE COPIES OF APPLICABLE STANDARDS SHOWN ON THESE PLANS, AND BE FAMILIAR WITH THEIR REQUIREMENTS.
- ALL CONSTRUCTION SHALL CONFORM TO ALL LOCAL CODES, ORDINANCES, RESTRICTIONS AND OSHA REQUIREMENTS.
- THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS OF ALL EXISTING FACILITIES, THE LOCATIONS OF ALL EXISTING UTILITIES, AND ALL OTHER CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
- NOTES AND DETAILS ON THE PLANS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES IN CASE OF CONFLICT.
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF THE WORK, SUCH DETAILS SHALL BE THE SAME AS FOR SIMILAR WORK SHOWN ON THE PLANS OR THE SAN DIEGO REGIONAL DRAWINGS.
- UPON COMPLETION OF EACH DAY'S WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE WORK AREA FREE OF HAZARDS, AND SHALL PROVIDE ALL NECESSARY TEMPORARY SIGNS, WARNING DEVICES, AND BARRICADES.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO LOCATE AND PROTECT ANY UNDERGROUND OR CONCEALED CONDUIT, PLUMBING OR OTHER UTILITIES WHERE NEW WORK IS BEING PERFORMED. BEFORE EXCAVATING, VERIFY LOCATION OF UNDERGROUND UTILITIES - CONTACT:
 - UNDERGROUND SERVICE ALERT: 800-227-2600
 - CITY OF SOLANA BEACH PUBLIC WORKS: 858-720-2470
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS BEFORE STARTING WORK, AND HE SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL WORK SHOWN IS BUILT IN ACCORDANCE WITH THESE PLANS. IF THERE IS ANY QUESTION REGARDING THESE PLANS OR FIELD STAKES, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION BEFORE DOING ANY WORK BY CONTACTING THE ENGINEER OF RECORD AT (858) 573-6900. THE CONTRACTOR SHALL ALSO TAKE THE NECESSARY STEPS TO PROTECT THE PROJECT AND ADJACENT PROPERTY FROM ANY EROSION AND SILTATION THAT RESULT FROM HIS OPERATIONS BY APPROPRIATE MEANS (SAND BAGS, HAY BALES, TEMPORARY DESILTING BASINS, DIKES, SHORING, ETC.) UNTIL SUCH TIME THAT THE PROJECT IS COMPLETED AND ACCEPTED FOR MAINTENANCE BY THE OWNER.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AT (858) 573-6900 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL KEEP ACCURATE AND LEGIBLE RECORDS ON A SET OF PROJECT BLUELINE PRINTS OF ALL CHANGES OF WORK WHICH OCCUR DURING PROJECT CONSTRUCTION. PRIOR TO FIELD ACCEPTANCE, THE CONTRACTOR SHALL DELIVER THIS "AS BUILT" INFORMATION TO THE ENGINEER.
- A CONSTRUCTION, EXCAVATION OR ENCROACHMENT PERMIT FROM THE CITY ENGINEER WILL BE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY.
- APPROVAL OF THESE PLANS BY THE CITY ENGINEER DOES NOT AUTHORIZE ANY WORK TO BE PERFORMED UNTIL A VALID PERMIT HAS BEEN ISSUED.
- ALL OPERATIONS CONDUCTED ON THE PREMISES, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTHMOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED GRADING EQUIPMENT SHALL BE LIMITED TO THE PERIOD BETWEEN 7:00 A.M. AND 7 P.M. EACH DAY, MONDAY THROUGH FRIDAY AND NO EARTHMOVING OR GRADING OPERATIONS SHALL BE CONDUCTED ON THE PREMISES ON SATURDAYS, SUNDAYS OR HOLIDAYS WITHOUT THE WRITTEN PERMISSION OF THE CITY ENGINEER.
- NOTWITHSTANDING THE MINIMUM STANDARDS SET FORTH IN THE EXCAVATION AND GRADING CODE, AND NOTWITHSTANDING THE APPROVAL OF THESE GRADING PLANS, THE PERMITTEE IS RESPONSIBLE FOR THE PREVENTION OF DAMAGE TO THE ADJACENT PROPERTY. NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PUBLIC STREET, SIDEWALK, ALLEY, FUNCTION OF ANY SEWAGE DISPOSAL SYSTEM, OR ANY OTHER PUBLIC OR PRIVATE PROPERTY WITHOUT SUPPORTING AND PROTECTING SUCH PROPERTY FROM SETTLING, CRACKING, EROSION, SILTING, SCOUR OR OTHER DAMAGE WHICH MIGHT RESULT FROM THE GRADING DESCRIBED ON THIS PLAN. THE CITY WILL HOLD THE PERMITTEE RESPONSIBLE FOR CORRECTION ON NON-DEDICATED IMPROVEMENTS, WHICH DAMAGE ADJACENT PROPERTY.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF SOLANA BEACH AT (858) 720-2470, 24 HOURS BEFORE GRADING OPERATIONS BEGIN.

EROSION CONTROL NOTES

- STORM WATER AND NON-STORM WATER DISCHARGE CONTROL: BEST MANAGEMENT PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO MANAGE STORM WATER AND NON-STORM WATER DISCHARGES FROM THE SITE AT ALL TIMES DURING EXCAVATION AND GRADING ACTIVITIES.
- EROSION AND SEDIMENT CONTROL: EROSION PREVENTION SHALL BE EMPHASIZED AS THE MOST IMPORTANT MEASURE FOR KEEPING SEDIMENT ON SITE DURING EXCAVATION AND GRADING ACTIVITIES. SEDIMENT CONTROLS SHALL BE USED AS A SUPPLEMENT TO EROSION PREVENTION FOR KEEPING SEDIMENT ON SITE.
- EROSION CONTROL ON SLOPES SHALL BE MITIGATED BY INSTALLING LANDSCAPING AS PER APPROVED LANDSCAPE PLANS.
- THE TOPS OF ALL SLOPES SHALL BE DIKED OR TRENCHED TO PREVENT WATER FLOWING OVER CRESTS OF SLOPES.
- THE CONTRACTOR SHALL REPAIR ANY ERODED SLOPES AS DIRECTED BY THE OFFICE OF THE CITY ENGINEER.
- THE CONTRACTOR SHALL SWEEP ROADWAYS AND ENTRANCES TO AND FROM THE SITE ON A REGULAR BASIS TO KEEP THEM FREE OF SOIL ACCUMULATION AND AT ALL OTHER TIMES DIRECTED BY THE CITY ENGINEER.
- THE CONTRACTOR SHALL WATER SITE ON A CONTINUOUS BASIS TO MINIMIZE AIR BORNE DUST CREATED FROM GRADING AND HAULING OPERATIONS OR EXCESSIVE WIND CONDITIONS, AND AT ALL TIMES DIRECTED BY THE CITY ENGINEER.
- IN THE EVENT SILT DOES ENTER THE EXISTING PUBLIC STORM DRAIN SYSTEM, REMOVAL OF THE SILT FROM THE SYSTEM WILL BE AT THE CONTRACTOR'S EXPENSE.

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS AND SPECIFICATIONS.

THIS PROJECT SHALL GENERALLY CONSIST OF ALL WORK NECESSARY TO CONSTRUCT THE SHORELINE PROTECTION IMPROVEMENTS BELOW THE SUBJECT PROPERTY AS SHOWN ON THESE CONSTRUCTION DRAWINGS.

UPON COMPLETION OF THE WORK, THE ENTIRE SITE SHALL BE CLEARED OF EQUIPMENT, UNUSED MATERIALS, AND RUBBISH SO AS TO PRESENT A SATISFACTORY, CLEAN, AND NEAT APPEARANCE. CONTRACTOR IS TO FURNISH ALL TOOLS, EQUIPMENT, LABOR, AND MATERIAL NECESSARY TO PERFORM THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

OWNER/DEVELOPER CERTIFICATE

WE, DAVID WINKLER AND RONALD LUCKER, AS OWNERS OF THE PROPERTIES DESCRIBED HEREIN ACKNOWLEDGE THESE PLANS HAVE BEEN PREPARED AT OUR DIRECTION WITH OUR FULL CONSENT. WE FULLY UNDERSTAND AND ACCEPT THE TERMS AND CONDITIONS CONTAINED HEREIN AND AS ATTACHED BY REFERENCE ON THIS GRADING PLAN.

IT IS AGREED THAT FIELD CONDITIONS MAY REQUIRE CHANGES TO THESE PLANS.

IT IS FURTHER AGREED THAT THE OWNERS SHALL HAVE A REGISTERED CIVIL ENGINEER MAKE SUCH CHANGES, ALTERATIONS OR ADDITIONS TO THESE PLANS WHICH THE CITY ENGINEER DETERMINES ARE NECESSARY AND DESIRABLE FOR THE PROPER COMPLETION OF THE IMPROVEMENTS.

WE FURTHER AGREE TO COMMENCE WORK ON ANY IMPROVEMENTS SHOWN ON THESE PLANS WITHIN EXISTING CITY RIGHT-OF-WAY WITHIN 60 DAYS AFTER ISSUANCE OF THE CONSTRUCTION PERMIT AND TO PURSUE SUCH WORK ACTIVELY ON EVERY NORMAL WORKING DAY UNTIL COMPLETED, IRRESPECTIVE AND INDEPENDENT OF ANY OTHER WORK ASSOCIATED WITH THIS PROJECT OR UNDER OUR CONTROL.

SIGNED _____ DATE _____

SIGNED _____ DATE _____

ENGINEER OF WORK CERTIFICATE

I, WALTER CRAMPTON, HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS AND CITY OF SOLANA BEACH RESOLUTION NO. 2016-010.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF SOLANA BEACH IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME OF RESPONSIBILITIES FOR PROJECT DESIGN.

SIGNED _____ DATE _____

R.C.E. NUMBER 23792 EXP. 12-31-17

ADDRESS 3890 MURPHY CANYON ROAD, SUITE 200, SAN DIEGO, CA 92123

TELEPHONE (858) 573-6900

ENGINEER OF WORK AS-BUILT CERTIFICATE

I, _____ HEREBY DECLARE THAT THE PREPARATION OF THESE AS-BUILT DRAWINGS AND THAT THE INFORMATION SHOWN IS BASED ON ACTUAL SITE INVESTIGATIONS AND SURVEYS OF THE IMPROVEMENTS BETWEEN THE DATES OF _____ AND _____ TO THE BEST OF MY KNOWLEDGE AND EXPERIENCE THE INFORMATION SHOWN ON THESE PLANS PROVIDE AN ACCURATE AND CORRECT REPRESENTATION OF THE AS-BUILT CONDITIONS.

SIGNED _____ DATE _____

R.C.E. NUMBER _____ EXP. _____

SOIL ENGINEER CERTIFICATE

I, WALTER CRAMPTON, A REGISTERED GEOTECHNICAL ENGINEER OF THE STATE OF CALIFORNIA, PRINCIPALLY DOING BUSINESS IN THE FIELD OF APPLIED SOIL MECHANICS, HEREBY CERTIFY THAT A SAMPLING AND STUDY OF THE SOIL AND CONDITIONS PREVALENT WITHIN THE SITE WAS MADE BY ME OR UNDER MY DIRECTION BETWEEN THE DATES FEBRUARY 2008 AND JULY 2015. I HAVE REVIEWED THE PROJECT DESIGN AND GRADING SHOWN HEREIN IS CONSISTENT WITH THE RECOMMENDATIONS CONTAINED IN THE APPROVED SOILS AND GEOTECHNICAL REPORTS FOR THE PROJECT. ONE COMPLETE COPY OF THE FINAL SOILS REPORT COMPILED FROM THIS STUDY, WITH MY RECOMMENDATIONS, HAS BEEN SUBMITTED TO THE OFFICE OF THE CITY ENGINEER.

SIGNED _____ DATE _____

G.E. NUMBER 245 EXP. 12-31-17

ADDRESS 3890 MURPHY CANYON ROAD, SUITE 200, SAN DIEGO, CA 92123

TELEPHONE (858) 573-6900

SOIL ENGINEER AS-BUILT CERTIFICATE

TO THE BEST OF MY KNOWLEDGE AND EXPERIENCE THE GRADING CONFORMS WITH THE RECOMMENDATIONS CONTAINED IN THE SOILS REPORT AND PLANS WITH THE EXCEPTION THAT ANY CHANGES OR DEVIATIONS FROM THE PLANS DUE TO UNFORESEEN FIELD CONDITIONS HAVE BEEN IDENTIFIED IN THE FINAL SOILS REPORT FOR THE PROJECT. ONE COMPLETE COPY OF THE FINAL SOILS REPORT COMPILED FROM THIS STUDY, WITH MY RECOMMENDATIONS, HAS BEEN SUBMITTED TO THE OFFICE OF THE CITY ENGINEER.

SIGNED _____ DATE _____

G.E. NUMBER _____ EXP. _____

STANDARD REQUIREMENTS

- ALL WORK, UNLESS OTHERWISE SPECIFIED, SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION AND SUPPLEMENTS OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," SAN DIEGO REGIONAL STANDARD DRAWINGS AND CITY OF SOLANA BEACH ENGINEERING CONSTRUCTION STANDARDS.

ASSESSOR PARCEL NUMBERS / ADDRESSES

263-041-14-00-517 PACIFIC AVENUE

263-041-04-00-521 PACIFIC AVENUE
263-041-26-00

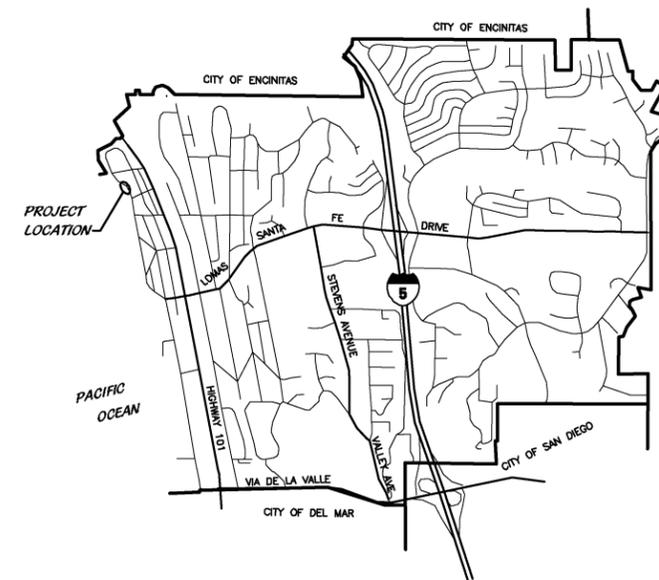
SHEET INDEX

SHEET NO. DESCRIPTION

- | SEAWALL PLANS | |
|---------------|--------------------------------------|
| 1 | TITLE SHEET |
| 2 | ADDITIONAL NOTES |
| 3 | ADDITIONAL NOTES |
| 4 | EXISTING CONDITION SITE PLAN |
| 5 | SITE PLAN |
| 6 | CROSS SECTIONS & WALL PROFILE |
| 7 | STRUCTURAL DETAILS |
| 8 | DETAILS |
| 9 | SITE ACCESS / STAGING & PHASING PLAN |

LANDSCAPE PLANS

- | | |
|---|-------------------------------------|
| 1 | LANDSCAPE PLANS TITLE SHEET |
| 2 | PLANTING PLAN |
| 3 | PLANTING NOTES, LIST & DETAILS |
| 4 | PLANTING SPECIFICATIONS |
| 5 | PLANTING SPECIFICATIONS |
| 6 | TEMPORARY IRRIGATION PLAN |
| 7 | TEMPORARY IRRIGATION NOTES & LEGEND |
| 8 | TEMPORARY IRRIGATION SPECIFICATIONS |



VICINITY MAP
NOT TO SCALE

BENCH MARK
DESCRIPTION: STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
LOCATION: AT SOLANA BEACH, ALONG HWY 101, 0.5 MILE N OF INTERSECTION OF HWY 101 AND VIA LA VALLE, 53 FT E OF CENTERLINE OF HWY 101, 82 FT W OF AT AND SFRR TRACKS, 24 FEET N OF PROJECTED CENTERLINE OF DAHLIA DRIVE, 6 FEET N OF PP J125081. A COPPER ROD 13.5 FEET DEEP WITH STANDARD DISK STAMPED LJ 108 1968, T145 R4W 02
ELEV.: 63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-04-86

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	ENGINEER OF WORK	CITY APPROVED CHANGES	APP'D DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH	ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief	By: _____ District Engineer	RF Drawn By: <u>WALTER F. CRAMPTON</u> , Date: <u>4-17-17</u> R.C.E.: 23792 Exp: 12/31/17			By: _____ Date: _____ By: _____ Date: _____	By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-18	SEE DETAILED BLOCK ABOVE LEFT	TITLE SHEET FOR: 517 & 521 PACIFIC AVENUE SHORELINE STABILIZATION PROJECT		SBGR- SHEET 1 OF 9



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

1393A/1809

SPECIAL NOTES

1. AERIAL PHOTOGRAMMETRICALLY-PREPARED TOPOGRAPHIC MAPS ARE REASONABLY ACCURATE ON FLAT TO MODERATE SLOPES, AND CONSIDERABLY LESS ACCURATE ON STEEP TO NEAR-VERTICAL SLOPES SUCH AS THOSE FOUND ON THIS PROJECT. MOREOVER, ADDITIONAL COASTAL EROSION HAS OCCURRED SINCE THE ORIGINAL AERIAL OVERFLIGHT ON JUNE 18, 1998 AND EXISTING CONDITIONS LIKELY VARY FROM THAT SHOWN ON THESE PLANS, CONTRACTOR SHALL INDEPENDENTLY FIELD-VERIFY ACTUAL BLUFF ELEVATIONS AND LOCATION, INCLUDING OVERHANGS, VOIDS, AND AMOUNTS AND DEPTHS OF BEACH SANDS AND TALUS PRIOR TO BIDDING WORK, AND AGAIN PRIOR TO CONSTRUCTION. CHANGES IN PERCEIVED OR ACTUAL PHYSICAL CONDITIONS MAY WARRANT MODIFICATIONS TO THE DESIGN. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER NO LESS THAN 14 DAYS PRIOR TO SCHEDULED START OF CONSTRUCTION TO PERMIT FIELD DESIGN CHANGES AS MAY BE REQUIRED.
2. A TIED-BACK WALL IS TO BE CONSTRUCTED TO CONTROL FUTURE EROSION OF THE SEA CLIFF AND PROVIDE AN ATTRACTIVE AND NATURAL LOOKING SURFACE OVER EXISTING NOTCH INFILLS CONSTRUCTED IN 1998 IN THE LOWER HALF OF THE SEA CLIFF. THE CONSTRUCTION OF TIED-BACK WALLS INVOLVES SURFACE PREPARATION OF THE EXISTING CLIFF FACE, FORMWORK, TRENCHING INTO FORMATIONAL MATERIAL, INSTALLATION OF STEEL ANCHORS AND REINFORCEMENT, AND APPLICATION OF STRUCTURAL SHOTCRETE TO CONFORM TO THESE SURFACES. THE SHOTCRETE WALL SHALL BE TEXTURED AND COLORED TO BLEND INTO THE NATURAL COASTAL BLUFFS. THE SURFACE SHALL BE CARVED OR OTHERWISE SHAPED TO CONFORM TO THE NATURAL GEOLOGIC STRUCTURE. A CHEMICAL STAIN THAT REACTS WITH THE ALKALINITY IN THE SHOTCRETE SHALL BE USED TO PROVIDE A MOTTLED NATURAL APPEARANCE SIMILAR IN COLOR TO THAT OF THE ADJACENT ROCK.
3. THE FACE OF THE EXISTING SEA CLIFF SHALL BE TRIMMED AND SHAPED AS NECESSARY TO REMOVE ANY SHARPLY PROTRUDING KNOBS AND FINS THAT MIGHT ADVERSELY AFFECT THE PLACEMENT OF REINFORCING STEEL AND SHOTCRETE. THE QUANTITY OF STRUCTURE EXCAVATION FOR THE TIED-BACK WALL IS LIMITED TO ONLY THAT NECESSARY FOR EXCAVATION OF THE KEYWAYS AND FOR THE PLACEMENT OF REINFORCING STEEL, AND SHOTCRETE. IT IS THE INTENT OF THESE CONSTRUCTION DOCUMENTS THAT THE COMPLETED FACING CONCRETE ON ANCHORED WALLS HAVE AN UNEVEN SURFACE PROFILE AND COLOR, SIMILAR IN APPEARANCE TO THAT OF THE ADJACENT CLIFFS. PLEASE NOTE THAT, ALTHOUGH THE PLANS SHOW PLANAR SURFACES ON TIED-BACK WALLS, THERE IS NO SPECIFIED BATTER, NOR SPECIFIED PLANAR SURFACE FOR ANY OF THE WALL ELEMENTS. THE INTENT IS TO PROVIDE A FREE-FORM UNEVEN ROCKLIKE SURFACE.
4. THE COLOR AND TEXTURE OF THE PROPOSED SEAWALL SHALL BE COMPATIBLE WITH THE NEARBY UNARMORED NATURAL BLUFFS. THE STRUCTURAL SHALL BE SHAPED, CONTOURED AND TEXTURED TO MATCH THE ADJACENT LANDFORMS.
5. ANY EXISTING PERMANENT IRRIGATION SYSTEM LOCATED ON THE SUBJECT SITES THAT DRAINS ANYWHERE ON OR OVER THE BLUFF TOP FACE SHALL BE REMOVED OR CAPPED.
6. ALL RUNOFF FROM IMPERVIOUS SURFACES ON THE TOP OF THE BLUFF SHALL BE COLLECTED AND DIRECTED AWAY FROM THE BLUFF EDGE TOWARDS THE STREET.

THE FOLLOWING REVISIONS AND ADDITIONS SUPPLEMENT THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC) AND THE REGIONAL SUPPLEMENTAL AMENDMENTS.

GRADING NOTES

1. THE CONTRACTOR IS REQUIRED TO EXCAVATE AS NECESSARY TO THE LINES AND GRADES SHOWN TO CONSTRUCT THE RETAINING STRUCTURES.
2. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AND PREVENT PONDING OF WATER. HE SHALL CONTROL SURFACE WATER TO AVOID DAMAGE TO ADJOINING PROPERTIES OR TO FINISHED WORK ON THE SITE AND SHALL TAKE REMEDIAL MEASURES TO PREVENT EROSION OF FRESHLY GRADED AREAS UNTIL SUCH TIME AS PERMANENT DRAINAGE AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
3. ALL EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH "SECTION 300-EARTHWORK" OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2009 EDITION) UNLESS OTHERWISE NOTED.
4. ALL STONES, ROOTS AND OTHER WASTE MATTER EXPOSED ON EXCAVATION OR EMBANKMENT SLOPES WHICH ARE LIABLE TO BECOME LOOSENEED SHALL BE REMOVED AND DISPOSED OF.
5. ALL TREES, BRUSH, GRASS AND OTHER OBJECTIONABLE MATERIAL SHALL BE COLLECTED AND DISPOSED OF OFF SITE BY THE CONTRACTOR SO AS TO LEAVE THE AREAS THAT HAVE BEEN CLEARED WITH A NEAT AND FINISHED APPEARANCE FREE FROM UNSIGHTLY DEBRIS.

PART 1 - SPECIAL PROVISIONS

1.01 STANDARDS AND PERMIT REQUIREMENTS

- A. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2009 EDITION (GREENBOOK), DOCUMENT NO. PITS0504091, FILED MAY 4, 2009, INCLUDING THE CITY OF SAN DIEGO SUPPLEMENT, DOCUMENT NO. PITS0504092, FILED MAY 4, 2009, EXCEPT AS SPECIFICALLY MODIFIED BY THE SPECIAL PROVISIONS HEREIN. THE SPECIFICATIONS CONTAINED IN THESE SPECIAL PROVISIONS TAKE PRECEDENCE OVER THE COLLECTIVE REQUIREMENTS OF SSPWC AND RSA.

WHEREVER THESE SPECIAL PROVISIONS REFER TO THE TERMINOLOGY "SSPWC" IT SHALL BE UNDERSTOOD THAT THE SPECIFICATION REFERS TO THE COLLECTIVE REQUIREMENTS OF THE SSPWC AND RSA.

- B. THE OWNER HAS OBTAINED THE NECESSARY PERMITS FROM THE CITY OF SOLANA BEACH AND THE CALIFORNIA COASTAL COMMISSION. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL CONDITIONS IMPOSED BY THESE PERMITS. ANY CONFLICTS WITH THESE SPECIFICATIONS AND THE PERMITS, NOTICED BY THE CONTRACTOR, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. NOTHING CONTAINED IN THE SPECIAL PROVISIONS SHALL BE DEEMED TO AUTHORIZE VIOLATION OF THE PERMITS.

1.02 SHOP DRAWINGS

- A. IN ADDITION TO THE ITEMS DESCRIBED IN THE SSPWC, SHOP DRAWINGS, SPECIFICATIONS, AND/OR CATALOG, CUTS SHALL BE SUBMITTED FOR THE FOLLOWING:
 - TIED-BACK WALL SYSTEM(S) COMPONENTS

COMPLIANCE CERTIFICATES AND WEIGH SLIPS SHALL BE PROVIDED FOR ALL PORTLAND CEMENT CONCRETE PRODUCTS, REINFORCING STEEL, ETC.

- B. MIX DESIGNS SHALL BE SUBMITTED FOR ALL PORTLAND CEMENT CONCRETE MIXES.

- C. COLOR SAMPLES SHALL BE SUBMITTED FOR COLORED CONCRETE.

- D. ALL SUBMITTALS SHALL BE MADE IN 2 COPIES, ONE OF WHICH WILL BE RETURNED TO THE CONTRACTOR.

PART 2 - CONSTRUCTION MATERIALS

2.01 AIR-PLACED CONCRETE (I.E. SHOTCRETE)

EXCEPT AS OTHERWISE INDICATED BELOW SHOTCRETING MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SSPWC 201-1 PORTLAND CEMENT CONCRETE.

- 1) CEMENT SHALL CONFORM TO ASTM C150, "TYPE V"
- 2) SAND SHALL BE WASHED AND MEET THE FOLLOWING GRADATION LIMITS:

SIEVE SIZE	% PASSING (BY WEIGHT)
3/8"	100
NO. 4	95 - 100
NO. 8	80 - 100
NO. 16	50 - 85
NO. 30	25 - 60
NO. 50	10 - 30
NO. 100	2 - 10

FINENESS MODULUS: 2.7 TO 3.1
MOISTURE CONTENT: 3% TO 6%

- 3) CONCRETE SHALL ACHIEVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI.

COASTAL COMMISSION PERMIT NO. 6-04-86

2.01 AIR-PLACED CONCRETE (I.E. SHOTCRETE) - CONTINUED

- 4) AGGREGATES SHALL BE NORMAL WEIGHT.
- 5) CONCRETE ADMIXTURES SHALL UTILIZE EITHER CHEMICAL STAINS OR MINERAL OXIDES TO PRODUCE AN EARTHEN COLOR OF THE CURED CONCRETE OF APPROXIMATELY THE SAME HUE AS THE SURROUNDING COASTAL BLUFFS. ADDITIONAL ADMIXTURES MAY BE USED EXCEPT CALCIUM CHLORIDE AND ADMIXTURES CONTAINING CHLORIDE IONS IN EXCESS OF .06% BY WEIGHT. IF MORE THAN ONE ADMIXTURE IS USED, SAID ADMIXTURES SHALL BE COMPATIBLE WITH EACH OTHER SO THAT THE DESIRABLE EFFECTS OF ALL ADMIXTURES USED WILL BE REALIZED. ADMIXTURES SHALL CONFORM TO THE REQUIREMENTS OF THE ASTM DESIGNATIONS LISTED BELOW:

CHEMICAL ADMIXTURES - ASTM C494

MINERAL ADMIXTURES - ASTM C618

- B. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 AND MEET THE REQUIREMENTS OF SSPWC SECTION 201-2. ALL REINFORCEMENT SHALL BE EPOXY COATED.
- C. CONCRETE SHALL BE PRODUCED IN A READY MIX PLANT IN ACCORDANCE WITH ASTM C-94.

2.02 EPOXY-COATED REINFORCEMENT

- A. ALL STEEL REINFORCING USED ON THIS PROJECT SHALL BE EPOXY COATED.
- B. REINFORCEMENT SHALL BE SHOP FABRICATED PRIOR TO COATING AND SHALL CONFORM TO THE REQUIREMENTS OF AASTHO M 284.
- C. VISIBLE VOIDS IN THE COATING, REGARDLESS OF CAUSE, SHALL BE PATCHED IF THE TOTAL AREA OF VOIDS EXCEEDS 0.25% OF THE SURFACE AREA OF THE BAR. BARS THAT REQUIRE SURFACE PATCHING LESS THAN 5% OF THE TOTAL SURFACE AREA OF THE BAR MAY BE FIELD COATED WITH AN APPROVED PATCH MATERIAL SUPPLIED BY THE EPOXY FABRICATOR. BARS WHICH REQUIRE SURFACE PATCHING IN EXCESS OF 5% OF THE TOTAL SURFACE AREA OF THE BAR WILL BE REJECTED.
- D. ALL SYSTEMS FOR HANDLING COATED BARS SHALL HAVE PADDED CONTACT AREAS FOR THE BARS WHEREVER POSSIBLE. ALL BUNDLING BANDS SHALL BE PADDED AND ALL BUNDLES SHALL BE LIFTED WITH STRONG BACK, MULTIPLE SUPPORTS OR A PLATFORM BRIDGE SO AS TO PREVENT BAR-TO-BAR ABRASION FROM SAGS IN THE BAR BUNDLE.
- E. COMPENSATION FOR REINFORCING AND EPOXY-COATED REINFORCING SHALL BE INCLUDED IN THE CONTRACT PRICE FOR VARIOUS CONCRETE PRODUCTS AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED THEREAFTER.

2.03 MULTI-STRAND EARTH ANCHORS

- A. ANCHOR RODS
 - 1) ANCHORS, INCLUDING ANCHOR WEDGES AND WEDGE PLATES, SHALL BE "DIYWDAG-SYSTEMS INTERNATIONAL," MULTI-STRAND OR EQUIVALENT, COMPLETE WITH DOUBLE CORROSION PROTECTION SYSTEM AS INDICATED ON THE DRAWINGS.
 - 2) ANCHORAGE SYSTEMS, INCLUDING TENDONS NOT SPECIFICALLY ITEMIZED IN ASTM A416 MAY BE USED PROVIDED SUCH TENDONS HAVE A DEMONSTRABLE, PROVEN RECORD OF SERVICE AND ARE EQUIVALENT IN TERMS OF LOAD CAPACITY, SERVICEABILITY AND CORROSION RESISTANCE TO THAT SPECIFIED HEREIN.
- B. ANCHOR BEARING PLATES AND ASSEMBLIES
 - 1) ALL BEARING PLATE ASSEMBLIES INCLUDING TRUMPETS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF SSPWC SECTION 210-3. MINIMUM WEIGHT OF COATING SHALL BE 2.0 OZ/SQ FT.
- C. ANCHORAGE & SHEATHING ENCAPSULATION GROUT
 - 1) GROUT SHALL CONFORM TO SECTION 201-1 OF THE SSPWC EXCEPT AS MODIFIED BELOW.
 - 2) GROUT SHALL CONSIST OF A CEMENT-WATER MIXTURE OR SAND-CEMENT- WATER MIXTURE AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,250 PSI. CONTRACTOR SHALL SELECT MIXTURES SUITABLE FOR THE ANCHOR RODS, SHEATHING, AND GROUT INSTALLATION EQUIPMENT AND PROCEDURES TO BE USED. PROPORTIONS SHALL BE BASED ON TESTS MADE ON THE GROUT BEFORE GROUTING IS TO BEGIN, OR MAY BE SELECTED BASED ON PRIOR DOCUMENTED EXPERIENCE WITH SIMILAR MATERIALS AND EQUIPMENT AND UNDER COMPARABLE FIELD CONDITIONS (WEATHER, TEMPERATURE, ETC).
 - 3) CEMENT SHALL CONFORM TO ASTM C150 TYPE V.
 - 4) WATER CONTENT SHALL BE THE MINIMUM NECESSARY FOR PROPER PLACEMENT BUT THE WATER-CEMENT RATIO SHALL NOT EXCEED 0.45.
 - 5) A NONSHRINK OR EXPANSIVE ADMIXTURE MAY BE USED TO ELIMINATE SHRINKAGE OF THE ANCHORAGE ZONE GROUT. OTHER ADMIXTURES, CONFORMING TO ASTM C494, MAY BE USED TO REDUCE THE WATER CONTENT, IMPROVE THE PUMPABILITY, OR ACCELERATE THE STRENGTH OF THE GROUT. CALCIUM CHLORIDE, AND ADMIXTURES CONTAINING CHLORIDE IONS IN EXCESS OF .06% BY WEIGHT SHALL NOT BE USED. IF MORE THAN ONE ADMIXTURE IS USED, SAID ADMIXTURES SHALL BE COMPATIBLE WITH EACH OTHER SO THAT THE DESIRABLE EFFECTS OF ALL ADMIXTURES USED WILL BE REALIZED. ADMIXTURES SHALL NOT BE USED IN GREATER DOSAGES THAN THOSE RECOMMENDED BY THE MANUFACTURER.
- D. ANCHOR REMOVAL
 - 1) ANCHOR INSTALLATION BOREHOLE SHALL BE LIMITED TO 6" DIAMETER TO ALLOW FUTURE REMOVAL OF ANCHOR, IF REQUIRED, BY OVERDRILLING WITH A HOLLOW-STEM AUGER.
- E. COMPENSATION FOR ROCK ANCHOR MATERIALS (ANCHOR RODS, ANCHORAGE AND SHEATHING ENCAPSULATION GROUT, NONSHRINK GROUT, FACING POCKET GROUT, AND ALL APPURTENANT COMPONENTS) SHALL BE INCLUDED IN THE CONTRACT PRICE FOR TIED-BACK WALLS, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED THEREFOR.

2.04 ERODIBLE CONCRETE

- A. MATERIALS: CEMENT SHALL CONFORM TO ASTM C-150, TYPE V PORTLAND CEMENT. FLY ASH SHALL CONFORM TO ASTM C-618, TYPE F FLY ASH. MAXIMUM ALLOWABLE SLUMP SHALL BE 4 INCHES, IN ACCORDANCE WITH ASTM C-143.

THE MIX SHALL INCLUDE THE FOLLOWING MATERIALS PER CUBIC YARD OF CONCRETE.

TYPE V PORTLAND CEMENT	200 LBS.
TYPE F FLY ASH	180 LBS.

SAND FOR CONCRETE SHALL MEET WITH GRADATION REQUIREMENTS OF SECTION 200 -1.5.5 OF THE SSPWC FOR PORTLAND CEMENT CONCRETE.

THE INTENT OF THIS CONCRETE MIX IS TO PROVIDE A MATERIAL WITH EROSION CHARACTERISTICS SIMILAR TO THAT OF THE EXISTING BLUFF.

CONCRETE SHALL BE PRODUCED IN A READY MIX PLANT, IN ACCORDANCE WITH ASTM C-94. MIX DESIGNS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL FOR ALL PORTLAND CEMENT CONCRETE.

CONCRETE COLORATION SHALL UTILIZE MINERAL OXIDES TO PROVIDE AN EARTHEN COLOR OF THE CURED CONCRETE SIMILAR TO THE HUE OF THE NEARBY NATURAL ROCK EXPOSURES. CONTRACTOR SHALL SUBMIT COLORED SAMPLES OF CONCRETE FOR APPROVAL PRIOR TO USE.

- B. PLACEMENT: CONCRETE SHALL BE ADEQUATELY VIBRATED AND COMPACTED DURING PLACEMENT.

BENCH MARK
DESCRIPTION: STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
LOCATION: AT SOLANA BEACH, ALONG HWY 101, 0.5 MILE N OF INTERSECTION OF HWY 101 AND VIA LA VALLE, 33 FT E OF CENTERLINE OF HWY 101, 82 FT W OF AT AND SFRR TRACKS, 24 FEET N OF PROJECTED CENTERLINE OF DAHLIA DRIVE, 8 FEET N OF PP JF126081. A COPPER ROD 13.5 FEET DEEP WITH STANDARD DISK STAMPED LJ 108 1968. T14S R4W 02
ELEV.: 63.78 DATUM: M.S.L.

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	ENGINEER OF WORK	CITY APPROVED CHANGES	APP'D DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH	ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief	By: _____ District Engineer	By: <u>WALTER F. CRAMPTON</u> , Date: <u>4-17-17</u> R.C.E.: 23792 Exp: 12/31/17			By: _____ Date: _____	By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-18	SEE DETAILED BLOCK ABOVE LEFT	517 & 521 PACIFIC AVENUE SHORELINE STABILIZATION PROJECT		SBGR-
ADDITIONAL NOTES FOR:									SHEET 2 OF 9	



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PART 3 - CONSTRUCTION METHODS

3.01 AIR-PLACED CONCRETE (SHOTCRETE)

- A. STANDARDS: EXCEPT AS OTHERWISE INDICATED HEREIN SHOTCRETING SHALL CONFORM TO ALL REQUIREMENTS OF SSPWC SECTION 303-2.
- B. FINISHED APPEARANCE: IT IS THE INTENT OF THESE SPECIFICATIONS THAT THE COMPLETED FACING CONCRETE ON ANCHORED WALLS HAVE AN UNEVEN SURFACE PROFILE AND COLOR SIMILAR IN APPEARANCE TO THAT OF THE ADJACENT BLUFFS.
- C. THICKNESS AND REINFORCEMENT COVER TOLERANCES: DESIGN CONCRETE THICKNESS AND CONCRETE COVER OVER REINFORCEMENT IS SHOWN ON THE DRAWINGS. MINIMUM TOLERANCE FOR IN-PLACE THICKNESS SHALL BE MINUS 1 INCH. MINUS TOLERANCE ON COVER SHALL BE 1 INCH.
- D. AIR PRESSURE DURING APPLICATION: A MACHINE CAPABLE OF MAINTAINING A 100 PSI PRESSURE SHALL BE USED.
- E. APPLICATION: THE NOZZLE MAN SHALL TAKE SPECIAL CARE TO PREVENT THE FORMATION OF VOIDS BEHIND THE REINFORCING STEEL & DAMAGE TO EPOXY COATING OF REINFORCEMENT.
- F. REBOUND: REBOUND MATERIAL CANNOT BE RE-USED AND MUST BE KEPT OUT OF THE WALL BY USE OF AN AIR HOSE.
- G. AIR-PLACED CONCRETE (SHOTCRETE): AIR-PLACED SHOTCRETE (CONCRETE) SHALL BE PLACED IN CONTINUOUS HORIZONTAL LIFTS, WITH THE LIFT HEIGHT BEING LIMITED TO THE VOLUME OF SHOTCRETE THAT CAN BE PLACED DURING A GIVEN DAY. SUBSEQUENT LIFTS MAY BE PLACED AFTER A PERIOD OF SEVEN (7) DAYS, OR AFTER A COMPRESSIVE STRENGTH OF 2,500 PSI HAS BEEN ACHIEVED. FINISH AND SUBSEQUENT PREPARATION OF HORIZONTAL OR VERTICAL CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH SSPWC SECTION 303-2.8.
- H. CONCRETE CURING: CURING OF THE AIR-PLACED CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SSPWC SECTION 303-1.10.

3.02 MULTI-STRAND EARTH ANCHOR INSTALLATION

- A. OBSERVATION: ALL ROCK ANCHOR INSTALLATION (INCLUDING DRILLING, TESTING, AND INSTALLATION OF ROCK ANCHORS) SHALL BE OBSERVED BY THE ENGINEER.
- B. DRILLING: HOLES SHALL BE DRILLED TO THE DIAMETER, DEPTH AND LINE AS INDICATED ON THE DRAWINGS. THE HOLE SHALL BE DRILLED SO THAT ITS DIAMETER IS NOT MORE THAN 1/4 INCH SMALLER THAN THE SPECIFIED DIAMETER. HOLES SHALL BE DRILLED ON A HORIZONTAL ALIGNMENT PERPENDICULAR TO THE FACE OF THE WALL FACE AND A STRAIGHT, UNIFORM ELEVATION ALIGNMENT (I.E. SLOPE) AS INDICATED ON THE DRAWINGS. TOLERANCE FOR DRILL HOLE LOCATION SHALL BE +ONE FOOT FOR HORIZONTAL AND VERTICAL POSITION AT THE WALL FACE AND WITHIN 3% OF THE SPECIFIED ROCK ANCHOR GRADIENT.
- C. ANCHOR FABRICATION AND HANDLING: TO THE EXTENT PRACTICABLE ANCHORS SHALL BE SHOP FABRICATED. FABRICATE ANCHORS IN ACCORDANCE WITH SHOP DRAWINGS SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. ANCHORS SHALL BE HANDLED AND PROTECTED IN SUCH A MANNER AS TO AVOID CORROSION AND PHYSICAL DAMAGE THERETO.
- D. ANCHOR PLACEMENT: PRIOR TO INSTALLATION, ANCHORS SHALL BE FREE OF DIRT, DETRIMENTAL RUST OR ANY OTHER DELETERIOUS SUBSTANCES. DRILLED HOLES SHALL BE CLEARED OF ANY LOOSE ROCK FRAGMENTS, SOIL OR OTHER SUBSTANCES WHICH MAY PREVENT THE PROPER PLACEMENT OF THE ANCHOR OR GROUT.

ANCHORS SHALL BE PLACED IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER. ANCHORS SHALL BE SECURELY FASTENED IN PLACE TO PREVENT MOVEMENT DURING GROUTING AND TO ASSURE THAT THE BOND LENGTH OF THE ANCHOR IS CENTRALLY LOCATED IN THE DRILL HOLE.
- E. GROUT PREPARATION AND PLACEMENT: GROUTING OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF SSPWC SECTION 303-3.7 EXCEPT AS FOLLOWS:
 - 1) WATER CONTENT SHALL CONFORM TO THE REQUIREMENTS OF SECTION 2.03 "C. ANCHORAGE AND SHEATHING ENCAPSULATION GROUT" OF THESE SPECIAL PROVISIONS.
 - 2) GROUT SHALL BE PUMPED INTO THE ANCHOR HOLE THROUGH A GROUT TUBE PROVIDED BY THE CONTRACTOR FOR THAT PURPOSE UNTIL THE HOLE IS FILLED TO THE TOP OF THE ANCHORAGE ZONE. PROVISIONS SHALL BE MADE FOR DETERMINING THE TOP OF THE GROUT TO ASSURE ADEQUATE ANCHORAGE.
 - 3) AFTER GROUTING, THE ANCHOR ROD SHALL REMAIN UNDISTURBED UNTIL THE NECESSARY GROUT STRENGTH HAS BEEN ATTAINED.

3.02 MULTI-STRAND EARTH ANCHOR INSTALLATION - (CONTINUED)

- F. PROOF TESTING AND STRESSING: THE CONTRACTOR SHALL PROOF TEST EACH ANCHOR AFTER ALL GROUT HAS ACHIEVED ITS SPECIFIED STRENGTH AND THE CONCRETE FACING WALL HAS ACHIEVED AT LEAST 80% OF ITS SPECIFIED 28-DAY STRENGTH.

TESTING SHALL BE PERFORMED TO A PROOF LOAD OF 150% OF THE DESIGN LOAD SPECIFIED ON THE PLANS. FINAL LOCK-OFF LOAD IN THE ANCHOR AFTER PROOFSTRESSING SHALL BE THE DESIGN LOAD AS SPECIFIED ON THE PLANS.

PROOF TESTING SHALL TAKE PLACE IN THE PRESENCE OF THE ENGINEER. THE ENGINEER SHALL RECORD ALL PROOF TEST MEASUREMENTS.

THE PROOF TEST SHALL BE PERFORMED BY INCREMENTALLY LOADING THE ANCHOR IN ACCORDANCE WITH THE FOLLOWING SCHEDULE.

THE LOAD CYCLE SHALL CONSIST OF THE FOLLOWING SEQUENCE:

- 0.10 P
- 0.25 P
- 0.50 P
- 0.75 P
- 1.00 P
- 1.25 P
- 1.50 P (HOLD FOR CREEP TEST)

P (DESIGN LOAD)

AT EACH INCREMENT, THE MOVEMENT OF THE TENDON SHALL BE RECORDED TO THE NEAREST 0.001 INCH WITH RESPECT TO AN INDEPENDENT FIXED REFERENCE POINT. THE JACK LOAD SHALL BE MONITORED WITH A PRESSURE GAUGE OR LOAD CELL. CALIBRATION OF THE JACK AND PRESSURE GAUGE OR LOAD CELL SHALL BE PERFORMED WITHIN 90 DAYS PRIOR TO TESTING, UNLESS OTHERWISE APPROVED BY THE ENGINEER. DOCUMENTATION OF THE CALIBRATION SHALL BE PROVIDED TO THE ENGINEER PRIOR TO THE TESTING.

THE CREEP TEST SHALL CONSIST OF THE FOLLOWING:

HOLD THE 1.50P LOAD FOR 10 MINUTES. WITH THE LOAD HELD CONSTANT, ANCHOR MOVEMENT (TOTAL MOVEMENT) SHALL BE RECORDED AT THE 1-MINUTE, 2 -MINUTE, 3-MINUTE, 4-MINUTE, 5-MINUTE, 6-MINUTE AND 10-MINUTE TIME INTERVALS.

OBSERVATION TIMES SHALL BE MEASURED FROM THE MOMENT THE JACK BEGINS TO APPLY THE 1.50P LOAD. IF THE MOVEMENT BETWEEN THE 1-MINUTE AND THE 10-MINUTE INTERVAL READING IS 0.040 INCH OR MORE, THE LOAD SHALL BE MAINTAINED FOR AN ADDITIONAL 50 MINUTES FOR EXTENDED CREEP TESTING.

EXTENDED CREEP TEST SHALL CONSIST OF HOLDING THE 1.50P LOAD FOR 60 MINUTES. WHILE THE LOAD IS MAINTAINED CONSTANT, ANCHOR MOVEMENT (TOTAL MOVEMENT) REFERENCED TO A FIXED POINT SHALL BE RECORDED AT 15, 20, 25, 30, 45, AND 60 MINUTES.

ACCEPTANCE AND REPLACEMENT: THE ENGINEER SHALL REVIEW ALL TESTS TO DETERMINE IF THE ANCHOR IS ACCEPTABLE. AN ANCHOR SHALL BE ACCEPTABLE IF:

THE TOTAL ELASTIC MOVEMENT OBTAINED EXCEEDS 80% OF THE THEORETICAL ELASTIC ELONGATION OF THE FREE LENGTH; AND

THE CREEP MOVEMENT DOES NOT EXCEED 0.080 INCH DURING THE 1-MINUTE TO 60-MINUTE TIME INCREMENT, REGARDLESS OF TENDON LENGTH AND BOND.

- G. ANCHOR REPLACEMENT: IF THE ANCHOR PROOF OR CREEP TESTING DEMONSTRATES THAT AN ANCHOR CANNOT MEET THE SPECIFIED PROOF LOAD CAPACITY, THEN, AT THE ENGINEER'S SOLE OPTION, THE ENGINEER MAY ORDER THAT THE ANCHOR BE ABANDONED, IN PLACE, AND ANOTHER ANCHOR BE INSTALLED IN AN ADJACENT LOCATION, ALL AS DIRECTED BY THE ENGINEER, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED THEREFOR.

3.03 BEST MANAGEMENT PRACTICES

TO PREVENT THE DISCHARGE OF CONCRETE MATERIALS, SUCH AS SHOTCRETE OR ANY OTHER CONSTRUCTION BYPRODUCTS, ONTO THE SANDY BEACH AND/OR FROM ENTERING COASTAL WATERS, THE CONTRACTOR SHALL, AS A MINIMUM, COMPLY WITH THE FOLLOWING BMP'S.

1. CONCRETE POURING/PUMPING ACTIVITIES

DURING ALL CONCRETE PUMPING ACTIVITIES, TARPS SHALL BE USED BELOW THE CONCRETE PUMP HOPPER TO PREVENT ACCIDENTAL DISCHARGE OF ANY SPILLED CONCRETE ONTO THE BEACH SANDS OR INTO COASTAL WATERS. TARPS SHALL BE OF SUFFICIENT SIZE TO CAPTURE ANY SPILLED CONCRETE MATERIALS.

2. SHOTCRETE/CONCRETE APPLICATION

DURING ALL CONCRETE PLACEMENT ACTIVITIES, CARE SHALL BE TAKEN TO PREVENT THE DISCHARGE OF CONCRETE MATERIALS ONTO THE BEACH SAND AND/OR INTO COASTAL WATERS. TARPS OF SUFFICIENT SIZE SHALL BE PLACED AT THE BASE OF ALL SHOTCRETE/CONCRETE PLACEMENT AREAS TO COMPLETELY CAPTURE ALL EXCESS CONCRETE AND/OR SHOTCRETE REBOUND AND PREVENT CONTACT WITH THE BEACH SANDS AND/OR COASTAL WATERS.

3. OFF-SITE DISPOSAL

ALL CONCRETE AND/OR OTHER CONSTRUCTION BYPRODUCTS COLLECTED SHALL BE PROPERLY CONTAINED AND DISPOSED OF OFF-SITE IN A LEGAL MANNER. ALL WASHOUT OF CONCRETE PUMPING EQUIPMENT SHALL BE BACK INTO THE CONCRETE READY-MIX TRUCK AT THE COMPLETION OF CONCRETE PLACEMENT FOR OFF-SITE DISPOSAL.

3.04 ERODIBLE CONCRETE FILL

A. APPEARANCE:

TO RECONSTRUCTE THE LOWER 5± FEET OF THE BLUFF ABOVE THE TOP OF WALL, ERODIBLE CONCRETE FILL SHALL BE USED. THE ERODIBLE CONCRETE FILL SHALL BE COLORED TO CLOSELY MATCH THE ADJACENT SLOPING UPPER BLUFF, AND SCULPTED TO MIMIC THE VISUAL APPEARANCE OF THE ADJACENT SLOPING UPPER BLUFFS TO CREATE A NATURAL APPEARANCE TO THE ERODIBLE CONCRETE FILL.

BENCH MARK
 DESCRIPTION: STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
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 ELEV.: 63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-04-86

SOLANA BEACH FIRE DEPARTMENT		SANTA FE IRRIGATION DISTRICT		ENGINEER OF WORK		CITY APPROVED CHANGES		APP'D	DATE	RECOMMENDED FOR APPROVAL		APPROVED FOR CONSTRUCTION		BENCH MARK		CITY OF SOLANA BEACH		ENGINEERING DEPARTMENT	DRAWING NO.
By: _____		By: _____		RF Drawn By: _____		By: WALTER F. CRAMPTON, Date: 4-17-17				By: _____ Date: _____		By: _____ Date: _____		SEE DETAILED BLOCK ABOVE LEFT		ADDITIONAL NOTES FOR:		SBGR-	
Fire Chief		District Engineer		R.C.E.: 23792 Exp: 12/31/17						By: Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-18						517 & 521 PACIFIC AVENUE SHORELINE STABILIZATION PROJECT		SHEET 3 OF 9	

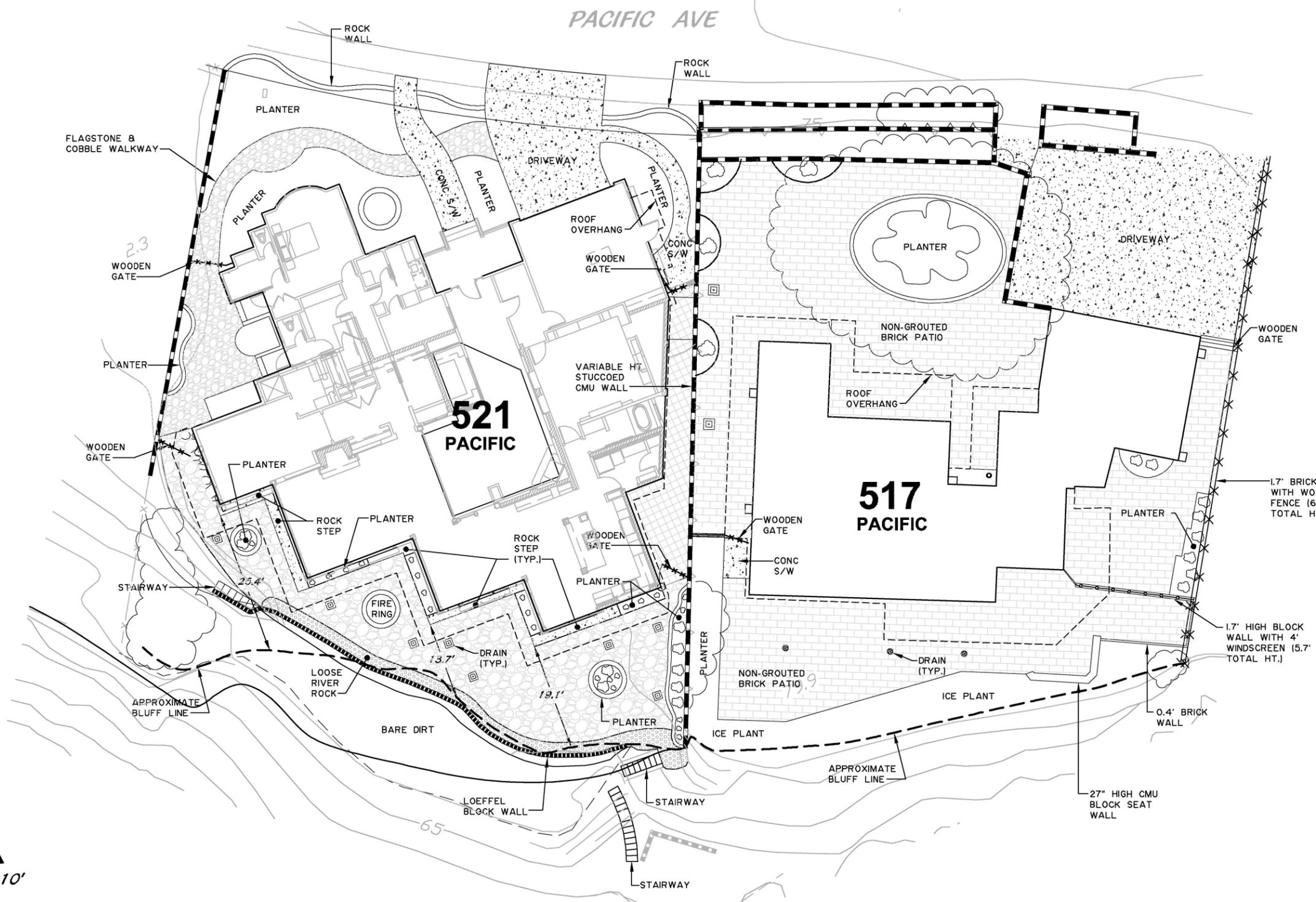
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 ENGINEERS & GEOLOGISTS
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 SAN DIEGO, CALIFORNIA 92123
 (858) 573-6900



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NOTE: IF DRAWING IS NOT FULL SIZE (24X36)
THEN REDUCE SCALE ACCORDINGLY

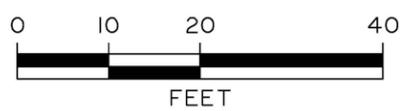
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



LEGEND

- BRICK
- STONE PAVERS
- FLAGSTONE
- LOOSE RIVER ROCK
- CONCRETE
- PLANTER
- CMU WALL
- DRAIN INLET OUT TO STREET

SCALE: 1"=10'



EXISTING CONDITION SITE PLAN

SCALE: 1"=10'

BENCH MARK
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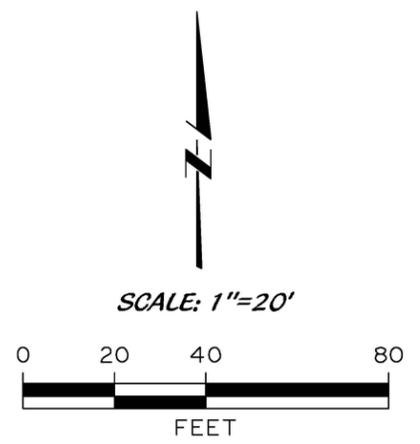
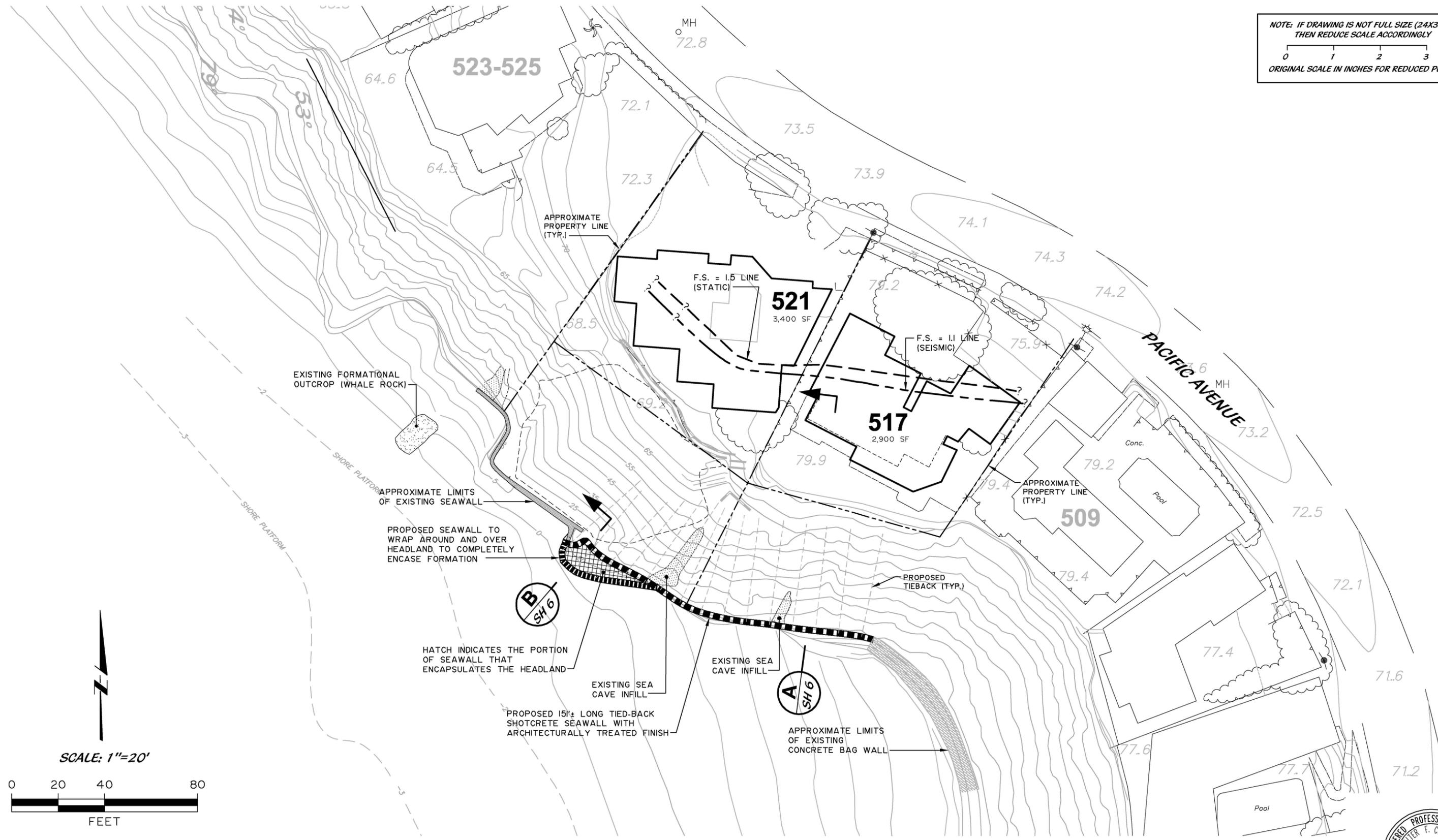
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By: _____ Fire Chief		By: _____ District Engineer		RF Drawn By: _____ Date: _____		By: WALTER F. CRAMPTON, Date: 4-17-17 R.C.E.: 23792 Exp: 12/31/17				By: _____ Date: _____		By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-18		SEE DETAILED BLOCK ABOVE LEFT		EXISTING CONDITION SITE PLAN FOR: 517 & 521 PACIFIC AVENUE SHORELINE STABILIZATION PROJECT			SBGR-	
																			SHEET 4 OF 9	

NOTE: IF DRAWING IS NOT FULL SIZE (24X36)
THEN REDUCE SCALE ACCORDINGLY
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



SITE PLAN
SCALE: 1"=20'

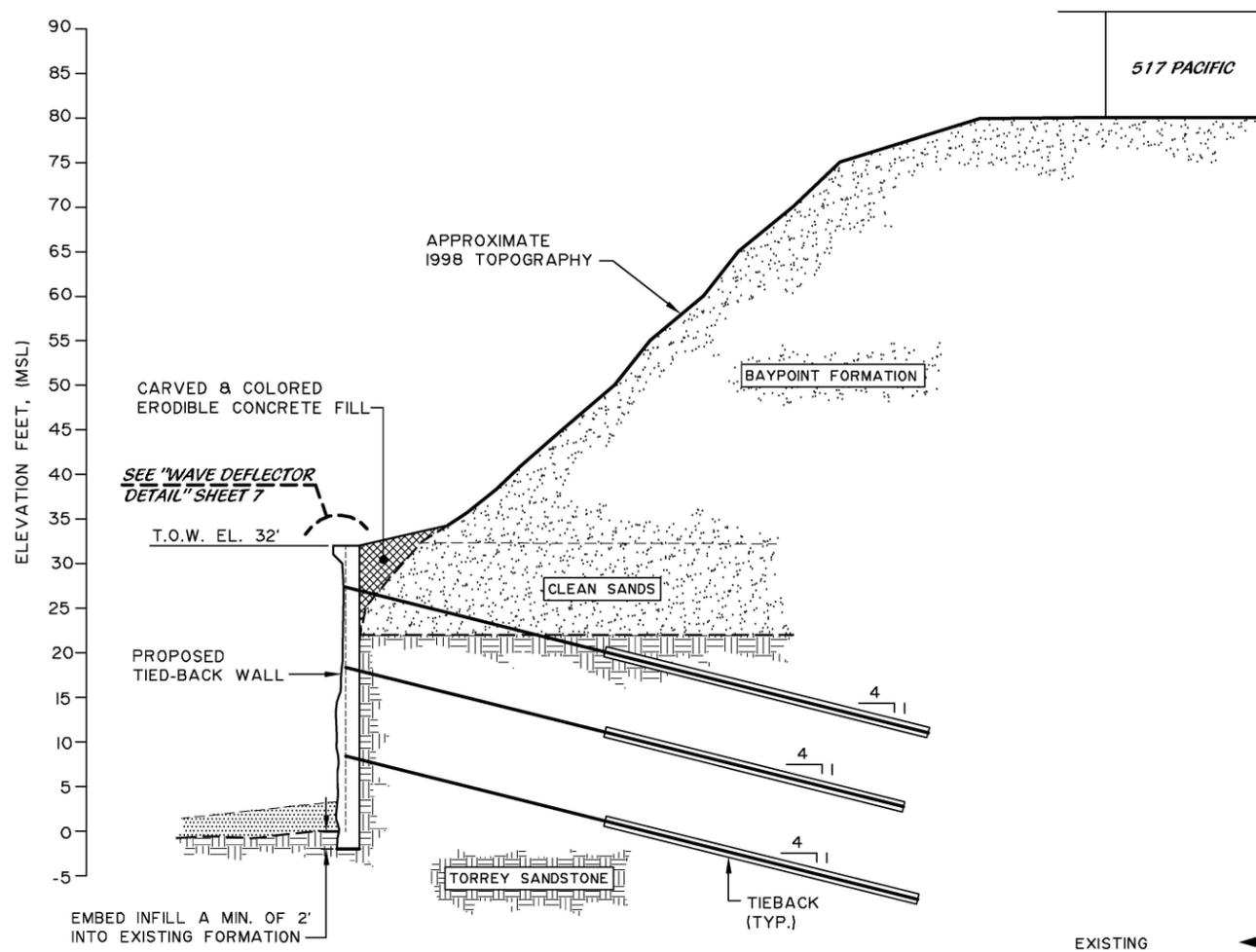
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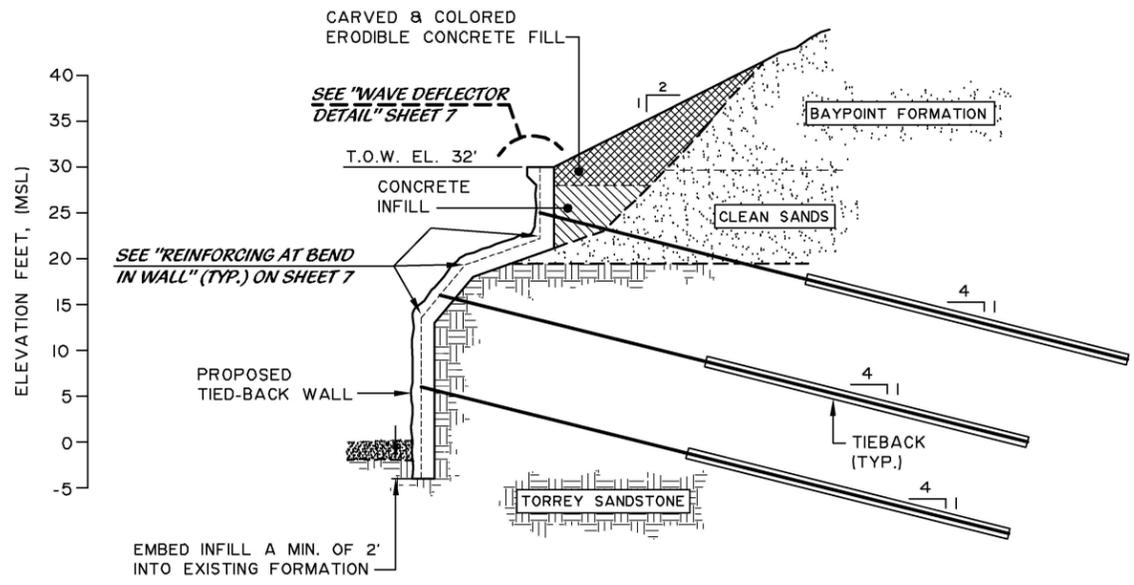
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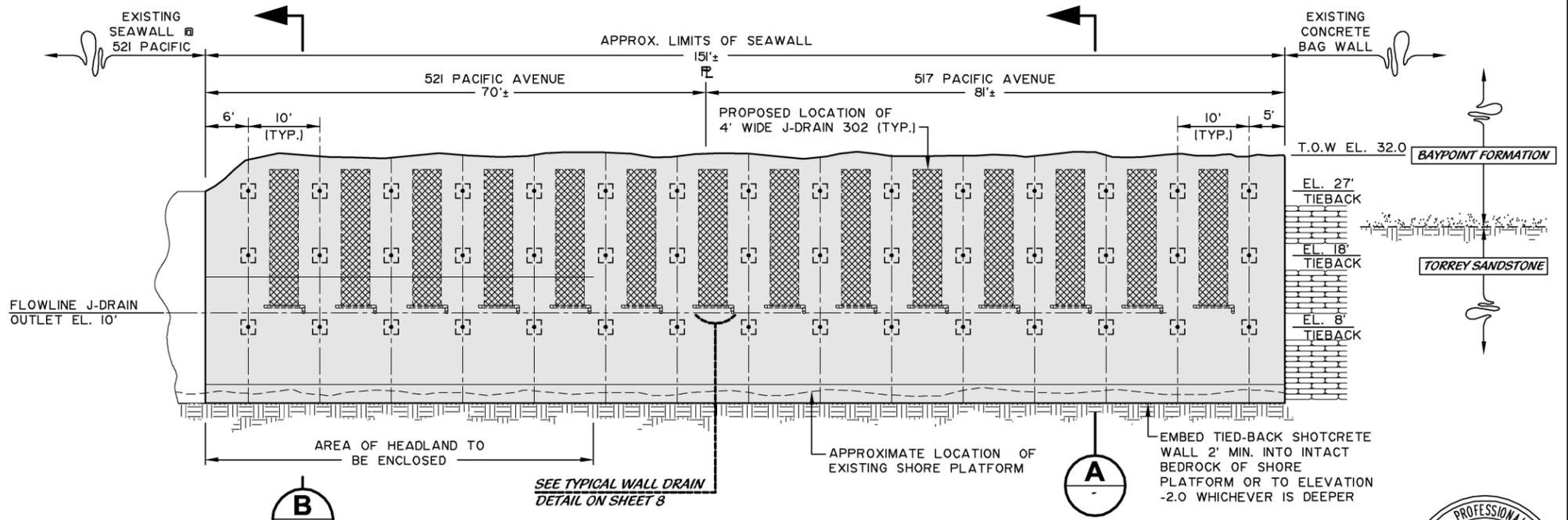
SOLANA BEACH FIRE DEPARTMENT		SANTA FE IRRIGATION DISTRICT		ENGINEER OF WORK		CITY APPROVED CHANGES		APP'D	DATE	RECOMMENDED FOR APPROVAL		APPROVED FOR CONSTRUCTION		BENCH MARK		CITY OF SOLANA BEACH		ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief		By: _____ District Engineer		RF Drawn By: _____		By: WALTER F. CRAMPTON Date: 4-17-17				By: _____ Date: _____		By: Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-18		SEE DETAILED BLOCK ABOVE LEFT		SITE PLAN FOR: 517 & 521 PACIFIC AVENUE SHORELINE STABILIZATION PROJECT			SBGR-
Date: _____		Date: _____		R.C.E.: 23792 Exp: 12/31/17						By: _____ Date: _____									SHEET 5 OF 9



CROSS SECTION A
SCALE: 1"=10' (HORIZ.:VERT.)



CROSS SECTION B
SCALE: 1"=10' (HORIZ.:VERT.)



TIED-BACK SHOTCRETE SEAWALL - PROFILE
SCALE: 1"=10' (HORIZ.:VERT.)

NOTE: IF DRAWING IS NOT FULL SIZE (24X36) THEN REDUCE SCALE ACCORDINGLY
0 1 2 3
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

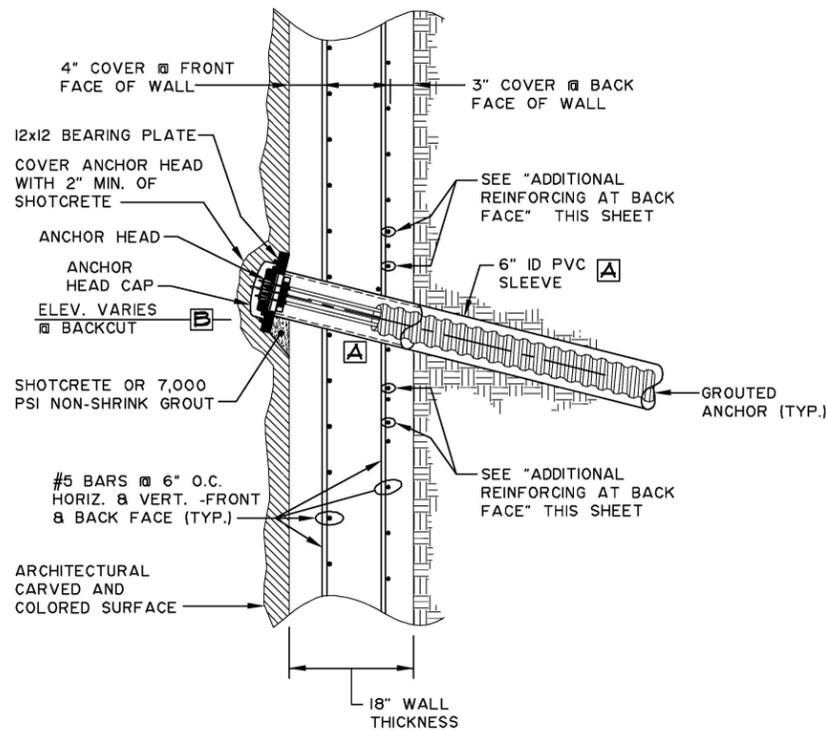
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By: _____		By: _____		By: WALTER F. CRAMPTON , Date: 4-17-17						By: _____ Date: _____		By: _____ Date: _____		SEE DETAILED BLOCK ABOVE LEFT		CROSS SECTIONS & WALL PROFILE FOR: 517 & 521 PACIFIC AVENUE SHORELINE STABILIZATION PROJECT		SBGR-	
Fire Chief		District Engineer		R.C.E.: 23792 Exp: 12/31/17						By: _____ Date: _____		Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-18						SHEET 6 OF 9	



TIED-BACK WALL - STRUCTURAL SECTION

SCALE: 1"=1'

TIEBACK NOTES:

- A** ADJUST BAR SPACING IN VICINITY OF ANCHOR TO ACCOMMODATE 6" DIA. PVC SLEEVE. NO CUTTING OF BARS ALLOWED
- B** ANCHOR HEAD CAP SHALL HAVE A MIN. OF 2" CONCRETE COVER

REINFORCING NOTES:

1. ALL BAR LAP SPLICES SHALL BE 3'-9" MIN. IN LENGTH.
2. ALL REBARS SHALL BE CONTINUOUS WHEREVER POSSIBLE. SPLICE BACK FACE REBARS (IF REQUIRED) AT MIDPOINT BETWEEN ANCHORS. SPLICE FRONT FACE REBARS (IF REQUIRED) AT ANCHOR LOCATIONS. STAGGER SPLICE LOCATIONS SUCH THAT NO TWO VERTICAL OR HORIZONTAL SPLICES OCCUR ADJACENT TO EACH OTHER.
3. ALL SPLICES SHALL BE NON-CONTACT WITH MINIMUM 4 BAR DIAMETERS, OR 2-1/2 INCHES (WHICHEVER IS GREATER) CLEARANCE BETWEEN ADJACENT BARS.

REINFORCING SCHEDULE

FRONT FACE & BACK FACE

18" THICK WALL SECTION:
#5 BARS @ 6" O.C. HORIZ. & VERT.

BACK FACE

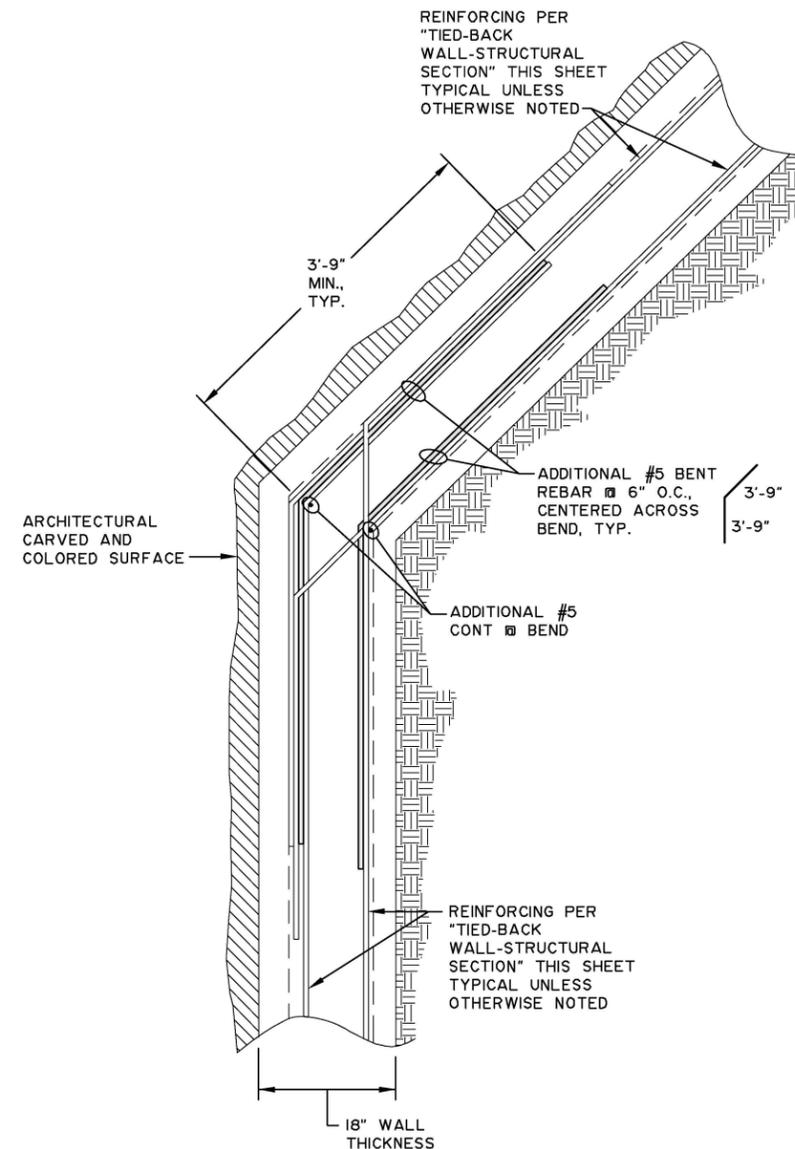
2 EACH 5' LONG HORIZ. & VERT. AROUND EACH TIEBACK (SEE DETAIL THIS SHEET)

NOTE: IF DRAWING IS NOT FULL SIZE (24X36) THEN REDUCE SCALE ACCORDINGLY



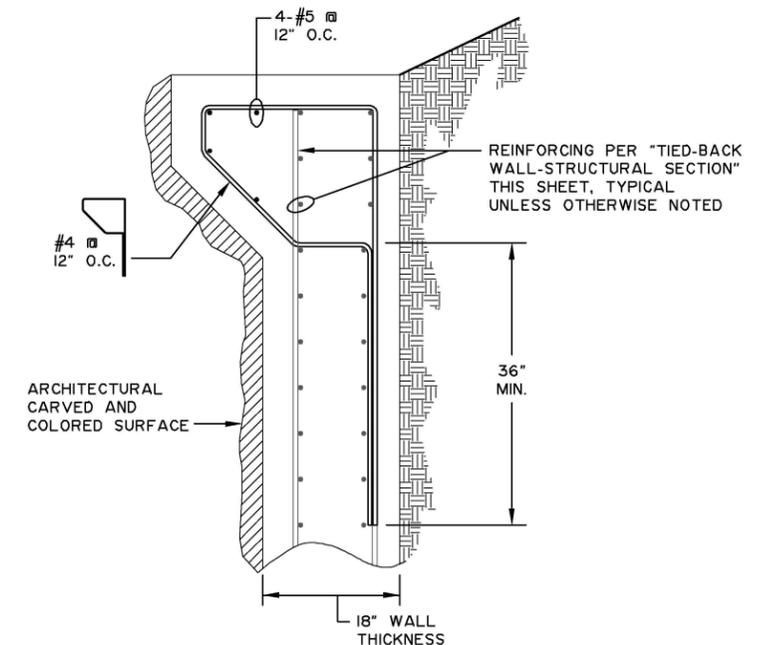
REINFORCING NOTES:

BALANCE OF WALL REINFORCING NOT SHOWN FOR CLARITY.



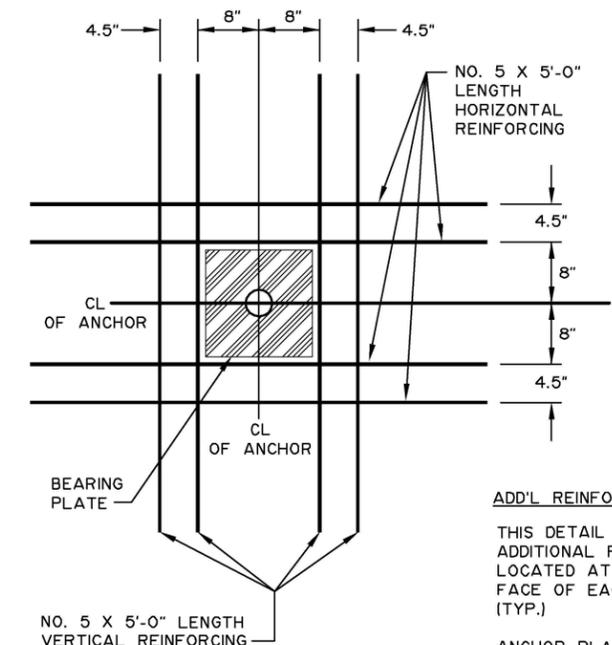
REINFORCING @ BEND IN WALL

SCALE: 1"=1'



WAVE DEFLECTOR DETAIL

SCALE: 1"=1'



ADD'L REINFORCING NOTES:

THIS DETAIL IS FOR ADDITIONAL REINFORCING LOCATED AT THE BACK FACE OF EACH TIEBACK (TYP.)

ANCHOR PLATE THICKNESS TO BE DETERMINED BY POST TENSION SUPPLIER.

ADDITIONAL REINFORCING AT BACK FACE

SCALE: 1"=1' (HORIZ.:VERT.)

BENCH MARK
DESCRIPTION: STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
LOCATION: AT SOLANA BEACH, ALONG HWY 101, 0.5 MILE N OF INTERSECTION OF HWY 101 AND VIA LA VALLE, 33 FT E OF CENTERLINE OF HWY 101, 82 FT W OF AT AND SFRR TRACKS, 24 FEET N OF PROJECTED CENTERLINE OF DAHLIA DRIVE, 8 FEET N OF PP JP126081. A COPPER ROD 13.5 FEET DEEP WITH STANDARD DISK STAMPED LJ 108 1968. T14S R4W 02
ELEV.: 63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-04-86

SOLANA BEACH FIRE DEPARTMENT		SANTA FE IRRIGATION DISTRICT		ENGINEER OF WORK		CITY APPROVED CHANGES		APP'D	DATE	RECOMMENDED FOR APPROVAL		APPROVED FOR CONSTRUCTION		BENCH MARK		CITY OF SOLANA BEACH		ENGINEERING DEPARTMENT		DRAWING NO.	
By: _____		By: _____		RF						By: _____ Date: _____		By: _____ Date: _____				STRUCTURAL DETAILS FOR:				SBGR-	
Fire Chief		District Engineer		Drawn By						By: _____ Date: _____		Mohammad Sammak, City Engineer				517 & 521 PACIFIC AVENUE				SHEET 7 OF 9	
				WALTER F. CRAMPTON						Date: 4-17-17		R.C.E.: 37146 Exp: 06-30-18				SHORELINE STABILIZATION PROJECT					

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



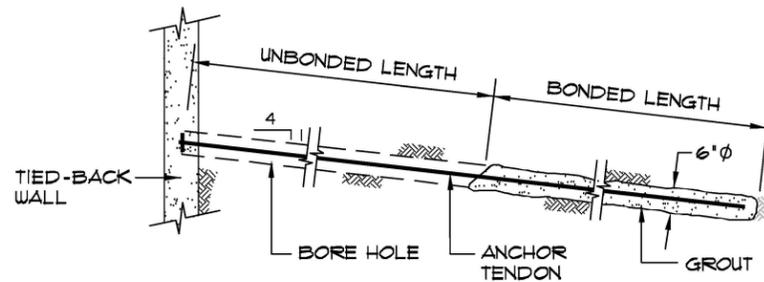
1383A/1809

NOTE: IF DRAWING IS NOT FULL SIZE (24X36)
THEN REDUCE SCALE ACCORDINGLY

0 1 2 3
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

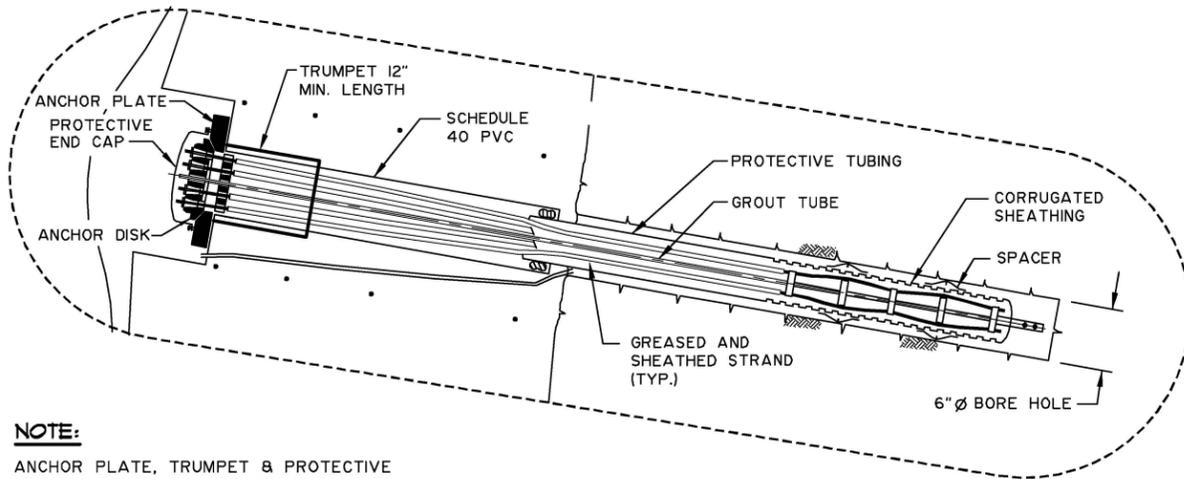
TIEBACK ANCHOR SCHEDULE

ANCHOR ROW	UNBONDED LENGTH (FT)	BONDED LENGTH (FT)	DESIGN LOAD (kips)	NO. OF 0.6" DIA. STRANDS	PROOF LOAD (kips)	LOCK OFF LOAD (kips)	BEARING PLATE (IN.)
UPPER	-	-	-	-	-	-	12 x 12
MIDDLE	-	-	-	-	-	-	12 x 12
LOWER	-	-	-	-	-	-	12 x 12



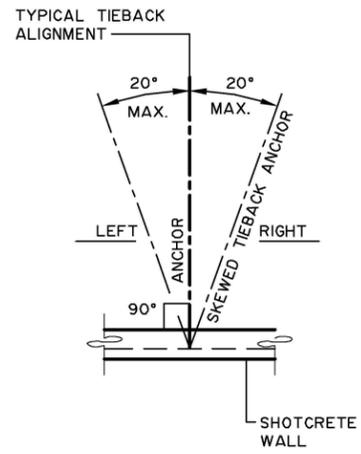
TYPICAL ANCHOR SCHEMATIC

NO SCALE



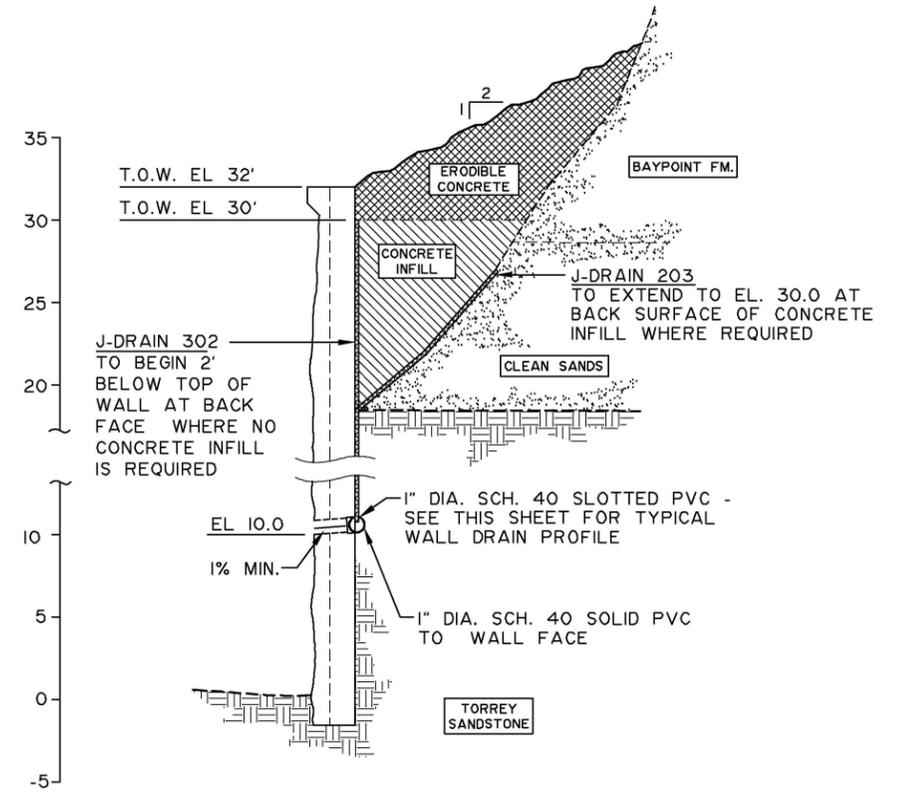
NOTE:
ANCHOR PLATE, TRUMPET & PROTECTIVE END CAP SHALL BE HOT DIP GALVANIZED

MULTISTRAND ANCHOR DETAIL WITH DOUBLE CORROSION PROTECTION



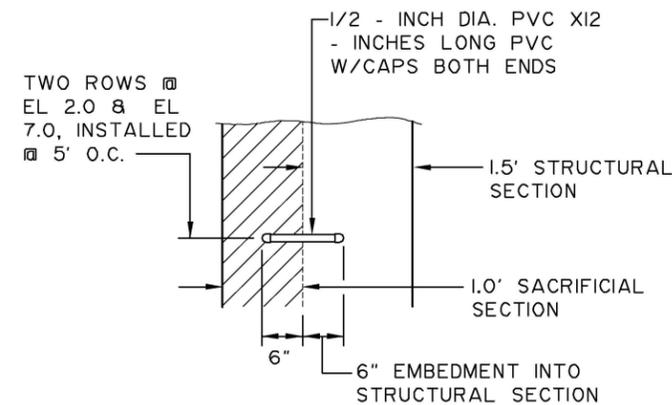
HORIZONTALLY SKEWED SOIL NAIL DETAIL - PLAN

NOT TO SCALE



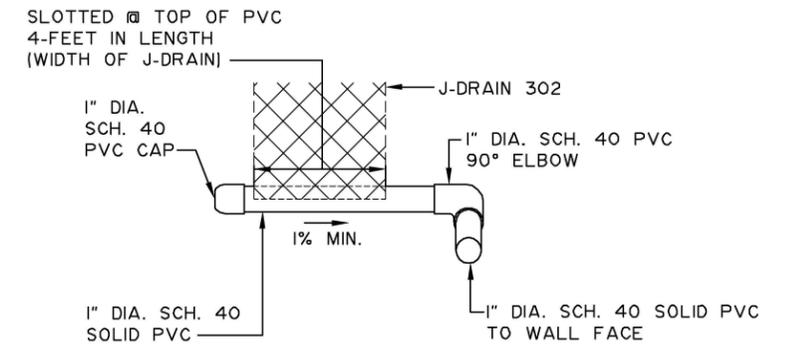
TYPICAL WALL DRAIN SECTION

NOT TO SCALE



MARKER - DETAIL

NO SCALE



TYPICAL WALL DRAIN DETAIL

NOT TO SCALE

BENCH MARK
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ELEV.: 63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-04-86

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	ENGINEER OF WORK	CITY APPROVED CHANGES	APP'D DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH	ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief	By: _____ District Engineer	By: <u>WALTER F. CRAMPTON</u> , Date: <u>4-17-17</u> R.C.E.: 23792 Exp: 12/31/17			By: _____ Date: _____	By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-18	SEE DETAILED BLOCK ABOVE LEFT	DETAILS FOR: 517 & 521 PACIFIC AVENUE SHORELINE STABILIZATION PROJECT		SBGR- SHEET 8 OF 9

TERRACOSTA CONSULTING GROUP
ENGINEERS & GEOLOGISTS
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SAN DIEGO, CALIFORNIA 92123
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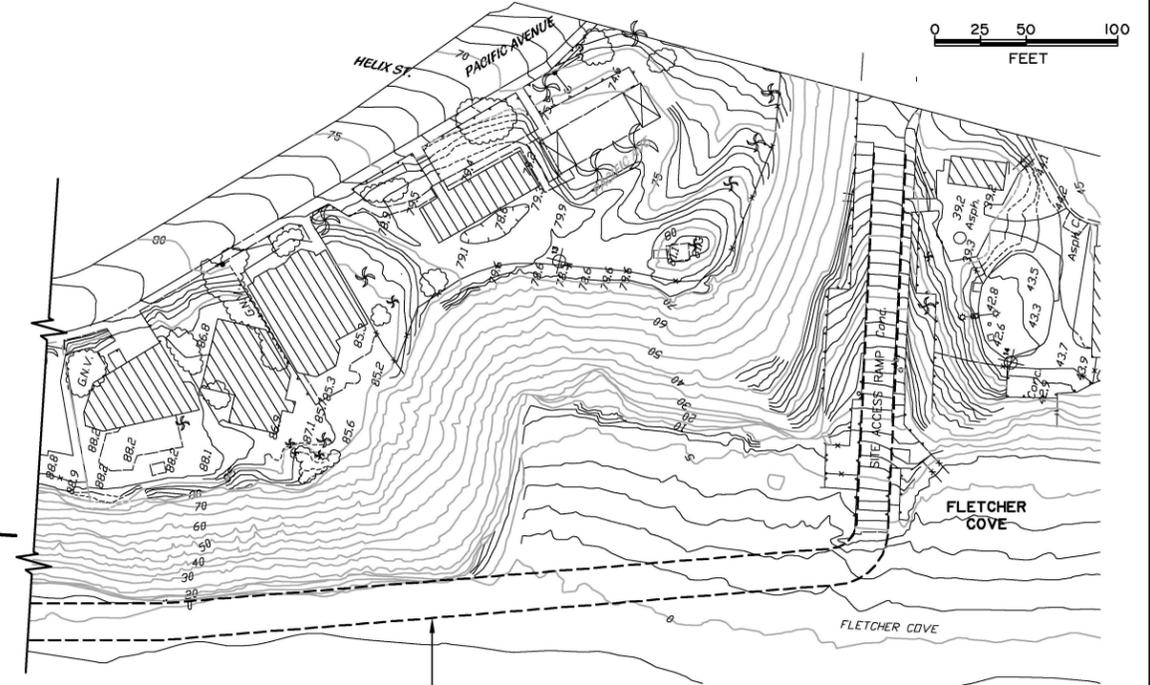
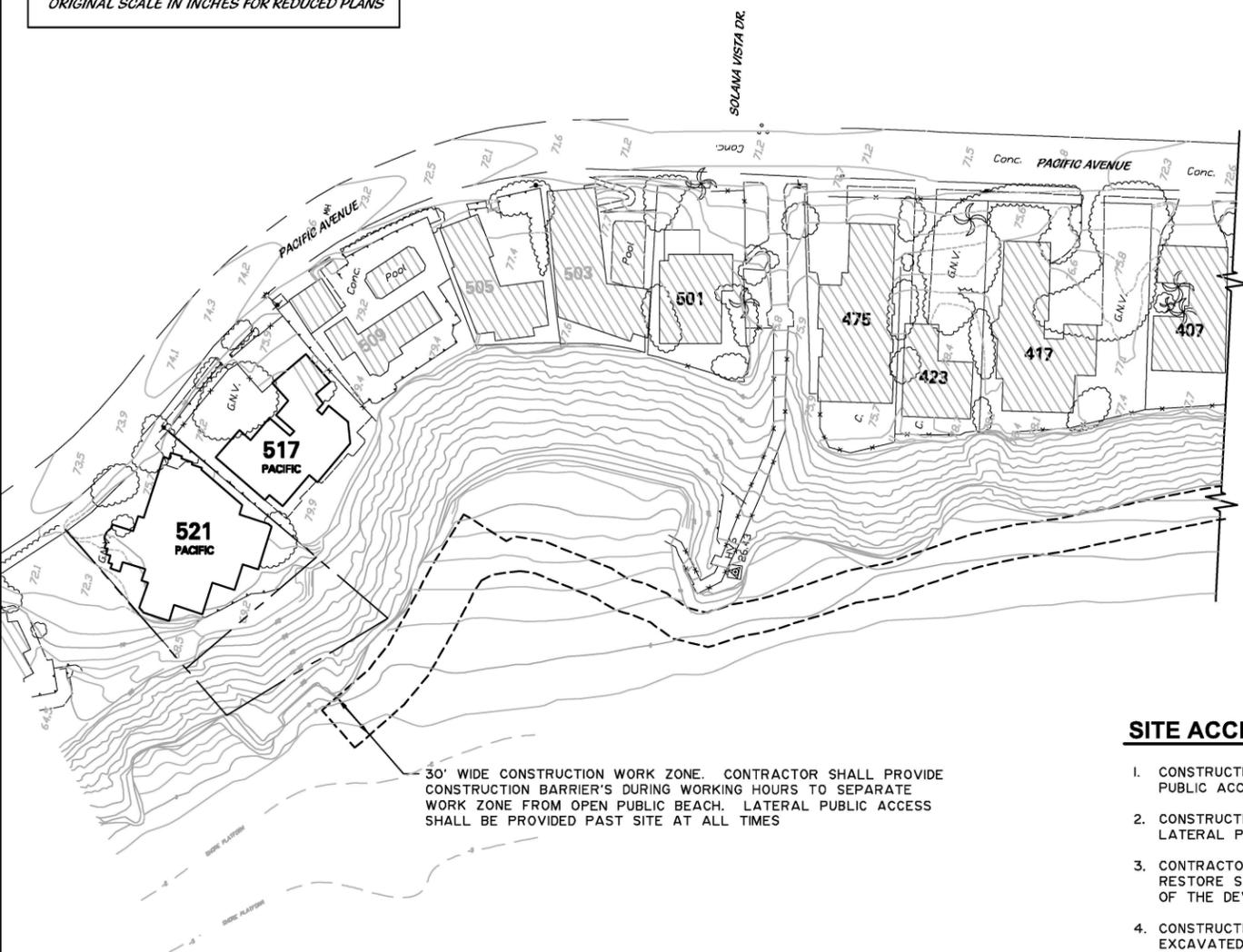
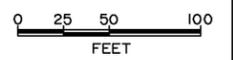


1383A/1809

NOTE: IF DRAWING IS NOT FULL SIZE (24X36)
THEN REDUCE SCALE ACCORDINGLY
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



SCALE: 1"=50'



← APPROXIMATELY 2650 FEET BETWEEN
FLETCHER COVE AND PROJECT LOCATION

30' WIDE CONSTRUCTION WORK ZONE. CONTRACTOR SHALL PROVIDE CONSTRUCTION BARRIER'S DURING WORKING HOURS TO SEPARATE WORK ZONE FROM OPEN PUBLIC BEACH. LATERAL PUBLIC ACCESS SHALL BE PROVIDED PAST SITE AT ALL TIMES

SITE ACCESS FOR CONTRACTOR EQUIPMENT ACROSS PUBLIC BEACH. CONTRACTOR SHALL COORDINATE WITH THE CITY OF SOLANA BEACH THE TIMES AND DATES OF EXPECTED EQUIPMENT AND MATERIALS MOVEMENT. FLAGMEN SHALL BE PROVIDED DURING THE MOVEMENT OF ALL CONSTRUCTION EQUIPMENT AND MATERIALS.

SITE ACCESS & STAGING AREA NOTES

1. CONSTRUCTION ACCESS CORRIDORS SHALL BE LOCATED IN A MANNER THAT HAS THE LEAST IMPACT ON PUBLIC ACCESS TO AND ALONG THE SHORELINE.
2. CONSTRUCTION EQUIPMENT AND ACTIVITIES PERFORMED ON THE SANDY BEACH AREA SHALL NOT RESTRICT LATERAL PUBLIC ACCESS.
3. CONTRACTOR SHALL REMOVE ALL CONSTRUCTION MATERIALS AND EQUIPMENT FROM THE STAGING SITE AND RESTORE STAGING SITE TO ITS PRIOR-TO-CONSTRUCTION CONDITION WITHIN 72 HOURS FOLLOWING COMPLETION OF THE DEVELOPMENT.
4. CONSTRUCTION MATERIALS: DISTURBANCE TO SAND AND INTERTIDAL AREAS SHALL BE MINIMIZED. BEACH SAND EXCAVATED SHALL BE REDEPOSITED ON THE BEACH. LOCAL SAND OR COBBLES SHALL NOT BE USED IN ANY PHASE OF THE CONSTRUCTION.
5. SITE ACCESS IS AVAILABLE APPROXIMATELY 2650' TO THE SOUTH AT FLETCHER COVE. CONTRACTOR SHALL COORDINATE WITH THE CITY OF SOLANA BEACH REGARDING CONSTRUCTION EQUIPMENT AND SITE ACCESS.
6. CONSTRUCTION SCHEDULE: NO CONSTRUCTION ACTIVITIES MAY OCCUR ON THE BEACH ON WEEKENDS OR HOLIDAYS, OR BETWEEN MEMORIAL DAY WEEKEND AND LABOR DAY OF ANY YEAR.
7. NO OVERNIGHT STORAGE OF EQUIPMENT OR MATERIALS MAY OCCUR ON SANDY BEACH OR AT THE FLETCHER COVE PARKING LOT, AND THE USE OF OTHER PUBLIC PARKING SPACES SHALL BE MINIMIZED. THE CONTRACTOR SHALL NOT STORE ANY CONSTRUCTION MATERIALS OR WASTE WHERE IT WILL BE OR COULD POTENTIALLY BE SUBJECT TO WAVE EROSION AND DISPERSION. IN ADDITION, NO MACHINERY MAY BE PLACED, STORED OR OTHERWISE LOCATED IN THE INTERTIDAL ZONE AT ANY TIME, EXCEPT FOR THE MINIMUM NECESSARY TO CONSTRUCT THE SEAWALL. CONSTRUCTION EQUIPMENT MAY NOT BE WASHED ON THE BEACH OR PUBLIC PARKING LOTS OR ACCESS ROAD.
8. COPIES OF THE SIGNED COASTAL DEVELOPMENT PERMIT AND THE APPROVED CONSTRUCTION PLAN SHALL BE MAINTAINED IN A CONSPICUOUS LOCATION AT THE CONSTRUCTION JOB SITE AT ALL TIMES, AND SUCH COPIES SHALL BE AVAILABLE FOR PUBLIC REVIEW ON REQUEST. ALL PERSONS INVOLVED WITH THE CONSTRUCTION SHALL BE BRIEFED ON THE CONTENT AND MEANING OF THE COASTAL DEVELOPMENT PERMIT AND THE APPROVED CONSTRUCTION PLAN, AND THE PUBLIC REVIEW REQUIREMENTS APPLICABLE TO THEM, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
9. A CONSTRUCTION COORDINATOR SHALL BE DESIGNATED TO BE CONTACTED DURING CONSTRUCTION SHOULD QUESTIONS ARISE REGARDING THE CONSTRUCTION INFORMATION (IN CASE OF BOTH REGULAR INQUIRIES AND EMERGENCIES), AND THE COORDINATOR'S CONTACT INFORMATION (OFFICE ADDRESS, OFFICE AND MOBILE PHONE NUMBERS, EMAIL ADDRESS) FOR THE DURATION OF CONSTRUCTION SHALL BE CONSPICUOUSLY POSTED AT THE JOB SITE WHERE SUCH CONTACT INFORMATION IS READILY VISIBLE FROM PUBLIC VIEWING AREAS, ALONG WITH AN INDICATION THAT THE CONSTRUCTION COORDINATOR SHOULD BE CONTACTED IN THE CASE OF QUESTIONS REGARDING THE CONSTRUCTION (IN CASE OF BOTH REGULAR INQUIRIES AND EMERGENCIES). THE CONSTRUCTION COORDINATOR SHALL RECORD THE NAME, PHONE NUMBER, AND NATURE OF ALL COMPLAINTS RECEIVED REGARDING THE CONSTRUCTION, AND SHALL INVESTIGATE COMPLAINTS AND TAKE REMEDIAL ACTION, IF NECESSARY, WITHIN 72 HOURS OF RECEIPT OF THE COMPLAINT OR INQUIRY.

BENCH MARK
DESCRIPTION: STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
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COASTAL COMMISSION PERMIT NO. 6-04-86

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SOLANA BEACH FIRE DEPARTMENT		SANTA FE IRRIGATION DISTRICT		ENGINEER OF WORK		CITY APPROVED CHANGES		APP'D	DATE	RECOMMENDED FOR APPROVAL		APPROVED FOR CONSTRUCTION		BENCH MARK		CITY OF SOLANA BEACH		ENGINEERING DEPARTMENT	DRAWING NO.
By: _____		By: _____		By: WALTER F. CRAMPTON						By: _____		By: _____		SEE DETAILED BLOCK ABOVE LEFT		SITE ACCESS / STAGING AND PHASING PLAN FOR:			SBGR-
Fire Chief		District Engineer		Date: 4-17-17						Date: _____		Date: _____				517 & 521 PACIFIC AVENUE			SHEET 9 OF 9
Date: _____		Date: _____		R.C.E.: 23792 Exp: 12/31/17						Date: _____		Mohammad Sammak, City Engineer				SHORELINE STABILIZATION PROJECT			
				Exp: 12/31/17						Date: _____		R.C.E.: 37146 Exp: 06-30-18							

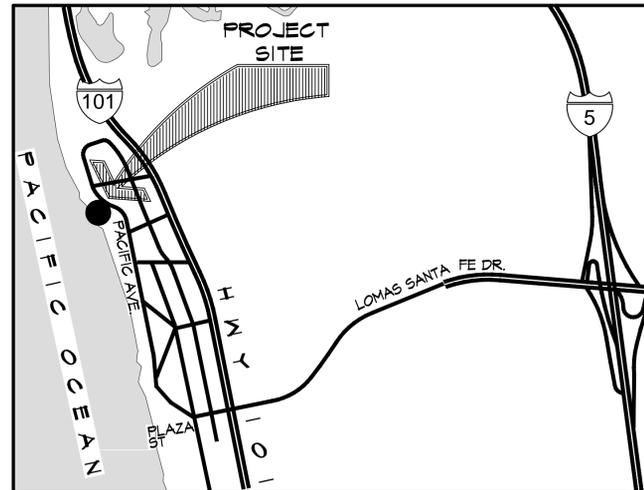
SEAWALL MAINTENANCE, REPAIR AND EXTENSION FOR: 517-521 PACIFIC AVENUE SLOPE RE-VEGETATION LANDSCAPE PLANS

GENERAL LANDSCAPE NOTES:

1. THIS IS A DIFFICULT ENVIRONMENT TO ESTABLISH COMPLETE PLANT COVER. AS SUCH, IT MAY BE NECESSARY TO REPLANT (OR RE-SEED) IN 2 OR 3 SUCCESSIVE YEARS, USING SPECIES FROM THIS LIST AND THE DETAILS AND SPECIFICATIONS LISTED HEREIN. CONTRACTOR TO DOCUMENT PLANT COVER THROUGHOUT THE ESTABLISHMENT PERIOD AND REPORT THE % COVER (AS VIEWED FROM BELOW) TO THE LANDSCAPE ARCHITECT BY THE END OF THE ESTABLISHMENT PERIOD.
2. OWNER SHALL HAVE RE-PLANTING OR SEEDING PERFORMED AS NECESSARY IN SUCCESSIVE YEARS TO ACHIEVE GREATER THAN 90% PLANT COVER OVER THE ENTIRE SLOPE.
3. 1. ALL VEGETATION PLANTED ON THE SITE SHALL CONSIST OF NATIVE, DROUGHT TOLERANT SPECIES, NON INVASIVE PLANTS. ALL HYDROSEEDING ON THE 1:1 SLOPE CONSISTS OF SPECIES NATIVE TO THE SAN DIEGO COUNTY COASTAL BLUFFS.
4. 2. ALL PLANTINGS SHALL BE COMPLETED WITHIN 60 DAYS OF THE CONSTRUCTION OF THE RECONSTRUCTED BLUFF AREA.
5. 3. ALL REQUIRED PLANTINGS WILL BE MAINTAINED IN GOOD GROWING CONDITION THROUGHOUT THE LIFE OF THE PROJECT, AND, WHENEVER NECESSARY, SHALL BE REPLACED WITH NEW EQUIVALENT PLANT MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH LANDSCAPE PLANS.

IRRIGATION NOTES:

1. THIS RECONSTRUCTED BLUFF SHALL HAVE TEMPORARY AND LIMITED IRRIGATION THAT MUST BE REMOVED WITHIN 365 DAYS OF PLANTINGS, UNLESS THE OPINION OF LANDSCAPE ARCHITECT IS THAT MORE TIME IS REQUIRED.
2. DUE TO THE SENSITIVE NATURE OF THIS COASTAL BLUFF, TEMPORARY IRRIGATION SHALL BE ACCOMPLISHED BY HAND WATERING, AS NECESSARY, UNDER THE SUPERVISION OF THE OWNER'S LANDSCAPE MAINTENANCE CONTRACTOR. HAND WATERING MAY BE ACCOMPLISHED ONLY IF A MAINTENANCE PERSON IS ON-SITE, MONITORING SAID IRRIGATION. OTHERWISE THE IRRIGATION SHALL NOT BE ALLOWED.
3. SINCE THE HYDROSEED MIX IS NATIVE, IRRIGATION SHALL BE APPLIED ONLY AS NECESSARY TO PROMOTE THE GERMINATION AND EARLY GROWTH OF THE PLANTINGS, AND THEREAFTER FOR UP TO 26 MONTHS AFTER SEEDING, AND ONLY AS REQUIRED TO MAINTAIN THE PLANTINGS IN A HEALTHY CONDITION.
4. THESE TEMPORARY SYSTEMS SHALL BE DISCONNECTED AND REMOVED WITHIN 26 MONTHS AFTER PLANTING.



VICINITY MAP
NOT TO SCALE.

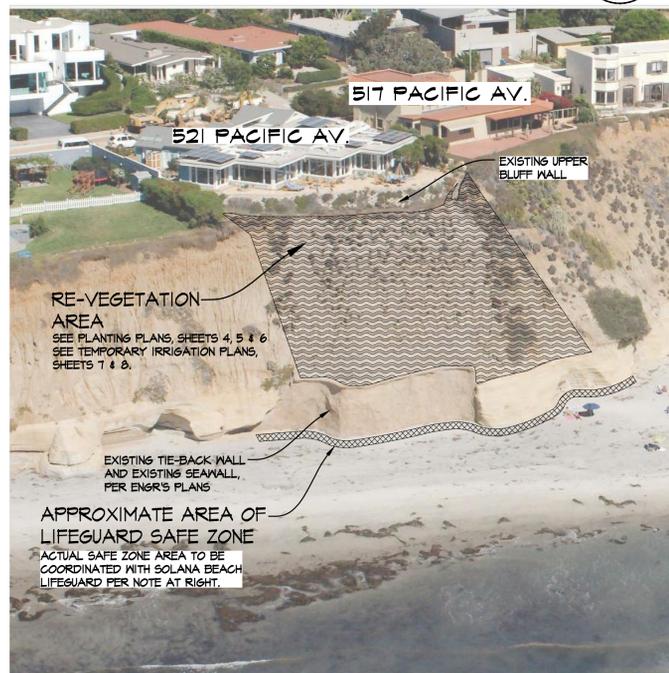
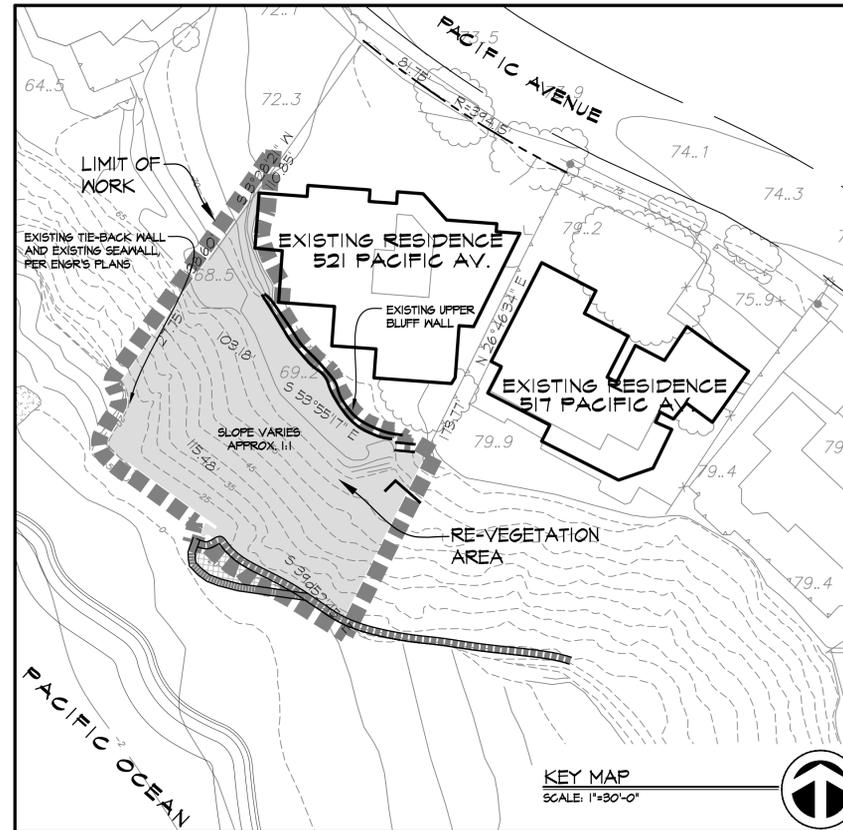


PHOTO EXHIBIT
NOT TO SCALE.



SCOPE OF WORK

- EXISTING SLOPE (APPROX. 1:1) TO BE MOSTLY PLANTED 10,800 S.F. (0.241 ACRES).
- ALL EXISTING VEGETATION TO REMAIN AND TO BE PROTECTED DURING CONSTRUCTION.
- ALL NEW SLOPE SHRUB PLANTING TO BE PLANTED AND COMPLETELY HYDROSEEDED AT INDICATED PERIOD(S) OF THE YEAR PRIOR TO REGION'S RAINY SEASON.
- TEMPORARY HAND-WATER CONTROLLED DRIP IRRIGATION SHALL BE INSTALLED FOR ALL NEW CONTAINER PLANTS FOR ESTABLISHMENT PURPOSES.
- TEMPORARY WINDSCREEN TO BE INSTALLED FOR NATIVE ESTABLISHMENT.

OWNER AND CONTRACTOR SHALL COMPLY WITH CITY OF SOLANA BEACH MUNICIPAL CODE TITLE 7. AS A FIRST ITEM OF WORK, OWNER SHALL HIRE LIFEGUARD SUPPORT FOR THE BEACH AREA IMMEDIATELY BELOW THE PROJECT SITE FOR ANY TIME WORK IS OCCURRING ON THE BLUFF ABOVE. THERE SHALL BE A MEETING WITH THE LIFEGUARD STAFF TO COORDINATE THIS, TO ADDRESS ANY CONCERNS FOR THE DURATION OF THE PROJECT. IN ADDITION, THE AREA BELOW THE SEAWALL SHALL BE ROPED OFF WITH CAUTION TAPE TO A CLEAR DISTANCE FROM THE BASE SATISFACTORY TO THE LIFEGUARD.

AS A SECOND ITEM OF WORK CONTRACTOR SHALL PROVIDE THE LANDSCAPE ARCHITECT WITH A COMPOSITE SOIL SAMPLE, COLLECTED AT THE DIRECTION OF THE LANDSCAPE ARCHITECT, OF ROUGHLY EQUAL AMOUNTS, FROM A MINIMUM OF 6 LOCATIONS ON THE PROJECT SITE. SOIL SAMPLE WILL BE PROCESSED BY THE LANDSCAPE ARCHITECT. ACTUAL SOIL AMENDMENTS WILL BE BASED ON THE RESULTS OF THE LAB TEST OF THIS SAMPLE. THE AMENDMENT SPECIFICATIONS HAVE BEEN CONSTRUCTED SO AS TO COVER MOST CONTINGENCIES FOR AMENDMENT, THEREBY ELIMINATING THE POSSIBILITY OF A CHANGE IN COST.

REFERENCE DRAWINGS

521 PACIFIC AVENUE SEAWALL MAINTENANCE, REPAIR AND EXTENSION PLANS BY TERRACOSTA CONSULTING GROUP, ENGINEERS AND GEOLOGIST, PLANS DATED 10/21/08 AND 2/26/15.

SITE ADDRESS

521 PACIFIC AVENUE, SOLANA BEACH CALIFORNIA 92075

TOPOGRAPHY SOURCE

TERRACOSTA CONSULTING GROUP, ENGINEERS AND GEOLOGIST, PLANS DATED 10/21/08

BENCHMARK

SEE BELOW LEFT CORNER

TOTAL REVEGETATION AREA

10,800 S.F. / 0.241 ACRES

ASSESSORS PARCEL NUMBER

APN: 263-041-04-00 AND 263-041-26-00

EXISTING LEGAL DESCRIPTION

LOTS: 04 & 26 BOOK: 263
PAGE: 041

LANDSCAPE PLAN SHEET INDEX

LANDSCAPE PLANS TITLE SHEET	SHEET 1
PLANTING PLAN	SHEET 2
PLANTING NOTES, LIST AND DETAILS	SHEET 3
PLANTING SPECIFICATIONS	SHEET 4
PLANTING SPECIFICATIONS	SHEET 5
TEMPORARY IRRIGATION PLAN	SHEET 6
TEMPORARY IRRIGATION NOTES & LEGEND	SHEET 7
TEMPORARY IRRIGATION SPECIFICATIONS	SHEET 8

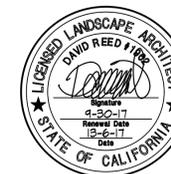
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ELEV.: 63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-08-122

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	LANDSCAPE ARCHITECT OF WORK	CITY APPROVED CHANGES	APP'D DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH	ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief	By: _____ District Engineer	By: DAVID W REED Date: 3-7-17 R.L.A.: 1962 Exp: 09/30/17			By: _____ Date: _____ By: _____ Date: _____	By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-10	SEE DETAILED BLOCK ABOVE LEFT	517-521 PACIFIC AVENUE SEAWALL MAINTENANCE, REPAIR & EXTENSION		SBGR- SHEET 1 OF 8

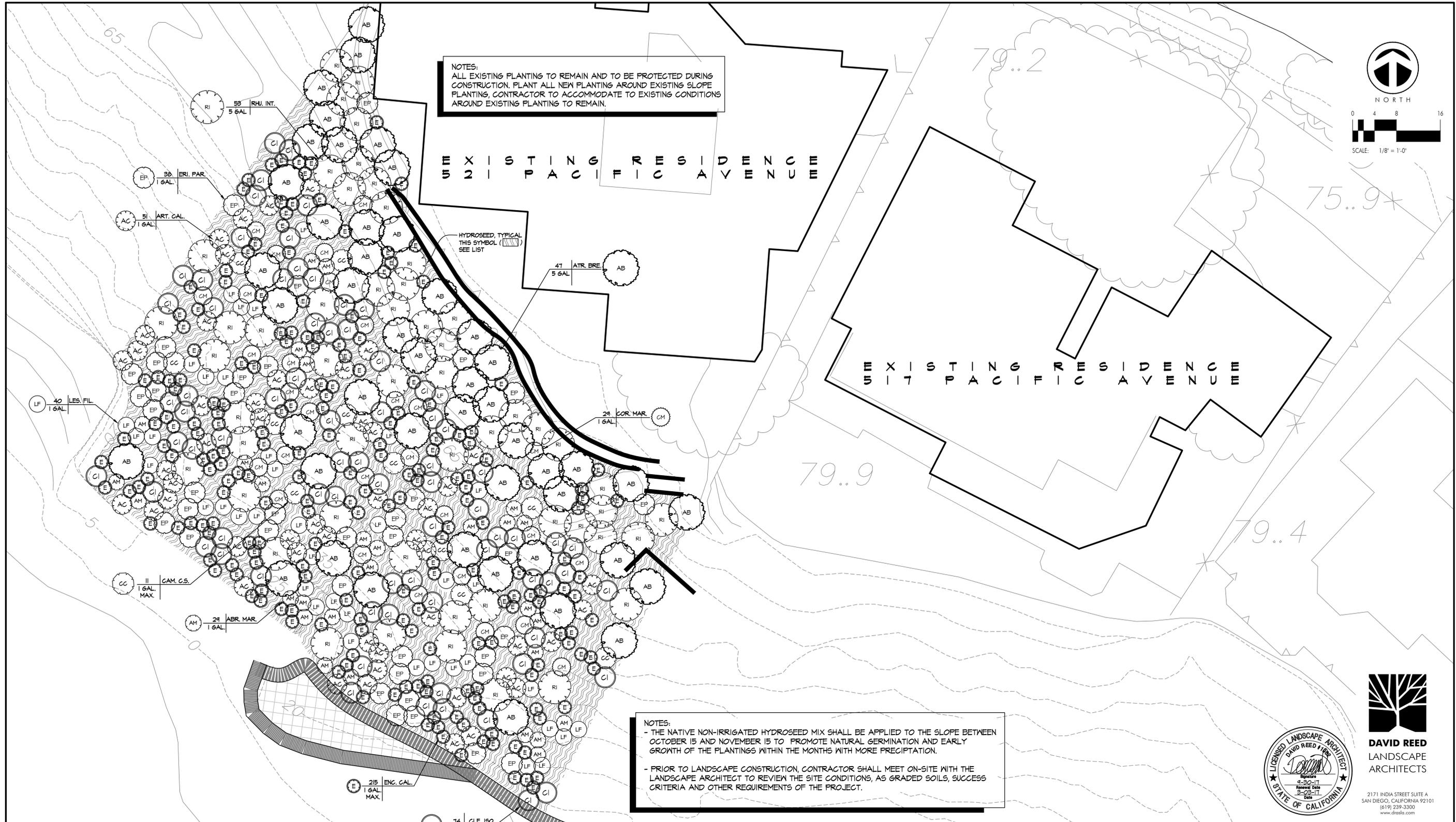


DAVID REED
LANDSCAPE
ARCHITECTS



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1393A



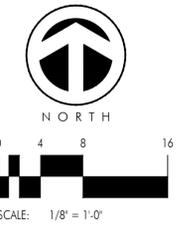
NOTES:
 ALL EXISTING PLANTING TO REMAIN AND TO BE PROTECTED DURING CONSTRUCTION. PLANT ALL NEW PLANTING AROUND EXISTING SLOPE PLANTING, CONTRACTOR TO ACCOMMODATE TO EXISTING CONDITIONS AROUND EXISTING PLANTING TO REMAIN.

EXISTING RESIDENCE
 521 PACIFIC AVENUE

EXISTING RESIDENCE
 517 PACIFIC AVENUE

HYDROSEED, TYPICAL
 THIS SYMBOL ([Symbol])
 SEE LIST

NOTES:
 - THE NATIVE NON-IRRIGATED HYDROSEED MIX SHALL BE APPLIED TO THE SLOPE BETWEEN OCTOBER 15 AND NOVEMBER 15 TO PROMOTE NATURAL GERMINATION AND EARLY GROWTH OF THE PLANTINGS WITHIN THE MONTHS WITH MORE PRECIPITATION.
 - PRIOR TO LANDSCAPE CONSTRUCTION, CONTRACTOR SHALL MEET ON-SITE WITH THE LANDSCAPE ARCHITECT TO REVIEW THE SITE CONDITIONS, AS GRADED SOILS, SUCCESS CRITERIA AND OTHER REQUIREMENTS OF THE PROJECT.



DAVID REED
 LANDSCAPE
 ARCHITECTS

2171 INDIA STREET SUITE A
 SAN DIEGO, CALIFORNIA 92101
 (619) 239-3300
 www.drdslo.com

BENCH MARK
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 ELEV.: 63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-08-122

PLANTING PLAN
 SCALE: 1/8"=1'-0"

FOR PLANTING NOTES, LIST & DETAILS, SEE SHEET 3
 FOR PLANTING SPECIFICATIONS, SEE SHEETS 4 & 5

1393A

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	LANDSCAPE ARCHITECT OF WORK	CITY APPROVED CHANGES	APP'D DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH	ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief	By: _____ District Engineer	By: DAVID W REED R.L.A.: 1962		Date: 3-7-17 Exp: 09/30/17	By: _____ Date: _____	By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-10	SEE DETAILED BLOCK ABOVE LEFT	517-521 PACIFIC AVENUE SEAWALL MAINTENANCE, REPAIR & EXTENSION		SBGR- SHEET 2 OF 8

HYDROSEEDING SPECIFICATIONS

1. SUPERVISION: ALL HYDROSEEDING IS SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE, AND THEY SHALL, IF NECESSARY, BE RELOCATED AS DIRECTED AS PART OF THE CONTRACT. THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE SHALL SUPERVISE THE HYDROSEEDING.

2. HYDROSEED APPLICATION: A SLURRY OF FERTILIZER, SEED, AND WOOD PULP OR FIBER SHALL BE ASITATED TO PROVIDE A UNIFORM MIX. THE OPERATOR SHALL SPRAY THE AREA WITH A COMPLETE UNIFORM VISIBLE COAT USING THE COLOR OF THE CELLULOSE FIBER AS A VISUAL GUIDE. THE SLURRY SHALL BE APPLIED IN A DOWNWARD DRILLING MOTION (EXCEPT ON SLOPES WELL ABOVE THE OPERATOR) VIA A FAN STREAM NOZZLE. THE MATERIALS SHOULD BE UNIFORMLY IMPREGNATED WITH SEED AND SHALL ALLOW PENETRATION OF RAINFALL AND PERCOLATION OF MOISTURE INTO THE UNDERLYING SOIL.

THE HYDROMULCHING SLURRY COMPONENTS SHALL NOT BE LEFT IN THE HYDROMULCH MACHINE FOR MORE THAN TWO HOURS. IF SLURRY COMPONENTS ARE LEFT FOR MORE THAN TWO HOURS IN THE MACHINE, THE CONTRACTOR SHALL ADD 50% MORE OF THE ORIGINALLY SPECIFIED SEED MIX TO ANY SLURRY MIX WHICH HAS NOT BEEN APPLIED WITHIN THE TWO HOURS AFTER MIXING. THE CONTRACTOR SHALL ADD 75% MORE OF THE ORIGINAL SEED MIX TO ANY SLURRY MIXTURE WHICH HAS NOT BEEN APPLIED EIGHT HOURS AFTER MIXING. ANY MIXTURE WHICH HAS NOT BEEN APPLIED WITHIN 8 HOURS OF MIXING SHALL BE REJECTED AND DISPOSED OF OFF-SITE AT CONTRACTOR'S EXPENSE.

3. SPECIAL CARE IS TO BE EXERCISED BY THE CONTRACTOR TO PREVENT THE SLURRY FROM BEING SPRAYED ONTO ANY ADJACENT PLANTERS, PROPERTY, OR ONTO WALKS OR WALLS. ANY SLURRY SPRAYED ONTO THESE AREAS SHOULD BE CLEANED OFF BY THE CONTRACTOR.

4. GERMINATION STAGE IRRIGATION: WITHIN 12 HOURS AFTER HYDROMULCHING THE PLANTING AREAS, THE WATERING SEQUENCE SHOULD BE INITIATED. THE WATER SHOULD BE LEFT ON LONG ENOUGH TO MOISTEN THE SOIL THOROUGHLY TO THE DEPTH OF THE SLURRY MULCH, TAKING CARE NOT TO SUPER SATURATE OR WASH AWAY THE SLURRY AND SEED. THE CONTRACTOR WILL REPAIR ALL SEED WASHING OR EROSION. A LIGHT, FREQUENT IRRIGATION SEQUENCE SHOULD CONTINUE UNTIL THE SEEDLINGS HAVE GROWN BEYOND THE GERMINATION STAGE. THE GERMINATION STAGE WILL RANGE FROM 45 TO 60 DAYS.

5. PREPLANTING FERTILIZER MAY BE APPLIED WITH THE HYDROSEED. FERTILIZER SHALL BE AN ORGANIC, PELLETED OR CHIP TYPE, UNIFORM IN COMPOSITION, FREE-FLOWING, SUITABLE FOR APPLICATION WITH APPROVED EQUIPMENT, AND DELIVERED TO THE SITE IN UNOPENED, ORIGINAL CONTAINERS, EACH BEARING THE MANUFACTURER'S STATEMENT OF GUARANTEED ANALYSIS. FERTILIZERS SHALL BE AT RATES RECOMMENDED BY AGRICULTURAL SUITABILITY SOIL TESTING RESULTS OR THE LANDSCAPE ARCHITECT.

6. GUARANTEE: ALL HYDROSEEDING SHALL BE GUARANTEED BY THE CONTRACTOR AS TO GROWTH AND HEALTH FOR A PERIOD OF THIRTY (30) DAYS AFTER FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT. AREAS THAT FAIL TO GROW SHALL BE RESEEDED UPON DIRECTION OF THE LANDSCAPE ARCHITECT. THE CONTRACTOR IS SUBJECT TO A SIXTY (60) DAY MAINTENANCE PERIOD OF THE RESEEDED AREAS.

HYDROSEED MIX

SCIENTIFIC OR PRODUCT NAME	COMMON NAME	P.L.S.	RATE/PLS LBS / ACRE	SEEDS/LB.
BINDER	SUPERTACK		225 LBS.	
FERTILIZER	TRI-C 6-2-4		500 LBS.	
MULCH	VIRGIN WOOD FIBER (NOT PAPER)		3000 LBS. - NOT PAPER	
ABRONIA VILLOSA	SAND VERBENA	15%	2 LBS.	15,000
AMBROSIA CHAMISSONIS	BEACH BUR	42%	5 LBS.	40,000
ARTEMISIA CALIFORNICA	COASTAL SAGEBRUSH	4%	3 LBS.	55,000,000
CAMISSONIA CHEIRANTHIFOLIA SSP. SUFFRUTICOSA	SUN CUP (BEACH EVENING PRIMROSE)	2%	2 LBS.	4,000
COREOPSIS MARITIMA	SAN DIEGO SEA DAHLIA	1/2	1/2 LBS.	
LESSINGIA FILAGINIFOLIA SSP. LINIFOLIA	DEL MAR MESA SAND ASTER	1%	5 LBS.	940,000
ENCHELIA CALIFORNICA	CALIFORNIA ENCHELIA	24%	8 LB.	175,000
ERIOSONUM FASCICULATUM	CALIFORNIA BUCKWHEAT	7%	10 LBS.	450,000
LASTHENIA CALIFORNICA	DWARF GOLDFIELDS	0.50%	1-1/2 LBS.	3,250,000
LASTHENIA GLABRA	GOLDFIELDS	77%	1-1/2 LBS.	1,800,000
LUPINUS BICOLOR	PYGMY-LEAFED LUPINE	7%	5 LBS.	115,000
MIMULUS PUNICEUS	MONKEY FLOWER	1%	1-1/2 LBS.	1,200,000
PERITOMA ARBOREA	BLADDER POD		10 LBS.	
SARVON™				6 GALS.
SUPERTHRIVE™			20Z/100 GALS OF HYDROSEED SLURRY	
ADD GYPSUM OR FLOWABLE GYPSUM TO THE MIX AND CONFIRM BEFORE APPLICATION			1800 LBS.	
MYCORRHIZAL INOCULUM, GLOMIS INTRARADICES			40 OZ.	

NATIVE CONTAINER PLANTS

ABBR.	SIZE	QTY.	SCIENTIFIC NAME	COMMON NAME
ABR. MAR.	1 GAL.	29	ABRONIA MARITIMA	COASTAL SAND VERBENA
ART. CAL.	1 GAL.	51	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH
ATR. BRE.	5 GAL.	41	ATRIFLEX L. 'BRENERI'	BRENER SALTBUCH
CAM. C.S.	1 GAL. MAX.	11	CAMISSONIA CHEIRANTHIFOLIA SSP. SUFFRUTICOSA	SUN CUP, BEACH EVENING -PRIMROSE
CLE. ISO.	1 GAL. MAX.	74	CLEOME ISOMERIS	BLADDER POD
COR. MAR.	1 GAL. MAX.	29	COREOPSIS MARITIMA	SEA DAHLIA
ENC. CAL.	1 GAL. MAX.	215	ENCHELIA CALIFORNICA	CALIFORNIA ENCHELIA
ERI. PAR.	1 GAL.	38	ERIOSONUM PARVIFOLIUM	SPEACLIFFBUCKWHEAT
LES. FIL.	1 GAL.	40	LESSINGIA FILAGINIFOLIA	CALIFORNIA SAND-ASTER
RHU. INT.	5 GAL.	53	RHUS INTEGRI-FOLIA	LEMONADE BERRY

NOTES:

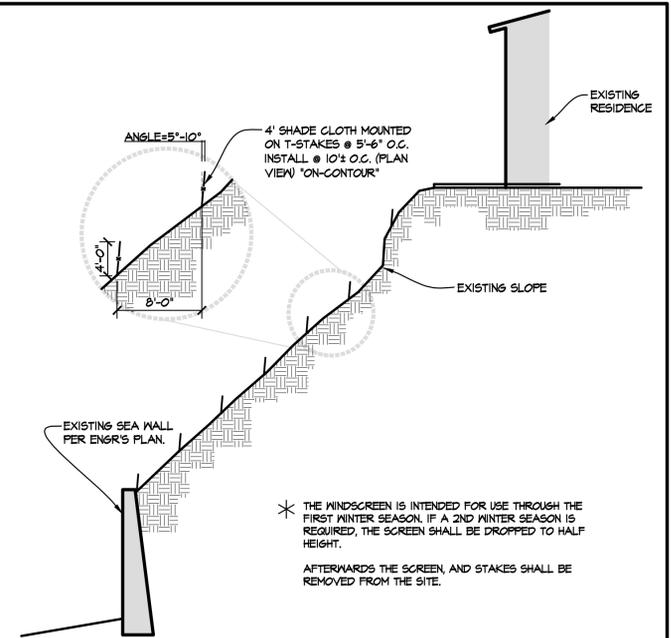
- THE NATIVE NON-IRRIGATED HYDROSEED MIX SHALL BE APPLIED TO THE SLOPE BETWEEN OCTOBER 15 AND JANUARY 15 TO PROMOTE NATURAL GERMINATION AND EARLY GROWTH OF THE PLANTINGS WITHIN THE MONTHS WITH MORE PRECIPITATION.
- PRIOR TO LANDSCAPE CONSTRUCTION, CONTRACTOR SHALL MEET ON-SITE WITH THE LANDSCAPE ARCHITECT TO REVIEW THE SITE CONDITIONS, AS GRADED SOILS, SUCCESS CRITERIA AND OTHER REQUIREMENTS OF THE PROJECT.

PLANTING NOTES

- ALL VEGETATION PLANTED ON THE SITE SHALL CONSIST OF NATIVE, DROUGHT TOLERANT SPECIES, NON INVASIVE PLANTS. ALL HYDROSEEDING ON THE APPROX. 1:1 SLOPE CONSISTS OF SPECIES NATIVE TO THE SAN DIEGO COUNTY COASTAL BLUFFS.
- ALL PLANTING SHALL BE COMPLETED WITHIN 60 DAYS OF THE CONSTRUCTION OF THE BLUFF.
- ALL REQUIRED PLANTINGS WILL BE MAINTAINED IN GOOD GROWING CONDITION THROUGHOUT THE LIFE OF THE PROJECT, AND, WHENEVER NECESSARY, SHALL BE REPLACED WITH NEW EQUIVALENT PLANT MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH LANDSCAPE PLANS.
- SINCE THE HYDROSEED MIX IS NATIVE, IRRIGATION SHALL BE APPLIED ONLY AS NECESSARY TO PROMOTE THE GERMINATION AND EARLY GROWTH OF THE PLANTINGS, AND THEREAFTER FOR UP TO 26 MONTHS AFTER SEEDING, ONLY AS REQUIRED TO MAINTAIN THE PLANTINGS IN A HEALTHY CONDITION.
- LANDSCAPE CONTRACTOR SHALL RECEIVE THE SITE AS IS.
- THE PLANTING PLANS ARE DIAGRAMMATIC. MINOR ADJUSTMENTS IN PLANT LOCATIONS AND TYPE MAY BE MADE AT THE DISCRETION OF THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT AND REPLACED UPON REQUEST BEFORE OR AFTER THE PLANTING.
- LANDSCAPE ARCHITECT SHALL APPROVE FINAL PLACEMENT OF ALL SHRUBS PRIOR TO PLANTING.
- 1 GAL. SHRUB PITS SHALL BE TWO TIMES ROOTBALL DIAMETER WIDE AND 1-1/2 TIMES CONTAINER DEPTH.
- DO NOT DAMAGE PLANT ROOTBALL DURING TRANSPORTATION OR PLANTING.
- NITROLIZED ORGANIC AMENDMENT SHALL BE WILBUR-ELLIS WIL-GRO± SOIL AMENDMENT, LOAMEX±, OR APPROVED EQUAL.
- A. PLANTING BACKFILL MIX FOR ALL CONTAINER PLANTS SHALL CONSIST OF 1/5 NITROLIZED ORGANIC AMENDMENT AND 4/5 EXISTING SOIL, PLUS 2 LBS. PER CU. YD. OF SOIL SULFUR, 1/2 LBS. OF IRON SULFATE, 4 LBS. OF TRI-C ORGANIC FERTILIZER 6-2-4 PER CUBIC YARD. IN ADDITION APPLY 1/2 LBS. OF TRI-C MYCO DRENCH FOR THE TOTAL OF BACKFILL OR PER MFG'S SPECIFICATIONS.
B. ALL PLANTED AREAS SHALL BE WATERED IN THOROUGHLY WITH SARVON± PER MANUFACTURER'S SPECIFICATIONS IN ADVANCE OF PLANTING. ALL PLANTS SHALL BE WATERED THOROUGHLY WITH SUPERTHRIVE± WITHIN 2 HOURS OF PLANTING.
- ALL PLANTS 1-GALLON SIZE OR LARGER SHALL RECEIVE AGRIFORM 21-GRAM 20-10-5 FERTILIZER TABLETS AT THE FOLLOWING RATES:
1-GALLON: ONE. PLACE TABLETS AT HALF THE DEPTH OF THE PLANTING PIT AND 1" FROM ROOTBALL.
- ALL PLANTS PLANTED FROM CONTAINERS SHALL HAVE THEIR ROOTBALLS SCORED WITH A SHARP TOOL TO A DEPTH OF 1" IN THREE LONGITUDINAL INCISIONS AT LOCATIONS SPACED AROUND THE ROOTBALL BEFORE PLACING PLANT IN PLANTING HOLE.
- ALL SHRUB BASINS (ONLY) SHALL BE COVERED WITH A 1" DEEP LAYER OF A HIGH QUALITY MULCH (BAGGED PRODUCT). ALL BARK TO BE NITROLIZED WITH 5% NITROGEN.
- A LANDSCAPE MAINTENANCE PERIOD OF 1 YEARS SHALL BE CONSIDERED PART OF THIS CONTRACT. PLEASE BID AS A SEPARATE ITEM.

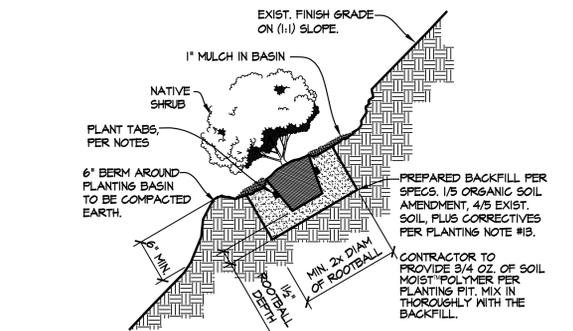
HYDROSEED NOTES:

- %P.L.S. = % PURITY TIMES % GERMINATION OF SEED. THIS INDICATES THE MINIMUM PERCENTAGE OF PURITY OF THE SEED TO BE PROVIDED.
- THE SEED COMPANY SHALL APPLY ALL SEED WITHIN ONE YEAR OF COLLECTION.
- HYDROSEEDINGS WILL BE MOST EASILY ESTABLISHED, IF APPLIED BETWEEN OCTOBER 15 AND JANUARY 15.
- ADDITIONAL RATES OF MULCH AND BINDER HAVE BEEN SPECIFIED TO BE ADEQUATE FOR THE STEEPNESS OF SLOPE.
- CONTRACTOR IS ADVISED THAT THE ACTUAL AREA (ON SLOPE) FOR THIS PROJECT IS APPROXIMATELY 14% LARGER THAN THE AREA SHOWN IN THE PLAN VIEW. SEED, MULCH AND BINDER AND FERTILIZER AMOUNTS SHALL BE COMMENSURATE WITH THIS ACTUAL SLOPE AREA, (NOT THE PLANIMETRIC AREA)



TEMPORARY WINDSCREEN FOR PLANT ESTABLISHMENT

SCALE: 1/16"=1'-0"



NATIVE PLANTING ON SLOPE

NOT TO SCALE.

BENCH MARK
DESCRIPTION: STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
LOCATION: AT SOLANA BEACH, ALONG HWY 101, 0.5 MILE N OF INTERSECTION OF HWY 101 AND VIA LA VALLE, 5.3 FT E OF CENTERLINE OF HWY 101, 82 FT W OF AT AND SFRR TRACKS, 24 FEET N OF PROJECTED CENTERLINE OF DAHLIA DRIVE, 6 FEET N OF PP. 01126081. A COPPER ROD 13.5 FEET DEEP WITH STANDARD DISK STAMPED LJ 108 1968, T14S R4W 02
ELEV.: 63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-08-122

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	LANDSCAPE ARCHITECT OF WORK		CITY APPROVED CHANGES	APP'D DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH	ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief	By: _____ District Engineer	Date: 3-7-17	Date: 09/30/17			By: _____ Date: _____	By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-10	SEE DETAILED BLOCK ABOVE LEFT	517-521 PACIFIC AVENUE SEAWALL MAINTENANCE, REPAIR & EXTENSION		SBGR- SHEET 3 OF 8



DAVID REED
LANDSCAPE ARCHITECTS

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LANDSCAPE PREPARATION & PLANTING

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A.** WORK DISCUSSED IN THIS SECTION INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE WORK INDICATED ON THE DRAWINGS. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE BEST STANDARDS OF PRACTICE RELATING TO THE VARIOUS TRADES AND UNDER THE CONTINUOUS SUPERVISION OF A COMPETENT FOREMAN, CAPABLE OF INTERPRETING THE DRAWINGS, NOTES, AND THESE SPECIFICATIONS.
- B.** IRRIGATION AND LANDSCAPE WORK MAY BE DONE CONCURRENTLY, HOWEVER, LANDSCAPE WORK MAY NOT START IN ANY SECTION PRIOR TO INSPECTION AND APPROVAL OF THE TEMPORARY IRRIGATION WORK.
- C.** PRIOR TO EXCAVATION, LOCATE ALL TEMPORARY DRIP IRRIGATION VALVES, AND ALL UTILITY LINES SO THAT PROPER PRECAUTIONS MAY BE TAKEN NOT TO DAMAGE SUCH IMPROVEMENTS. IN THE EVENT OF A CONFLICT BETWEEN SUCH LINES AND AREAS REQUIRING SOIL PREPARATION, PROMPTLY NOTIFY THE OWNER. FAILURE TO FOLLOW THIS PROCEDURE PLACES UPON THE CONTRACTOR THE RESPONSIBILITY FOR (AT HIS OWN EXPENSE) MAKING ANY AND ALL REPAIRS FOR DAMAGE RESULTING FROM WORK HEREUNDER.

1.02 SUBMITTALS

- A.** CERTIFICATIONS OF CONFORMANCE OR COMPLIANCE: IN ADDITION TO ANY OTHER CERTIFICATES SPECIFIED, THE CONTRACTOR SHALL FURNISH A CERTIFICATE WITH EACH DELIVERY OF BULK MATERIAL STATING THE SOURCE, QUANTITY, TYPE OF MATERIAL, AND THAT THE MATERIAL CONFORMS TO THE SPECIFICATION REQUIREMENT. THESE CERTIFICATES SHALL BE SUBMITTED TO THE OWNER PRIOR TO THE START OF THE MAINTENANCE PERIOD. AFTER THE SOIL HAS BEEN PREPARED AS CALLED FOR IN THE SECTION ON SOIL PREPARATION, THE IRRIGATION SYSTEM HAS BEEN INSTALLED AND TESTED, AND CONDITIONS ARE FAVORABLE TO PLANT, THE LANDSCAPE CONTRACTOR SHALL REQUEST APPROVAL TO START PLANTING FROM THE OWNER.
- B.** AGRICULTURAL SUITABILITY SOIL TESTS SHALL BE MADE BY THE CONTRACTOR (AT THE DIRECTION OF THE LANDSCAPE ARCHITECT) CONTRACTOR SHALL ADJUST SOIL AMENDMENTS ACCORDINGLY.

PART 2 - DELIVERY AND STORAGE

2.01 DELIVERY

- A.** PROVIDE NOTIFICATION OF THE DELIVERY SCHEDULE IN ADVANCE SO MATERIAL MAY BE INSPECTED UPON ARRIVAL AT THE JOB SITE. REMOVE UNACCEPTABLE MATERIAL FROM THE JOB SITE IMMEDIATELY.
- B.** PROTECT PLANTS DURING DELIVERY TO PREVENT DAMAGE TO THE ROOT BALLS OR DESICCATION OF LEAVES. PROTECT TREES DURING TRANSPORT BY TYING IN THE BRANCHES AND COVERING ALL EXPOSED BRANCHES.
- C.** DELIVER PESTICIDES OR OTHER CHEMICALS TO THE SITE IN THE ORIGINAL, UNOPENED CONTAINERS. CONTAINERS THAT DO NOT HAVE A LEGIBLE LABEL THAT IDENTIFIES THE ENVIRONMENTAL MANUFACTURER'S REGISTERED USES WILL BE REJECTED.

2.02 STORAGE

- A.** KEEP GYPSUM AND FERTILIZER IN DRY STORAGE AND AWAY FROM CONTAMINANTS.
- B.** STORE AND PROTECT PLANTS NOT INSTALLED ON THE DAY OF ARRIVAL AT THE SITE AS FOLLOWS:
 - OUTSIDE STORAGE SHALL BE PROTECTED FROM THE WIND.
 - KEEP PLANTS, INCLUDING THOSE IN CONTAINERS, IN A MOIST CONDITION BY WATERING WITH A FINE MIST SPRAY.
 - SEPARATE PLANTS TO PREVENT DAMPING OFF.
- C.** DO NOT STORE CHEMICALS AND HERBICIDES WITH ANY OTHER LANDSCAPE MATERIALS. STORE IN AN APPROVED, LOCKED, SEPARATE STRUCTURE OR VEHICLE.

2.03 HANDLING

- A.** PLANTS: TAKE CARE TO AVOID DAMAGING PLANTS BEING MOVED FROM THE NURSERY OR STORAGE AREA TO THE PLANTING SITE. HANDLE ALL PLANTS CAREFULLY TO AVOID CRACKING OR BREAKING THE ROOT BALL. DO NOT HANDLE PLANTS BY THE TRUNK OR STEM. REMOVE DAMAGED PLANTS OR PLANTS WITH BROKEN OR CRACKED ROOT BALLS FROM THE SITE.
- B.** SPECIMEN PLANTS SHALL BE PLANTED, MULCHED, GUYED, AND IN A BASIN AND FERTILIZED WITHIN 48 HOURS AFTER REMOVAL FROM PREVIOUS LOCATION.

2.04 JOB CONDITIONS

PLANTING CONDITIONS: PLANTING SHALL NOT BE DONE WHEN THE GROUND IS MUDDY OR IN AN UNSATISFACTORY CONDITION FOR PLANTING.

2.05 GUARANTEE

WORK SHALL BE SUBJECT TO THE TERMS OF THE GENERAL PROVISIONS, EXCEPT THAT PLANT MATERIAL SHALL BE GUARANTEED THROUGH THE PLANT MAINTENANCE PERIOD. ALL PLANTINGS SHALL BE GUARANTEED FOR AS LONG AS THE CONTRACTOR IS MAINTAINING THE LANDSCAPING, WITH THE EXCEPTION THAT BOXED TREES SHALL BE GUARANTEED FOR ONE YEAR. ANY MATERIAL THAT IS NOT GROWING PROPERLY DURING THIS PERIOD SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR WITHIN SEVEN (7) DAYS AFTER THE RECEIPT OF A WRITTEN NOTICE BY THE OWNER. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR THE ORIGINAL PERIOD, STARTING FROM THE DATE OF REPLACEMENT. THE CONTRACTOR'S GUARANTEE MAY BE EXTENDED BY THE OWNER IN CASES WHERE PLANTS ARE SLOW TO ESTABLISH. IF THE CONTRACTOR FAILS TO MAKE REPLACEMENTS WITHIN THE TIME LIMIT, THE OWNER MAY REPLACE THEM AT THE CONTRACTOR'S EXPENSE AFTER DULY NOTIFYING HIM.

PART 3 - PRODUCTS

3.01 TOPSOIL

WHERE NEW TOPSOIL IS CALLED FOR, PROVIDE A NEW CLASS A TOPSOIL AND/OR MODIFY EXISTING TOPSOIL TO SUPPLY THE FOLLOWING COMPOSITIONS. REQUIREMENTS: PH BETWEEN 6 AND 7.4, CONTAINING FROM 5 TO 20 PERCENT ORGANIC MATTER AS DETERMINED BY THE ORGANIC CARBON 6A, CHEMICAL ANALYSIS METHOD DESCRIBED IN USDA SOIL SURVEY INVESTIGATION REPORT NO. 1. MAXIMUM PARTICLE SIZE, 3/4-INCH, WITH MAXIMUM 3 PERCENT RETAINED ON 1/4-INCH SCREEN. SOLUBLE SALTS SHALL NOT EXCEED 600 PPM. OTHER COMPONENTS SHALL BE WITHIN THE FOLLOWING PERCENTAGES:

- SILT 25-50
- CLAY 10-30
- SAND 20-35

3.02 GYPSUM AND PH ADJUSTERS

- A.** GYPSUM: COMMERCIALY PACKAGED, FREE FLOWING GYPSUM CONTAINING NOT LESS THAN 95 PERCENT, BY VOLUME, OF CALCIUM SULPHATE AS ACTIVE INGREDIENT
- B.** FLOWABLE GYPSUM SHALL BE A CALCIUM SULFATE, DIHYDRATE, EQUIVALENT TO 5.7 LB./U.S. GALLON.
- C.** SULFUR: SHALL BE ELEMENTAL; 90% PURE.

3.03 SOIL CONDITIONERS

- USE INDIVIDUALLY OR IN COMBINATION AS REQUIRED TO MEET SPECIFIED REQUIREMENTS FOR TOPSOIL.
- A.** ORGANIC SOIL AMENDMENT: SHALL BE DERIVED FROM WOOD (RESIDUAL PRODUCTS) FROM THE BARK OF PINE WHITE FIR AND RED FIR, CEDAR SHAVINGS OR REDWOOD SHAVINGS. AMENDMENT UPON ANALYSIS SHALL CONTAIN AT LEAST 0.5% NITROGEN BASED ON DRY WEIGHT WITH AN ASH CONTENT NOT TO EXCEED 10%. A COMMERCIAL GRADE PRODUCT SHALL BE USED, WITH A SAMPLE ACCOMPANIED BY AN APPROVED LABORATORY ANALYSIS WITH THE FOLLOWING: GUARANTEE - WT/ CU. YD.= 560-820LBS.; PH LESS THAN 6.5; SALINITY ECE LESS THAN 2.5 MILLIMOHS / CC; IRON EXPRESSED AS METALLIC = 0.1 %
- USE INDIVIDUALLY OR IN COMBINATION AS REQUIRED TO MEET SPECIFIED REQUIREMENTS FOR TOPSOIL.
- PARTICLE SIZE: MINIMUM PERCENT BY WEIGHT PASSING:
 - NO. 1 MESH SCREEN 2%
 - NO. 5 MESH SCREEN 36%
 - NO. 8 MESH SCREEN 25%
 - NO. 12 MESH SCREEN 30%
 - NO. 32 MESH SCREEN 5%

3.04 FERTILIZER

- A.** FERTILIZER: ONLY IF NOT SUPERCEDED BY A SITE SPECIFIC AGRICULTURAL SOILS REPORT, USE A COMPLETE COMMERCIAL, GRANULAR FERTILIZER CONTAINING THE FOLLOWING MINIMUM PERCENTAGES, BY WEIGHT, OF PLANT FOOD NUTRIENTS:
 - 18% AVAILABLE NITROGEN
 - 18% AVAILABLE PHOSPHORUS
 - 6% AVAILABLE POTASSIUM
 - 1.8% SULFUR
 - 1.5% IRON
- B.** PALM TREE FERTILIZER SHALL CONTAIN THE FOLLOWING:
 - 4% AVAILABLE NITROGEN
 - 3% AVAILABLE PHOSPHORIC ACIDS
 - 4% SOLUBLE POTASH
 - 4% MAGNESIUM
 - 2% IRON
 - 5% MANGANESE
 - 5% ZINC
 - 5% HUMIC ACIDS
- C.** FERTILIZER PLANTING TABLETS: TIGHTLY COMPRESSED FERTILIZER CHIPS FORMING A TABLET THAT IS INSOLUBLE IN WATER, IS DESIGNATED TO PROVIDE A CONTINUOUS RELEASE OF NUTRIENTS FOR AT LEAST 24 MONTHS AND CONTAINS THE FOLLOWING MINIMUM PERCENTAGES, BY WEIGHT, OF PLANT FOOD NUTRIENTS:
 - 20% AVAILABLE NITROGEN
 - 10% AVAILABLE PHOSPHORUS
 - 5% AVAILABLE POTASSIUM
- PLANTING TABLETS SHALL WEIGH APPROXIMATELY 21 GRAMS EACH FOR TREES AND SHRUBS AND 5 GRAMS FOR GROUND COVER PLANTS.
- D.** IRON CHELATES: CONTAINING 10 PERCENT IRON AS METALLIC.

3.05 PLANTS

- A.** CARE OF STOCK PILED PLANTS. WHERE EXISTING PLANTS ARE TO BE DUG, STOCKPILED AND LATER TRANSPANTED DURING CONSTRUCTION TRANSPLANTS FROM AREA OF BUILDING ADDITION, THEY SHOULD BE HEELED IN WELL WITH A MIXTURE OF SOIL AND APPROVED SOIL AMENDMENT AND WATERED TWICE A WEEK WITH WATER AND ONCE A WEEK WITH WATER AND SUPERTHRIVE™. THEY MUST BE PLACED IN AN AREA PROTECTED FROM DAMAGE BY CONSTRUCTION.
- B.** PLANT MATERIALS SHALL BE FURNISHED IN THE QUANTITIES AND / OR SPACING AS SHOWN, OR NOTED FOR EACH LOCATION, AND SHALL BE OF THE SPECIES, KINDS, SIZES, ETC., AS SYMBOLIZED AND/OR DESCRIBED IN THE DRAWINGS. PLANT NAMES INDICATED OR LISTED ON THE DRAWINGS CONFORM TO "STANDARD PLANT NAMES" ESTABLISHED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE, EXCEPT FOR NAMES NOT COVERED HEREIN, THE ESTABLISHED CUSTOM OF THE NURSERY IS FOLLOWED.
- C.** PLANTING STOCK: PLANTING STOCK SHALL BE WELL-BRANCHED AND WELL-FORMED, SOUND, VIGOROUS, HEALTHY, AND FREE FROM DISEASE, SUNSCALE, WINDBURN, ABRASION, AND HARMFUL INSECTS OR INSECT EGGS, AND SHALL HAVE HEALTHY, NORMAL, AND UNBROKEN ROOT SYSTEMS AND NOT ROOT BOUND. DECIDUOUS TREES AND SHRUBS SHALL BE SYMMETRICALLY DEVELOPED, OF UNIFORM HABIT OF GROWTH, WITH STRAIGHT BOLES OR STEMS AND FREE FROM OBJECTIONABLE DISFIGUREMENTS. EVERGREEN TREES AND SHRUBS SHALL HAVE WELL DEVELOPED SYMMETRICAL TOPS WITH TYPICAL SPREAD OF BRANCHES FOR EACH PARTICULAR SPECIES OR VARIETY. GROUND COVERS AND VINES SHALL BE VIGOROUS, HAVE THE NUMBER AND LENGTH OF RUNNERS, AND CLUMP SIZE SPECIFIED, AND BE THE PROPER AGE FOR THE GRADE OF PLANTS SPECIFIED. ONLY VINES AND GROUND COVER PLANTS WELL ESTABLISHED IN REMOVABLE CONTAINERS, INTEGRAL CONTAINERS, OR FORMED HOMOGENEOUS SOIL SECTIONS SHALL BE USED. PLANTS SHALL NOT BE PRUNED PRIOR TO DELIVERY, EXCEPT AS AUTHORIZED BY THE LANDSCAPE ARCHITECT, OR HIS REPRESENTATIVE. IN NO CASE SHALL TREES BE TOPPED BEFORE DELIVERY.

- D.** SIZES OF PLANTS: SHALL BE AS STATED IN THE PLANT LIST. CONTAINER STOCK (1 GALLON, 5 GALLON, 15 GALLON AND 24" BOXED SIZE) SHALL HAVE BEEN GROWN IN CONTAINERS FOR A PERIOD OF TIME SUFFICIENT TO DEVELOP ROOT GROWTH SUFFICIENT TO HOLD THE SOIL BALL TOGETHER TO THE SIDE AND BOTTOM OF THE SUFFICIENT TO HOLD THE SOIL BALL TOGETHER TO THE SIDE AND BOTTOM OF THE CONTAINER IN WHICH IT WAS DELIVERED. THE HEIGHT AND SPREAD OF ALL PLANT MATERIAL SHALL BE MEASURED WITH BRANCHES IN THEIR NORMAL POSITION; AND SHALL BE AS INDICATED ON THE DRAWINGS. WHERE CALIPER OR OTHER DIMENSIONS OF ANY PLANT MATERIALS ARE OMITTED FROM THE DRAWINGS IT SHALL BE AVERAGE STOCK FOR TYPE LISTED.
- E.** PLANT MATERIAL: PLANT MATERIAL SHALL BE NURSERY GROWN, UNLESS OTHERWISE INDICATED. GROUND COVER PLANTS SHALL BE WELL ROOTED CUTTINGS GROWN IN FLATS AND SHALL REMAIN IN THOSE FLATS UNTIL PLANTED.
 - PLANT LIST: AS INDICATED ON DRAWINGS.
 - SAMPLES, TESTS, AND INSPECTIONS: SOURCE OF MATERIAL SHALL BE FURNISHED IF REQUESTED BY THE OWNER OR LANDSCAPE ARCHITECT.
- F.** SEED FOR HYDROSEEDING: ALL SEED IS TO BE DELIVERED TO THE JOB SITE, UNMIXED, IN SEPARATE SEALED CONTAINERS. EACH SEALED CONTAINER WILL BEAR THE SEED SUPPLIERS' TAGS WHICH SHALL INDICATE THE CONTAINER WEIGHT, SEED TYPE, SEED PURITY, AND SEED GERMINATION. ALL SEED SHALL BE LABELED ACCORDING TO STATE AND FEDERAL SEED LAWS. A SAMPLE OF EACH SEED TYPE WILL BE DRAWN BEFORE SEEDING TO ASSURE THAT SEED SPECIFICATIONS HAVE BEEN MET. PLANT NAMES INDICATED OR LISTED IN THE "LIST OF PLANT MATERIALS" ON THE DRAWINGS MUST CONFORM TO "STANDARD PLANT NAMES" ESTABLISHED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. WHEN NAMES ARE NOT COVERED THEREIN, THE ESTABLISHED CUSTOM OF THE NURSERY IS FOLLOWED.
 - PLANT LIST: AS INDICATED ON DRAWINGS.
 - SAMPLES, TESTS, AND INSPECTIONS: SOURCE OF MATERIAL SHALL BE FURNISHED IF REQUESTED BY THE OWNER OR LANDSCAPE ARCHITECT.
 - MULCH FOR HYDROSEEDING: EACH PACKAGE OF CELLULOSE SHALL SHOW AIR-DRY WEIGHT. FIBER WEIGHT SHALL BE EQUIVALENT TO TEN PERCENT MOISTURE AS BASED ON THE TECHNICAL ASSOCIATION OF PULP AND PAPER INDUSTRY STANDARDS FOR AIR-DRY CELLULOSE.
 - SLURRY FOR HYDROSEEDING: NO GROWTH INHIBITING MATERIAL SHALL BE PERMITTED IN THE HYDROSEED SLURRY.
- G.** SUBSTITUTIONS: SUBSTITUTIONS FOR THE INDICATED PLANT MATERIALS WILL BE PERMITTED, PROVIDED THE SUBSTITUTE MATERIALS ARE APPROVED IN ADVANCE BY THE LANDSCAPE ARCHITECT, AND THE SUBSTITUTIONS ARE MADE AT NO ADDITIONAL CHARGE TO THE OWNER, EXCEPT FOR THE VARIATIONS SO AUTHORIZED, ALL SUBSTITUTE PLANT MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THESE SPECIFICATIONS. IF ACCEPTED SUBSTITUTE MATERIALS ARE OF LESS VALUE THAN THOSE INDICATED OR SPECIFIED, THE CONTRACT PRICE WILL BE ADJUSTED IN ACCORDANCE WITH THE PROVISIONS OF THE CONTRACT.
- H.** APPROVAL: ALL PLANT MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF OWNER OR HIS REPRESENTATIVE, BEFORE PLANTING. ALL PLANTS SUPPLIED TO THE PROJECT (WHETHER PLANTED OR NOT) ARE SUBJECT TO REJECTION BY THE OWNER OR HIS REPRESENTATIVE. PLANTS NOT APPROVED SHALL BE REMOVED FROM SITE IMMEDIATELY AND REPLACED WITH SUITABLE PLANTS.

3.06 PLANTING SOIL MIXTURE

MIXTURE SHALL BE THOROUGHLY MIXED TO THE PROPORTIONS GIVEN ON THE PLANS.

3.07 PESTICIDES AND CHEMICAL CONTROLS

- A.** PRE-EMERGENCE APPLICATIONS: EPTAM, TREFLAN, SURFLAN OR RONSTAR.
- B.** POST-EMERGENCE APPLICATION: ROUNDUP.
- C.** INSECT CONTROL SHALL BE SAFER INSECTICIDAL SOAP, NICOTINE SULFATE, SPECTRACIDE, MALATHION-SO, DIAZINON OR AS DEEMED APPROPRIATE BY A PEST CONTROL ADVISOR.
- D.** ALTERNATIVE PRODUCTS MAY BE USED IF APPROVED IN WRITING BY THE OWNER.

3.08 PLANTS

- A.** CARE OF STOCK PILED PLANTS. WHERE EXISTING PLANTS ARE TO BE DUG, STOCKPILED AND LATER TRANSPANTED DURING CONSTRUCTION TRANSPLANTS FROM AREA OF BUILDING ADDITION, THEY SHOULD BE HEELED IN WELL WITH A MIXTURE OF SOIL AND APPROVED SOIL AMENDMENT AND WATERED TWICE A WEEK WITH WATER AND ONCE A WEEK WITH WATER AND SUPERTHRIVE™. THEY MUST BE PLACED IN AN AREA PROTECTED FROM DAMAGE BY CONSTRUCTION.
- B.** PLANT MATERIALS SHALL BE FURNISHED IN THE QUANTITIES AND / OR SPACING AS SHOWN, OR NOTED FOR EACH LOCATION, AND SHALL BE OF THE SPECIES, KINDS, SIZES, ETC., AS SYMBOLIZED AND/OR DESCRIBED IN THE DRAWINGS. PLANT NAMES INDICATED OR LISTED ON THE DRAWINGS CONFORM TO "STANDARD PLANT NAMES" ESTABLISHED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE, EXCEPT FOR NAMES NOT COVERED HEREIN, THE ESTABLISHED CUSTOM OF THE NURSERY IS FOLLOWED.
- C.** PLANTING STOCK: PLANTING STOCK SHALL BE WELL-BRANCHED AND WELL-FORMED, SOUND, VIGOROUS, HEALTHY, AND FREE FROM DISEASE, SUNSCALE, WINDBURN, ABRASION, AND HARMFUL INSECTS OR INSECT EGGS, AND SHALL HAVE HEALTHY, NORMAL, AND UNBROKEN ROOT SYSTEMS AND NOT ROOT BOUND. DECIDUOUS TREES AND SHRUBS SHALL BE SYMMETRICALLY DEVELOPED, OF UNIFORM HABIT OF GROWTH, WITH STRAIGHT BOLES OR STEMS AND FREE FROM OBJECTIONABLE DISFIGUREMENTS. EVERGREEN TREES AND SHRUBS SHALL HAVE WELL DEVELOPED SYMMETRICAL TOPS WITH TYPICAL SPREAD OF BRANCHES FOR EACH PARTICULAR SPECIES OR VARIETY. GROUND COVERS AND VINES SHALL BE VIGOROUS, HAVE THE NUMBER AND LENGTH OF RUNNERS, AND CLUMP SIZE SPECIFIED, AND BE THE PROPER AGE FOR THE GRADE OF PLANTS SPECIFIED. ONLY VINES AND GROUND COVER PLANTS WELL ESTABLISHED IN REMOVABLE CONTAINERS, INTEGRAL CONTAINERS, OR FORMED HOMOGENEOUS SOIL SECTIONS SHALL BE USED. PLANTS SHALL NOT BE PRUNED PRIOR TO DELIVERY, EXCEPT AS AUTHORIZED BY THE LANDSCAPE ARCHITECT, OR HIS REPRESENTATIVE. IN NO CASE SHALL TREES BE TOPPED BEFORE DELIVERY.
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- C.** INSECT CONTROL SHALL BE SAFER INSECTICIDAL SOAP, NICOTINE SULFATE, SPECTRACIDE, MALATHION-SO, DIAZINON OR AS DEEMED APPROPRIATE BY A PEST CONTROL ADVISOR.
- D.** ALTERNATIVE PRODUCTS MAY BE USED IF APPROVED IN WRITING BY THE OWNER.

PART 4 - EXECUTION

4.01 SOIL PREPARATION SEQUENCE

- A.** NO SOIL PREPARATION SHALL BE PERFORMED UNTIL ALL STRUCTURES AND WALLS AND CONSTRUCTION ITEMS (INCLUDING IRRIGATION MAINS) HAVE BEEN INSTALLED.
- B.** THE OWNER OR HIS REPRESENTATIVE SHALL APPROVE THE SITE PRIOR TO SOIL PREPARATION.
- C.** THE SITE SHALL BE FREE FROM ALL WEEDS, TRASH AND DELETERIOUS MATERIALS PRIOR TO SOIL PREPARATION.
- D.** AFTER THE SITE HAS BEEN CLEANED AND ALL GRADES ESTABLISHED, THE CONTRACTOR SHALL SPREAD THE SOIL AMENDMENTS IN AN EVEN LAYER OVER PRESCRIBED PLANTING AREAS, ROTOTILL IN THE AMENDMENTS TO THE REQUIRED DEPTH; METHOD AND EQUIPMENT BEING SUBJECT TO APPROVAL OF THE OWNER OR HIS REPRESENTATIVE.
- E.** IF, AFTER AN AREA HAS BEEN ROTOTILLED, THE CONTRACTOR DISPLACES OR BURIES THE AMENDED SOIL, THE AREA IS SUBJECT TO FURTHER AMENDING AS DETERMINED BY THE OWNER OR HIS REPRESENTATIVE.
- F.** AMENDMENTS ARE TO BE INCORPORATED INTO THE SOIL AS SHOWN ON THE PLANS.
- G.** ALL SOIL CONDITIONERS SHALL BE ADDED TO THE SOIL AS INDICATED SPECIFICALLY ON THE PLANS.
- H.** SLOPES: THE LANDSCAPE CONTRACTOR WILL RECEIVE ALL SLOPES AS IS. SOIL AMENDMENTS SUCH AS GYPSUM, IRON SULFATE, IF REQUIRED BY SOIL TEST, SHALL BE RAKED INTO THE UPPER 2" OF THE SOIL ONLY WHERE PLANTING IS TO TAKE PLACE. OTHER SLOPE AREAS ARE NOT INCLUDED. SARVON IS REQUIRED AND IT SHALL BE APPLIED PER MANUFACTURING SPECIFICATIONS. SLOPES SHALL BE INSPECTED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO PLANTING TO INSURE THAT THEY ARE FREE OF EROSION GULLIES, WEEDS, AND OTHER DELETERIOUS MATERIALS. SLOPES SHALL NOT BE DISTURBED IN A MANNER WHICH CHANGES THE SOIL CONDITION ESTABLISHED. IN PARTICULAR, SLOPES SHALL NOT BE MADE MORE PERMEABLE TO WATER, THUS CREATING AN UNSTABLE SURFACE AREA.
- J.** WEED CONTROL: PRIOR TO ANY HYDROSEEDING, IRRIGATE ALL PLANTING AREAS FOR APPROXIMATELY TWO (2) WEEKS TO ENCOURAGE WEED SEED GERMINATION. ALLOW WEEDS TO GROW UNTIL THEY REACH A MAXIMUM HEIGHT OF TWO TO THREE (2 TO 3) INCHES AND THEN THOROUGHLY SPRAY WITH "ROUND UP™". REMOVE ALL WEEDS PRIOR TO SEEDING. DO NOT ALLOW THE USAGE OF ANY PRE-EMERGENCE HERBICIDES OR "DOWNPON™" FOR WEED CONTROL IN HYDROSEEDING.
- K.** HYDROSEEDING - SEE SHEET 4 TOP LEFT CORNER FOR THIS SECTION



DAVID REED
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BENCH MARK	
DESCRIPTION:	STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
LOCATION:	AT SOLANA BEACH, ALONG HWY 101, 0.5 MILE N OF INTERSECTION OF HWY 101 AND VAL LA VALLE, 33 FT E OF CENTERLINE OF HWY 101, 82 FT W OF AT AND SFRR TRACKS, 24 FEET N OF PROJECTED CENTERLINE OF DAHLIA DRIVE, 6 FEET N OF CP JPI26081. A COPPER ROD 13.5 FEET DEEP WITH STANDARD DISK STAMPED LJ 108 1968, T14S R4W 02
ELEV.:	63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-08-122

SOLANA BEACH FIRE DEPARTMENT		SANTA FE IRRIGATION DISTRICT		LANDSCAPE ARCHITECT OF WORK		CITY APPROVED CHANGES		APP'D DATE		RECOMMENDED FOR APPROVAL		APPROVED FOR CONSTRUCTION		BENCH MARK		CITY OF SOLANA BEACH		ENGINEERING DEPARTMENT		DRAWING NO.	
By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____	By: _____	Date: _____
Fire Chief		District Engineer		Drawn By		R.L.A.: 1962		Exp: 09/30/17													
												SEE DETAILED BLOCK ABOVE LEFT				517-521 PACIFIC AVENUE SEAWALL MAINTENANCE, REPAIR & EXTENSION		SBGR-		SHEET 4 OF 8	

LANDSCAPE PREPARATION & PLANTING

PART 4 - EXECUTION (CONTINUATION)

4.02 FINAL GRADING

- A. AFTER COMPLETION OF ALL SOIL CONDITIONING, TILLING AND SOIL TREATING, CORRECT IRREGULARITIES IN FINISHED SURFACES TO ELIMINATE DEPRESSIONS. REMOVE ALL DEBRIS AND STONES LARGER THAN ONE INCH REMAINING ON THE SURFACE. PROTECT FINISHED AREAS FROM DAMAGE DUE TO VEHICULAR OR PEDESTRIAN TRAFFIC.
- B. DEEP WATERING AND LEACHING: AFTER SOIL CONDITIONING AND FINAL GRADING IS COMPLETE, SETTLE AND LEACH PLANTING AREAS BY WATERING TO A MINIMUM DEPTH OF 8 INCHES.
- C. EXCAVATION FOR PLANTING: PRIOR TO EXCAVATING FOR PLANT PITS, THE AREA SHALL CONFORM TO THE LINES AND GRADES SHOWN. VERIFY LOCATION OF UNDERGROUND UTILITIES. REPAIR ANY DAMAGE DONE TO UTILITY LINES SHOWN. IF UTILITY LINES NOT SHOWN ON THE DRAWINGS ARE ENCOUNTERED, NOTIFY THE OWNER IMMEDIATELY. IN THE EVENT THAT UNDERGROUND CONSTRUCTION WORK OR OBSTRUCTIONS ARE ENCOUNTERED IN THE PLANTING OPERATION, ALTERNATE LOCATIONS WILL BE SELECTED BY THE LANDSCAPE ARCHITECT. LOCATION OPERATION WILL BE DONE AT NO EXTRA COST TO THE OWNER.
 - 1. PLANT PITS: DIG PITS BY ANY METHOD PROVIDED THAT THE PITS HAVE VERTICAL SIDES AND FLAT BOTTOMS. WHEN PITS ARE DUG WITH AN AUGER AND/OR THE SIDES OF THE PITS BECOME GLAZED, SCARIFY THE GLAZED SURFACE AT A MINIMUM OF 4 LOCATIONS. IF THE PERCOLATION IS SUCH THAT WATER WILL NOT DRAIN OUT OF THE HOLE OVERNIGHT, THE CONTRACTOR SHALL TAKE CAUTION NOT TO OVER WATER PLANTS. NO TREES 15 GALLONS AND OVER SHALL BE PLANTED IN A HOLE THAT WILL NOT NATURALLY DRAIN OVERNIGHT AFTER HAVING BEEN FILLED WITH WATER.
 - 2. ALL PLANTS SHALL BE SET SO THAT, WHEN SETTLED, THEY BEAR THE SAME RELATION TO THE REQUIRED GRADE AS THEY BORE TO THE NATURAL GRADE BEFORE BEING TRANSPLANTED. EACH PLANT SHALL BE PLANTED IN THE CENTER OF THE PIT AND BACKFILLED, UNLESS OTHERWISE SPECIFIED, WITH THE PREPARED SOIL. NO SOIL WILL BE PERMITTED AROUND TRUNKS OR STEMS. ALL BROKEN OR FRAYED ROOT SHALL BE PROPERLY CUT OFF. USE EXCESS TOPSOIL TO FORM WATERING BASINS AROUND PLANTS. AMEND AS DESCRIBED IN NOTES AND DETAILS.
 - 1. WATER THOROUGHLY WITH A SOLUTION OF SUPERTHRIVE™ PER MANUFACTURER'S SPECIFICATIONS IMMEDIATELY AFTER PLANTING.
 - 2. GROUND COVERS AND VINES: DO NOT REMOVE FROM FLATS AND CONTAINERS UNTIL IMMEDIATELY BEFORE PLANTING. SPACE AT THE INTERVALS INDICATED, SUFFICIENTLY DEEP TO COVER ALL ROOTS. AFTER PLANTING 100 PLANTS, WATER THOROUGHLY WITH A SOLUTION OF SUPERTHRIVE™ PER MANUFACTURER'S SPECIFICATIONS IMMEDIATELY AFTER PLANTING, UNTIL ENTIRE AREA IS SOAKED. SMOOTH PLANTING AREAS AFTER PLANTING TO PROVIDE EVEN, SMOOTH FINISH.
- E. APPLICATION OF PESTICIDES (INC. HERBICIDES AND FUNGICIDES): INTEGRATED PEST MANAGEMENT (IPM) SHALL BE USED AS A FIRST CHOICE ON THIS JOB. APPLY ALL HERBICIDES AND OTHER CHEMICALS IN ACCORDANCE WITH EPA LABEL RESTRICTIONS AND RECOMMENDATIONS AND FEDERAL AND STATE LAWS. MAKE REPORTS TO THE OWNER STATING AREAS TO BE TREATED WITH EACH CHEMICAL, THE QUANTITY APPLIED AND SPRAY MIXTURE OF FORMULATION USED. APPLICATION AT EACH SITE SHALL BE UNDER THE SUPERVISION OF A CERTIFIED APPLICATOR.

PART 5 - COMPLETION OF CONTRACT

5.01 RESTORATION AND CLEAN-UP

REMOVE EXCESS WASTE MATERIAL DAILY. WHEN PLANTING IN AN AREA IS COMPLETE, CLEAR THE AREA OF DEBRIS, SPOIL PILES, AND CONTAINERS. WHERE EXISTING PLANTING BEDS HAVE BEEN SCARRED OR DAMAGED, RESTORE THESE DAMAGED AREAS TO THEIR ORIGINAL CONDITION. REMOVE DISUSED EQUIPMENT AND IMPLEMENTS OF SERVICE AND LEAVE ENTIRE AREA INVOLVED IN A NEAT ACCEPTABLE CONDITION SUCH AS TO MEET THE APPROVAL OF THE OWNER.

5.02 INSPECTIONS AND ON SITE REVIEW

THE OWNER, HIS REPRESENTATIVE OR THE LANDSCAPE ARCHITECT MAY MAKE PERIODIC ON SITE REVIEWS DURING THE PLANTING. ANY PLANTS THAT HAVE NOT BEEN HANDLED, SPOTTED OR PLANTED PROPERLY SHALL BE SUBJECT TO REMOVAL, AND THEY SHALL, IF NECESSARY, BE REPLACED OR RELOCATED AS DIRECTED AS PART OF THE CONTRACT. A PLANT MAY BE REJECTED BY THE LANDSCAPE ARCHITECT FOR ANY REASON AT ANY TIME.

5.03 MAINTENANCE PERIOD

- A. DEFINITION: THE MAINTENANCE PERIOD SHALL BEGIN ON THE DATE THAT THE OWNER OR DULY APPOINTED REPRESENTATIVE INSPECTS AND GIVES WRITTEN PROVISIONAL ACCEPTANCE OF THE WORK AND SHALL CONTINUE FOR 90 DAYS FROM THAT DATE. THE DATE FOR ACCEPTANCE SHALL BE SET AT 12 MONTHS FROM THAT DATE.
- B. MAINTENANCE: MAINTAIN ALL PLANTING AREAS IN A VIGOROUS, THRIVING CONDITION BY WATERING, CULTIVATING, SPRAYING, WASHING OFF WALKS, AND ANY OTHER NECESSARY OPERATIONS DURING THE ENTIRE PERIOD OF THE INSTALLATION AND UNTIL FINAL ACCEPTANCE BY THE OWNER.
- C. CONTRACTOR SHALL CONTINUOUSLY MAINTAIN ALL AREAS INCLUDED IN THE CONTRACT DURING THE PROGRESS OF THE WORK, THROUGH THE ESTABLISHMENT PERIOD, AND UNTIL FINAL ACCEPTANCE OF THE WORK.
- D. THE ENTIRE PROJECT SHALL BE SATISFACTORILY MAINTAINED FOR A PERIOD OF 30 CALENDAR DAYS, COMMENCING FROM THE TIME ALL ITEMS OF IRRIGATION AND LANDSCAPE PLANTING WORK HAVE BEEN COMPLETED AS SPECIFIED IN THE FOREGOING ARTICLES OF THESE SPECIAL PROVISIONS AND TO THE SATISFACTION OF THE OWNER.
- E. ESTABLISHMENT WORK INCLUDES ALL WATERING, WEEDING, PLANTING, CULTIVATING, SPRAYING, AND TRIMMING NECESSARY TO BRING THE PLANTED AREAS TO A HEALTHY GROWING CONDITION, AND ANY ADDITIONAL WORK NEEDED TO KEEP THE AREAS NEAT, EDGED, AND ATTRACTIVE.
- F. DURING THE PLANT ESTABLISHMENT PERIOD, ALL PLANTS AND PLANTED AREAS SHALL BE KEPT WELL AND WEED-FREE AT ALL TIMES.
- G. ANY DAY THE CONTRACTOR FAILS TO ADEQUATELY WATER, REPLACE UNSUITABLE PLANTS, WEED, AND OTHER WORK DETERMINED TO BE NECESSARY BY THE OWNER, WILL NOT BE CREDITED AS PART OF THE MAINTENANCE PERIOD.
- H. DURING THE MAINTENANCE PERIOD, ANY PLANT INDICATING WEAKNESS OR PROBABILITY OF DYING, SHALL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- I. ALL BASINS AROUND SHRUBS AND TREES SHALL BE MAINTAINED AT A 2-1/2" INCH DEPTH THROUGHOUT MAINTENANCE PERIOD, UNLESS OTHERWISE INSTRUCTED BY THE OWNER OR HIS REPRESENTATIVE.
- J. CONSTANT DILIGENCE SHALL BE MAINTAINED TO DETECT THE PRESENCE OF DISEASE, INSECTS, AND/OR RODENT INFESTATIONS AND PROPER PREVENTATIVE OR CONTROL MEASURES TAKEN.
- K. ALL SHRUBS SHALL BE MAINTAINED IN THEIR NATURAL SHAPES. TALL OR SCRAGGLY BRANCHES SHALL BE THINNED OUT WHERE NECESSARY. IN NO CASE SHALL SHRUBS BE TRIMMED BY HEADING OR SHEARING. ANY PLANTS SEVERELY PRUNED IN THIS MANNER SHALL BE REMOVED AND REPLACED AT CONTRACTOR'S EXPENSE.
- L. AT COMPLETION OF ESTABLISHMENT PERIOD, ALL AREAS INCLUDED IN THE CONTRACT SHALL BE SUBSTANTIALLY CLEAN AND FREE OF DEBRIS AND WEEDS. ALL PLANT MATERIALS SHALL BE LIVE, HEALTHY, AND FREE OF INFESTATIONS.
- M. ANY EROSION OR SLIPPAGE OF SOIL CAUSED BY WATERING SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

5.04 WRITTEN NOTICE

AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PRESENT WRITTEN NOTICE TO THE OWNER THAT HE HAS SUBSTANTIALLY COMPLETED THE REQUIRED WORK AND WANTS TO START MAINTENANCE AS OF A DATE MENTIONED IN THE NOTICE. AT THE END OF SPECIFIED MAINTENANCE PERIOD, THE CONTRACTOR SHALL PRESENT WRITTEN NOTICE TO THE OWNER THAT HE HAS COMPLETED THE REQUIRED MAINTENANCE, AND THAT ANY FURTHER MAINTENANCE WILL BE THE RESPONSIBILITY OF THAT OWNER.

5.05 FINAL INSPECTION AND ACCEPTANCE

- A. FINAL INSPECTION AND ACCEPTANCE IN WRITING, OF LANDSCAPING WORK WILL BE MADE AFTER REPLACEMENT, FERTILIZING, AND CORRECTIVE MAINTENANCE HAVE BEEN COMPLETED.
- B. INSPECTION OF LANDSCAPE SHALL BE MADE 12 MONTHS FROM THE DATE OF PROVISIONAL ACCEPTANCE TO DETERMINE THE HEALTH PLANTING. REJECTED PLANTS SHALL BE REPLACED BY SPECIMEN OF THE SAME SIZE AS THAT WHICH WAS REJECTED, WITHIN SEVEN DAYS OF INSPECTION, AND SHALL BE PLANTED, FERTILIZED, AND WATERED, AS DIRECTED ON PLANS. FINAL INSPECTION AND ACCEPTANCE WILL BE MADE AFTER REQUIRED STEPS HAVE BEEN COMPLETED.

5.06 CRITERIA FOR BIDDING

BASE BIDS ON THE FOLLOWING CRITERIA:

1. THAT THE SURFACE ELEVATIONS ARE AS INDICATED.
 2. THAT NO PIPES OR OTHER ARTIFICIAL OBSTRUCTIONS, OTHER THAN THOSE OF UTILITIES AND SPRINKLER LINES AS MENTIONED IN THE SPECIAL CONDITIONS, WILL BE ENCOUNTERED.
 3. THAT HARD MATERIALS WILL NOT BE ENCOUNTERED. (SEE DEFINITION FOLLOWING.)
- IN CASE THE ACTUAL CONDITIONS DIFFER SUBSTANTIALLY FROM THOSE STATED OR SHOWN, THE CONTRACT SHALL PROVIDE FOR AN ADJUSTMENT FOR CHANGED CONDITIONS, SUBJECT TO THE REQUIREMENTS OF NOTIFICATION THEREUNDER BEING GIVEN. HARD MATERIAL SHALL BE DEFINED AS SOLID ROCK, FIRMLY CEMENTED UNSTRATIFIED MASSES OF CONGLOMERATE DEPOSITS POSSESSING THE CHARACTERISTICS OF SOLID ROCK NOT ORDINARILY REMOVED WITHOUT SYSTEMATIC DRILLING AND BLASTING, AND ANY BOULDER, MASONRY, OR CONCRETE EXCEPT PAVEMENT, EXCEEDING 1/2 CUBIC YARD IN VOLUME. FIRM MATERIALS (LINDA VISTA, POMAY, OR SWEITZEN FORMATION, A FERRUGINOUS CEMENTED CONGLOMERATE OF CLAY, SAND, SILT OR GRAVEL) IS NOT INCLUDED IN THE DEFINITION OF HARD MATERIAL. HOWEVER, THE FIRM MATERIAL USUALLY REQUIRES HEAVY EXCAVATION EQUIPMENT OR JACKHAMMER FOR REMOVAL.

BENCH MARK
 DESCRIPTION: STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
 LOCATION: AT SOLANA BEACH, ALONG HWY 101, 0.5 MILE N OF INTERSECTION OF HWY 101 AND VIA LA VALLE, 53 FT E OF CENTERLINE OF HWY 101, 82 FT W OF AT AND SFRR TRACKS, 24 FEET N OF PROJECTED CENTERLINE OF DAHLIA DRIVE, 6 FEET N OF PP-4P126081, A COPPER ROD 13.5 FEET DEEP WITH STANDARD DISK STAMPED LJ 108 1968, T14S R4W 02
 ELEV.: 63.78 DATUM: M.S.L.

COASTAL COMMISSION PERMIT NO. 6-08-122

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	LANDSCAPE ARCHITECT OF WORK		CITY APPROVED CHANGES	APP'D DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH	ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief Date: _____	By: _____ District Engineer Date: _____	GBS Drawn By	By: DAVID W REED Date: 3-7-17			By: _____ Date: _____	By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-10	SEE DETAILED BLOCK ABOVE LEFT	517-521 PACIFIC AVENUE SEAWALL MAINTENANCE, REPAIR & EXTENSION		SBGR- SHEET 5 OF 8



DAVID REED
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EXISTING RESIDENCE
521 PACIFIC AVENUE

NOTE: PLAN IS DIAGRAMMATIC.
LOCATE MAIN, LATERAL LINE AND VALVES
INSIDE PLANTED AREA.

CONNECT LATERAL LINE WITH FLEXIBLE TUBING AT IV EASY FIT
COMPRESSION FITTINGS SYSTEM ADAPTER MOD.#MDFC50FTF,
COUPLING MOD.#MDFCOUP, AND TEE MOD.#MDFCTEE, BY RAINBIRD,
TYPICAL.

POINT OF CONNECTION UPSTREAM OF EXISTING HOSE BIBB (FIELD
LOCATE). CONTRACTOR SHALL CHECK & VERIFY WATER PRESSURE
IS AT LEAST 50 PSI AT POINT OF CONNECTION (P.O.C.), TYPICAL.

1" TEMPORARY ATMOSPHERIC VACUUM BREAKER VALVE
TYPICAL. DOWNSTREAM OF CONNECTION, PER DETAIL

MAINLINE, SCH. 40 PVC (THIS SYMBOL ---), TYPICAL.

MANIFOLD'S TEMPORARY BALL
VALVE, (THIS SYMBOL ⊗),
TYPICAL, PER DETAIL

1" PVC ADJUSTABLE CHECK VALVE,
MOD. #V-020FM BY K.B.I.
(THIS SYMBOL ▣), TYPICAL,
PER DETAIL

TEMPORARY 1" AUTOMATIC
METERING VALVE MOD. #K
DOSE-O-MAT SERIES, BY
NETAFIM, (THIS SYMBOL ⊕),
TYPICAL, (4 TOTAL) PER DETAIL

TEMPORARY LATERAL
LINE, PER DETAIL

THESE SECTIONS OF LATERAL LINES
CAN BE LAID ON-GRADE AT BOTTOM
OF EXISTING PAVEMENT

EXISTING RESIDENCE
517 PACIFIC AVENUE

IRRIGATION LEGEND

SYM.	MFR	DESCRIPTION	MODEL	NOTES	DETAIL
⊖	RAINBIRD	PRESSURE COMPENSATING XERI-BUG EMITTER	PC-5	INSTALL ON HIGH SIDE OF PLANTING, WITH 1/4" TUBING STAKE MOD. #T5-025 BY RAINBIRD, PER DETAIL	(F) (T)
⊕	NETAFIM	AUTOMATIC METERING VALVE WITH	DOSE-O-MAT K SERIES	1" SIZE WITH PRESSURE REGULATING FILTER MOD. # WITH PRF-100-RBY, BY RAINBIRD PRESSURE SET AT 50 PSI, PER DETAIL	(B) (T)
⊗	KBI	BALL VALVE	BTU-SERIES	LINE SIZE FOR MANIFOLD, PER DETAIL	(C) (T)
▣	KBI	ANTI-DRAIN / CHECK VALVE	CV SERIES	LINE SIZE, USE SPRING CHECK VALVE ONLY PER PLAN, INSTALL CORRECTLY WITH DIRECTION OF FLOW ON LATERAL LINE, PER PLAN AND DETAIL	(D) (T)
---	BROWNLINE	UVR-PVC LATERAL LINE	SCH. 40	USE ON GRADE LATERAL LINE, LAYOUT ON GRADE WITH V.I.T. STABILIZERS, PER DETAIL CONNECT LATERAL LINE TO FLEXIBLE TUBING WITH EASY FIT COMPRESSION FITTINGS SYSTEM ADAPTER MOD.#MDFC50FTF, COUPLING MOD.#MDFCOUP, AND TEE MOD.#MDFCTEE, BY RAINBIRD, TYPICAL.	(E) (T)
⊙	ZURN	PRESSURE VACUUM BREAKER ASSEMBLY	420-XL	1" SIZE TO BE INSTALLED INCONSPICUOUSLY IN BETWEEN SHRUBS, AND 12" ABOVE HIGHEST HEAD OF SYSTEM, PER DETAIL	(A) (T)
---	ANY	PVC MAIN LINE	SCH. 40	USE ON GRADE LATERAL LINE, LAYOUT ON GRADE WITH V.I.T. STABILIZERS, (IF REQ'D),	
---	RAINBIRD	FLEXIBLE BLACK STRIPE TUBING	XB6-75006	PLACE ON GRADE W/ GALVANIZED STAKE DOWN MOD. #TDS-050 W/BEND, BY RAINBIRD @ 5' O.C. MAX	
→	RAINBIRD	COMPRESSION FITTING ENDCAP	MDFC50	AT EACH END OF BLACK STRIPE TUBING LINE INSTALL WITH COUPLING MOD. #MDFCOUP, BY RAINBIRD.	
⊖	RAINBIRD	1/4" DISTRIBUTION TUBING	PT-025	INSTALL 1/4" BARB TRANSFER FITTING FOR SINGLE EMITTER OUTLET; USE MOD. #XBFCOAN AND FOR DOUBLE EMITTER OUTLET, USE MOD. #XBFTTEE BY RAINBIRD.	

PRESSURE COMPENSATING XERIBUS EMITTERS,
MOD. #PC-5, W/ DIFFUSER CAP BY RAINBIRD,
(THIS SYMBOL ⊖), TYPICAL. INSTALL WITH 1/4"
TUBING STAKE MOD. #T5-025 ON HIGH SIDE OF
PLANT, PER DETAIL

FLEXIBLE BLACK STRIPE TUBING, MOD.#XB6-100, W/
GALVANIZED STAKE DOWN MOD. #TDS-050 W/BEND, BY
RAINBIRD, 5' O.C. SPACING (THIS SYMBOL ---),
TYPICAL.

COMPRESSION FITTING END CAP,
MOD.#MDFC50, BY RAINBIRD, AT EACH END
OF LINE, WITH COUPLING MOD. #MDFCOUP
(THIS SYMBOL →), TYPICAL.

1/4" DISTRIBUTION TUBING, MOD.#PT-025, BY
RAINBIRD, (THIS SYMBOL ⊖), TYPICAL

1/4" BARB TRANSFER FITTING, MOD.#XBFCOAN FOR
SINGLE EMITTER AND XBFTTEE FOR DOUBLE
EMITTER, (THESE SYMBOLS ⊖ / ⊕),
TYPICAL

IRRIGATION PLAN

SCALE: 1/8"=1'-0"
TEMPORARY

COASTAL COMMISSION PERMIT NO. 6-08-122

FOR IRRIGATION NOTES AND DETAILS, SEE SHEET 7
FOR IRRIGATION SPECIFICATIONS, SEE SHEET 8

BENCH MARK
DESCRIPTION: STD 2-1/2" BRASS DISK S.D. CO. ENGR. STAMPED "LJ 108 1968"
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SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	LANDSCAPE ARCHITECT OF WORK	CITY APPROVED CHANGES	APP'D DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH	ENGINEERING DEPARTMENT	DRAWING NO.
By: _____ Fire Chief	By: _____ District Engineer	By: DAVID W REED Date: 3-7-17 R.L.A.: 1962 Exp: 09/30/17			By: _____ Date: _____ By: _____ Date: _____	By: _____ Date: _____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 06-30-10	SEE DETAILED BLOCK ABOVE LEFT	517-521 PACIFIC AVENUE SEAWALL MAINTENANCE, REPAIR & EXTENSION		SBGR- SHEET 6 OF 8

IRRIGATION SPECIFICATIONS

PART 1 - GENERAL

1.01 DESCRIPTION

A. WORK DISCUSSED IN THIS SECTION INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE WORK INDICATED ON THE DRAWINGS. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE BEST STANDARDS OF PRACTICE RELATING TO THE VARIOUS TRADES AND UNDER THE CONTINUOUS SUPERVISION OF A COMPETENT FOREMAN, CAPABLE OF INTERPRETING THE DRAWINGS, NOTES, AND THESE SPECIFICATIONS.

B. IRRIGATION AND LANDSCAPE WORK MAY BE DONE CONCURRENTLY, HOWEVER, PLANTING MAY NOT START IN ANY SECTION PRIOR TO INSPECTION AND APPROVAL OF THE SPRINKLER WORK.

1.02 SPECIAL CONDITIONS

THE GENERAL CONDITIONS ARE A PART OF THIS SECTION AND THE CONTRACT FOR THIS WORK, AND APPLY TO THIS SECTION FULLY AS IF REPEATED HERE.

1.03 GENERAL REQUIREMENTS

FURNISH AND INSTALL IRRIGATION SYSTEM, INCLUDING ANY INCIDENTAL WORK NOT SHOWN OR SPECIFIED WHICH CAN REASONABLY BE INFERRED AS PART OF THE WORK, AS NECESSARY TO PROVIDE A COMPLETE AND WORKABLE SYSTEM.

1.04 WORK INCLUDED

THE FOLLOWING ITEMS ARE DETERMINED TO BE A PART OF THE IRRIGATION WORK (OR WORK OF LANDSCAPE SUBCONTRACTOR) WHEN APPLICABLE TO THE PLANS.

- A. P.O.C. CONNECTION OF SYSTEM TO EXISTING IRRIGATION SYSTEMS.
- B. REVIEW OF UTILITY PLANS SHOWING OTHER UNDERGROUND FACILITIES.
- C. TRENCHING AND BACKFILL.
- D. ALL IRRIGATION MATERIAL AND EQUIPMENT INDICATED ON DRAWINGS.
- E. AUTOMATIC CONTROLLER AND ELECTRICAL CONNECTION.
- F. WATER CONNECTION.

1.05 WORK BY GENERAL CONTRACTOR

- A. ELECTRICAL SUB-OUT.

1.06 CODES, RULES, AND SAFETY ORDERS

ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY; THE UNIFORM PLUMBING CODE PUBLISHED BY THE WESTERN PLUMBING OFFICIALS' ASSOCIATION; AND OTHER APPLICABLE LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1.07 PERMITS AND FEES

OBTAIN ALL PERMITS AND PAY ALL REQUIRED FEES TO ANY GOVERNMENTAL AGENCY HAVING JURISDICTION OVER THE WORK. ARRANGE FOR INSPECTIONS REQUIRED BY LOCAL ORDINANCES DURING THE COURSE OF CONSTRUCTION AS REQUIRED. ON COMPLETION OF THE WORK, SATISFACTORY EVIDENCE SHALL BE FURNISHED TO LANDSCAPE ARCHITECT TO SHOW THAT ALL WORK HAS BEEN INSTALLED IN ACCORDANCE WITH THE ORDINANCES AND CODE REQUIREMENTS.

1.08 SUBSTITUTIONS AND APPROVAL

WHEREVER THE TERMS "APPROVE", "APPROVAL", OR "APPROVED EQUAL" ARE USED IN THE PLANS & SPECIFICATIONS, THEY SHALL MEAN THE APPROVAL OF LANDSCAPE ARCHITECT IN WRITING.

1.09 SCHEDULE OF WORK

SCHEDULE AND COORDINATE THE ELECTRICAL AND WATER CONNECTIONS, AND THE PLACEMENT OF MATERIAL AND EQUIPMENT IN A MANNER THAT WILL EFFECT THE EARLIEST COMPLETION OF THE WORK IN CONFORMANCE WITH THE CONSTRUCTION PROGRESS SCHEDULE.

PART 2 - DELIVERY, STORAGE AND HANDLING

2.01 NOTIFICATION

PROVIDE NOTIFICATION OF DELIVERY SCHEDULE IN ADVANCE SO MATERIAL MAY BE INSPECTED UPON ARRIVAL AT THE JOB SITE. REMOVE UNACCEPTABLE MATERIAL FROM THE JOB SITE IMMEDIATELY.

2.02 PROTECTION

A. PROTECT WORK AND MATERIALS UNDER THIS SECTION FROM DAMAGE DURING CONSTRUCTION AND STORAGE. POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS SHALL BE SHIELDED FROM DIRECT SUNLIGHT.

B. ASSUME ALL RESPONSIBILITY FOR DAMAGE TO EXISTING CONSTRUCTION AND RESTORE PROPERTY TO ITS ORIGINAL CONDITION SHOULD DAMAGE OCCUR AS A RESULT OF THE WORK OF THIS SECTION.

C. HANDLE PLASTIC PIPE AND FITTINGS CAREFULLY AND STORE UNDER COVER TO AVOID DAMAGE. BEDS ON WHICH MATERIALS ARE STORED MUST BE FULL LENGTH OF PIPE TO AVOID DAMAGE. ANY PIPE THAT HAS BEEN DAMAGED OR DENTED SHALL NOT BE USED IN THE WORK.

PART 3 - MATERIALS

3.01 GENERAL

ALL MATERIALS THROUGHOUT THE SYSTEM SHALL BE NEW AND IN PERFECT CONDITION. FOR ALL MATERIALS, AN INVOICE SHALL BE SUBMITTED SHOWING QUANTITIES OF MATERIALS.

3.02 DESCRIPTION

A. PLASTIC PIPING: ALL MAIN LINE PIPE SHALL BE AN APPROVED BRAND, CLASS 315 PVC. ALL LATERAL PIPE TO SPRINKLERS SHALL BE CLASS 200, TYPE 1120-1220 POLYVINYL CHLORIDE (PVC) PIPE, EXCEPT FOR 1/2" LATERALS, WHICH SHALL BE SCHEDULE 40. ALL PIPE SHALL CONFORM TO ASTM D1785 AND ASTM D2241.

B. PLASTIC FITTINGS AND OTHER PARTS: SCHEDULE 40, POLYVINYL CHLORIDE (PVC) STANDARD WEIGHT, AS MANUFACTURED BY SLOANE, LASCO, OR AN APPROVED EQUAL, ASTM D2464, ASTM D2466, OR ASTM D2467 AS REQUIRED.

C. SOLVENT CEMENT: COMPATIBLE WITH PVC PIPE AND OF PROPER CONSISTENCY. NO MIXING OF SOLVENT WITH THINNER WILL BE ALLOWED.

D. PIPE PRIMER: COMPATIBLE WITH PVC PIPE AND OF PROPER CONSISTENCY.

E. CONTROL WIRES: 24 VOLT SOLID WIRE U.L. APPROVED FOR DIRECT BURIAL IN GROUND. BLACK #14 UF DIRECT LEAD AND WHITE #12 UF COMMON GROUND, UNLESS NOTED ON PLANS. COLOR CODE CONTROL WIRES FOR EASY IDENTIFICATION.

F. WIRE CONDUIT UNDER PAVEMENT: ASTM D1785 2" PVC PIPE, SCHEDULE 40.

G. PLASTIC VALVE BOXES: CARSON, AMETEK, OR APPROVED EQUAL. MUST HAVE A 2% TITANIUM BASED UV INHIBITOR.

H. REMOTE CONTROL VALVES: OF THE MANUFACTURE SPECIFIED IN LEGEND ON DRAWINGS.

I. BACKFLOW PREVENTER: OF THE MANUFACTURE SPECIFIED IN LEGEND ON DRAWINGS.

J. COPPER PIPE AND FITTINGS: TYPE L (MINIMUM), IPS THREADED.

K. BRASS FITTINGS: STANDARD WEIGHT, IPS THREADED, CLASS 1, 85% RED BRASS. PART 4 - INSTALLATION

L. DRIPPERLINE AND INTEGRAL DRIPPERLINE COMPONENTS: OF THE MANUFACTURE SPECIFIED IN LEGEND ON DRAWINGS. DRIPPER FLOW RATE AND SPACING SHALL BE AS INDICATED ON DRAWINGS.

1. DRIPPERLINE FITTINGS: ALL CONNECTIONS SHALL BE MADE WITH DRIPPERLINE (MANUFACTURE APPROVED) INSERT FITTINGS.

2. SOIL STAPLES: ALL ON-SURFACE/UNDER MULCH INSTALLATIONS SHALL BE HELD IN PLACE WITH SOIL STAPLES SPACED EVENLY EVERY 3' - 5' ON CENTER, AND WITH TWO STAPLES ON EACH CHANGE OF LOCATION.

PART 4 - INSTALLATION

4.01 LAYOUT

A. LAYOUT WORK AS ACCURATELY AS POSSIBLE TO THE DRAWINGS. THE DRAWINGS, THOUGH CAREFULLY DRAWN, ARE GENERALLY DIAGRAMMATIC TO THE EXTENT THAT SWING JOINTS, OFFSETS AND ALL FITTINGS ARE NOT SHOWN. JOB CONDITIONS WILL NOT ALWAYS PERMIT LOCATING PIPING, VALVES, AND HEADS WHERE SHOWN. WHEN THIS SITUATION OCCURS, IT SHALL BE BROUGHT TO THE OWNER'S ATTENTION IMMEDIATELY AND THE RELOCATION DETERMINED IN A JOINT CONFERENCE. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE RELOCATING OF ANY ITEMS WITHOUT FIRST OBTAINING OWNER'S APPROVAL. HE SHALL REMOVE AND RELOCATE SUCH ITEMS AT HIS OWN EXPENSE IF SO DIRECTED BY THE OWNER.

B. MINOR CHANGES IN LOCATIONS TO THE ABOVE FROM LOCATIONS SHOWN SHALL BE MADE WHEN DIRECTED BY OWNER AT NO ADDITIONAL COST (TO THE OWNER) PROVIDING SUCH CHANGE IS ORDERED BEFORE SUCH ITEMS OF WORK, OR WORK DIRECTLY CONNECTED TO SAME ARE INSTALLED, AND PROVIDING NO ADDITIONAL MATERIALS ARE REQUIRED.

4.02 PIPE LINE ASSEMBLY

A. BACKFLOW PREVENTER: INSTALL 12-INCH MINIMUM ABOVE GRADE WITH CONCRETE THRUST BLOCKS.

B. REMOTE CONTROL VALVES: INSTALL WHERE SHOWN. GROUP TOGETHER WHERE PRACTICAL. PLACE NO CLOSER THAN 3 INCHES AND PARALLEL TO SIDEWALK, AND HOUSE IN VALVE BOXES WITH TOPS SET TO GRADE. SNAKE WIRES BESIDE PIPE IN COMMON TRENCH, AT A MINIMUM OF 1 INCH FROM PIPE. PROVIDE A 12-INCH MINIMUM LOOP OF WIRE AT EACH VALVE. BUNDLE WIRE AT 10-FOOT INTERVALS WITH A 12-INCH LOOP OF ELECTRICIAN'S TAPE, ALLOWING FOR EXPANSION. CONTROL WIRE SPLICES SHALL BE ALLOWED ONLY IN BOXES. CRIMP WIRES TOGETHER WITH STA KON #PT-10 CONNECTOR OR APPROVED EQUAL. SEAL CONNECTION WITH APPROVED SEALING COMPOUND. PROVIDE CONDUIT WHERE WIRES RUN UNDER PAVING.

C. PLASTIC PIPE AND FITTINGS: PIPE MAY BE ASSEMBLED AND WELDED ON THE SURFACE. SNAKE PIPE FROM SIDE TO SIDE OF TRENCH BOTTOM TO ALLOW FOR EXPANSION AND CONTRACTION. SOLVENT-WELD PLASTIC PIPE AND FITTINGS, USING SOLVENTS AND METHODS AS RECOMMENDED BY MANUFACTURER OF THE PIPE, EXCEPT WHERE SCREWED CONNECTIONS ARE REQUIRED. PIPE AND FITTINGS SHALL BE THOROUGHLY CLEANED OF DIRT, DUST, AND MOISTURE BEFORE APPLYING SOLVENT. INSTALL PIPE AT TEMPERATURES OVER 40 DEGREES F.

IMPORTANT! - CLEAN OFF EXCESS SOLVENT. ALL WELDED JOINTS SHALL CURE AT LEAST 15 MINUTES BEFORE MOVING OR HANDLING, AND AT LEAST 24 HOURS BEFORE WATER IS PERMITTED IN THE PIPE.

D. PLASTIC TO METAL PIPE CONNECTIONS: MAKE ALL CONNECTIONS BETWEEN PLASTIC PIPE AND METAL PARTS OR PIPE WITH THREADED FITTINGS USING PLASTIC MALE ADAPTERS. APPLY A NON-HARDENING PIPE DOPE OR TEFLON TAPE TO MALE THREADS. TAKE UP WITH LIGHT WRENCH PRESSURE.

E. XERI-BUBBLERS: INSTALL IN HIGH SIDE OF PLANTING ROOTBALL

F. PLUGGING PIPE: CAP OR PLUG ALL OPENINGS AS SOON AS LINES HAVE BEEN INSTALLED TO PREVENT THE ENTRANCE OF MATERIALS THAT COULD OBSTRUCT THE PIPE, AND LEAVE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.

H. FLUSHING IRRIGATION SYSTEM: THOROUGHLY FLUSH OUT ALL WATERLINES, THEN INSTALL ON-GRADE DRIP IRRIGATION SYSTEM, VALVES, AND OTHER HYDRANTS. TEST IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:

1. REQUEST THE PRESENCE OF OWNER OR HIS REPRESENTATIVE AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF TESTING. TEST IS TO BE ACCOMPLISHED AT THE EXPENSE OF CONTRACTOR, AND IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE IF SO DESIRED, OR WITH SUBMITTAL OF RECORDED RESULTS OF TEST.

2. CENTER LOAD PIPING WITH SUFFICIENT AMOUNT OF BACKFILL TO PREVENT ARCHING OR SLIPPING UNDER PRESSURE. APPLY CONTINUOUS WATER PRESSURE OF THE NUMBER OF POUNDS PER SQUARE INCH SPECIFIED ON THE PLANS AT THE POINT OF CONNECTION.

- A. PRESSURE LINES TO BE TESTED FOR FOUR HOURS.
- B. LATERAL LINES TO BE TESTED FOR TWO HOURS.

3. REPAIR LEAKS RESULTING FROM TESTS AND RETEST UNTIL SYSTEM MEETS SPECIFIED TESTS.

H. DRIPPERLINE INSTALLATION:

1. INSTALL ALL DRIPPERLINE AS INDICATED ON DRAWINGS. USE ONLY TEFLON TAPE ON ALL THREADED CONNECTIONS.

2. WHEN INSTALLING TECHLINE CV, TECHLINE, OR 8MM TECHLITE DRIPPERLINES ON-SURFACE, INSTALL SOIL STAPLES AS LISTED BELOW:

- A. SANDY SOIL - ONE STAPLE EVERY THREE (3) FEET AND TWO (2) STAPLES ON EACH CHANGE OF DIRECTION (TEE, ELBOW, OR CROSS).
- B. LOAM SOIL - ONE STAPLE EVERY FOUR (4) FEET AND TWO (2) STAPLES ON EACH CHANGE OF DIRECTION (TEE, ELBOW, OR CROSS).
- C. CLAY SOIL - ONE STAPLE EVERY FIVE (5) FEET AND TWO (2) STAPLES ON EACH CHANGE OF DIRECTION (TEE, ELBOW, OR CROSS).

3. CAP OR PLUG ALL OPENINGS AS SOON AS LINES HAVE BEEN INSTALLED TO PREVENT THE INTRUSION OF MATERIALS THAT WOULD OBSTRUCT THE PIPE. LEAVE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.

4. THOROUGHLY FLUSH ALL WATER LINES BEFORE INSTALLING VALVES AND OTHER HYDRANTS.

5. TEST IN ACCORDANCE WITH PARAGRAPH ON HYDROSTATIC TESTS.

UPON COMPLETION OF THE TESTING, THE CONTRACTOR SHALL COMPLETE ASSEMBLY AND ADJUST XERI EMITTERS FOR PROPER DISTRIBUTION.

4.04 AUTOMATIC CONTROLLER

A. INSTALL CONTROLLER AS SHOWN ON THE PLAN, UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. CONNECT REMOTE CONTROL VALVES TO CONTROLLER IN A SEQUENCE CORRESPONDING TO VALVE STATION NUMBERS AS SHOWN ON THE PLANS.

B. CONTROLLER CHART: PREPARE A MAP DIAGRAM SHOWING LOCATION OF ALL VALVES, LATERAL LINES, AND ROUTE OF THE CONTROL WIRE. IDENTIFY ALL VALVES AS TO SIZE, STATION, NUMBER, AND TYPE OF PLANTING IRRIGATED; I.E., SLOPES, TREES, SHRUBS, & GROUND COVER. SUBMIT DIAGRAM TO OWNER OR HIS REPRESENTATIVE FOR APPROVAL, PRIOR TO FINAL INSPECTION.

4.05 BACKFILL AND COMPACTING

A. AFTER SYSTEM IS OPERATING, AND REQUIRED TESTS AND INSPECTIONS HAVE BEEN MADE, BACKFILL EXCAVATIONS AND TRENCHES WITH CLEAN SOIL, FREE FROM RUBBISH.

B. BACKFILL FOR ALL TRENCHES, REGARDLESS OF THE TYPE OF PIPE COVERED, SHALL BE COMPACTED TO 90% DENSITY.

PART 5 - JOB COMPLETION

5.01 "AS-BUILT" IRRIGATION DRAWINGS

PREPARE AN "AS-BUILT" DRAWING ON A BLUELINE PRINT WHICH SHALL SHOW DEVIATIONS FROM THE BID DOCUMENTS MADE DURING CONSTRUCTION AFFECTING THE MAIN LINE PIPE, CONTROLLER LOCATIONS, VALVES AND SPRINKLER HEADS. THE DRAWINGS SHALL BE DELIVERED TO OWNER OR HIS REPRESENTATIVE BEFORE FINAL ACCEPTANCE OF WORK. LANDSCAPE CONTRACTOR SHALL KEEP REDLINES AS-BUILTS UP TO DATE IN A DAILY BASIS.

5.02 GUARANTEE

A. ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL, EQUIPMENT, AND WORKMANSHIP. GUARANTEE SHALL ALSO COVER REPAIR OF DAMAGE TO ANY PART OF THE PREMISES, RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIAL, EQUIPMENT, AND WORKMANSHIP TO THE SATISFACTION OF OWNER OR HIS REPRESENTATIVE.

B. REPAIRS, IF REQUIRED, SHALL BE DONE PROMPTLY UPON NOTIFICATION BY OWNER OR HIS REPRESENTATIVE AT NO ADDITIONAL COST.

C. MAINTENANCE DATA: SUBMIT MAINTENANCE DATA AND PARTS LISTS FOR IRRIGATION SYSTEM MATERIALS AND PRODUCTS. INCLUDE THESE DATA, PRODUCT DATA, SHOP DRAWINGS AND RECORD DRAWINGS IN MAINTENANCE MANUAL.

5.02 CRITERIA FOR BIDDING

BASE BIDS ON THE FOLLOWING CRITERIA:

- 1. THAT THE SURFACE ELEVATIONS ARE AS INDICATED.
- 2. THAT NO PIPES OR OTHER ARTIFICIAL OBSTRUCTIONS, OTHER THAN THOSE UTILITIES AND SPRINKLER LINES AS MENTIONED IN THE SPECIAL CONDITIONS, WILL BE ENCOUNTERED.
- 3. THAT HARD MATERIALS WILL NOT BE ENCOUNTERED. (SEE DEFINITION FOLLOWING.)

IN CASE THE ACTUAL CONDITIONS DIFFER SUBSTANTIALLY FROM THOSE STATED OR SHOWN, THE CONTRACTOR SHALL PROVIDE FOR AN ADJUSTMENT FOR CHANGED CONDITIONS, SUBJECT TO THE REQUIREMENTS OF NOTIFICATION THEREUNDER BEING GIVEN. HARD MATERIAL SHALL BE DEFINED AS SOLID ROCK, FIRMLY CEMENTED UNSTRATIFIED MASSES OF CONGLOMERATE DEPOSITS POSSESSING THE CHARACTERISTICS OF SOLID ROCK, NOT ORDINARILY REMOVED WITHOUT SYSTEMATIC DRILLING AND BLASTING, AND ANY BOULDER, MASONRY, OR CONCRETE EXCEPT PAVEMENT, EXCEEDING 1/2 CUBIC YARD IN VOLUME. FIRM MATERIALS, FORMATIONAL SOILS OR CEMENTED CONGLOMERATE OF CLAY, SAND, SILT OR GRAVEL ARE NOT INCLUDED IN THE DEFINITION OF HARD MATERIAL. HOWEVER, THE FIRM MATERIAL USUALLY REQUIRES HEAVY EXCAVATION EQUIPMENT OR JACKHAMMER FOR REMOVAL.

BENCH MARK	
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COASTAL COMMISSION PERMIT NO. 6-08-122

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By: _____	Date: _____	By: _____	Date: _____	By: DAVID W REED	Date: 3-7-17					By: _____	Date: _____	By: _____	Date: _____	SEE DETAILED BLOCK ABOVE LEFT			517-521 PACIFIC AVENUE SEAWALL		SBGR-		
Fire Chief		District Engineer		R.L.A.: 1962	Exp: 09/30/17							Mohammad Sammak, City Engineer	R.C.E.: 37146	Exp: 06-30-10			MAINTENANCE, REPAIR & EXTENSION		SHEET 8 OF 8		



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