

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

California Regional Water Quality Control Board, San Diego Region

March 20, 2014

Certified Mail – Return Receipt Required

Article Number: 7011 0471 0002 8961 8170

Ms. Amy Glad
Pardee Homes
2120 Park Place, Suite 120
El Segundo, California 90245

In reply/refer to:
799983: amonji

**Subject: Clean Water Act Section 401 Water Quality Certification No. R9-2013-0160;
Olive Hill Project**

Ms. Glad:

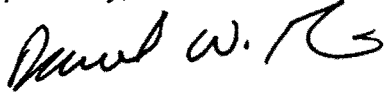
Enclosed find Clean Water Act Section 401 Water Quality Certification No. R9-2013-0160 (Certification) issued by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) in response to the application submitted by Pardee Homes for the Olive Hills Project (Project). A description of the Project and Project location can be found in the Certification and site maps which are included as attachments to the Certification.

Pardee Homes is enrolled under State Water Resources Control Board Order No. 2003-017-DWQ as a condition of the Certification and is required to implement and comply with all terms and conditions of the Certification in order to ensure that water quality standards are met for the protection of wetlands and other aquatic resources. Failure to comply with this Certification may subject Pardee Homes to enforcement actions by the San Diego Water Board including administrative enforcement orders requiring Pardee Homes to cease and desist from violations or to clean up waste and abate existing or threatened conditions of pollution or nuisance; administrative civil liability in amounts of up to \$10,000 per day per violation; referral to the State Attorney General for injunctive relief; and, referral to the District Attorney for criminal prosecution.

Any petition for reconsideration of this Certification must be filed with the State Water Resources Control Board within 30 days of certification action pursuant to section 3867 of Title 23 of the California Code of Regulations (23 CCR). If no petition is received, it will be assumed that Pardee Homes has accepted and will comply with all terms and conditions of the Certification.

In the subject line of any response, please include reference number 799983: amonji. For questions or comments, please contact Alan Monji by telephone at (619) 521-3968 or by email at Alan.Monji@waterboards.ca.gov.

Respectfully,



DAVID W. GIBSON
Executive Officer

Enclosure:

Clean Water Act Section 401 Water Quality Certification No. R9-2013-0160 for the Olive Hill Project

DWG:jgs:db:kd:atm

cc:

U.S. Army Corps of Engineers, Regulatory Branch
San Diego Field Office
Courtney Stevens
Courtney.M.Steven@usace.army.mil

California Department of Fish and Wildlife
South Coast Region
Habitat Conservation Planning – South
Kevin Hupf
Khupf@wildlife.ca.gov

U.S. EPA, OWOW, Region 9
R9-WTR8-Mailbox@epa.gov

State Water Resources Control Board, Division of Water Quality
401 Water Quality Certification and Wetlands Unit
Stateboard401@waterboards.ca.gov

Tech Staff Info & Use	
Certification No.	R9-2013-0160
Party ID	35436
WDID	9000002654
Regulatory ID	393631
Place ID	799983
Person ID	516929

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

2375 Northside Drive, Suite 100, San Diego, CA 92108
Phone (619) 516-1990 • Fax (619) 516-1994
<http://www.waterboards.ca.gov/sandiego/>

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

PROJECT: Olive Hill
Certification Number R9-2013-0160
WDID: 9000002654

Reg. Meas. ID: 393631
Place ID: 799983
Party ID: 35436
Person ID: 516929

APPLICANT: Pardee Homes
2120 Park Place, Suite 120
El Segundo, California 90245

ACTION:

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

PROJECT DESCRIPTION

An application dated October 10, 2013 was submitted by Pardee Homes (hereinafter Applicant), for Water Quality Certification pursuant to section 401 of the Clean Water Act (33 U.S.C. § 1341) for the proposed Olive Hill Project (Project). The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) deemed the application to be complete on December 18, 2013. The Applicant proposes to discharge dredged or fill material to waters of the United States and/or State associated with construction activity at the Project site.

The Project is located on Olive Hill Road in the community of Bonsall, an unincorporated area of San Diego County, California. The Project center reading is located at latitude 33.293 decimal degrees (dd) and longitude -117.299 dd. The Applicant has paid all required fees for this Certification in the amount of \$2,907.00. On October 21, 2013, the San Diego Water Board provided public notice of the Project application pursuant to California Code of Regulations, title 23, section 3858 by posting information describing the Project on the San Diego Water Board's web site and providing a period of twenty-one days for public review and comment. No comments were received.

The Applicant proposes to construct a 37-unit residential development with associated roads, infrastructure improvements, and two biological open space areas on 46 acres. A bridge will be built to cross Bonsall Creek, an ephemeral drainage, in order to gain access to the development area on the north side of the creek. The bridge will be approximately 24 feet above the existing streambed and would consist of pre-cast concrete girders and a cast in

place concrete deck. Rip-rap will be used to protect the bridge abutments, but will not be placed in the ephemeral drainage channel bottom. The Project was previously issued a Water Quality Certification (Certification No. 04C-124) in 2007 however, the Project was never initiated and the U. S. Army Corps of Engineers (USACE) Nation Permit expired. Because the 2007 permit and certification expired prior to project initiation, the applicant was required to re-apply for a Section 404 permit from the USACE and a Section 401 Water Quality Certification from the San Diego Water Board.

The Project will convert approximately 24 acres of pervious ground cover to impervious surfaces. Runoff leaving the developed Project area will be significantly greater in volume, velocity, peak flow rate, and duration than pre-development runoff from the same area. Post-construction best management practices (BMPs) to manage and control the effects of the runoff increase will consist of bioretention basins, curb inlet filters, and low impact development (LID) design features. These BMPs will be designed, constructed, and maintained to meet County of San Diego's Low Impact Development (LID) Capture Volume and hydromodification treatment requirements. Each individual lot will have a small bioretention basin to receive all surface runoff generated by the house footprint landscaping areas and adjacent driveways. LID features incorporated into the Project design include: conservation of natural areas; minimization of disturbance to natural drainages; minimization and disconnection of impervious surfaces through driveway design, curb-cut design features, pitching pavements toward landscaping, and direction of downspouts to swale or landscaping. LID features also include landscape design features such as use of soil amendments, smart irrigation systems, street trees, minimization of slope erosion through restricting slope disturbances, minimizing cut-and-fill areas to reduce slope lengths, incorporation of retaining walls to shorten slopes and reduce steepness, rounding and shaping slopes to reduce concentrated flow paths, and the collection of concentrated flows in stabilized drains and channels.

The Project application includes a description of the design objective, operation, and degree of treatment expected to be attained from equipment, facilities, or activities (including construction and post-construction BMPs) to treat waste and reduce runoff or other effluents which may be discharged. Compliance with the Certification conditions will help ensure that construction and post-construction discharges from the Project will not cause on-site or off-site downstream erosion, damage to downstream properties, or otherwise damage stream habitats in violation of water quality standards in the *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan).

Project construction will permanently impact 0.53 acre (294 linear feet (LF)) of riparian and non-wetland waters of the United States and/or State. The Applicant 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 0.04 acres (119 LF) of streambed habitat and 0.49 acres (175 LF) of riparian waters of the United States and/or State will be achieved through the establishment of 0.53 acres (570 LF) of waters of the United States and/or State and enhancement of 1.06 acres (710 LF) of riparian habitat onsite. All waters of the United States and/or State receiving temporary discharges of fill material will be

restored upon removal of the fill. Mitigation for discharges of fill material to waters of the United States and/or State will be completed by the Applicant at the Project site located in the Bonsall hydrologic sub-area (HSA 903.12) at a minimum compensation ratio of 13.3:1 (area mitigated:area impacted) establishment and 2.2:1 enhancement.

Detailed written specifications and work descriptions for the compensatory mitigation project including, but not limited to, the geographic boundaries of the project, timing, sequence, monitoring, maintenance, ecological success performance standards and provisions for long-term management and protection of the mitigation areas are described in the *Wetland Mitigation Plan for the Olive Hill Project* (Mitigation Plan), dated February 24, 2014. San Diego Water Board acceptance of the Mitigation Plan applies only to the Project described in this Certification and must not be construed as approval for other current or future projects that are planning to use additional acreage at the site for mitigation. The Mitigation Plan is incorporated in this Certification by reference as if set forth herein. The Mitigation Plan provides for implementation of compensatory mitigation which offsets adverse water quality impacts attributed to the Project in a manner that protects and restores the abundance, types and conditions of aquatic resources and supports their beneficial uses. Implementation of the Mitigation Plan will reduce significant environmental impacts to resources within the San Diego Water Board's purview to a less than significant level. Based on all of these considerations, the Mitigation Plan will adequately compensate for the loss of beneficial uses and habitat within waters of the United States and/or State attributable to the Project.

Additional Project details are provided in Attachments 1 through 5 of this Certification.

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Attachments:

- 1. Definitions**
- 2. Project Location Maps**
- 3. Project Site Plans**
- 4. Mitigation Figures**
- 5. CEQA Mitigation Requirements**

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. R9-2013-0160 (Certification) shall expire upon a) the expiration or retraction of the Clean Water Act section 404 (33 U.S.C. §1344) permit issued by the U.S. Army Corps of Engineers for this Project, or b) five (5) years from the date of issuance of this Certification, whichever occurs first.
- B. **Duty to Comply.** The Applicant must comply with all conditions and requirements of this Certification. Any Certification noncompliance constitutes a violation of the Water Code and is grounds for enforcement action or Certification termination, revocation and reissuance, or modification.
- C. **General Waste Discharge Requirements.** The requirements of this Certification are enforceable through Water Quality Order No. 2003-0017-DWQ, *Statewide General Waste Discharge Requirements for Discharges of Dredged or Fill Material that have Received State Water Quality Certification* (Water Quality Order No. 2003-0017-DWQ). This provision shall apply irrespective of whether a) the federal permit for which the Certification was obtained is subsequently retracted or is expired, or b) the Certification is expired. Water Quality Order No. 2003-0017-DWQ is accessible at:

http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/generalorders/gowdr401regulated_projects.pdf

- D. Project Conformance with Application.** All water quality protection measures and BMPs described in the application and supplemental information for water quality certification are incorporated by reference into this Certification as if fully stated herein. Notwithstanding any more specific conditions in this Certification, the Applicant shall construct, implement and comply with all water quality protection measures and BMPs described in the application and supplemental information. The conditions within this Certification shall supersede conflicting provisions within the application and supplemental information submitted as part of this Certification action.
- E. Project Conformance with Water Quality Control Plans or Policies.** Notwithstanding any more specific conditions in this Certification, the Project shall be constructed in a manner consistent with the Basin Plan and any other applicable water quality control plans or policies adopted or approved pursuant to the Porter Cologne Water Quality Act (Division 7, commencing with Water Code Section 13000) or section 303 of the Clean Water Act (33 U.S.C §1313.)
- F. Project Modification.** The Applicant must submit any changes to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of this Certification, to the San Diego Water for prior review and written approval. If the San Diego Water Board is not notified of a significant change to the Project, it will be considered a violation of this Certification.
- G. Certification Distribution Posting.** During Project construction, the Applicant must maintain a copy of this Certification at the Project site. This Certification must be available at all times to site personnel and agencies. A copy of this Certification shall also be provided to any contractor or subcontractor performing construction work, and the copy shall remain in their possession at the Project site.
- H. Inspection and Entry.** The Applicant must allow the San Diego Water Board or the State Water Resources Control Board, 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 Bonsall Creek or its tributaries;
 3. Obtaining this Certification by misrepresentation or failure to disclose fully all relevant facts;
 4. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
 5. Incorporation of any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

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

- K. **Duty to Provide Information.** The Applicant shall furnish to the San Diego Water Board, within a reasonable time, any information which the San Diego Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Certification or to determine compliance with this Certification.
- L. **Property Rights.** This Certification does not convey any property rights of any sort, or any exclusive privilege.

III. CONSTRUCTION BEST MANAGEMENT PRACTICES

- A. **Approvals to Commence Construction.** The Applicant shall not commence Project construction until all necessary federal, state, and local approvals are obtained.
- B. **Personnel Education.** Prior to the start of the Project, and annually thereafter, the Applicant must educate all personnel on the requirements in this Certification, pollution prevention measures, spill response measures, and BMP implementation and maintenance measures.

- C. **Spill Containment Materials.** The Applicant must, at all times, maintain appropriate types and sufficient quantities of materials on-site to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the United States and/or State.
- D. **General Construction Storm Water Permit.** 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 runoff management plan (or equivalent construction BMP plan) to prevent the discharge of sediment and other pollutants during construction activities.
- E. **Waste Management.** The Applicant must properly manage, store, treat, and dispose of wastes in accordance with applicable federal, state, and local laws and regulations. Waste management shall be implemented to avoid or minimize exposure of wastes to precipitation or storm water runoff. The storage, handling, treatment, or disposal of waste shall not create conditions of pollution, contamination or nuisance as defined in Water Code section 13050. Upon Project completion, all Project generated debris, building materials, excess material, waste, and trash shall be removed from the Project site(s) for disposal at an authorized landfill or other disposal site in compliance with federal, state and local laws and regulations.
- F. **Waste Management.** Except for a discharge permitted under this Certification, the dumping, deposition, or discharge of trash, rubbish, unset cement or asphalt, concrete, grout, damaged concrete or asphalt, concrete or asphalt spoils, wash water, organic or earthen material, steel, sawdust or other construction debris waste from Project activities directly into waters of the United States and or State, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited.
- G. **Downstream Erosion.** Discharges of concentrated flow during construction or after Project completion must not cause downstream erosion or damage to properties or stream habitat.
- H. **Construction Equipment.** All equipment must be washed prior to transport to the Project site and must be free of sediment, debris, and foreign matter. All equipment used in direct contact with surface water shall be steam cleaned prior to use. All equipment using gas, oil, hydraulic fluid, or other petroleum products shall be inspected for leaks prior to use and shall be monitored for leakage. Stationary equipment (e.g., motors, pumps, generator, etc.) shall be positioned over drip pans or other types of containment.

- I. **Process Water.** Water containing mud, silt, or other pollutants from equipment washing or other activities, must not be discharged to waters of the United States and/or State or placed in locations that may be subjected to storm water runoff flows. Pollutants discharged to areas within a stream diversion must be removed at the end of each work day or sooner if rain is predicted.
- J. **Surface Water Diversion.** All surface waters, including ponded waters, must be diverted away from areas of active grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. Diversion activities must not result in the degradation of beneficial uses or exceedance of the receiving water quality objectives. Any temporary dam or other artificial obstruction constructed must only be built from materials such as clean gravel which will cause little or no siltation. Normal flows must be restored to the affected stream immediately upon completion of work at that location.
- K. **Re-vegetation and Stabilization.** All areas that have 14 or more days of inactivity must be stabilized within 14 days of the last activity. The Applicant shall implement and maintain BMPs to prevent erosion of the rough graded areas. After completion of grading, all areas must be re-vegetated with native species appropriate for the area. The re-vegetation palette must not contain any plants listed on the California Invasive Plant Council Invasive Plant Inventory, which can be accessed at: <http://www.cal-ipc.org/paf/>
- L. **Hazardous Materials.** Except as authorized by this Certification, substances hazardous to aquatic life including, but not limited to, petroleum products, unused cement/concrete, asphalt, and coating materials, must be prevented from contaminating the soil and/or entering waters of the United States and/or State. BMPs must be implemented to prevent such discharges during each Project activity involving hazardous materials.
- M. **Vegetation Removal.** Removal of vegetation must occur by hand, mechanically, or through application of United States Environmental Protection Agency (USEPA) approved herbicides deployed using applicable BMPs to minimize adverse effects to beneficial uses of waters of the United States and/or State. Discharges related to the application of aquatic pesticides within waters of the United States must be done in compliance with State Water Resources Control Board Water Quality Order No. 2004-0009-DWQ, the *Statewide General National Pollution Discharge Elimination System Permit for the Discharge of Aquatic Weed Control in Waters of the United States*, and any subsequent reissuance as applicable.
- N. **Limits of Disturbance.** The Applicant shall clearly define the limits of Project disturbance to waters of the United States and/or State using highly visible markers such as flag markers, construction fencing, or silt barriers prior to commencement of Project construction activities within those areas.
- O. **On-site Qualified Biologist.** The Applicant shall designate an on-site qualified biologist to monitor Project construction activities within or adjacent to waters of the United States and/or State to ensure compliance with the Certification requirements.

The biologist shall be given the authority to stop all work on-site if a violation of this Certification occurs or has the potential to occur. Records and field notes of the biologist's activities shall be kept on-site and made available for review upon request by the San Diego Water Board.

- P. **Beneficial Use Protection.** The Applicant must take all necessary measures to protect the beneficial uses of waters of Bonsall Creek. This Certification requires compliance with all applicable requirements of the Basin Plan. If at any time, an unauthorized discharge to surface waters (including rivers or streams) occurs or monitoring indicates that the Project is violating, or threatens to violate, water quality objectives, the associated Project activities shall cease immediately and the San Diego Water Board shall be notified in accordance with Notification Requirement VII.A of this Certification. Associated Project activities may not resume without approval from the San Diego Water Board.

IV. POST-CONSTRUCTION BEST MANAGEMENT PRACTICES

- A. **Post-Construction Discharges.** The Applicant shall not allow post-construction discharges from the Project site to cause or contribute to onsite or off-site erosion or damage to properties or stream habitats.
- B. **Storm Drain Inlets.** All storm drain inlet structures within the Project boundaries must be stamped or stenciled (or equivalent) with appropriate language prohibiting non-storm water discharges.
- C. **Post-Construction BMP Design.** The Project must be designed to comply with the most current County of San Diego *Stormwater Standards Manual* and hydromodification plans. Post-construction BMPs, including those described in the *Major Storm Water Management Plan for County of San Diego TM 4976 Grading Plan LM 15060, Olive Hill Road* (SWMP), November 8, 2013, must treat 100 percent of the added impervious surface.
- D. **Post-Construction BMP Implementation.** All post-construction BMPs must be constructed, functional, and implemented prior to completion of Project construction, occupancy, and/or planned use, and maintained in perpetuity. The post construction BMPs must include those described in the SWMP, dated November 8, 2013, prepared on behalf of the Applicant by BHA, Inc.; or any subsequent version of the SWMP approved by the County of San Diego.
- E. **Post-Construction BMP Maintenance.** The post construction BMPs must be designed, constructed, and maintained in accordance with the most recent California Storm Water Quality Association (CASQA)¹ guidance. The Applicant shall:
1. No less than two times per year, assess the performance of the BMPs to ensure protection of the receiving waters and identify any necessary corrective measures;

¹ California Storm Water Quality Association (*California Storm Water BMP Handbook, New Development and Redevelopment 2003*), available on-line at: <http://www.cabmphandbooks.org/> [Accessed on January 15, 2012]

2. Perform inspections of BMPs, at the beginning of the wet season no later than October 1 and the end of the wet season no later than April 1, for standing water, slope stability, sediment accumulation, trash and debris, and presence of burrows;
3. Regularly perform preventative maintenance of BMPs, including removal of accumulated trash and debris, as needed to ensure proper functioning of the BMPs;
4. Identify and promptly repair damage to BMPs; and
5. Maintain a log documenting all BMP inspections and maintenance activities. The log shall be made available to the San Diego Water Board upon request.

V. PROJECT IMPACTS AND COMPENSATORY MITIGATION

- A. **Project Impact Avoidance and Minimization.** The Project must avoid and minimize adverse impacts to waters of the United States and/or State to the maximum extent practicable.
- B. **Project Impacts and Compensatory Mitigation.** Unavoidable Project impacts to Bonsall Creek and its unnamed tributaries within the San Luis Rey Watershed 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:

Permanent Impacts	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)
Streambed	0.04	119	0.53 Establishment ¹	13.3:1	570 Establishment	4.8:1
Vegetated non-wetland (Riparian)	0.49	175	1.06 Enhancement ²	2.2:1	710 Enhancement	4.1:1

1. Streambed establishment onsite in Bonsall Creek
2. Riparian enhancement onsite in Bonsall Creek

- C. **Compensatory Mitigation Plan Implementation.** The Applicant must fully and completely implement the Mitigation Plan; any deviations from, or revisions to, the Mitigation Plan must be pre-approved by the San Diego Water Board.
- D. **Performance Standards.** Compensatory mitigation required under this Certification shall be considered as achieved once it has met the ecological success performance standards contained in the Mitigation Plan (Section 8, pages 9 - 11) to the satisfaction of the San Diego Water Board.

- E. Compensatory Mitigation Site Design.** The compensatory mitigation site(s) shall be designed, to the maximum extent practicable, to be self-sustaining once performance standards have been achieved. This includes minimization of active engineering features (e.g., pumps) and appropriate siting to ensure that natural hydrology and landscape context support long-term sustainability in conformance with the following conditions:
1. Most of the channels through the mitigation sites shall be characterized by equilibrium conditions, with no evidence of severe aggradation or degradation;
 2. As viewed along cross-sections, the channel and buffer area(s) shall have a variety of slopes, or elevations, that are characterized by different moisture gradients. Each sub-slope shall contain physical patch types or features that contribute to irregularity in height, edges, or surface and to complex topography overall; and
 3. The mitigation sites shall have a well-developed plant community characterized by a high degree of horizontal and vertical interspersion among plant zones and layers.
- F. 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.
- G. Long Term Management and Maintenance.** The compensatory mitigation site(s), must be managed, protected, and maintained, in perpetuity, in conformance with the long term management plan and the final ecological success performance standards identified in the Mitigation Plan. The aquatic habitats, riparian areas, buffers and uplands that comprise the mitigation site(s) must be protected in perpetuity from land-use and maintenance activities that may threaten water quality or beneficial uses within the mitigation area(s) in a manner consistent with the following requirements:
1. Any maintenance activities on the mitigation site(s) that do not contribute to the success of the mitigation site(s) and enhancement of beneficial uses and ecological functions and services are prohibited;
 2. Maintenance activities must be limited to the removal of trash and debris, removal of exotic plant species, replacement of dead native plant species, and remedial measures deemed necessary for the success of the compensatory mitigation project;
 3. The mitigation site(s) must be maintained, in perpetuity, free of perennial exotic plant species including, but not limited to, pampas grass, giant reed, tamarisk, sweet fennel, tree tobacco, castor bean, and pepper tree. Annual exotic plant species must not occupy more than 5 percent of the mitigation site(s); and

4. If at any time a catastrophic natural event (e.g., fire, flood) causes damage(s) to the mitigation site(s) or other deficiencies in the compensatory mitigation project, the Applicant must take prompt and appropriate action to repair the damage(s) including replanting the affected area(s) and address any other deficiencies. The San Diego Water Board may require additional monitoring by the Applicant to assess how the compensatory mitigation site(s) or project is responding to a catastrophic natural event.
- H. **Timing of Mitigation Site Construction.** The construction of proposed mitigation must be concurrent with project grading and completed no later than 9 months following the start of Project construction. Delays in implementing mitigation must be compensated for by an increased mitigation implementation of 10% of the cumulative compensatory mitigation for each month of delay.
- I. **Mitigation Site(s) Preservation Mechanism. Within 60 days from the start of Project construction,** the Applicant must provide the San Diego Water Board a draft preservation mechanism (e.g. deed restriction, conservation easement, etc.) that will protect all mitigation areas and their buffers in perpetuity. **Within one year of the issuance of this Certification,** the Applicant must submit proof of a completed final preservation mechanism that will protect all mitigation areas and their buffers in perpetuity. The conservation easement, deed restriction, or other legal limitation on the mitigation properties must be adequate to demonstrate that the sites will be maintained without future development or encroachment on the sites which could otherwise reduce the functions and values of the sites for the variety of beneficial uses of waters of the United States and/ or State that it supports. The legal limitation must prohibit, without exception, all residential, commercial, industrial, institutional, and transportation development, and any other infrastructure development that would not maintain or enhance the wetland and streambed functions and values of the sites. The preservation mechanism must clearly prohibit activities that would result in soil disturbance or vegetation removal, other than the removal of non-native vegetation. Other infrastructure development to be prohibited includes, but is not limited to, additional utility lines, maintenance roads, and areas of maintained landscaping for recreation.

VI. MONITORING AND REPORTING REQUIREMENTS

- A. **Representative Monitoring.** Samples and measurements taken for the purpose of monitoring under this Certification shall be representative of the monitored activity.
- B. **Monitoring Reports.** Monitoring results shall be reported to the San Diego Water board at the intervals specified in section VI of this Certification.
- C. **Monitoring and Reporting Revisions.** The San Diego Water Board may make revisions to the monitoring program at any time during the term of this Certification and may reduce or increase the number of parameters to be monitored, locations monitored, the frequency of monitoring, or the number and size of samples collected.

- D. Records of Monitoring Information.** Records of monitoring information shall include:
- a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
- E. California Rapid Assessment Method.** California Rapid Assessment Method (CRAM)² monitoring must be performed to assess the current and potential ecological conditions (ecological integrity) of the impact site and proposed compensatory mitigation site(s). These conditions reflect the overall level of ecological function of an aquatic resource. Prior to initiating Project construction, the Applicant shall develop a monitoring plan to implement California Rapid Assessment Method (CRAM) monitoring. The Applicant must conduct a quantitative function-based assessment of the health of streambed habitat to establish pre-project baseline conditions, set CRAM success criteria, and assess the mitigation site(s) progress towards meeting the success criteria. CRAM monitoring must be conducted prior to the start of Project construction authorized under this Certification and in years three and five following construction completion. The CRAM monitoring results shall be submitted with the Annual Progress Report. An evaluation, interpretation, and tabulation of all CRAM assessment data shall be submitted with the final Project Annual Project Monitoring Report.
- F. Annual Project Progress Reports.** The Applicant must submit annual Project progress reports describing status of BMP implementation and compliance with all requirements of this Certification to the San Diego Water Board prior to **March 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 including the installation and operational status of best management practices project features for erosion and storm water quality treatment;
 3. A description of Project construction delays encountered or anticipated that may affect the schedule for construction completion;

² The most recent versions of the California Rapid Assessment Method (CRAM) for Wetlands and additional information regarding CRAM can be accessed at <http://www.cramwetlands.org/>

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; and
5. The results of the California Rapid Assessment Method (CRAM) monitoring required under section VI.E of this Certification.

H. **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. BMP installation and operational status for the Project;
4. As-built drawings of the Project, no bigger than 11"X17"; and
5. 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/StreamPhotoDocSOP.pdf. In addition, photo documentation must include Global Positioning System (GPS) coordinates for each of the photo points referenced.

I. **Annual Compensatory Mitigation Monitoring Report.** The Applicant must submit compensatory mitigation monitoring reports, annually, by **March 1** of each year containing sufficient information to demonstrate how the compensatory mitigation project is progressing towards accomplishing its objectives and meeting its performance standards. Mitigation monitoring reports must be submitted annually for a period of not less than five years, sufficient to demonstrate that the compensatory mitigation project has accomplished its objectives and met ecological success performance standards contained in the Mitigation Plan. Following Project implementation the San Diego Water Board may reduce or waive compensatory mitigation monitoring requirements upon a determination that performance standards have been achieved. Conversely the San Diego Water Board may extend the monitoring period beyond five years upon a determination that the performance standards have not been met or the compensatory mitigation project is not on track to meet them.

The monitoring reports must include, but not be limited to, the following information:

1. Names, qualifications, and affiliations of the persons contributing to the report;

2. An evaluation, interpretation, and tabulation of the parameters being monitored, including the results of the Mitigation Plan monitoring program, and all quantitative and qualitative data collected in the field;
 3. A description of the following mitigation site(s) characteristics:
 - a. Detritus cover;
 - b. General topographic complexity characteristics;
 - c. General upstream and downstream habitat and hydrologic connectivity; and
 - d. Source of hydrology
 4. Monitoring data interpretations and conclusions as to how the compensatory mitigation project(s) is progressing towards meeting performance standards and whether the performance standards have been met;
 5. A description of the progress toward implementing a plan to manage the compensatory mitigation project after performance standards have been achieved to ensure the long term sustainability of the resource in perpetuity, including a discussion of long term financing mechanisms, the party responsible for long term management, and a timetable for future steps;
 6. Qualitative and quantitative comparisons of current mitigation conditions with pre-construction conditions and previous mitigation monitoring results;
 7. Stream photo documentation, including all areas of permanent and temporary impact, prior to and after mitigation site construction. Photo documentation must be conducted in accordance with guidelines posted at http://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/StreamPhotoDocSOP.pdf. In addition, photo documentation must include Geographic Positioning System (GPS) coordinates for each of the photo points referenced;
 8. A qualitative comparison to adjacent preserved streambed areas;
 9. As-built drawings of the compensatory mitigation project site(s), no bigger than 11"X17"; and
 10. A survey report documenting boundaries of the compensatory mitigation site(s).
- J. **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.
- K. **Electronic and Paper Media Documents.** The Applicant must submit all reports and information required under this Certification in both hardcopy (paper) and electronic format. The preferred electronic format for each report submission is one file in PDF

format that is also Optical Character Recognition (OCR) capable. All paper and electronic documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Certification No. R9-2013-0160: PIN 799983.

- L. 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.

- M. 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."

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

Executive Officer
California Regional Water Quality Control Board
San Diego Region
Attn: 401 Certification No. R9-2013-0160: PIN 799983
2375 Northside Drive, Suite 100
San Diego, California 92108

VII. 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. **Hazardous Substance Discharge.** Except for a discharge which is in compliance with this Certification, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, shall as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the County of San Diego in accordance with California Health and Safety Code section 5411.5 and the California Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Government Code Title 2, Division 1, Chapter 7, Article 3.7 (commencing with section 8574.17), and immediately notify the State Water Board or the San Diego Water Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of section 13271 of the Water Code unless the Applicant is in violation of a Basin Plan prohibition.
- C. **Oil or Petroleum Product Discharge.** Except for a discharge which is in compliance with this Certification, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the California Office of Emergency Services of the discharge in accordance with the spill reporting

provision of the State oil spill contingency plan adopted pursuant to Government Code Title 2, Division 1, Chapter 7, Article 3.7 (commencing with section 8574.1). This requirement does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Clean Water Act section 311, or the discharge is in violation of a Basin Plan prohibition.

- D. **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.
- E. **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.

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

VIII. CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE

- A. The County of San Diego 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 filed a Mitigated Negative Declaration dated March 15, 2001. The Lead Agency has determined the Project will have a significant effect on the environment and mitigation measures were made a condition of the Project.
- 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 considered the Lead Agency's Mitigated Negative Declaration and finds that the Project as proposed will have a significant effect on resources within the San Diego Water Board's purview.
- C. The San Diego Water Board has required mitigation measures as a condition of this Certification to avoid or reduce the environmental effects of the Project to resources within the Board's purview to a less than significant level.
- D. The Lead Agency has required mitigation measures in its Mitigated Negative Declaration. The mitigation measures included in the Mitigated Negative Declaration are incorporated by reference in Attachment 5 to this Certification. The Applicant shall implement the Lead Agency's mitigation measures described in the Mitigated Negative Declaration, as it pertains to resources within the San Diego Water Board's purview. The San Diego Water Board has imposed additional monitoring and reporting requirements as specified in section VI of this Certification.
- E. As a Responsible Agency under CEQA, the San Diego Water Board will file a Notice of Determination in accordance with CEQA Guidelines section 15096 subdivision (i).

IX. SAN DIEGO WATER BOARD CONTACT PERSON

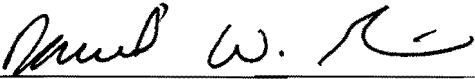
Alan Monji, Environmental Scientist
California Regional Water Quality Control Board, San Diego Region
2375 Northside Drive, Suite 100
San Diego, California 92108
Telephone: 619-521-3968
Email: Alan.Monji@waterboards.ca.gov

X. WATER QUALITY CERTIFICATION

I hereby certify that the proposed discharge from the **Olive Hill** (Certification No. R9-2013-0160) 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. R9-2013-0160 issued on March 20, 2014.



DAVID W. GIBSON
Executive Officer
San Diego Water Board

3/20/2014
Date

ATTACHMENT 1

DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pardee Homes
Olive Hill
Certification No. R9-2013-0160

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ATTACHMENT 2

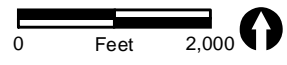
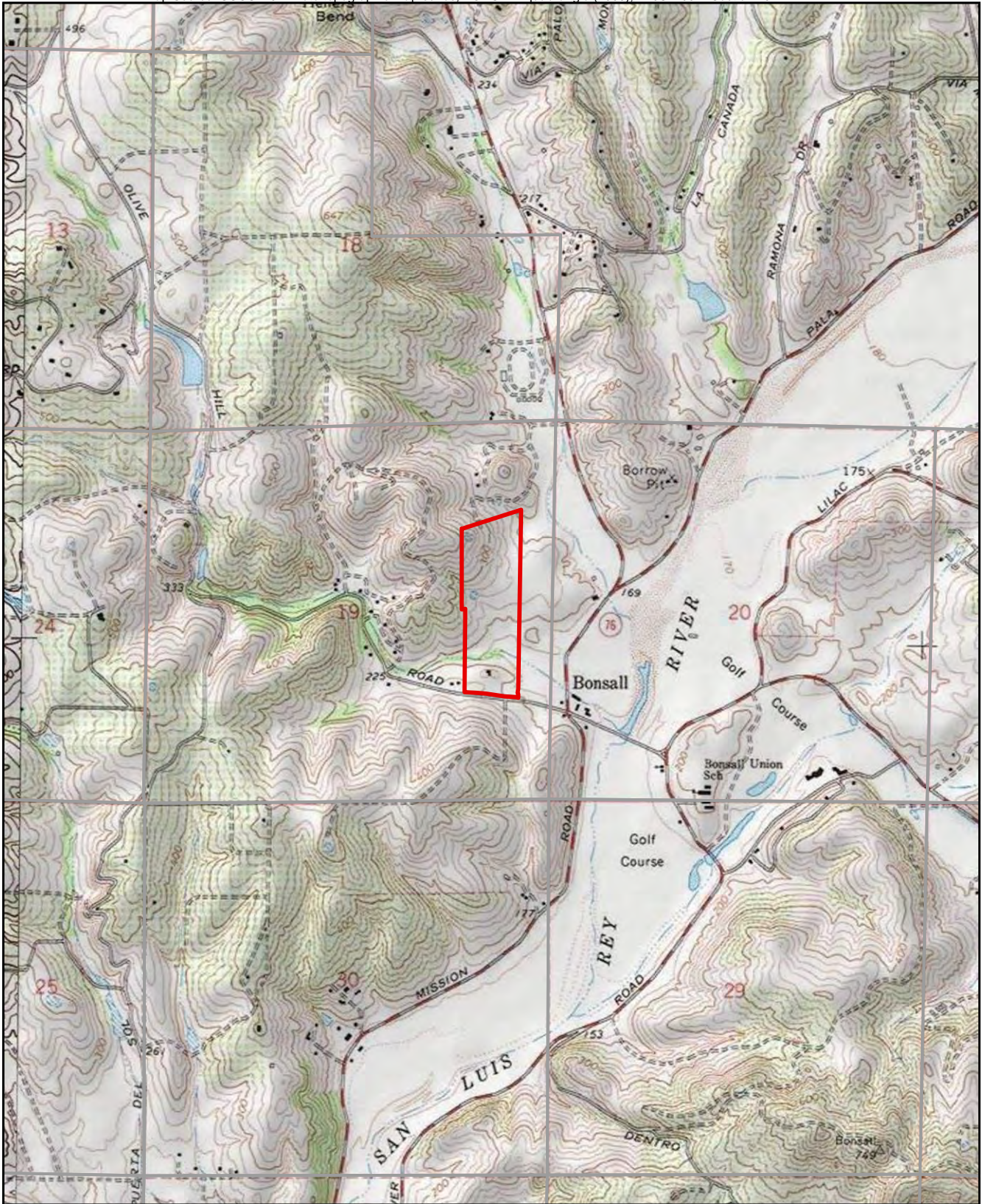
LOCATION MAP



 Project Location

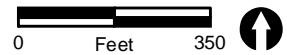
FIGURE 1

Regional Location



 Project Boundary

FIGURE 2
Project Location on USGS Map



 Project Boundary

FIGURE 3

Olive Hill Project Location
on Aerial Photograph

Pardee Homes
Olive Hill
Certification No. R9-2013-0160

- 1 -

ATTACHMENT 3
PROJECT SITE PLANS

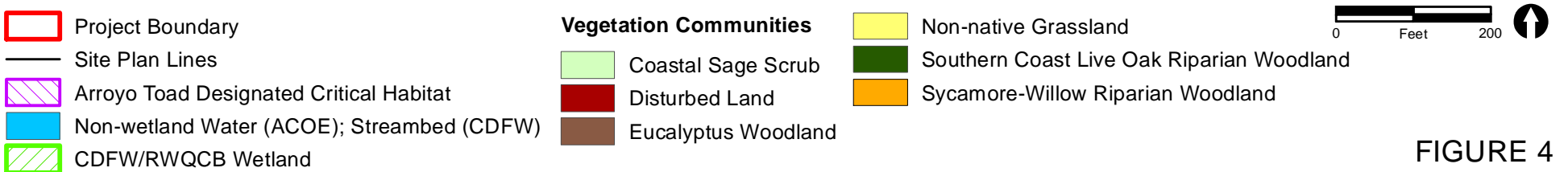
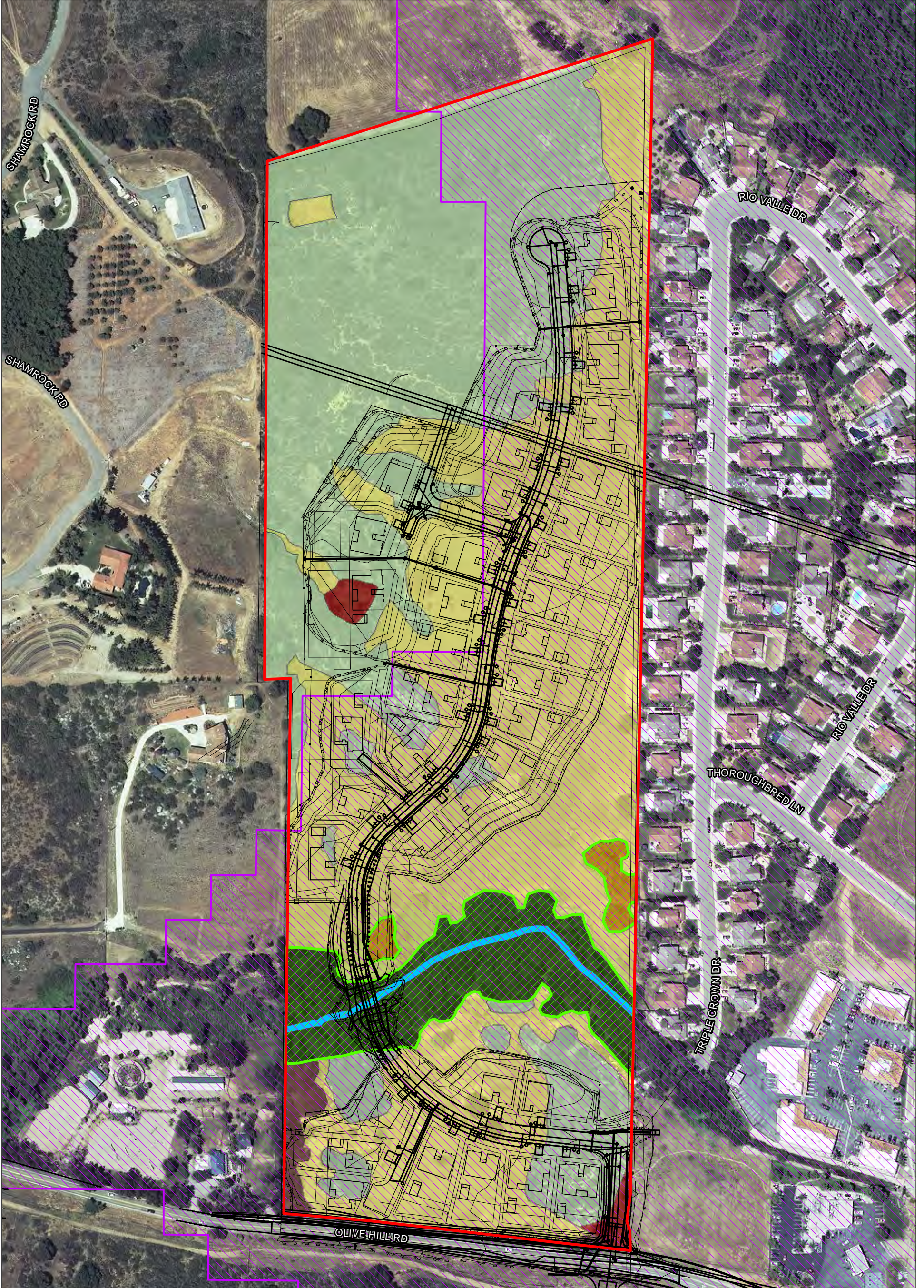
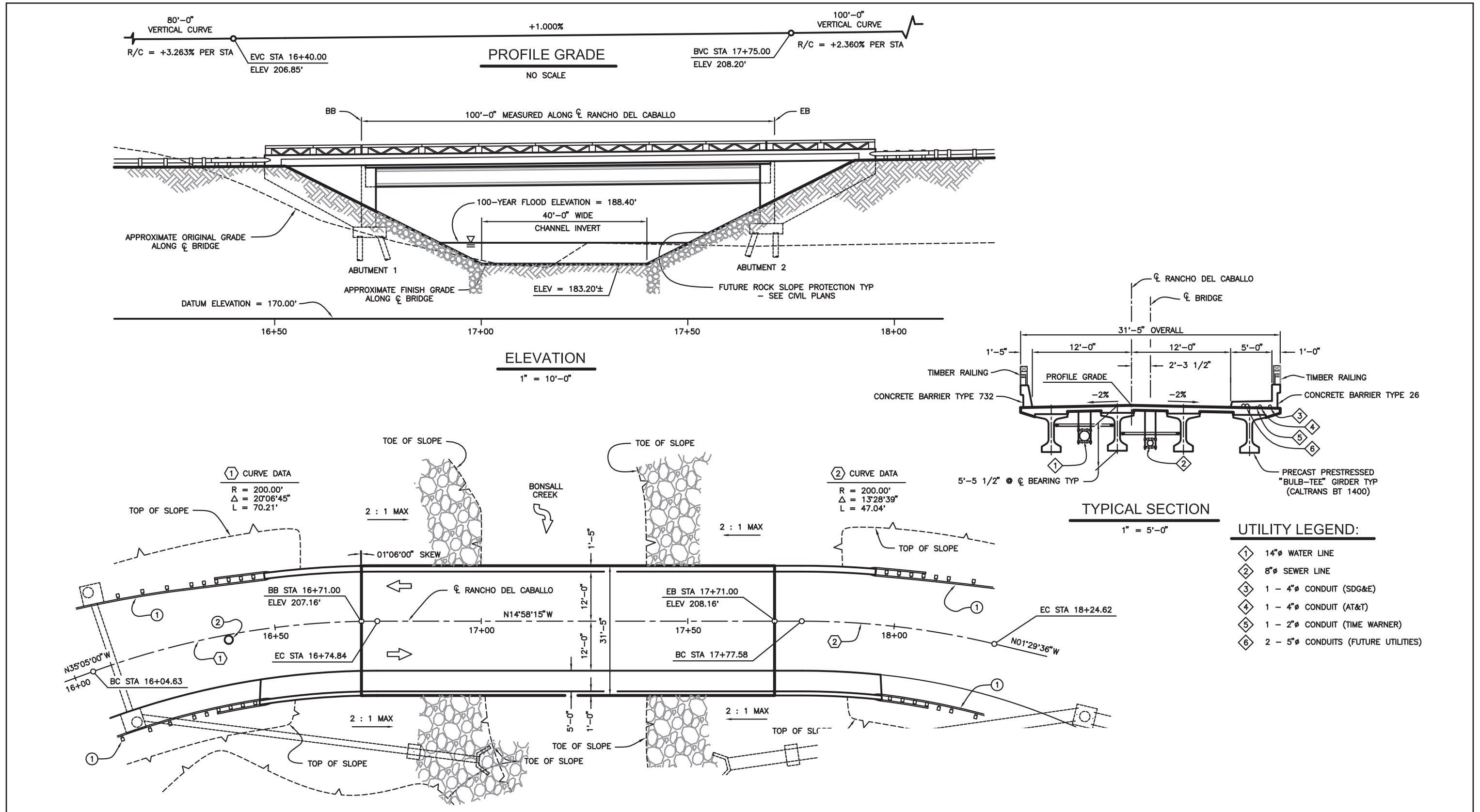


FIGURE 4



LEGEND:

- ① - METAL BEAM GUARD RAIL - SEE "CIVIL PLANS"
- ② - SEWER MANHOLE - SEE "CIVIL PLANS"
- ← - INDICATES DIRECTION OF TRAFFIC FLOW

NOTE: FOR GENERAL NOTES AND INDEX TO BRIDGE PLANS, SEE "DECK CONTOURS" SHEET.



GRADING & EROSION CONTROL PLANS FOR: OLIVE HILL ESTATES COUNTY OF SAN DIEGO TRACT NO. 4976-RPL 4R

HAUL ROUTE NOTES:

PRIOR TO BEGINNING OF GRADING, SUBMIT A TRAFFIC CONTROL PLAN TO ENVIRONMENTAL SERVICE UNIT (ESU) FOR APPROVAL INCLUDING:

- SPECIFIC TRUCK TRAVEL ROUTES.
- ANTICIPATED LENGTH OF GRADING PERIOD INVOLVING THE NEED FOR TRUCK EXPORTS OF SOIL.
- TIME OF OPERATIONS.
- EXISTING CONDITIONS OF THE IMPACTED ROAD AREAS- INCLUDING TRAFFIC AND ROAD CONDITIONS.
- TRAFFIC SAFETY INCLUDING SAFETY TO RESIDENTS ON FOOT, ON BICYCLE AND IN VEHICLES, AND POSSIBLE MITIGATION FOR AVOIDANCE OF SIGNIFICANT PEAK HOUR TRAFFIC AT CERTAIN INTERCHANGES, AND INTERCHANGE GEOMETRY TO DETERMINE IF IT WILL ALLOW SAFE USE BY THE TRUCKS.

(CONT.)

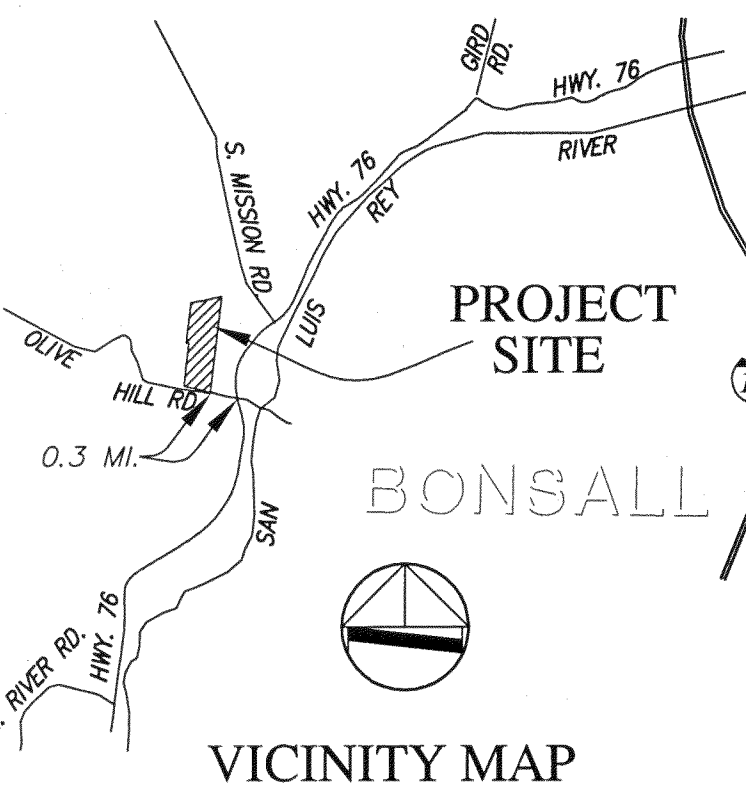
C. "RESTRICT ALL BRUSHING, CLEARING AND/OR GRADING SUCH THAT NONE WILL BE ALLOWED WITHIN 300 FEET OF COASTAL SAGE SCRUB HABITAT DURING THE BREEDING SEASON OF THE CALIFORNIA Gnatcatcher. THIS IS DEFINED AS OCCURRING BETWEEN FEBRUARY 15 AND AUGUST 31. THE DIRECTOR OF PLANNING AND LAND USE MAY WAIVE THIS CONDITION, THROUGH WRITTEN CONCURRENCE FROM THE US FISH AND WILDLIFE SERVICE AND THE CALIFORNIA DEPARTMENT OF FISH AND GAME, THAT NO CALIFORNIA Gnatcatcher ARE PRESENT IN THE VICINITY OF THE BRUSHING, CLEARING OR GRADING."

D. PRIOR TO RECORD PLAN APPROVAL SUBMIT TO THE DIRECTOR, DEPARTMENT OF PLANNING AND LAND USE A SIGNED, STAMPED STATEMENT FROM A CALIFORNIA REGISTERED ENGINEER, OR LICENCED SURVEYOR THAT PERMANENT FENCES OR WALLS, AND OPEN SPACE SIGNS HAVE BEEN INSTALLED. THE PERMANENT FENCE AND SIGN LOCATION(S) SHALL BE IDENTIFIED IN THE FIELD BY A CALIFORNIA REGISTERED ENGINEER OR LICENCED SURVEYOR AND POSITIONED JUST OUTSIDE OF THE OPEN SPACE EASEMENT. PHOTOGRAPHS AND A BRIEF DESCRIPTION OF DESIGN AND MATERIALS USED SHALL BE SUBMITTED WITH THE STATEMENT FROM THE CALIFORNIA REGISTERED CIVIL ENGINEER. THE SIGNS MUST BE CORROSION RESISTANT, A MINIMUM OF 6"x9" IN SIZE, ON POST NOT LESS THAN THREE (3) FEET IN HEIGHT FROM THE GROUND SURFACE, AND MUST STATE THE FOLLOWING:

"SENSITIVE ENVIRONMENTAL RESOURCES DISTURBANCE BEYOND THIS POINT IS RESTRICTED BY EASEMENT

INFORMATION:
CONTACT COUNTY OF SAN DIEGO, DEPARTMENT OF PLANNING AND LAND USE REF. 91-02-032A"

NOTE:
CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING FACILITIES PRIOR TO CONSTRUCTION AND PROTECT ALL FACILITIES DURING CONSTRUCTION.



VICINITY MAP

NTS
THOMAS GUIDE 1067-J1,1047-J7

SPECIFIC CONDITIONS

- TEMPORARY FENCES SHALL BE PLACED TO PROTECT ALL OPEN SPACE EASEMENTS SHOWN ON THE TENTATIVE MAP WHICH PRECLUDE GRADING, OR BRUSHING OR CLEARING IN ALL LOCATIONS OF THE PROJECT WHERE PROPOSED GRADING OR CLEARING IS WITHIN 100 FEET OF AN OPEN SPACE EASEMENT BOUNDARY.
- PERMANENT FENCES OR WALLS AND OPEN SPACE SIGNS SHALL BE PLACED ALONG THE OPEN SPACE BOUNDARY OF PARCELS 6-11, 15-16, 20-23, 24, AND 30-37, AND ALONG THE ROAD RIGHT-OF-WAY CROSSING LOTS A, B AND C. PERMANENT FENCING OR WALLS ARE REQUIRED IN ALL LOCATIONS OF THE PROJECT AS SHOWN ON THE OPEN SPACE EXHIBIT DATED MARCH 21, 2006 ON FILE WITH THE DEPARTMENT OF PLANNING AND LAND USE AS ENVIRONMENTAL REVIEW NUMBER 91-02-032A. FENCE AND WALLS SHALL BE A MINIMUM HEIGHT OF FOUR (4) FEET. CONSTRUCTION MATERIALS AND FENCE OR WALL DESIGN ARE SUBJECT TO APPROVAL BY THE DEPARTMENT OF PLANNING AND LAND USE. SIGNS SHALL BE SPACED NO MORE THAN FIFTY (50) FEET APART.

SOILS ENGINEER CERTIFICATION

THIS GRADING PLAN HAS BEEN REVIEWED BY THE UNDERSIGNED AND FOUND TO BE IN CONFORMANCE WITH THE RECOMMENDATIONS AS OUTLINED IN OUR SOILS REPORT FOR THIS PROJECT. THE SOILS REPORT SHALL BE CONSIDERED AS A PART OF THIS PLAN, AND ALL GRADING WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND RECOMMENDATIONS OF SAID REPORTS DATED: FEBRUARY 13, 2004. PREPARED BY CTE, INC. & DATED: JULY 19, 2013 PREPARED BY GEOCON, INC.

BY: _____ R.C.E. _____ EXP _____

GEOCON, INC
6960 FLANDERS DRIVE
SAN DIEGO, CA 92121
(858) 558-6900

DEFENSE OF LAWSUITS AND INDEMNITY

THE APPLICANT SHALL:

- DEFEND, INDEMNIFY AND HOLD HARMLESS THE COUNTY, ITS AGENTS, OFFICERS AND EMPLOYEES FROM ANY CLAIM, ACTION OR PROCEEDING AGAINST THE COUNTY, ITS AGENTS, OFFICERS AND EMPLOYEES TO ATTACK, SET ASIDE, VOID OR ANNUL THIS APPROVAL OR ANY OF THE PROCEEDINGS ACTS OR DETERMINATIONS TAKEN, DONE OR MADE PRIOR TO THIS APPROVAL; AND
- REIMBURSE THE COUNTY, ITS AGENTS, OFFICERS OR EMPLOYEES FOR ANY COURT COSTS AND ATTORNEY'S FEES WHICH THE COUNTY, ITS AGENTS OFFICERS OR EMPLOYEES MAY BE REQUIRED BY A COURT TO PAY AS A RESULT OF SUCH APPROVAL. AT ITS SOLE DISCRETION, THE COUNTY MAY PARTICIPATE AT ITS OWN EXPENSE IN THE DEFENSE OF ANY SUCH ACTION, BUT SUCH PARTICIPATION SHALL NOT RELIEVE THE APPLICANT OF ANY OBLIGATION IMPOSED BY THIS CONDITION. THE COUNTY SHALL NOTIFY THE APPLICANT PROMPTLY OF ANY CLAIM OR ACTION AND COOPERATE FULLY IN THE DEFENSE.

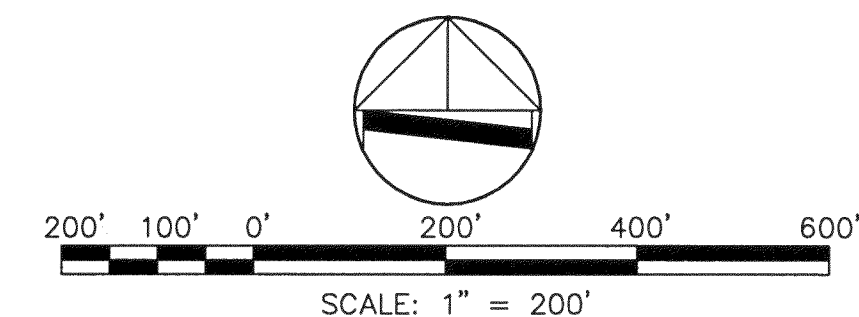
SOLAR ACCESS CERTIFICATE

I DECLARE THAT THIS GRADING PLAN HAS PRESERVED A MINIMUM OF ONE HUNDRED SQ. FT. OF SOLAR ACCESS FOR EACH LOT CREATED BY THIS SUBDIVISION PURSUANT TO SECTION 81.401 (m) OF THE SUBDIVISION ORDINANCE.

RONALD L. HOLLOWAY R.C.E. 29271
EXP. 3/31/15

OWNER'S/PERMITTEE'S

NAME: PARDEE HOMES
ADDRESS: 6025 EDGEWOOD BEND COURT
SAN DIEGO, CA 92130
TELEPHONE NO: (858) 794-2571
SHORT LEGAL DESCRIPTION: A PORTION OF SECTION 19, TOWNSHIP 10 SOUTH RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA
APN NO: 126-310-03, 126-050-81
SITE ADDRESS: OLIVE HILL ROAD 0.3 MILES WEST OF SR 76



UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-800-422-4133

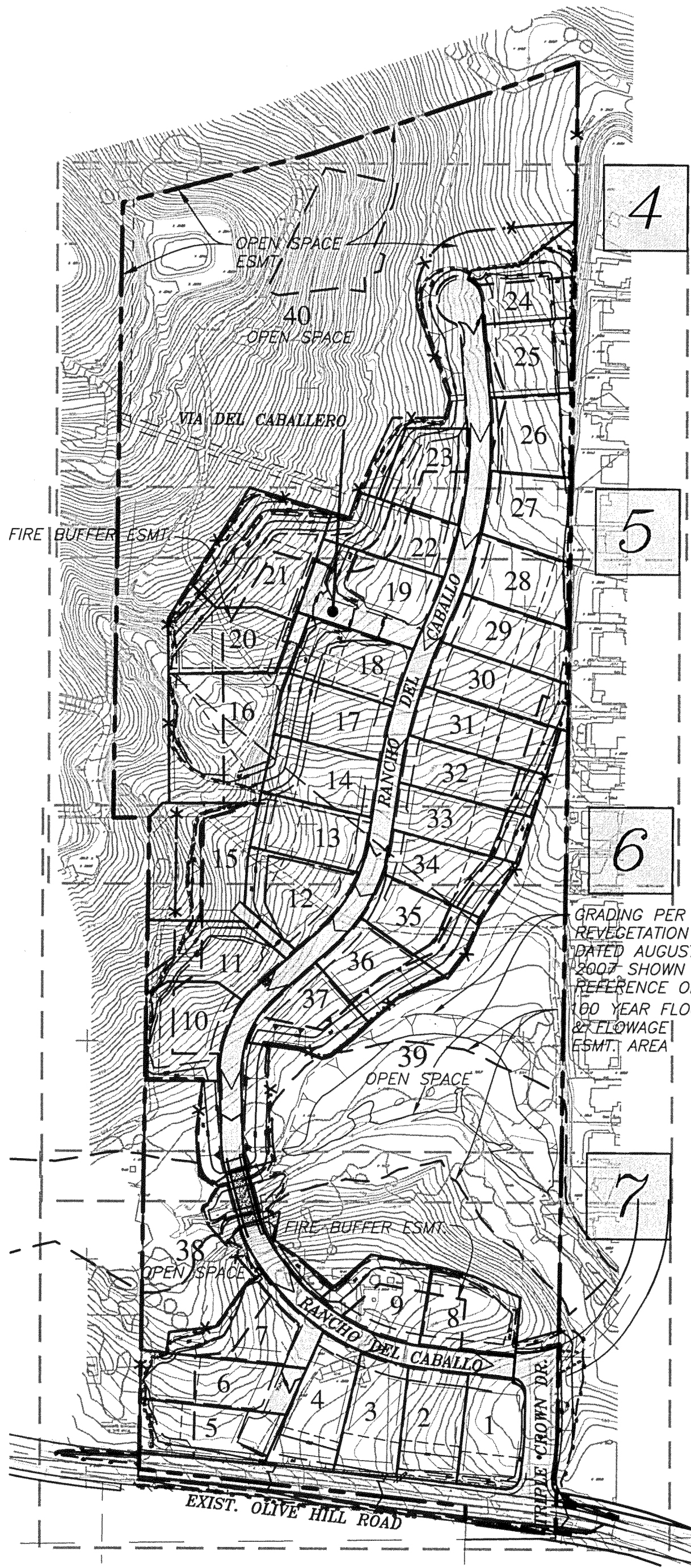


SHEET INDEX

SHEET 1	TITLE SHEET
SHEET 2	NOTES AND SECTIONS
SHEET 3	FENCING AND SIGNING PLAN
SHEET 4-7	GRADING PLAN
SHEET 8	DRAINAGE MANAGEMENT AREA MAP & BIO-BASIN DETAILS
SHEET 9	CIVIL WALL DETAILS
SHEET 10-15	STRUCTURAL WALL PLANS & DETAILS
SHEET 16	EROSION CONTROL/BMP NOTES, PLAN & DETAILS
SHEET 17-18	EROSION CONTROL & BMP PLAN
SHEET 19	KEYSTONE WALL DRAINAGE DETAILS & CONSTRUCTION DETAILS

LEGEND:

SUBDIVISION BOUNDARY.....	---
PROPERTY LINE.....	---
STORM DRAIN.....	---
LOT NUMBER.....	12
SHEET NUMBER.....	7



KEY MAP

IMPORTANT NOTICE

SECTION 4216 14217 OF THE GOVERNMENT CODE REQUIRES A DIGALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIGALERT I. D. NUMBER CALL UNDERGROUND SERVICE ALERT.

TOLL FREE: 1-800-422-4133
TWO WORKING DAYS BEFORE YOU DIG.

WORK TO BE DONE

GRADING AND DRAINAGE WORK CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS, THE CURRENT SAN DIEGO AREA REGIONAL STANDARD DRAWINGS, THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2003 EDITION AND PER THE SAN DIEGO COUNTY GRADING ORDINANCE.

STANDARD SPECIFICATIONS

- STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2003) INCLUDING THE REGIONAL AND SAN DIEGO SUPPLEMENT AMENDMENTS.
- CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (FHWA'S MUTCD 2003 EDITION, AS AMENDED FOR USE IN CALIFORNIA).

STANDARD DRAWINGS

- COUNTY OF SAN DIEGO STANDARD DRAWINGS, OCTOBER 2012 EDITION
- CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS,

SOURCE OF TOPOGRAPHY:

SAN-LO AERIAL SURVEYS, OCTOBER 1990

HYDROLOGY/HYDRAULIC REPORT:

PREPARED BY: BHA, INC.

AREA OF DISTURBANCE

24.99 AC.

OWNER'S STATEMENT

IT IS AGREED THAT FIELD CONDITIONS MAY REQUIRE CHANGES TO THESE PLANS. IT IS FURTHER AGREED THAT THE OWNER (DEVELOPER) SHALL HAVE A REGISTERED CIVIL ENGINEER MAKE SUCH CHANGES, ALTERATIONS OR ADDITIONS TO THESE PLANS WHICH THE DIRECTOR OF PUBLIC WORKS DETERMINE ARE NECESSARY AND DESIRABLE FOR THE PROPER COMPLETION OF THE IMPROVEMENTS.

I FURTHER AGREE TO COMMENCE WORK ON ANY IMPROVEMENTS SHOWN ON THESE PLANS WITHIN EXISTING COUNTY 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 MY CONTROL.

NAME: _____ DATE _____

LEGEND

PROJECT BOUNDARY.....	---
EXISTING CONTOURS.....	---
FINISH CONTOURS.....	---
FLOW LINE ELEVATION.....	600.0 FL
FINISH GRADE ELEVATION.....	600.0 FG
CUT SLOPE (1.5:1 MAXIMUM).....	Y-Y
FILL SLOPE (2:1 MAXIMUM).....	Y-Y
DAYLIGHT LINE (LIMITS OF GRADING).....	---
EARTHEN SWALE.....	---
FLOW DIRECTION.....	3.0%
MASONRY RETAINING WALL.....	SDRSD C-4
AC PAVEMENT.....	---
CUT/FILL LINE.....	--- --- ---
STORM DRAIN PIPES (SIZE & TYPE NOTED).....	SEE TM 4976
TYPE F CATCH BASIN.....	SEE TM 4976
TYPE A CLEANOUT.....	SEE TM 4976
TYPE B CURB INLET.....	SEE TM 4976
TERRACE DITCH.....	SEE DETAIL SHEET 2
DRIVEWAY.....	DS-7
SPLASH WALL.....	SEE DETAIL SHEET 2
RIP RAP.....	D-40

DWG. NO.

SYMBOL

CUT-1.5:1 FOR MINOR SLOPES UNDER 15' HIGH OR IN ROCK 2:1 FOR MAJOR SLOPES	FILL-2:1
EXCAVATION: 195,000 C.Y.	FILL: 195,000 C.Y.
WASTE/IMPORT: 0 C.Y.	

(NOTE: A SEPARATE VALID PERMIT MUST EXIST FOR EITHER WASTE OR IMPORT AREAS)

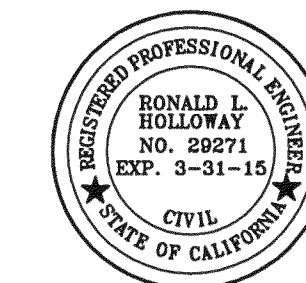
- SPECIAL CONDITION: IF ANY ARCHEOLOGICAL RESOURCES ARE DISCOVERED ON THE SITE OF THIS GRADING DURING GRADING OPERATIONS, SUCH OPERATIONS WILL CEASE IMMEDIATELY, AND THE PERMITTEE WILL NOTIFY THE DIRECTOR OF PUBLIC WORKS OF THE DISCOVERY. GRADING OPERATIONS WILL NOT RECOMMENCE UNTIL THE PERMITTEE HAS RECEIVED WRITTEN AUTHORITY FROM THE DIRECTOR OF PUBLIC WORKS.

SEE SHEET 2 FOR CONTINUATION OF NOTES.

NOTICE: THE ISSUANCE OF THIS PERMIT/APPROVAL BY THE COUNTY OF SAN DIEGO DOES NOT AUTHORIZE THE APPLICANT FOR SAID PERMIT/APPROVAL TO VIOLATE AND FEDERAL, STATE, OR COUNTY LAWS, ORDINANCES, REGULATIONS, OR POLICIES INCLUDING, BUT NOT LIMITED TO, THE FEDERAL ENDANGERED SPECIES ACT AND ANY AMENDMENTS THERETO.

STORMWATER TREATMENT CONTROL BMP'S			
DESCRIPTION / TYPE	SHEET	MAINTENANCE CATEGORY	REVISIONS
BIO RETENTION BASINS	4,5,6,7,8	SECOND	

* BMP'S APPROVED AS PART OF STORMWATER MANAGEMENT PLAN (SWMP) DATED _____ ON FILE WITH DPW. ANY CHANGES TO THE ABOVE BMP'S WILL REQUIRE SWMP REVISION AND PLAN CHANGE APPROVALS.



bha, inc.
land planning, civil engineering, surveying
5115 AVENIDA ENCINAS
SUITE "L"
CARLSBAD, CA. 92008-4387
(760) 931-8700

COUNTY OF SAN DIEGO PDS ENVIRONMENTAL REVIEW	NORTH COUNTY FIRE PROTECTION DISTRICT
APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW.	
APPROVED BY: _____ DATE: _____	APPROVED BY: _____ DATE: _____

DECLARATION OF RESPONSIBLE CHARGE

I 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 THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS. I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE COUNTY OF SAN DIEGO IS CONFINED TO REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

BY: RONALD L. HOLLOWAY DATE: _____
RCE NO: 29271 EXPIRES: 3-31-15

RAINBOW MUNICIPAL WATER DISTRICT

3707 S. HWY 395 FALLBROOK, CA 92028
WATER AND SEWER AGENCY

DATE: _____ APPROVED: GENERAL MANAGER
DATE: _____ APPROVED: DISTRICT ENGINEER
DATE: _____ APPROVED: OPERATIONS MANAGER
NOTE: SIGNATURE EXPIRES 2 YEARS AFTER DATE

COUNTY APPROVED CHANGES

NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO. _____
LANDSCAPE NO. 2006 PDS 2007-3967-07-001
SPECIAL USE PERMIT NO. N/A
TENTATIVE MAP NO. TM 4976 RPL 4R
IMPROVEMENT PERMIT NO. PDS 2006-2140-4976-1

BENCHMARK

DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARK Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT

SHEET 1	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
GRADING PLAN FOR: TM 4976-RPL 4R		
CA.COOR.INDEX 410-1695. 1701		
APPROVED MOHAMMAD FAKHRIDDINE COUNTY ENGINEER	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 29271	GRADING PERMIT NO. PDS 2006-2700-15060

GENERAL NOTES CONTINUATION

- ALL GRADING DETAILS WILL BE IN ACCORDANCE WITH SAN DIEGO COUNTY STANDARD DRAWINGS DS-8, DS-10, DS-11, AND D-75.
- THE CONSTRUCTION OF ONE PCC STANDARD RESIDENTIAL DRIVEWAY PER LOT, LOCATION TO BE DETERMINED IN THE FIELD BY ENGINEER OF WORK. PCC SURFACING OF DRIVEWAY TO EXTEND FROM CURB TO PROPERTY LINE. USE STANDARD DRAWINGS G-14A G-14B, G-14C, G-15 AND G-16
- FINISHED GRADING SHALL BE CERTIFIED BY A REGISTERED CIVIL ENGINEER AND INSPECTED BY THE COUNTY ENGINEER FOR DRAINAGE CLEARANCE. (APPROVAL OF ROUGH GRADING DOES NOT CERTIFY FINISH BECAUSE OF POTENTIAL SURFACE DRAINAGE PROBLEMS THAT MAY BE CREATED BY LANDSCAPING ACCOMPLISHED AFTER ROUGH GRADING CERTIFICATION.
- GRADING AND CLEARING ACTIVITIES ADJACENT TO IDENTIFIED WETLANDS SHALL BE LIMITED TO AREAS SHOWN ON PLAN. STANDARD EROSION CONTROL PROCEDURES SHALL BE USED, AND GRADED SLOPES SHALL BE REVEGETATED AS SHOWN AS POSSIBLE AFTER GRADING.
- FUELING OF CONSTRUCTION VEHICLES OR EQUIPMENT IS PROHIBITED WITHIN 50 FEET OF ALL WETLANDS AND DRAINAGES.

KEYSTONE RETAINING WALL NOTES

- KEYSTONE RETAINING WALLS WILL BE CONSTRUCTED WITH FULL SPECIAL INSPECTION ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
- KEYSTONE RETAINING WALL WILL BE CERTIFIED BY THE ENGINEER OF WORK AS BEING CONSTRUCTED IN ACCORDANCE TO THE MANUFACTURER'S SPECIFICATIONS.

REINFORCED CONCRETE PIPE (RCP) NOTES

- AT MINIMUM, RCP'S SHALL BE MANUFACTURED OF TYPE II PORTLAND CEMENT (SEE TABLE B-1). TYPE II PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, WITH THE FOLLOWING MODIFICATIONS:
 - CEMENT SHALL NOT CONTAIN MORE THAN 0.6 PERCENT BY WEIGHT ALKALIS, CALCULATED AS THE PERCENTAGE OF NA2O PLUS 0.658 TIMES THE PERCENTAGE OF K2O, DETERMINED BY EITHER DIRECT INTENSITY FLAME PHOTOMETRY OR THE ATOMIC ADSORPTION METHOD (PER ASTM C-114).
 - AUTOCALVE EXPANSION SHALL NOT EXCEED 0.5 PERCENT.
 - MORTAR CONTAINING PORTLAND CEMENT AND SAND SHALL NOT EXPAND IN WATER MORE THAN 0.01 PERCENT AND SHALL NOT CONTRACT IN AIR MORE THAN 0.048 PERCENT.
- TYPE V PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, WITH THE MODIFICATIONS LISTED ABOVE FOR TYPE II PORTLAND CEMENT.
- VALUES FOR THE SOLUBLE SULFATE CONTENT OF THE PROPOSED BACKFILL, WATERSHED SOIL, OR RUNOFF SHALL BE PROVIDED WHEN THE SOIL RESISTIVITY MEASURES LESS THAN 3000 OHM-CM.
- USE OF POROUS CONCRETE PIPE WITH SHELL THICKNESS OF 1 INCH OR LESS IS NOT ADVISABLE WHEN SOIL OR BACKFILL PH IS BELOW 6.5.
- PROTECTIVE COATINGS (E.G., COAL TAR OR EPOXY) SHALL BE USED WHEN SOIL OR BACKFILL PH IS BELOW 5.5.
- PROTECTIVE COVER FOR RCP SHALL BE 2 FT WHEN PLACED UNDER UNPAVED AREAS OR UNDER FLEXIBLE PAVEMENT OR UNDER FLEXIBLE PAVEMENT.
- MINIMUM COVER FOR RCP SHALL BE 1 FT WHEN PLACED UNDER RIGID PAVEMENTS.
- MINIMUM PIPE STRENGTH SHALL BE DETERMINED BY PIPE DIAMETER AND DEPTH OF COVER, WITH APPROPRIATE ACCOUNTING FOR BACKFILL PLACEMENT METHOD, AS DESCRIBED IN TABLE B-2.

HIGH DENSITY POLYETHYLENE PIPE (HDPE) NOTES

GENERAL REQUIREMENTS

- HDPE PIPE SHALL CONFORM TO CURRENT AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO). PIPES WITH A DIAMETER OF 4 INCHES THROUGH 36 INCHES SHALL CONFORM TO AASHTO DESIGNATION M-294, TYPE S (SMOOTH INTERIOR). PIPES WITH A DIAMETER OF 42 INCHES THROUGH 48 INCHES SHALL CONFORM TO AASHTO DESIGNATION M-294, TYPE D.
- THE LAST 16 FEET (TYPICALLY TWO SECTIONS) AT EACH EXPOSED END OF A CULVERT SHALL BE CONSTRUCTED OF REINFORCED CONCRETE PIPE (RCP).
- HDPE IS NOT PERMITTED IN AREAS WITH RUNNING GROUND WATER OR IN AREAS WITH UNSTABLE TRENCH WALLS.

HDPE PIPES LARGER THAN 48 IN

- PIPE SHALL BE BACKFILLED WITH CRUSHED ROCK IN ACCORDANCE WITH REGIONAL STANDARD DRAWING NO. S-4, TYPE C ROCK ENVELOPE, INCLUDING APPROPRIATE FILTER FABRIC LINING.
- THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH THE SPECIFIED BACKFILL MATERIAL COMPACTED TO 90 PERCENT RELATIVE COMPACTION PER CALIFORNIA TEST METHOD 216, AS MODIFIED BY THE COUNTY OF SAN DIEGO OR ASTM D-1557, EXCEPT FOR THE PORTION IN THE PAVEMENT SUBGRADE, WHICH SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION.
- PIPE WITH LESS THAN 2 FEET OF COVER UNDER HIGHWAY LOADING SHALL BE CONCRETE-ENCASED IN ACCORDANCE WITH REGIONAL STANDARD DRAWING NO. S-7. THE PORTION ABOVE THE ENCASUREMENT SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE PARAGRAPH ABOVE.
- MAXIMUM PIPE COVER SHALL NOT EXCEED THE AMOUNT SPECIFIED IN THE CURRENT CALTRANS DESIGN MANUAL.

GRADING AND IMPROVEMENT NOTES

1. GRADING AND/OR IMPROVEMENT PLANS SHALL INCLUDE THE REQUIREMENT THAT TEMPORARY FENCES SHALL BE PLACED TO PROTECT ALL OPEN SPACE EASEMENTS SHOWN ON THE TENTATIVE MAP WHICH PRECLUDE GRADING, OR BRUSHING OR CLEARING. THE SUBDIVIDER SHALL SUBMIT TO THE DEPARTMENT OF PLANNING AND LAND USE A STATEMENT FROM A CALIFORNIA REGISTERED ENGINEER, OR LICENSED SURVEYOR THAT TEMPORARY FENCES HAVE BEEN PLACED IN ALL LOCATIONS OF THE PROJECT WHERE PROPOSED GRADING OR CLEARING IS WITHIN 100 FEET OF AN OPEN SPACE EASEMENT BOUNDARY. THE TEMPORARY FENCE LOCATION SHALL BE IDENTIFIED IN THE FIELD BY A CALIFORNIA REGISTERED ENGINEER OR LICENSED SURVEYOR AND POSITIONED BETWEEN THE OPEN SPACE EASEMENT BOUNDARY AND ANY AREA OF PROPOSED DISTURBANCE. THE TEMPORARY FENCING SHALL BE REMOVED ONLY AFTER THE CONCLUSION OF SUCH ACTIVITY.

2. PERMANENT FENCES SHALL BE PLACED ALONG THE OPEN SPACE BOUNDARIES AS SHOWN ON FIGURE 1.1-3 OF THE ENVIRONMENTAL IMPACT REPORT PREPARED FOR THIS PROJECT DATED JULY 15. THE PROPERTY OWNER SHALL SUBMIT TO THE DIRECTOR, DEPARTMENT OF PLANNING AND LAND USE ENGINEER, OR LICENSED SURVEYOR THAT PERMANENT FENCES OR WALLS HAVE BEEN PLACED TO PROTECT FROM INADVERTENT DISTURBANCE ALL OPEN SPACE EASEMENT(S) THAT DO NOT ALLOW GRADING, BRUSHING OR CLEARING. PERMANENT FENCING OR WALLS ARE REQUIRED IN ALL LOCATIONS OF THE PROJECT AS SHOWN ON THE FIGURE 1.1-3 OF THE ENVIRONMENTAL IMPACT REPORT DATED JULY 15, 2002 ON FILE AS ER 98-08-021A WITH THE DEPARTMENT OF PLANNING AND LAND USE AT THE CONCLUSION OF THE GRADING ACTIVITY AND PRIOR TO RECORD PLAN APPROVAL. THE PERMANENT FENCE LOCATION(S) SHALL BE IDENTIFIED IN THE FIELD BY A CALIFORNIA REGISTERED ENGINEER OR LICENSED SURVEYOR AND POSITIONED JUST OUTSIDE OF THE OPEN SPACE EASEMENT. PHOTOGRAPHS AND A BRIEF DESCRIPTION OF DESIGN AND MATERIALS USED SHALL BE SUBMITTED WITH THE STATEMENT FROM THE CALIFORNIA REGISTERED ENGINEER. CONSTRUCTION MATERIALS AND FENCE AND/OR WALL DESIGN ARE SUBJECT TO APPROVAL BY THE DEPARTMENT OF PLANNING AND LAND USE. MINIMUM FENCE OR WALL HEIGHT SHALL BE 4 FEET.

3. DRILLING OPERATIONS FOR BLASTING WITHIN 260 FEET OF THE PROPERTY LINE OF A RESIDENTIAL PROPERTY SHALL BE SHIELDED THROUGH PHYSICAL INTERRUPTION IN THE DIRECT LINE OF SIGHT FROM THE SOURCE TO THE RECEIVER.

4. A QUALIFIED ACOUSTICIAN SHALL MONITOR NOISE LEVELS AT THE RESIDENTIAL PROPERTY LINE MOST AFFECTED BY CONSTRUCTION OPERATIONS (I.E. ALONG THE NORTHERN PROJECT SITE BOUNDARY BOTH WEST AND EAST OF CAMINO DEL ARROYO DRIVE). WHEN A DAILY NOISE "DOSE" HAS BEEN ACCUMULATED SUFFICIENT TO EQUAL 75 dB(A) Leq(8), DRILLING OR CONSTRUCTION OPERATIONS SHALL BE TERMINATED FOR THAT DAY.

5. A COUNTY CERTIFIED ARCHAEOLOGIST SHALL FIELD CHECK THE RIDGETOPS WITHIN THE LIMITS OF GRADING FOLLOWING BRUSHING AND CLEARING AND PRIOR TO GRADING ACTIVITIES. SHOULD ARCHAEOLOGICAL RESOURCES BE DISCOVERED DURING MONITORING, A GRADING MONITORING AND DATA RECOVERY PROGRAM SHALL BE IMPLEMENTED. THIS PROGRAM SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, THE FOLLOWING ACTIONS:

A. THE COUNTY CERTIFIED ARCHAEOLOGIST/HISTORIAN SHALL ATTEND THE PRE-GRADING MEETING WITH THE CONTRACTORS TO EXPLAIN AND COORDINATE THE REQUIREMENTS OF THE MONITORING PROGRAM.

B. DURING THE ORIGINAL CUTTING OF PREVIOUSLY UNDISTURBED DEPOSITS, THE ARCHAEOLOGICAL MONITOR(S) SHALL BE ON-SITE FULL-TIME TO PERFORM PERIODIC INSPECTIONS OF THE EXCAVATIONS, THE FREQUENCY OF INSPECTIONS WILL DEPEND ON THE RATE OF EXCAVATION, THE MATERIALS EXCAVATED, AND THE PRESENCE AND ABUNDANCE OF ARTIFACTS AND FEATURES.

C. IN THE EVENT THAT PREVIOUSLY UNIDENTIFIED CULTURAL RESOURCES ARE DISCOVERED, THE ARCHAEOLOGIST SHALL HAVE THE AUTHORITY TO DIVERT, DIRECT OR TEMPORARILY HALT GRADING ACTIVITIES IN THE AREA OF DISCOVERY TO ALLOW EVALUATION OF POTENTIAL SIGNIFICANT CULTURAL RESOURCES. THE ARCHAEOLOGIST SHALL CONTACT THE COUNTY ARCHAEOLOGIST, IN CONSULTATION WITH THE COUNTY ARCHAEOLOGIST, SHALL DETERMINE THE SIGNIFICANCE OF THE DISCOVERED RESOURCES. THE COUNTY ARCHAEOLOGIST MUST CONCUR WITH THE EVALUATION BEFORE CONSTRUCTION ACTIVITIES WILL BE ALLOWED TO RESUME IN THE AFFECTED AREA. ISOLATES AND CLEARLY NON-SIGNIFICANT DEPOSITS WILL BE MINIMALLY DOCUMENTED IN THE FIELD AND THE MONITORED GRADING CAN PROCEED. FOR SIGNIFICANT CULTURAL RESOURCES, A RESEARCH DESIGN AND DATA RECOVERY PROGRAM TO MITIGATE IMPACTS SHALL BE PREPARED BY THE CONSULTING ARCHAEOLOGIST AND APPROVED BY THE COUNTY ARCHAEOLOGIST, THEN CARRIED OUT USING PROFESSIONAL ARCHAEOLOGICAL METHODS. IF ANY HUMAN BONES ARE DISCOVERED, THE COUNTY CORONER SHALL BE CONTACTED. IN THE EVENT THAT THE REMAINS ARE OF NATIVE AMERICAN ORIGIN, THE MOST LIKELY DESCENDANT, AS IDENTIFIED BY THE NATIVE AMERICAN HERITAGE COMMISSION, SHALL BE CONTACTED IN ORDER TO DETERMINE PROPER TREATMENT AND DISPOSITION OF THE REMAINS.

1) BEFORE CONSTRUCTION ACTIVITIES ARE ALLOWED TO RESUME IN THE AFFECTED AREA, THE ARTIFACTS SHALL BE RECOVERED AND FEATURES RECORDED USING PROFESSIONAL ARCHAEOLOGIST METHODS, ACCORDING TO THE RESEARCH DESIGN AND DATA RECOVERY PROGRAM.

2) ALL CULTURAL MATERIAL COLLECTED DURING THE GRADING MONITORING PROGRAM SHALL BE PROCESSED AND CURATED ACCORDING TO CURRENT PROFESSIONAL REPOSITORY STANDARDS. THE COLLECTIONS AND ASSOCIATED RECORDS SHALL BE TRANSFERRED, INCLUDING TITLE, TO AN APPROPRIATE CURATION FACILITY WITHIN SAN DIEGO COUNTY, TO BE ACCOMPANIED BY PAYMENT OF THE FEES NECESSARY FOR PERMANENT CURATION.

3) A REPORT DOCUMENTING THE FIELD AND ANALYSIS RESULTS AND INTERPRETING THE ARTIFACT AND RESEARCH DATA WITHIN THE RESEARCH CONTEXT SHALL BE COMPLETED AND SUBMITTED TO THE SATISFACTION OF THE DIRECTOR OF PLANNING AND LAND USE PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS. THE REPORT WILL INCLUDE DEPARTMENT OF PARKS AND RECREATION PRIMARY AND ARCHAEOLOGICAL SITE FORMS.

6. A COUNTY CERTIFIED, QUALIFIED ORNITHOLOGIST, SHALL PERFORM A SURVEY TO BE COMPLETED NOT MORE THAN ONE WEEK PRIOR TO INITIATION OF BLASTING, CLEARING AND GRADING ACTIVITIES, AND BASED ON THE SURVEY, CERTIFY IN WRITING TO THE COUNTY DEPARTMENT OF PLANNING AND LAND USE THAT THERE ARE NO NESTING RAPTORS ON THE PROJECT SITE. IF THE ORNITHOLOGIST'S SURVEY LOCATES NESTING RAPTORS, THE ORNITHOLOGIST SHALL CERTIFY THAT AN AREA NOT LESS THAN 800 FEET RADIUS FROM THE NEST(S) HAS BEEN FLAGGED TO IDENTIFY A CONSTRUCTION-FREE ZONE TO AVOID DISTURBANCE TO NESTING RAPTORS.

7. PRIOR TO THE START OF GRADING, DRILLING AND BLASTING ACTIVITIES, A COUNTY CERTIFIED BIOLOGIST SHALL CONDUCT A PROTOCOL SURVEY WITHIN THE NATIVE COASTAL SAGE SCRUB TO DETERMINE IF ANY NESTING CALIFORNIA GNATCATCHER PAIRS ARE PRESENT. IF NESTING PAIRS ARE LOCATED WITHIN 500 FEET OF THE PROPOSED LIMITS OF GRADING (INCLUDES LIMITS OF DRILLING AND BLASTING), ONE OF THE TWO FOLLOWING MITIGATION MEASURES SHALL BE IMPLEMENTED:

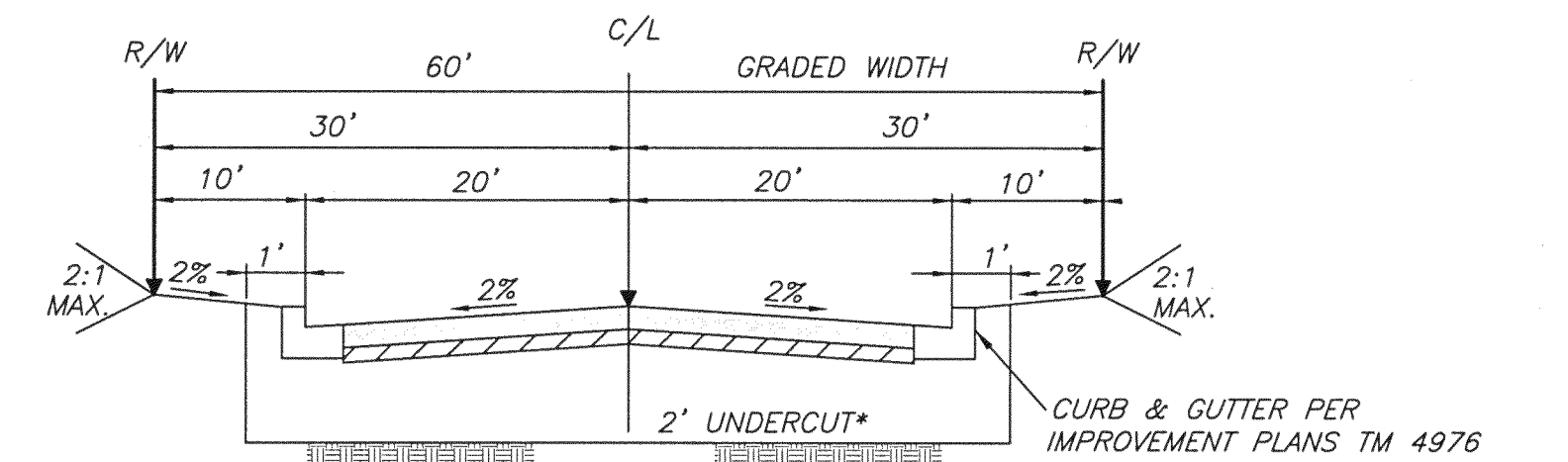
A. CONSTRUCTION ACTIVITIES (DRILLING, BLASTING OR GRADING) SHALL BE POSTPONED UNTIL AFTER THE BREEDING SEASON ENDS (BREEDING SEASON IS FEBRUARY 15 THROUGH AUGUST 15), OR

B. TEMPORARY NOISE BARRIERS (EARTHEN BERMS OR SOLID FENCING) SHALL BE ERECTED BETWEEN THE NOISE SOURCE AND RECEIVER TO REDUCE THE NOISE TO A LEVEL THAT WILL NOT DISTURB NESTING GNATCATCHER (60 dB Leq). THE LOCATION AND HEIGHT OF THE TEMPORARY BARRIER SHALL DEPEND UPON WHERE BREEDING PAIRS OF GNATCATCHERS ARE FOUND AND UPON THE DISTANCE BETWEEN THE CONSTRUCTION NOISE SOURCE AND THE RECEIVER (BREEDING PAIRS). THE PEAK HOURLY NOISE LEVEL AND REQUIRED BERM HEIGHT TO ACHIEVE THE NECESSARY MITIGATION ARE PROVIDED IN THE ENVIRONMENTAL IMPACT REPORT, APPENDIX F, PAGE 9. NOISE BARRIER MATERIALS SHALL CONSIST OF EITHER AN EARTHEN BERM OR PLYWOOD FENCING, AND SHALL BE LOCATED AT THE EDGE OF THE LIMITS OF GRADING FOR DISTANCES NO GREATER THAN 200-300 LINEAR FEET.

LEGEND OF ABBREVIATIONS

AB - AGGREGATE CONCRETE BASE	IE - INVERT ELEVATION
AC - ASPHALT CONCRETE	LT - LEFT
BC - BEGIN CURVE	MH - MANHOLE
BVC - BEGIN VERTICAL CURVE	NTS - NOT TO SCALE
BW - BOTTOM OF WALL	P - PAVEMENT
C&G - CURB AND GUTTER	PCR - POINT OF CURB RETURN
CL - CENTERLINE	PRC - POINT OF REVERSE CURVE
CO - CLEANOUT	PVC - POLYVINYL CHLORIDE
E - ELECTRIC	RCP - REINFORCED CONCRETE PIPE
EC - END CURVE	RT - RIGHT
EOR - END CURVE RETURN	RF - RIGHT-OF-WAY
EP - EDGE OF PAVEMENT	S - SEWER
EVC - END VERTICAL CURVE	SD - STORM DRAIN
FC - FACE OF CURB	SG - SUBGRADE
FG - FINISHED GRADE	SW - SIDEWALK
FL - FLOWLINE	T - TELEPHONE
FS - FINISHED SURFACE/FIRE SERVICE	TB - TOP OF BERM/DIKE
G - GAS	TC - TOP OF CURB
GB - GRADE BREAK	TF - TOP OF FOOTING
HDPE - HIGH DENSITY POLYETHYLENE	TG - TOP OF GRATE
HP - HIGH POINT	TW - TOP OF WALL
I - IRRIGATION	W - WATER

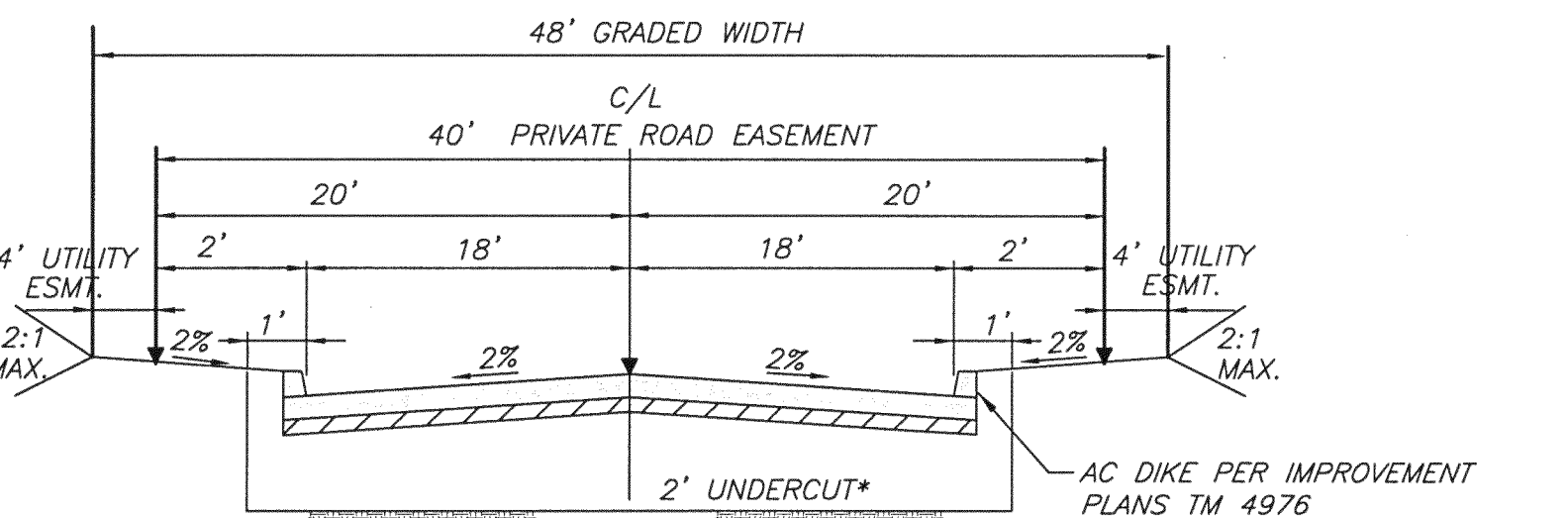
ROUGH GRADE SECTIONS



TRIPLE CROWN DRIVE (PUBLIC)

N.T.S.

*=SEE NOTE 2 BELOW

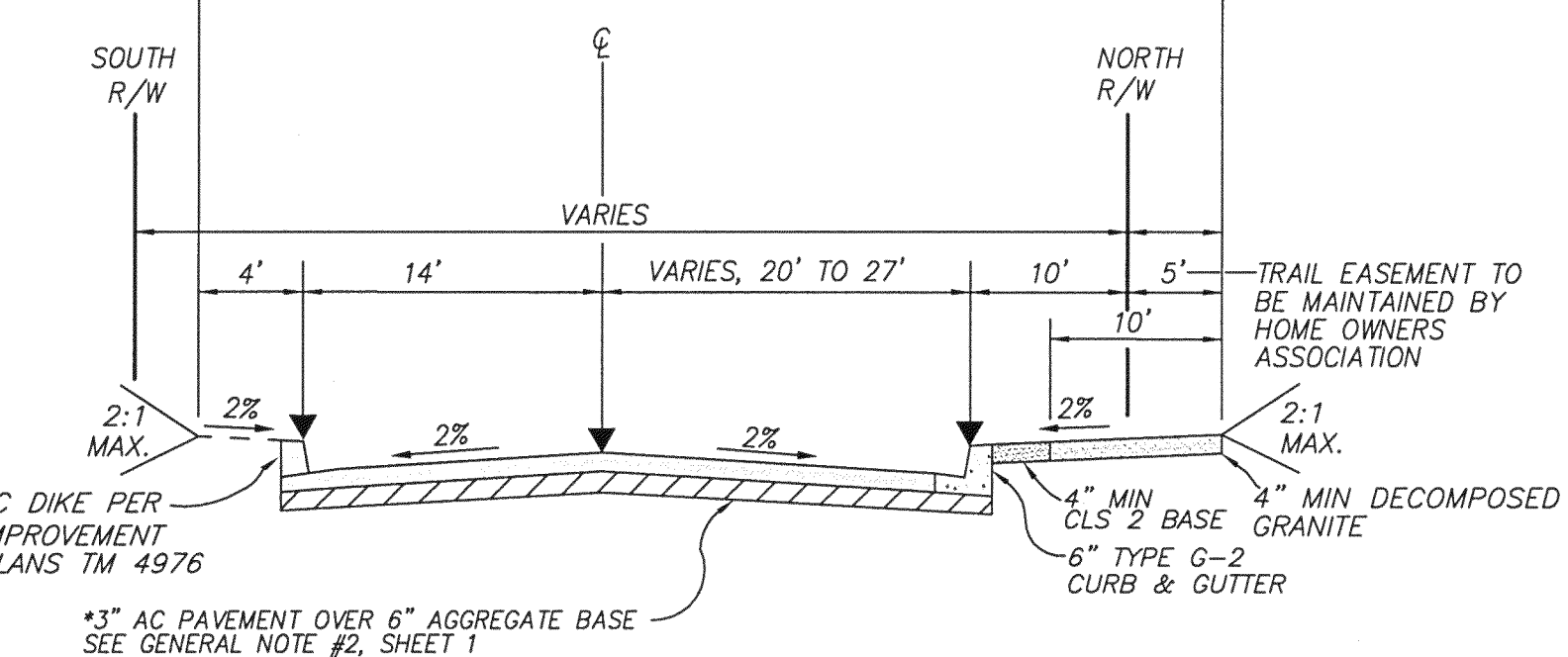


RANCHO DEL CABALLO & VIA DEL CABALLERO

(BOTH PRIVATE ROADS PER 3.1.C)

N.T.S.

*=SEE NOTE 2 BELOW



OLIVE HILL ROAD (SC100.1) (PUBLIC)

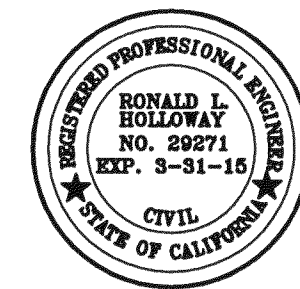
N.T.S.

*=SEE NOTE 2 BELOW

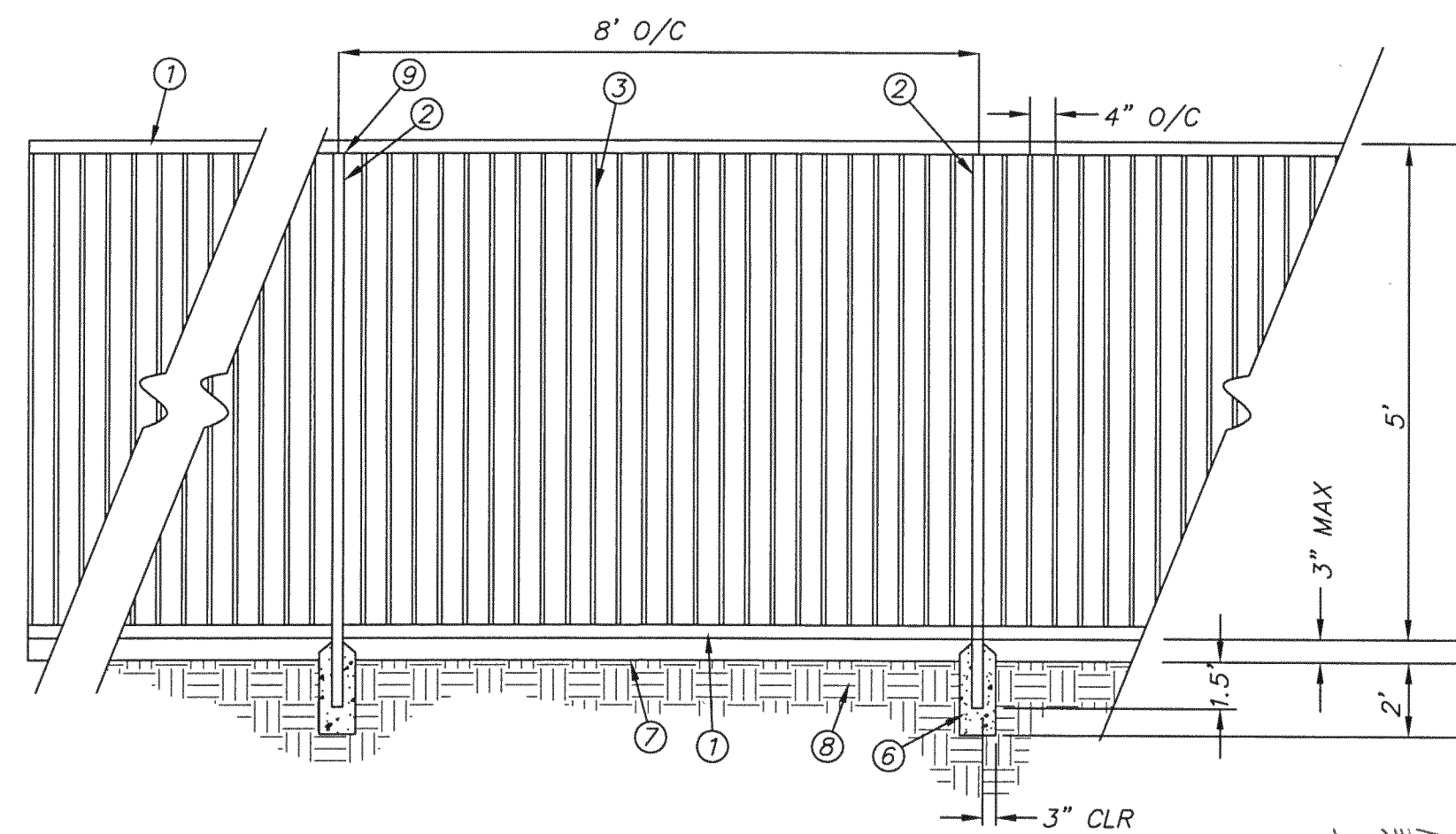
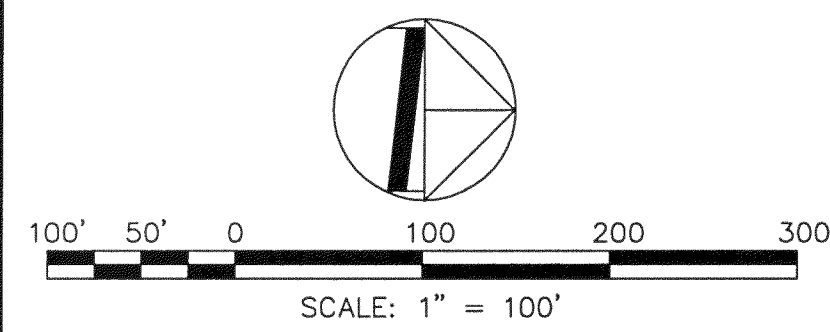
NOTES:

- ▼ INDICATES ELEVATION AS SHOWN ON PLANS.
- GRADING AND IMPROVEMENTS SHALL BE IN ACCORDANCE WITH COUNTY OF SAN DIEGO STANDARDS.

COUNTY APPROVED CHANGES				PERMITS		PRIVATE CONTRACT	
NO.	DESCRIPTION:	APPROVED BY:	DATE:	N.O.I. NO.	LANDSCAPE NO.	SHEET	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS
				2006 PDS 2007-3967-07-001	2006 PDS 2007-3967-07-001	2	19 SHEETS
				SPECIAL USE PERMIT NO. N/A	TENTATIVE MAP NO. TM 4976 RPL 4R	GRADING PLAN FOR:	
				IMPROVEMENT PERMIT NO. PDS 2006-2140-4976-1		TM 4976-RPL 4R	
				BENCHMARK			
				DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.			
				CA.COOR.INDEX 410-1695.1701			
				APPROVED MOHAMMAD FAKHRIDDINE COUNTY ENGINEER		ENGINEER OF WORK RONALD L. HOLLOWAY REC 2927T	
				Date		GRADING PERMIT NO: PDS 2006-2700-15060	



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FENCE DETAIL
NTS

DETAIL LEGEND

- ① 1-5/8" T.S. TOP AND BOTTOM RAILS. ATTACH TO POSTS W/GALV. STEEL MOUNTING BRACKETS.
- ② 2-1/2" SQ. T.S. POSTS W/FLAT CAPS AT TOP.
- ③ 1" DIA T.S. PICKETS AT 4" O.C.
- ④ CONCRETE FOOTING, SLOPE TO DRAIN AWAY FROM POST.
- ⑤ FINISH GRADE.
- ⑥ COMPACTED SUBGRADE AS PER SOILS REPORT.
- ⑦ GALVANIZED STEEL MOUNTING BRACKETS AT TOP AND BOTTOM. WELD TO PANEL IN SHOP AND WELD TO POST IN FIELD.

NOTES:

FINISH W/ (1) COAT OF METAL PRIMER AND (2) COATS METAL EXTERIOR GLOSS, COLOR TO BE SHERWIN WILLIAMS "TRICORN BLACK" NO. SW625B.

ALL TUBING SHALL HAVE BOTH ENDS WELDED CLOSED AND GROUND SMOOTH.

ALL METAL FENCING CONNECTIONS SHALL BE CONTINUOUSLY WELDED. THERE SHALL BE NO WELDING OF FENCE MATERIALS IN THE FIELD UNLESS NOTED OTHERWISE.

ALL MATERIALS TO BE FULLY GALVANIZED BEFORE INSTALLATION IN FIELD.

FENCE PANELS SHALL BE PRE-MEASURED AND INSTALLED W/GALVANIZED STEEL MOUNTING BRACKETS.

FENCE DETAIL FOR REFERENCE ONLY SEE FENCE AND WALL PLAN.

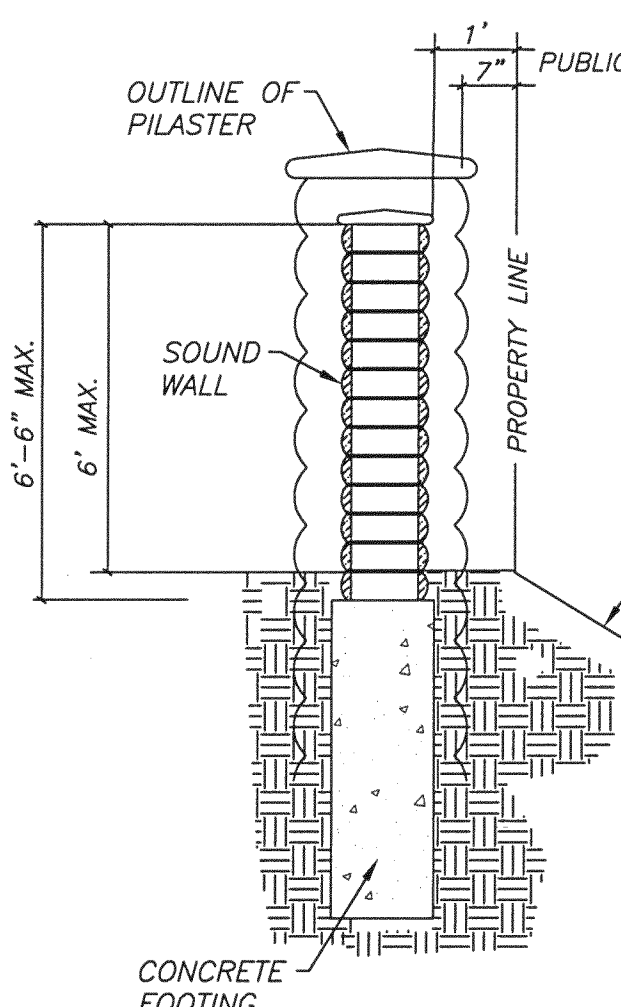
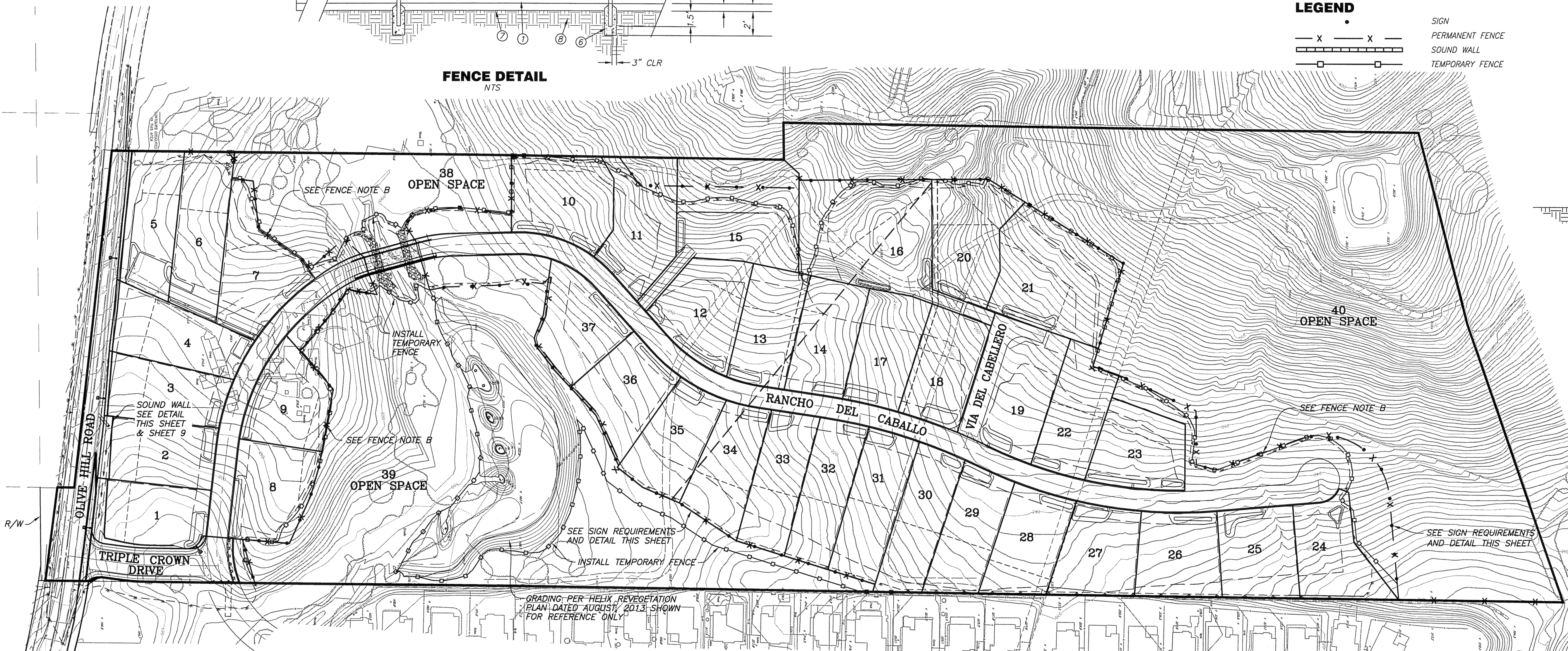
LEGEND

- SIGN
- X — PERMANENT FENCE
- — — SOUND WALL
- □ □ TEMPORARY FENCE

SENSITIVE ENVIRONMENTAL REOURCES DISTURBANCE BEYOND THIS POINT IS RESTRICTED BY EASEMENT

INFORMATION:
CONTACT COUNTY OF SAN DIEGO
DEPARTMENT OF PLANNING AND
LAND USE REF. 91-02-032A

SIGN DETAIL
NTS



SOUND WALL DETAIL
NTS

SOUND WALL NOTES:

SOUND WALL DETAIL FOR REFERENCE ONLY SEE SHEET 9.

REFER TO PLAN MATERIAL COLORS, FINISHES AND MANUFACTURERS.

TOP OF WALL SHALL BE LEVEL.

SPECIFIC ENVIRONMENTAL NOTE:

C.20.c PRIOR TO ROUGH GRADING SIGN OFF, PROVIDE EVIDENCE TO THE SATISFACTION OF THE DIRECTOR OF PLANNING AND LAND USE; THAT A MINIMUM 4.5 FOOT SOUND BARRIER HAS BEEN CONSTRUCTED ALONG LOTS 1, 2, AND 3 AS INDICATED ON FENCING AND SIGNAGE PLAN (SHEET 3) PURSUANT TO THE APPROVED GRADING PLAN L-15060. EVIDENCE OF THE WALL SHALL CONSIST OF THE FOLLOWING:

- A. A SIGNED, STAMPED STATEMENT FROM A CALIFORNIA REGISTERED ENGINEER OR LICENSED SURVEYOR, AND PHOTOGRAPHIC EVIDENCE THAT THE SOUND WALL HAS BEEN CONSTRUCTED.

FENCE NOTE A:

INSTALL TEMPORARY FENCE TO PROTECT ALL OPEN SPACE EASEMENTS WHICH INCLUDE GRADING OR BRUSHING OR CLEARING IN ALL LOCATIONS OF THE PROJECT WHERE PROPOSED GRADING OR CLEARING IS WITHIN 100 FEET OF AN OPEN SPACE EASEMENT BOUNDARY.

PRIOR TO GRADING AND/OR IMPROVEMENTS AND PRIOR TO PRECONSTRUCTION CONFERENCE THE TEMPORARY FENCING AND OPEN SPACE SIGNS MUST BE INSTALLED PURSUANT TO SHEET 3 THROUGH 8 OF THIS PLAN.

FENCE NOTE B:

INSTALL PERMANENT FENCE OR WALL PER THE FENCING AND SIGNING PLAN. INSTALL SIGNS PER SIGN REQUIREMENT SHEET 3.

THE SIGNS SHALL BE SPACED NO MORE THAN 50' APART AND SHALL BE CORROSION RESISTANT. A MINIMUM OF 6"x9" IN SIZE ON POST NO LESS THAN THREE FEET IN HEIGHT FROM THE GROUND SURFACE AND SHALL STATE THE FOLLOWING:

"SENSITIVE ENVIRONMENTAL REOURCES DISTURBANCE BEYOND THIS POINT IS RESTRICTED BY EASEMENT

INFORMATION:
CONTACT COUNTY OF SAN DIEGO, DEPARTMENT OF PLANNING AND LAND USE
REF: 91-02-032A"

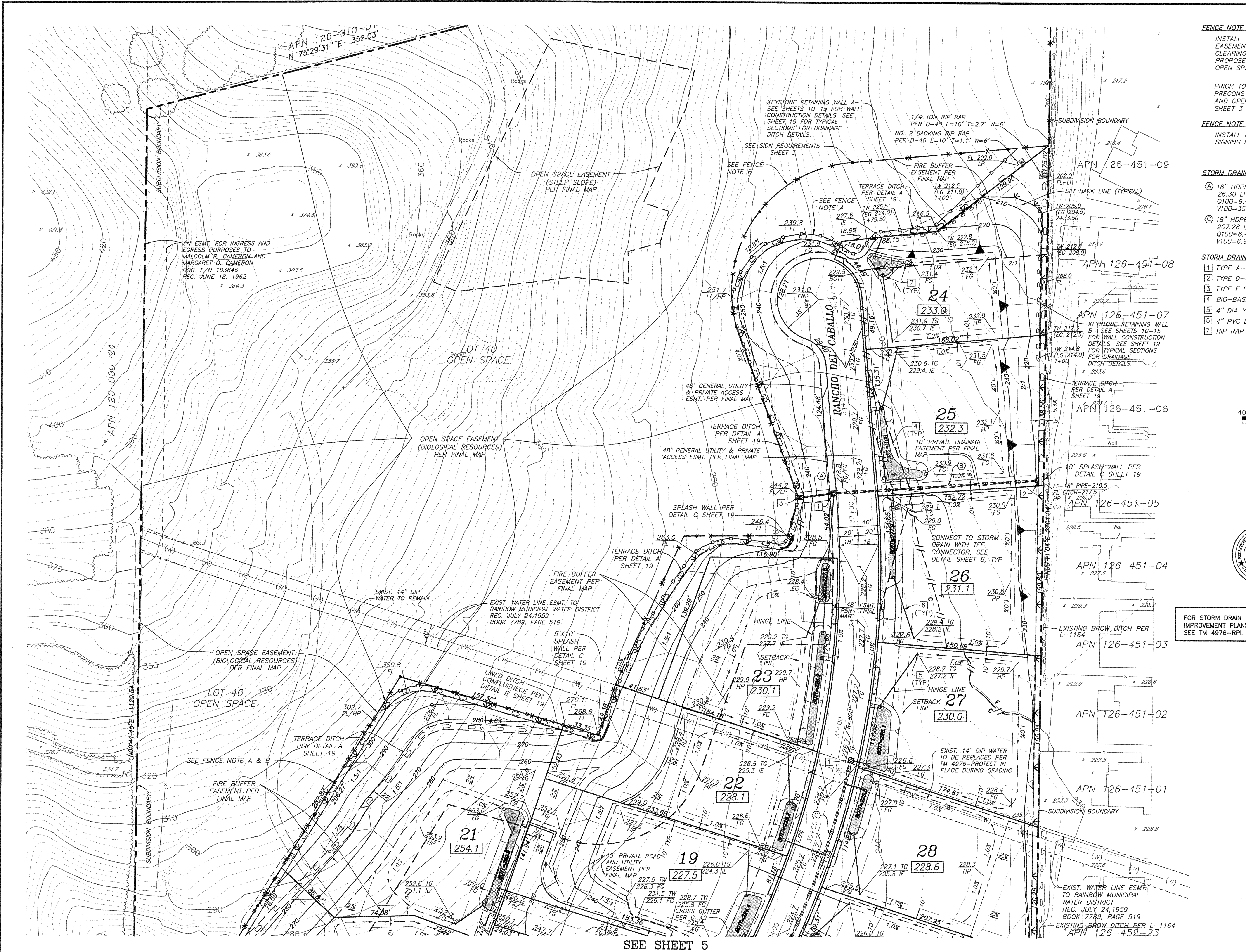


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COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS	
N.O.I. NO.	2006 PDS 2007-3967-07-001
LANDSCAPE NO.	N/A
SPECIAL USE PERMIT NO.	TM 4976 RPL 4R
TENTATIVE MAP NO.	PDS 2006-2140-4976-1
IMPROVEMENT PERMIT NO.	
BENCH MARK	
DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.	

PRIVATE CONTRACT		
SHEET 3	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
GRADING PLAN FOR:		
FENCING AND SIGNING PLAN		
CA.COOR.INDEX 410-1695.1701		
APPROVED MOHAMAD FAKHRRIDINE COUNTY ENGINEER	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 28271	
	GRADING PERMIT NO: PDS 2006-2700-15060	



FENCE NOTE A:
 INSTALL TEMPORARY FENCE TO PROTECT ALL OPEN SPACE EASEMENTS WHICH INCLUDE GRADING OR BRUSHING OR CLEARING IN ALL LOCATIONS OF THE PROJECT WHERE PROPOSED GRADING OR CLEARING IS WITHIN 100 FEET OF AN OPEN SPACE EASEMENT BOUNDARY.

PRIOR TO GRADING AND/OR IMPROVEMENTS AND PRIOR TO PRECONSTRUCTION CONFERENCE THE TEMPORARY FENCING AND OPEN SPACE SIGNS MUST BE INSTALLED PER SUANT TO SHEET 3 THROUGH 8 OF THIS PLAN.

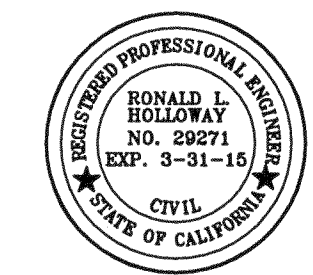
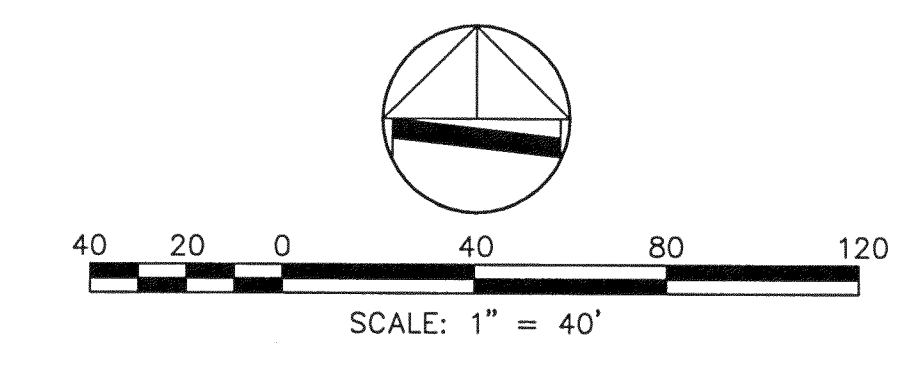
FENCE NOTE B:
 INSTALL PERMANENT FENCE OR WALL PER THE FENCING AND SIGNING PLAN. INSTALL SIGNS PER SIGN REQUIREMENT SHEET 3.

STORM DRAIN DATA (SHEET SPECIFIC):

- Ⓐ 18" HDPE
26.30 LF @ 69.2%
Q100=9.43 CFS
V100=35.76 FPS
- Ⓑ 18" HDPE
184.93 LF @ 0.5%
Q100=14.42 CFS
V100=8.16 FPS
- Ⓒ 18" HDPE
207.28 LF @ 1.00%
Q100=6.45 CFS
V100=6.96 FPS

STORM DRAIN CONSTRUCTION NOTES (SHEET SPECIFIC):

- 1 TYPE A-4 CLEANOUT
- 2 TYPE D-34 HEADWALL
- 3 TYPE F CATCH BASIN
- 4 BIO-BASIN PER DETAIL ON SHEET 8
- 5 4" DIA YARD DRAIN
- 6 4" PVC DRAIN PIPE
- 7 RIP RAP



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FOR STORM DRAIN AND STREET IMPROVEMENT PLANS SEE TM 4976-RPL 4R

COUNTY APPROVED CHANGES

NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO. _____
 LANDSCAPE NO. 2006 PDS 2007-3967-07-001
 SPECIAL USE PERMIT NO. N/A
 TENTATIVE MAP NO. TM 4976 RPL 4R
 IMPROVEMENT PERMIT NO. PDS 2006-2140-4976-1

BENCH MARK

DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARK Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT

SHEET 4	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
GRADING PLAN FOR:		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1695, 1701		
APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER BY:	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 29271	GRADING PERMIT NO. PDS 2006-2700-15060
Date		

SEE SHEET 5

SEE SHEET 4



APN 126-451-03

APN 126-451-02

APN 126-451-01

APN 126-452-22

APN 126-452-21

APN 126-452-20

APN 126-452-19

APN 126-452-18

APN 126-452-17

APN 126-452-16

FENCE NOTE A:
 INSTALL TEMPORARY FENCE TO PROTECT ALL OPEN SPACE EASEMENTS WHICH INCLUDE GRADING OR BRUSHING OR CLEARING IN ALL LOCATIONS OF THE PROJECT WHERE PROPOSED GRADING OR CLEARING IS WITHIN 100 FEET OF AN OPEN SPACE EASEMENT BOUNDARY.

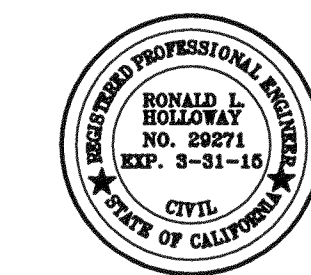
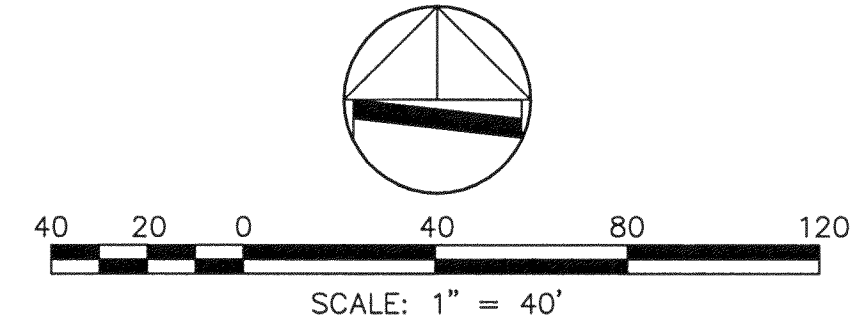
PRIOR TO GRADING AND/OR IMPROVEMENTS AND PRIOR TO PRECONSTRUCTION CONFERENCE THE TEMPORARY FENCING AND OPEN SPACE SIGNS MUST BE INSTALLED PER SHEET 3 THROUGH 8 OF THIS PLAN.

FENCE NOTE B:
 INSTALL PERMANENT FENCE OR WALL PER THE FENCING AND SIGNING PLAN. INSTALL SIGNS PER SIGN REQUIREMENT SHEET 3.

STORM DRAIN DATA (SHEET SPECIFIC):

(A) 18" HDPE 207.28 LF @ 1.00% Q100=6.45 CFS V100=6.96 FPS	(B) 24" HDPE 135.01 LF @ 1.00% Q100=19.85 CFS V100=9.13 FPS	(C) 18" HDPE 216.57 LF @ 1.81% Q100=16.63 CFS V100=9.41 FPS
(D) 18" HDPE 65.51 LF @ 39.58% Q100=16.63 CFS V100=33.57 FPS	(E) 24" HDPE 159.34 LF @ 4.50% Q100=16.63 CFS V100=15.44 FPS	(F) 36" HDPE 210.01 LF @ 1.00% Q100=34.28 CFS V100=10.56 FPS
(G) 12" HDPE 237.18 LF @ 6.00% Q100=4.33 CFS V100=12.31 FPS	(H) 36" HDPE 285.58 LF @ 1.61% Q100=44.71 CFS V100=13.46 FPS	

- STORM DRAIN CONSTRUCTION NOTES (SHEET SPECIFIC):**
- TYPE A-4 CLEANOUT
 - TYPE F CATCH BASIN
 - TYPE F (MODIFIED) CATCH BASIN
 - BIO-BASIN PER DETAIL ON SHEET B
 - 4" DIA YARD DRAIN
 - 4" PVC DRAIN PIPE
 - RIP RAP



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COUNTY APPROVED CHANGES

NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO.	2006 PDS 2007-3967-07-001
LANDSCAPE NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4976 RPL 4R
IMPROVEMENT PERMIT NO.	PDS 2006-2140-4976-1

BENCH MARK

DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS 063 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT

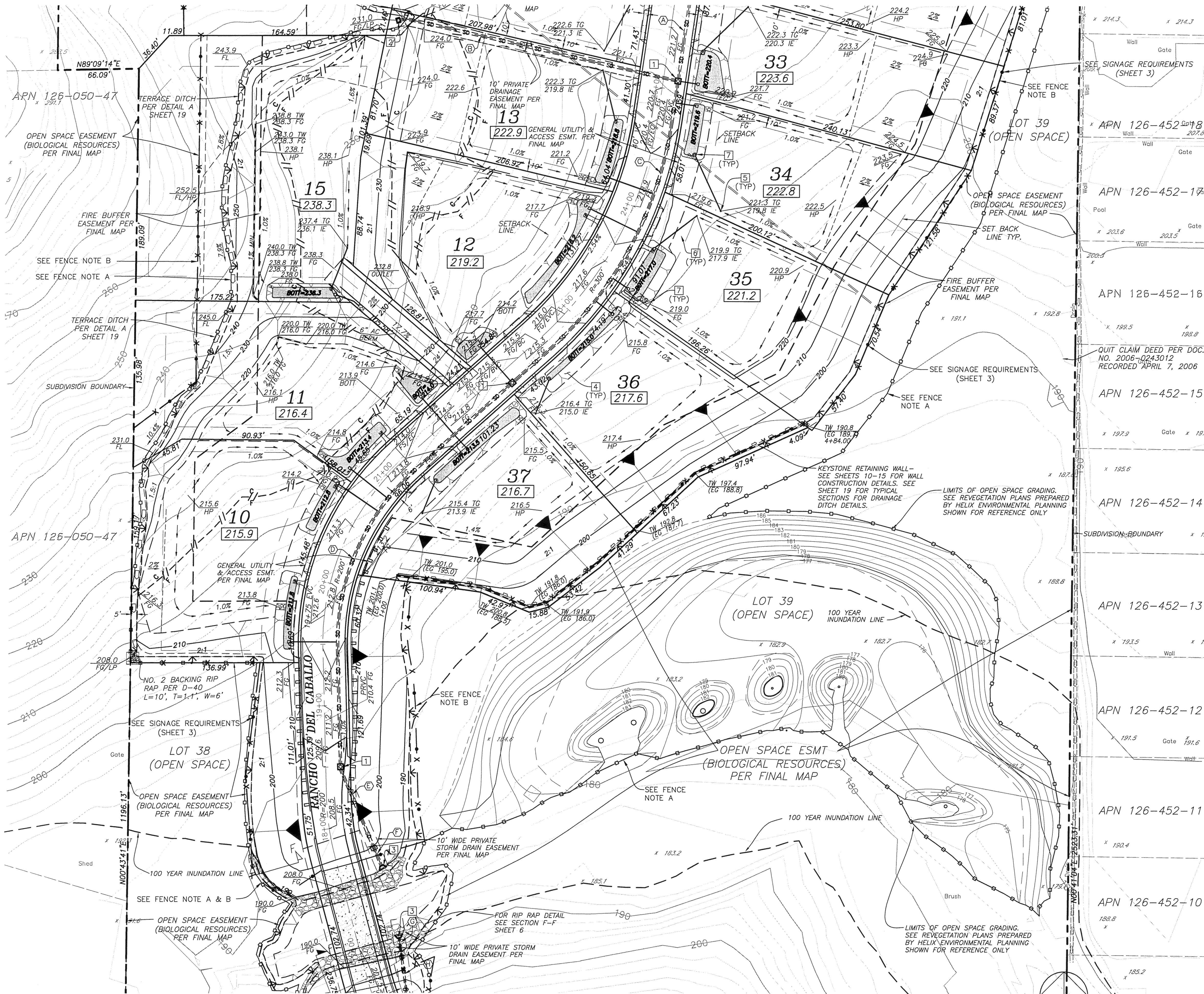
SHEET 5	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
GRADING PLAN FOR:		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1695, 1701		
APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 29271	
By: _____	GRADING PERMIT NO. PDS 2006-2700-15060	Date: _____

FOR STORM DRAIN & ST. IMP. PLAN SEE TM 4976-RPL4R

SEE SHEET 6

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SEE SHEET 5



FENCE NOTE A:
 INSTALL TEMPORARY FENCE TO PROTECT ALL OPEN SPACE EASEMENTS WHICH INCLUDE GRADING OR BRUSHING OR CLEARING IN ALL LOCATIONS OF THE PROJECT WHERE PROPOSED GRADING OR CLEARING IS WITHIN 100 FEET OF AN OPEN SPACE EASEMENT BOUNDARY.

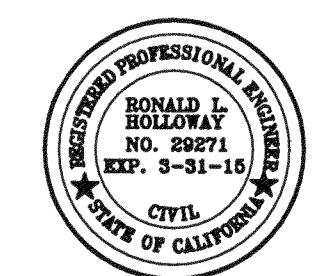
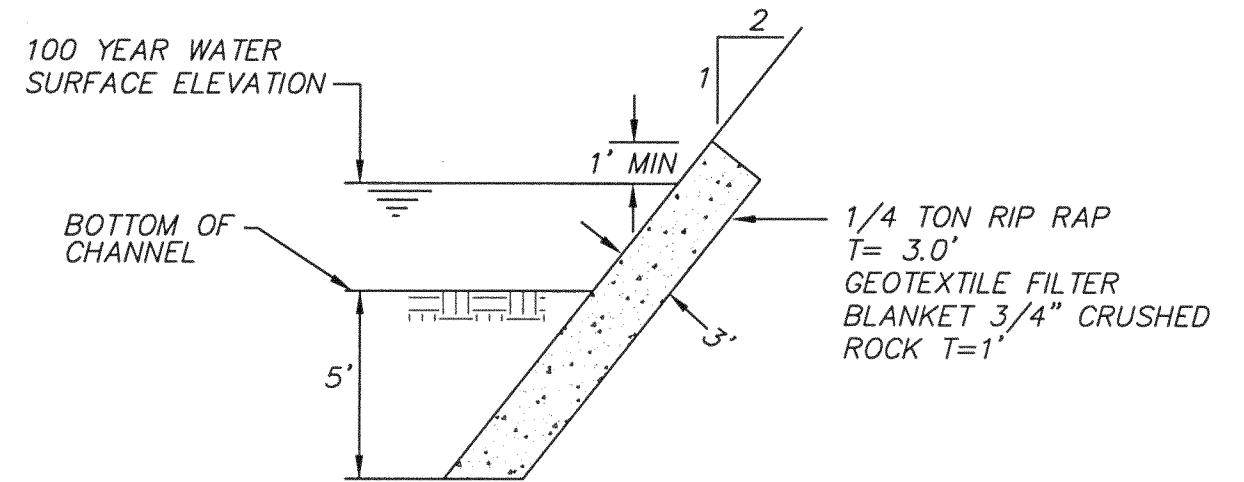
FENCE NOTE B:
 PRIOR TO GRADING AND/OR IMPROVEMENTS AND PRIOR TO PRECONSTRUCTION CONFERENCE THE TEMPORARY FENCING AND OPEN SPACE SIGNS MUST BE INSTALLED PURSUANT TO SHEET 3 THROUGH 8 OF THIS PLAN.

FENCE NOTE C:
 INSTALL PERMANENT FENCE OR WALL PER THE FENCING AND SIGNING PLAN. INSTALL SIGNS PER SIGN REQUIREMENT SHEET 3.

STORM DRAIN DATA (SHEET SPECIFIC):

(A) 36" HDPE 210.01 LF @ 1.00% Q100=34.28 CFS V100=10.56 FPS	(B) 12" HDPE 237.18 LF @ 6.00% Q100=4.33 CFS V100=12.31 FPS	(C) 36" HDPE 285.58 LF @ 1.61% Q100=44.71 CFS V100=13.46 FPS
(D) 36" HDPE 361.22 LF @ 1.08% Q100=49.61 CFS V100=11.90 FPS	(E) 36" HDPE 69.60 LF @ 12.71% Q100=49.61 CFS V100=29.41 FPS	(F) 36" RCP 16.00 LF @ 12.71% Q100=18.15 CFS V100=3.70 FPS
(G) 12" RCP 16.00 LF @ 18.81% Q100=3.93 CFS V100=7.21 FPS	(H) 12" HDPE 66.61 LF @ 18.81% Q100=4.81 CFS V100=20.63 FPS	*DISCHARGE POINT-VALUES REFLECT DETAINED FLOWRATES

- STORM DRAIN CONSTRUCTION NOTES (SHEET SPECIFIC):**
- 1 TYPE A-4 CLEANOUT
 - 2 TYPE F (MODIFIED) CATCH BASIN
 - 3 TYPE D-34 HEADWALL
 - 4 BIO-BASIN PER DETAIL ON SHEET 8
 - 5 4" DIA YARD DRAIN
 - 6 4" PVC DRAIN PIPE
 - 7 RIP RAP



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COUNTY APPROVED CHANGES

NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO.	2006 PDS 2007-3967-07-001
LANDSCAPE NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4976 RPL 4R
IMPROVEMENT PERMIT NO.	PDS 2006-2140-4976-1

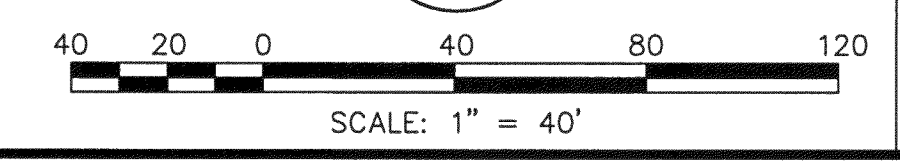
BENCH MARK

DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT

SHEET 6	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
GRADING PLAN FOR:		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1695, 1701		
APPROVED MOHAMAD FAKHRRIDDINE COUNTY ENGINEER	BY:	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 28271
Date		GRADING PERMIT NO: PDS 2006-2700-15060

SEE SHEET 7



FOR STORM DRAIN AND STREET IMPROVEMENT PLAN SEE TM 4976-RPL4R

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SEE SHEET 6

FENCE NOTE A:
 INSTALL TEMPORARY FENCE TO PROTECT ALL OPEN SPACE EASEMENTS WHICH INCLUDE GRADING OR BRUSHING OR CLEARING IN ALL LOCATIONS OF THE PROJECT WHERE PROPOSED GRADING OR CLEARING IS WITHIN 100 FEET OF AN OPEN SPACE EASEMENT BOUNDARY.
 PRIOR TO GRADING AND/OR IMPROVEMENTS AND PRIOR TO PRECONSTRUCTION CONFERENCE THE TEMPORARY FENCING AND OPEN SPACE SIGNS MUST BE INSTALLED PER SUJANT TO SHEET 3 THROUGH 8 OF THIS PLAN.

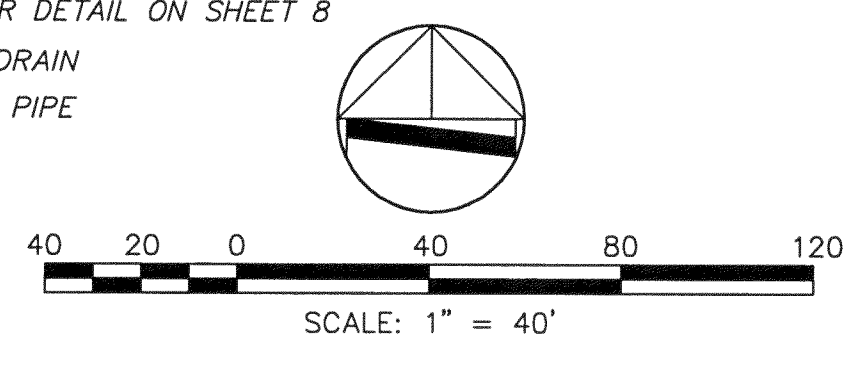
FENCE NOTE B:
 INSTALL PERMANENT FENCE OR WALL PER THE FENCING AND SIGNING PLAN. INSTALL SIGNS PER SIGN REQUIREMENT SHEET 3.

STORM DRAIN DATA (SHEET SPECIFIC):

- (A) 36" HDPE 69.60 LF @ 12.71% Q100=49.61 CFS V100=29.41 FPS
- (B) 36" RCP 16.00 LF @ 12.71% Q100=18.15 CFS V100=3.70 FPS
- (C) 12" RCP 16.00 LF @ 18.81% Q100=3.93 CFS V100=7.21 FPS
- (D) 12" HDPE 66.61 LF @ 18.81% Q100=4.81 CFS V100=20.63 FPS
- (E) 18" HDPE 146.44 LF @ 1.00% Q100=4.15 CFS V100=7.49 FPS
- (F) 18" HDPE 236.40 LF @ 1.00% Q100=9.28 CFS V100=7.54 FPS
- (G) 24" RCP 226.00 LF @ 2.5% Q100=24.54 CFS V100=12.01 FPS
- (H) 24" RCP 48.77 LF @ 2.00% Q100=23.31 CFS V100=12.33 FPS
- (I) 24" RCP 52.59 LF @ 3.00% Q100=21.08 CFS V100=12.40 FPS
- (J) 24" RCP 48.77 LF @ 2.00% Q100=23.31 CFS V100=12.33 FPS
- (K) 24" RCP 52.59 LF @ 3.00% Q100=21.08 CFS V100=12.40 FPS
- (L) 12" RCP 15.00 LF @ 6.90% Q100=2.79 CFS V100=10.21 FPS

STORM DRAIN CONSTRUCTION NOTES (SHEET SPECIFIC):

- 1 TYPE A-4 CLEANOUT
- 2 TYPE B INLET, L=5'
- 3 TYPE D-34 HEADWALL
- 4 TYPE F CATCH BASIN
- 5 2' X 2' BROOKS CATCH BASIN W/PARKWAY GRATE
- 6 TYPE A CURB OUTLET, D-25
- 7 BIO-BASIN PER DETAIL ON SHEET 8
- 8 4" DIA YARD DRAIN
- 9 4" PVC DRAIN PIPE
- 10 RIP RAP



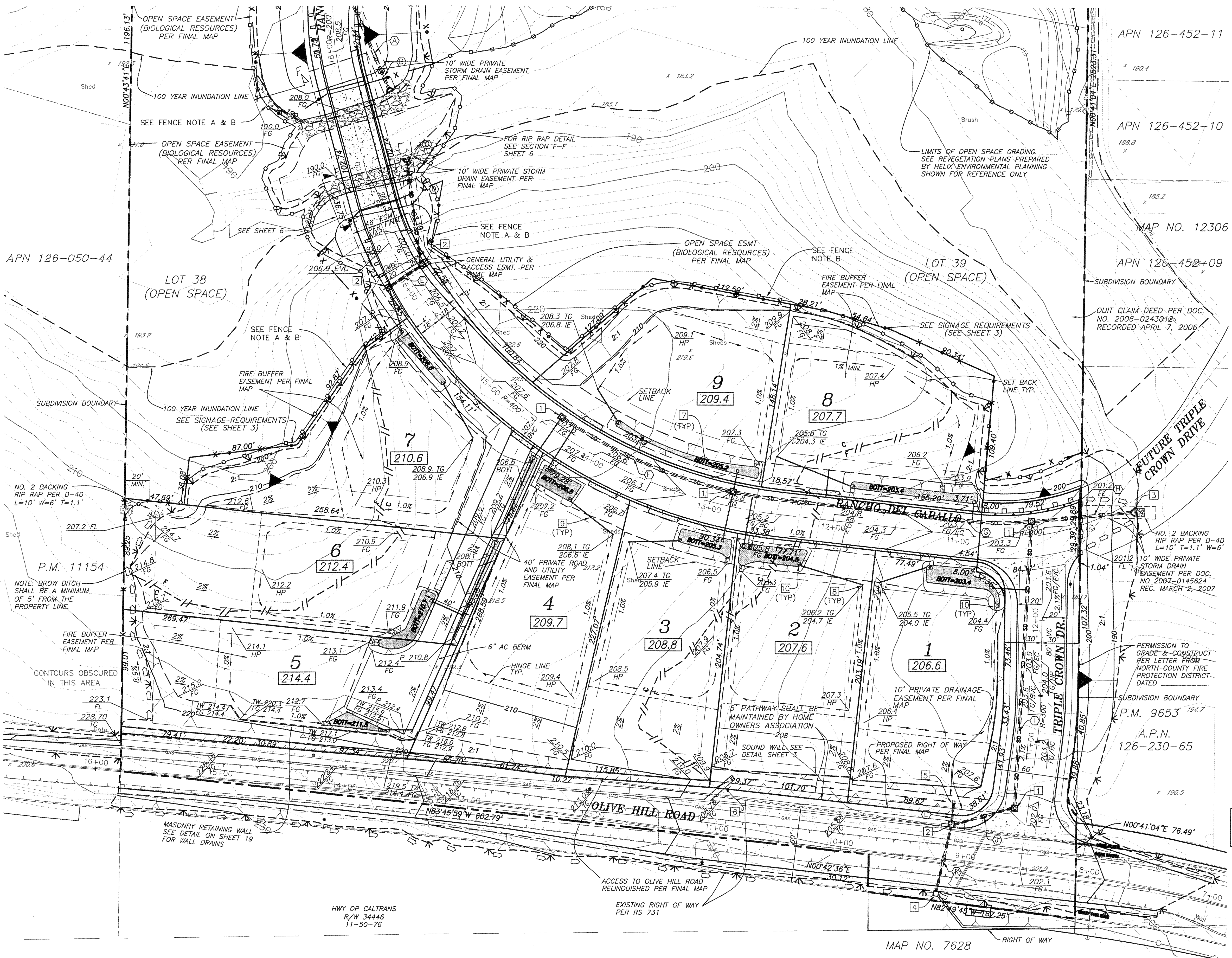
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COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS	
N.O.I. NO.	2006 PDS 2007-3967-07-001
LANDSCAPE NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4976 RPL 4R
IMPROVEMENT PERMIT NO.	PDS 2006-2140-4976-1

BENCH MARK	
DESCRIPTION:	THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

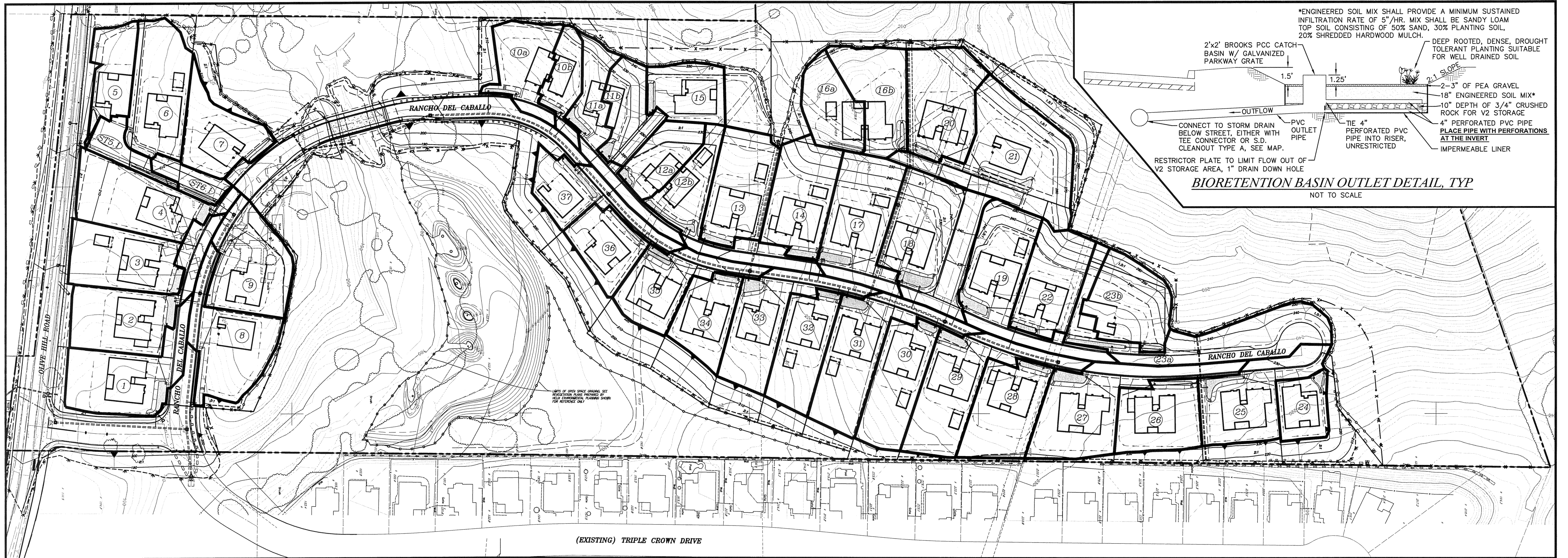
PRIVATE CONTRACT		
SHEET 7	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
GRADING PLAN FOR:		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1695, 1701		
APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 29271	
	GRADING PERMIT NO. PDS 2006-2700-15060	
Date		



FOR STORM DRAIN & TM IMP. PLANS SEE TM 4976RPL4R

MAP NO. 7628

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(EXISTING) TRIPLE CROWN DRIVE

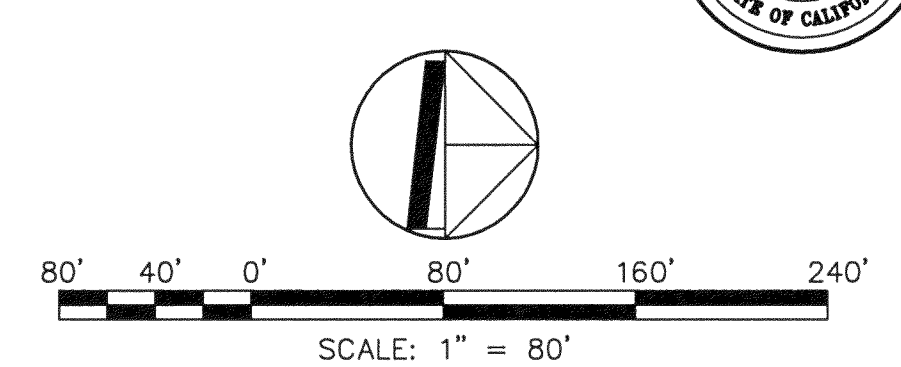
OLIVE HILL BIORETENTION BASIN SIZING CALCULATIONS

Soil Type	Slope	Rain Gauge	Low-Flow Threshold	Bioretention Basins			IMP
				A	V1	V2	
D	Steep	Oceanside	0.1Q2	0.065	0.0542	0.0390	

DMA Name	DMA Area (sq ft)	Post-Project Surface	DMA Runoff Factor	DMA Area x runoff	Area (sf)		V1 (cf)		V2 (cf)		IMP
					Min	Proposed	Min	Proposed	Min	Proposed	
Lot 1	4,244	street	1.0	4,244	728.1	728.5	607.1	607.1	436.9	437.1	1
Lot 2	5,630	roof+dwy	1.0	5,630	721.4	727.0	601.5	605.8	432.8	436.2	2
Lot 3	13,280	ldsp	0.1	1,328	512.7	513.0	427.5	427.5	307.6	307.8	3
Lot 4	4,075	street	1.0	4,075	495.8	522.0	413.4	435.0	297.5	313.2	4
Lot 5	5,491	roof+dwy	1.0	5,491	323.3	324.0	269.6	270.0	194.0	194.4	5
Lot 6	15,318	ldsp	0.1	1,531.8	506.3	684.0	422.2	570.0	303.8	410.4	6
Lot 7	6,542	roof+dwy	1.0	6,542	338.4	339.0	282.2	282.5	203.0	203.4	7
Lot 8	13,452	ldsp	0.1	1,345.2	606.5	620.0	505.7	516.6	363.9	372.0	8
Lot 9	955	street	1.0	955	600.1	628.0	500.4	523.3	360.1	376.8	9
Lot 10a	4,846	roof+dwy	1.0	4,846	335.1	342.0	279.4	285.0	201.0	205.2	10a
Lot 10b	18,268	ldsp	0.1	1,826.8	283.1	338.0	236.1	281.7	169.9	202.8	10b
Lot 11a	4,213	roof+dwy	1.0	4,213	563.4	621.0	469.8	517.5	338.0	372.6	11a
Lot 11b	7,614	ldsp	0.1	761.4	353.5	445.0	294.7	370.8	212.1	267.0	11b
Lot 12a	6,161	roof+dwy	1.0	6,161	277.5	304.0	231.4	253.3	166.5	182.4	12a
Lot 12b	16,279	ldsp	0.1	1,627.9							

DMA Name	DMA Area (sq ft)	Post-Project Surface	DMA Runoff Factor	DMA Area x runoff	Area (sf)		V1 (cf)		V2 (cf)		IMP
					Min	Proposed	Min	Proposed	Min	Proposed	
Lot 12b	5,607	street	1.0	5,607	632.2	638.0	527.1	531.6	379.3	382.8	12b
Lot 13	3,040	roof+dwy	1.0	3,040	499.4	516.0	416.4	430.0	299.6	309.6	13
Lot 14	10,786	ldsp	0.1	1,078.6	481.7	547.0	401.7	455.8	289.0	328.2	14
Lot 15	6,442	roof+dwy	1.0	6,442	411.9	461.0	343.5	384.2	247.2	276.6	15
Lot 16a	12,404	ldsp	0.1	1,240.4	278.4	280.0	232.1	233.3	167.0	168.0	16a
Lot 16b	6,768	roof+dwy	1.0	6,768	344.3	390.0	287.1	325.0	206.6	234.0	16b
Lot 17	6,433	ldsp	0.1	643.3	780.1	781.0	650.5	650.8	468.1	468.6	17
Lot 18	5,575	roof+dwy	1.0	5,575	1,092.4	1,105.0	910.9	920.8	655.4	663.0	18
Lot 19	7,626	ldsp	0.1	762.6	879.2	886.0	733.1	738.3	527.5	531.6	19
Lot 20	3,245	roof+dwy	1.0	3,245	508.1	510.0	423.7	425.0	304.9	306.0	20
Lot 21	4,010	street	1.0	4,010	860.4	881.0	717.4	734.1	516.2	528.6	21
Lot 22	6,445	roof+dwy	1.0	6,445	449.3	450.0	374.7	375.0	269.6	270.0	22
Lot 23a	15,469	ldsp	0.1	1,546.9	745.7	746.0	621.8	621.6	447.4	447.6	23a
Lot 23b	9,912	street	1.0	9,912	319.6	320.0	266.5	266.7	191.7	192.0	23b
Lot 24	5,206	roof+dwy	1.0	5,206	319.5	320.0	266.4	266.7	191.7	192.0	24
Lot 25	16,879	ldsp	0.1	1,687.9	729.5	730.0	608.3	608.3	437.7	438.0	25
Lot 26	6,069	street	1.0	6,069	426.8	427.0	355.9	355.8	256.1	256.2	26
Lot 27	6,044	roof+dwy	1.0	6,044							
Lot 28	14,133	ldsp	0.1	1,413.3							
Lot 29	6,199	roof+dwy	1.0	6,199							
Lot 30	16,186	ldsp	0.1	1,618.6							
Lot 31	5,871	street	1.0	5,871							
Lot 32	4,690	roof+dwy	1.0	4,690							
Lot 33	26,760	ldsp	0.1	2,676.0							
Lot 34	5,579	roof+dwy	1.0	5,579							
Lot 35	13,340	ldsp	0.1	1,334.0							
Lot 36	8,872	street	1.0	8,872							
Lot 37	743	roof+dwy	1.0	743							
ST 5.1	18,579	ldsp	0.1	1,857.9							
ST 6.1	3,430	roof+dwy	1.0	3,430							

DMA Name	DMA Area (sq ft)	Post-Project Surface	DMA Runoff Factor	DMA Area x runoff	Area (sf)		V1 (cf)		V2 (cf)		IMP
					Min	Proposed	Min	Proposed	Min	Proposed	
Lot 27	5,870	street	1.0	5,870	865.3	928.0	721.6	773.3	519.2	556.8	27
Lot 28	5,911	roof+dwy	1.0	5,911	438.3	478.0	365.5	398.3	263.0	286.8	28
Lot 29	15,320	ldsp	0.1	1,532.0	838.3	840.0	699.0	700.0	503.0	504.0	29
Lot 30	5,274	roof+dwy	1.0	5,274	418.7	425.0	349.1	354.2	251.2	255.0	30
Lot 31	14,688	ldsp	0.1	1,468.8	727.0	727.0	606.2	605.8	436.2	436.2	31
Lot 32	5,345	street	1.0	5,345	403.8	404.0	336.7	336.7	242.3	242.4	32
Lot 33	6,040	roof+dwy	1.0	6,040	634.0	662.0	528.7	551.6	380.4	397.2	33
Lot 34	15,119	ldsp	0.1	1,511.9	400.5	415.0	333.9	345.8	240.3	249.0	34
Lot 35	5,019	roof+dwy	1.0	5,019	615.3	618.0	513.0	515.0	369.2	370.8	35
Lot 36	14,227	ldsp	0.1	1,422.7	391.2	406.0	326.2	338.3	234.7	243.6	36
Lot 37	4,004	street	1.0	4,004	650.2	692.0	542.1	576.6	390.1	415.2	37
ST 5.1	5,471	roof+dwy	1.0	5,471	313.0	345.0	261.0	287.5	187.8	207.0	ST 5.1
ST 6.1	17,096	ldsp	0.1	1,709.6	214.7	286.0	179.0	238.3	128.8	171.6	ST 6.1

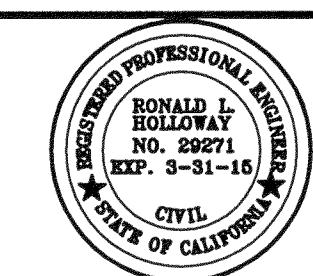


LEGEND:

(11) BIO RETENTION BASIN

DMA REFERENCE NUMBER,

DMA BASIN BOUNDARY



bha, inc.
land planning, civil engineering, surveying
5115 AVENIDA ENCINAS
SUITE "L"
CARLSBAD, CA. 92008-4387
(760) 931-8700

COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

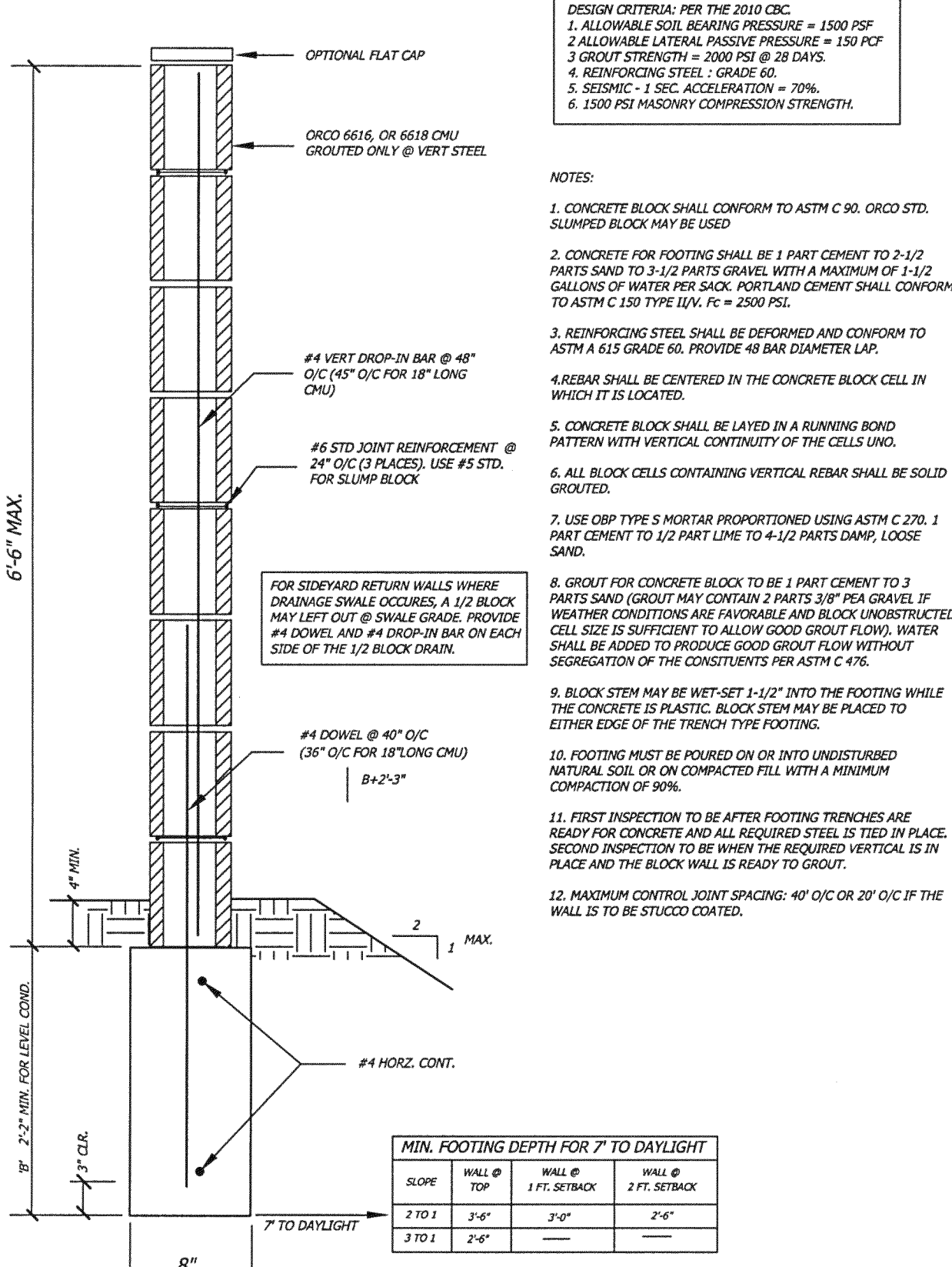
PERMITS	
N.O.I. NO.	2006 PDS 2007-3967-07-001
LANDSCAPE NO.	2006 PDS 2007-3967-07-001
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4976 RPL 4R
IMPROVEMENT PERMIT NO.	PDS 2006-2140-4976-1

BENCH MARK	
DESCRIPTION:	THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARK Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT		
SHEET 8	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
DRAINAGE MANAGEMENT AREA MAP FOR:		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1695, 1701		
APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER	ENGINEER OF WORK RONALD L. HOLLWAY RCE 29271	
By: _____	GRADING PERMIT NO. PDS 2006-2700-15060	Date _____

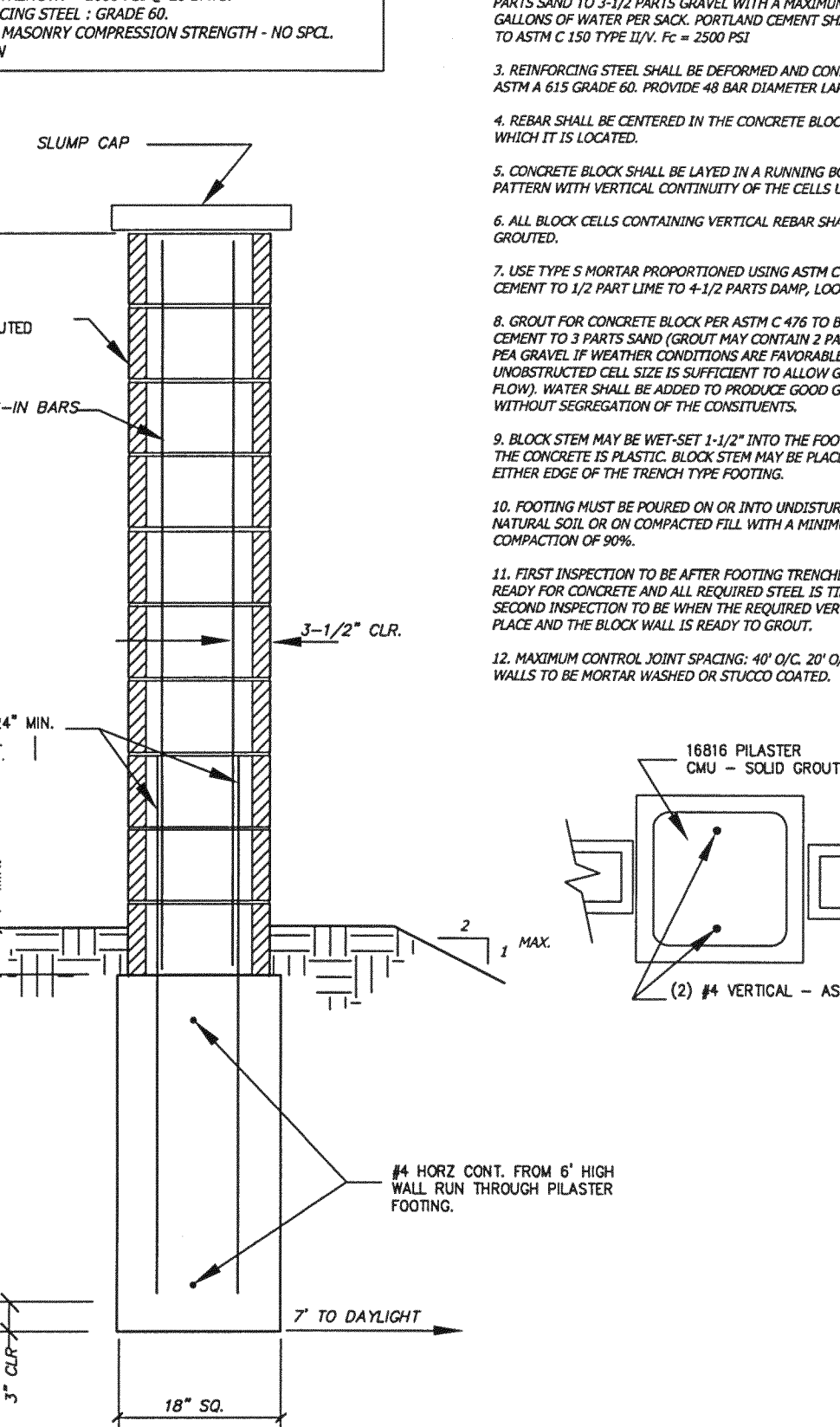
6' HIGH ORCO WALL SYSTEM SITE WALL

FOR 85 MPH 3 SEC. GUST @ EXP C



7'-6" HIGH ORCO 16" SQ. PILASTER

DESIGN CRITERIA: PER THE 2010 CBC



BASIS OF DESIGN

ALLOWABLE SOIL VALUES USED FOR DESIGN PER GEOCON REPORT:

ALLOWABLE SOIL BEARING PRESSURE: 2,000 PSF + INCREASES FOR WIDTH AND DEPTH UP TO A MAX. OF 4,000 PSF. SOIL BEARING PRESSURE 1/3 INCREASE FOR WIND OR SEISMIC SHORT TIME LOADINGS.

ALLOWABLE PASSIVE PRESSURE: 300 PSF FOR LEVEL CONDITIONS AND 150 PSF FOR SLOPING CONDITIONS.

ALLOWABLE FRICTION : 0.40

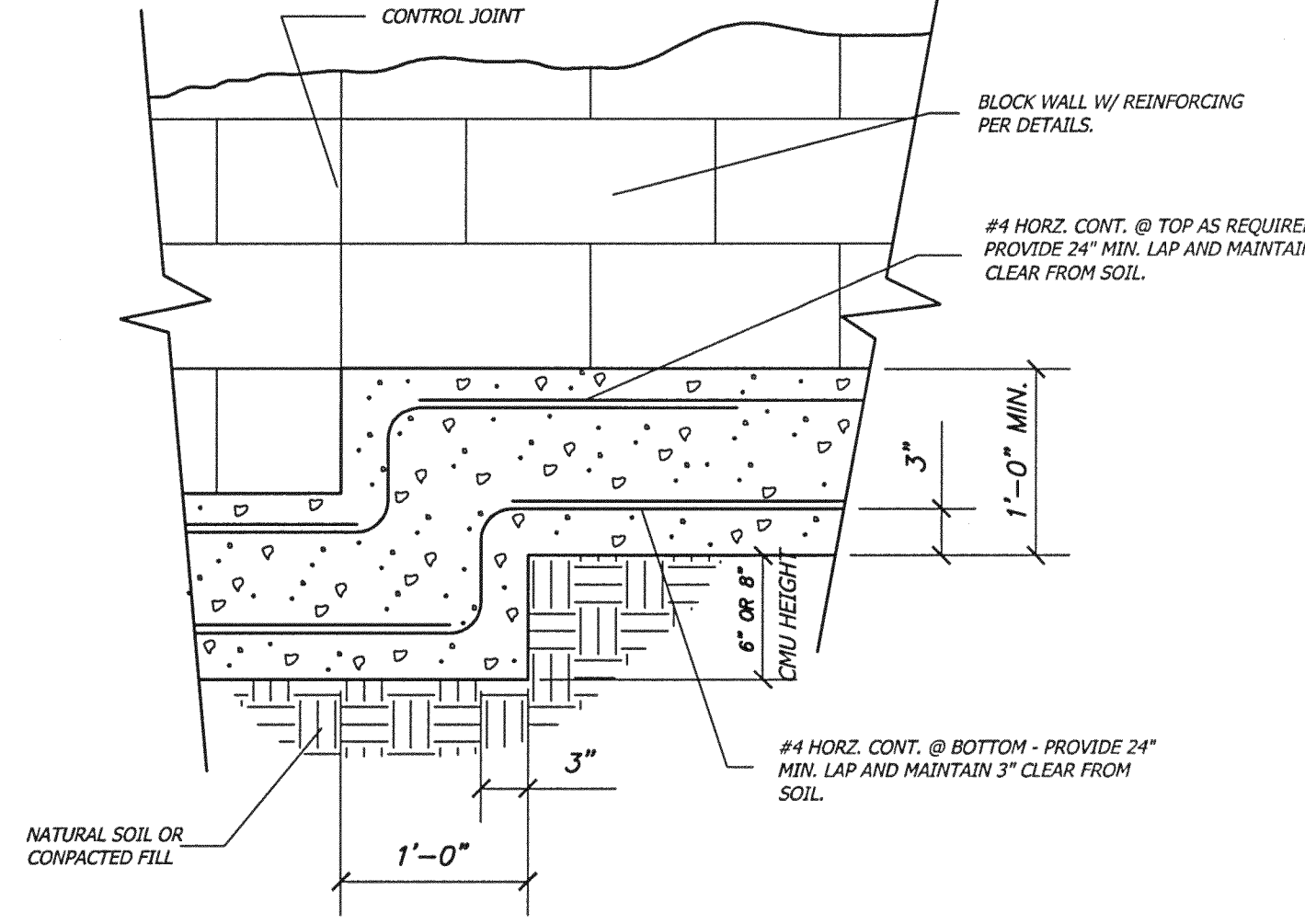
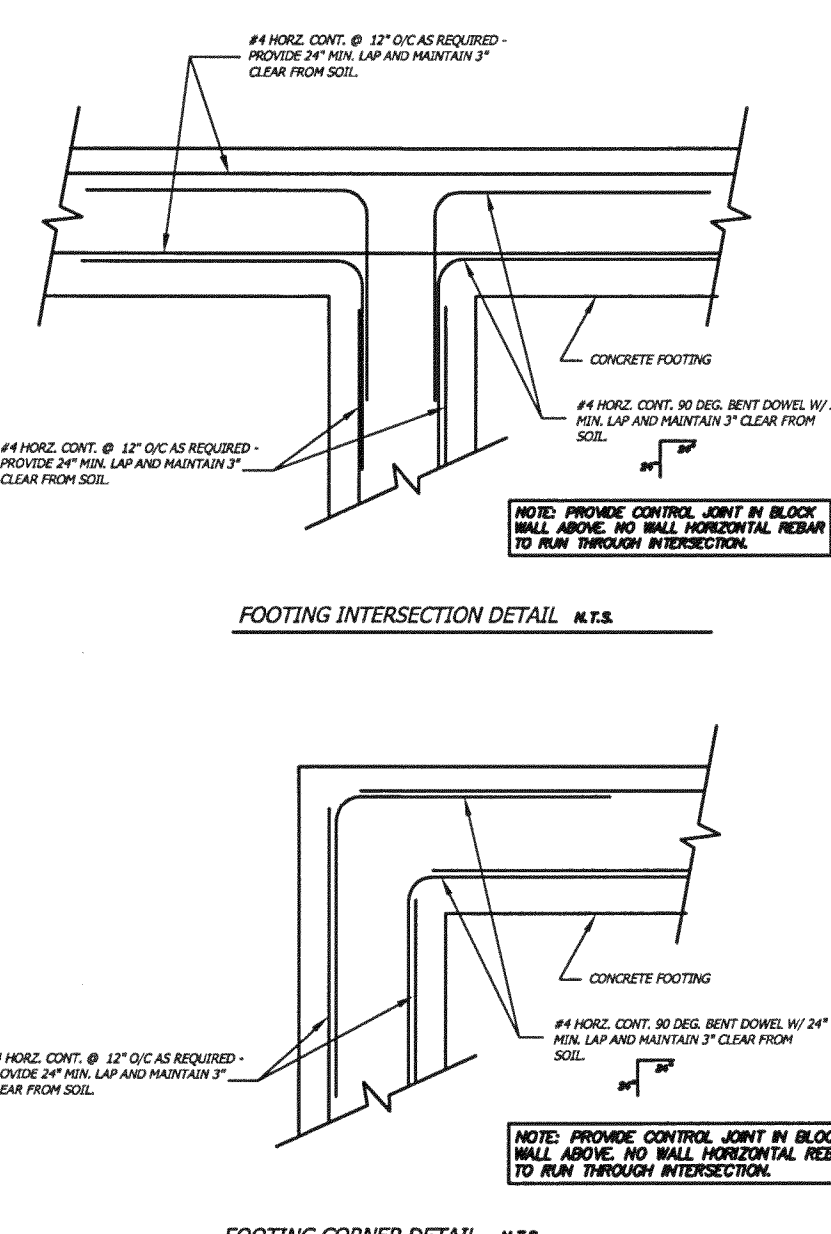
ACTIVE PRESSURES: 35 PSF FOR LEVEL BACKFILL AND 50 PSF FOR 2 TO 1 BACKFILL CONDITIONS. SEISMIC SOIL LOADING: 17H BASED ON A 0.32g USING A Sds/2.5 PER SOILS REPORT.

WIND @ 85 MPH EXP C = 13.8 PSF

SEISMIC: SITE CLASS D, I = 1.0, S₁ = 0.44g, S_s = 1.199g S_{ds} = 0.816g, S_{d1} = 0.457g

WIND FORCES TO WALLS PER CBC SECTION 1609

WIND FORCE CALCULATION FOR BASIC 85 MPH 3 SECOND GUST SPEED EXPOSURE C CONDITION USING ASCE 7-05 CHAPTER 6 WIND LOADS:
 USING SECTION 6.5.10 TO FIND THE 3 SEC. VELOCITY PRESSURE q_h
 $q_h = 0.00256 K_z K_{zt} K_{d1} V^2 I$ (6-15)
 WHERE: $K_z = .57$ FOR EXP B AND $K_{zt} = .85$ FOR EXP C FROM TABLE 6.3
 $K_d = 1.0$ DEFAULT PER SECTION 6.5.7.2
 $I = .87$ FROM TABLE 6.4
 THEREFORE, FOR 85 MPH 3 SEC. WIND GUST SPEED:
 $q_h = (0.00256)(.85)(1.0)(.85)(.87)(.87) = 11.6$ PSF
 NOW USING SECTION 6.5.14 FOR SOLID FREESTANDING WALLS:
 $F_h = q_h C_f A_v$ (6-27)
 WHERE: $C_f = .85$ FROM 6.5.8.1
 $C_v = 1.40$ PER FIGURE 6-20 USING z_{avg} AND A B AVERAGE ASPECT RATIO (WALL LENGTH TO HEIGHT) OF 3. NOTE: OF RANGES FROM 1.45 FOR A 2' WIDE RETURN WALL TO 1.3 FOR A 60' PANEL. SO USE AN AVERAGE FACTOR OF 1.4
 THEREFORE, $F_h = (11.6 \text{ PSF})(.85)(1.4) = 13.8$ PSF



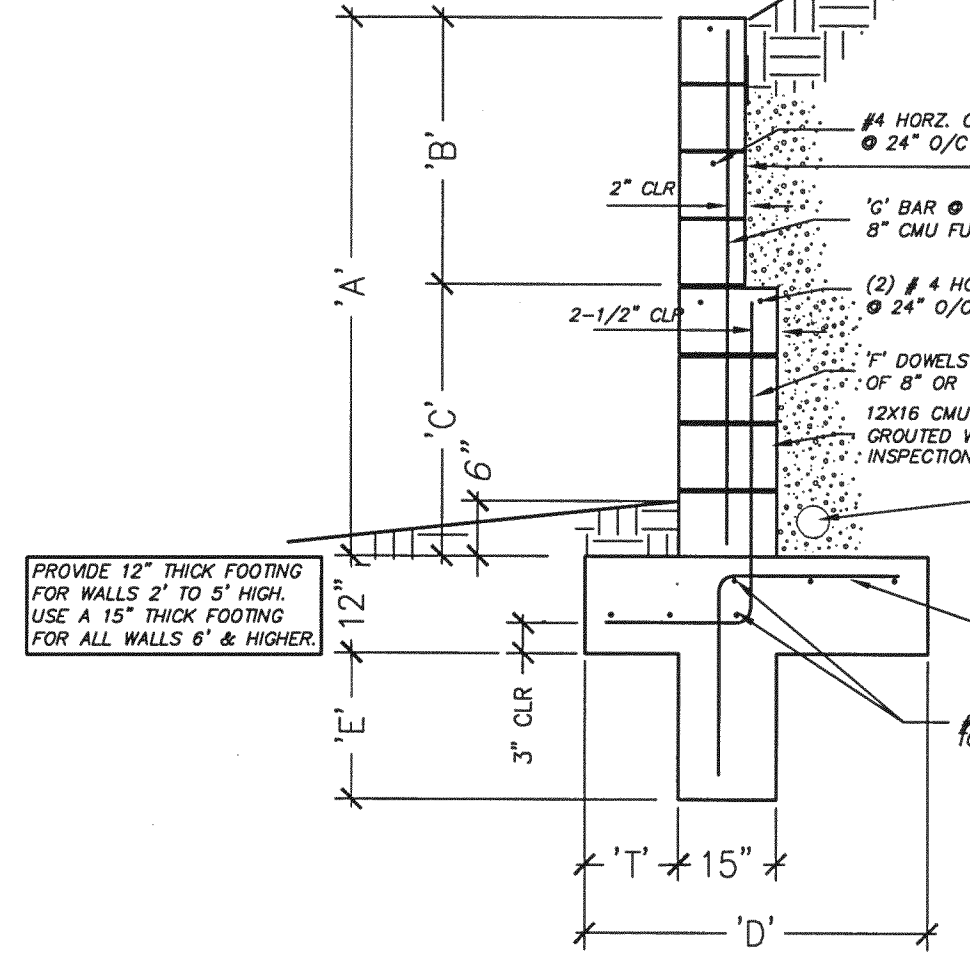
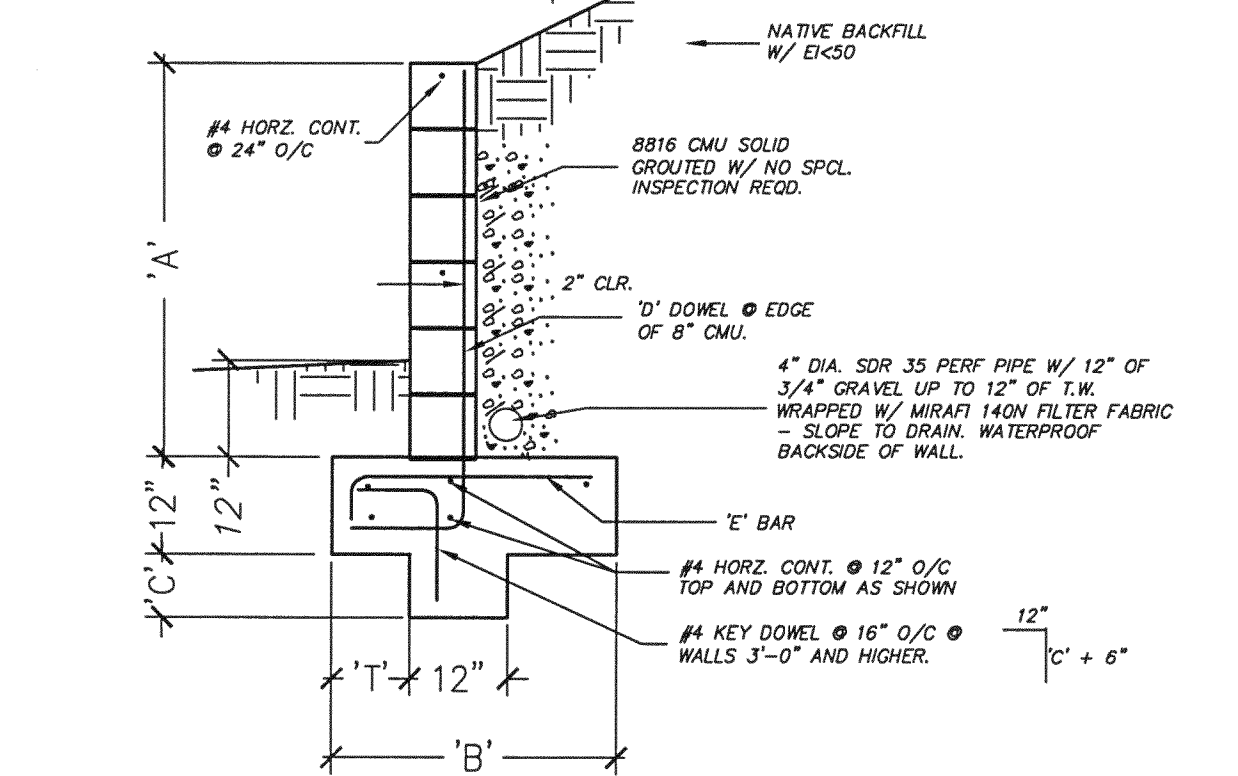
RETAINING WALL NOTES:

1. ALL MATERIALS, PRODUCTS, WORKMANSHIP, TESTING AND INSPECTION SHALL COMPLY WITH THE 2010 CBC.
2. ALL FOOTINGS SHALL BE POURED ON UNDISTURBED NATURAL GROUND OR ON UNDISTURBED ENGINEERED FILL.
3. WALL SHALL BE LAID TRUE AND PLUMB, AND ALL CELLS SHALL BE GROUDED SOLID.
4. ALL SPLICES SHALL BE 48 BAR DIAMETERS.
5. ALL VERTICAL AND HORIZONTAL BARS SHALL BE TIED TOGETHER.
6. DO NOT USE HEAVY COMPACTION EQUIPMENT ADJACENT TO THE WALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE WALL RESULTING FROM INAPPROPRIATE COMPACTION TECHNIQUES AND EQUIPMENTS.
7. THE RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL AT LEAST 14 DAYS - UNLESS PROPER SHORING IS PROVIDED.
8. WALLS SHOULD BE GROUDED AT 4' HEIGHT INTERVALS. GROUDED SHOULD BE PERFORMED AS SOON AS POSSIBLE AFTER THE CONCRETE MASONRY UNITS ARE PLACED.
9. PROVIDE CONTROL JOINTS AT 40' O/C MAX.
10. BUILDING DEPARTMENT INSPECTION SHALL BE OF THE FOLLOWING STEPS:
 - 1st. FOUNDATION TRENCH WITH SECURED REINFORCING STEEL.
 - 2nd. BLOCK WALL WITH REINFORCING STEEL BEFORE GROUT.
 - 3rd. MID-HEIGHT GROUDED FOR WALLS OVER 4' HIGH.
 - 4th. GROUDED WALL AND DRAINAGE SYSTEM.
 - 5th. BACKFILL AND FINISH.
11. PROVIDE 4" x 35 PERFORATED PIPE WITH PERFORATIONS DOWN AT 1% MIN. SLOPE WITH 1 CF OF 3/4" GRAVEL WRAPPED WITH MIRAFI 140N FILTER FABRIC OR EQUAL. BACK DRAINAGE SYSTEM SHALL HAVE TEE CONNECTION AND NON-PERFORATED 2" x 1/2" OUTLET PIPE AT EVERY 10' C/W THROUGH THE WALL AT 2% SLOPE ABOVE THE FINISHED SURFACE - OR PROVIDE DRAINSTRAP SUBDRAIN SYSTEM AS SHOWN.

NOTES:
 F_h = 1500 PSI WITH NO SPECIAL INSPECTION. CONCRETE BLOCK SHALL CONFORM TO ASTM C 90 "TYPE S" MORTAR PER ASTM C 270. USE ASTM A615 GRADE 60 STEEL MIN. GRADE 60 FOR #5 BARS AND UP. GROUT STRENGTH TO BE 2000 PSI MIN. PER ASTM C 476. FOOTING CONCRETE: 2500 PSI MIN. @ 28 DAYS. USE TYPE III/IV CEMENT. PROVIDE 3" MIN. CONCRETE REBAR COVER FOR ANY FOOTING CAST AGAINST NATURAL SOIL.
 FOR RETAINING WALLS: PROVIDE 90% MIN. BACKFILL COMPACTION OR USE SAND/GRAVEL BACKFILL W/ SE-20. PROVIDE A ASTM C-33 3/4" GRAVEL SUBDRAIN AS SHOWN. WATERPROOF BACKFILL SIDE OF WALL W/ OBP "WATERSTOP" OR EQUAL. PROVIDE PROPER SHORING DURING CONSTRUCTION.

DESIGN CRITERIA:
 ALLOWABLE SOIL BEARING = 2000 PSF + 1/3 INCR. FOR WIND OR SEISMIC. ALLOWABLE LATERAL PASSIVE = 300 PCF. EQUIVALENT FLUID PRESSURE FOR 1.5 TO 1 BACKFILL = 50 PSF PER SOILS REPORT.
 FOR RETAINING WALLS: PROVIDE 90% MIN. BACKFILL COMPACTION OR USE SAND/GRAVEL BACKFILL W/ SE-20. PROVIDE A ASTM C-33 3/4" GRAVEL SUBDRAIN AS SHOWN. WATERPROOF BACKFILL SIDE OF WALL W/ OBP "WATERSTOP" OR EQUAL. PROVIDE PROPER SHORING DURING CONSTRUCTION.

DESIGN CRITERIA:
 ALLOWABLE SOIL BEARING = 2000 PSF + 1/3 INCR. FOR WIND OR SEISMIC. ALLOWABLE LATERAL PASSIVE = 300 PCF. EQUIVALENT FLUID PRESSURE FOR 1.5 TO 1 BACKFILL = 50 PSF PER SOILS REPORT.
 PROVIDE 12" THICK FOOTING FOR WALLS 2' TO 5' HIGH. USE A 15" THICK FOOTING FOR ALL WALLS 6' & HIGHER.



'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'I'
2'-0"	1'-6"	4"	#4@32" O/C 33"	N/A	6"	N/A	N/A	9"
3'-0"	2'-3"	6"	#4@32" O/C 45"	N/A	10"	N/A	#4@32" O/C 12"	15"
4'-0"	3'-0"	12"	#4@16" O/C 57"	#4@16" O/C 30"	18"	N/A	#4@16" O/C 18"	21"
5'-0"	3'-9"	18"	#5@16" O/C 69"	#4@16" O/C 39"	24"	#4@16" O/C	#5@16" O/C 24"	24"
					33"	#4@16" O/C	#5@16" O/C 30"	30"
					39"	#4@16" O/C	#5@16" O/C 36"	36"
					42"	#4@16" O/C	#5@16" O/C 42"	39"

INSPECTION NOTES

NOTICE TO THE APPLICANT/OWNER/OWNER'S AGENT/ARCHITECT OR ENGINEER OF RECORD: BY USING THIS PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE CITY OF SAN DIEGO FOR SPECIAL INSPECTION, AND THOSE REQUIREMENT REQUIRED BY THE CALIFORNIA CONSTRUCTION CODES.

NOTICE TO THE CONTRACTOR/ BUILDER/ INSTALLER/ SUB-CONTRACTOR/ OWNER BUILDER: BY USING THIS PERMITTED CONSTRUCTION DRAWING FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU ACKNOWLEDGE AND ARE AWARE OF THE REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS. YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE CITY OF SAN DIEGO FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND, AS REQUIRED BY THE CALIFORNIA CONSTRUCTION CODES.

THE SPECIAL INSPECTOR MUST BE CERTIFIED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES, IN THE CATEGORY OF WORK REQUIRED TO HAVE SPECIAL INSPECTION.

THE SPECIAL INSPECTIONS IDENTIFIED ON THE PLAN ARE, IN ADDITION TO, AND NOT A SUBSTITUTE FOR, THOSE INSPECTIONS REQUIRED TO BE PERFORMED BY A CITY'S BUILDING INSPECTOR.

FABRICATOR SHALL SUBMIT AN "APPLICATION TO PERFORM OFF-SITE FABRICATION" TO THE INSPECTION SERVICES DIVISION FOR APPROVAL PRIOR TO COMMENCEMENT OF FABRICATION.

FABRICATOR SHALL SUBMIT A "CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION" TO THE INSPECTION SERVICES DIVISION FOR APPROVAL PRIOR TO ERECTION OF FABRICATED ITEMS AND ASSEMBLIES.

THE CONSTRUCTION MATERIALS TESTING LABORATORY MUST BE APPROVED BY THE CITY OF SAN DIEGO DEVELOPMENT SERVICES, FOR TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND, EQUIPMENTS.

STATEMENT OF SPECIAL INSPECTION

INSPECTION TASK	FREQUENCY OF INSPECTION	
	CONTINUOUS DURING TASK	PERIODIC DURING TASK
1. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE: PROPORTIONS OF SITE-PREPARED MORTAR. CONSTRUCTION OF MORTAR JOINTS.		X
2. THE INSPECTION PROGRAM SHALL VERIFY: SIZE AND LOCATION OF STRUCTURAL ELEMENTS. SPEED SIZE, GRADE AND TYPE OF REINFORCEMENT. HOT OR COLD WEATHER CONSTRUCTION REQM.		X
3. PRIOR TO GROUDED, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE: GROUT SPACE IS CLEAN CONSTRUCTION OF MORTAR JOINTS		X
4. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION DOCUMENT PROVISIONS.	X	
6. COMPLIANCE WITH THE APPROVED SUBMITTALS SHALL BE VERIFIED.		X

NOTE: PROVIDE LEVEL ONE SPECIAL INSPECTION PER CBC TABLE 1704.5.1 OF THE MASONRY STEM PRIOR TO GROUDED TO VERIFY GRADE, SIZE AND PROPER PLACEMENT OF REINFORCEMENT AND TO ENSURE THE GROUT SPACE IS THE PROPER SIZE WITHOUT OBSTRUCTION OTHER THAN NORMAL MORTAR FINS - SEE CHART.

ENGINEERING STAMP APPROVAL IS CONDITIONAL; REQUIRING USE OF ORCO MANUFACTURED CMU ON ALL ORCO WALL SYSTEM DESIGNS.



COUNTY APPROVED CHANGES

NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO. 937C344964
 REZONE PERMIT NO. N/A
 SPECIAL USE PERMIT NO. N/A
 TENTATIVE MAP NO. TM 4976-RPL4R

BENCH MARK

DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NOV29. SPECIFICALLY BENCHMARKS 063 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT

SHEET 9 COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS 19 SHEETS

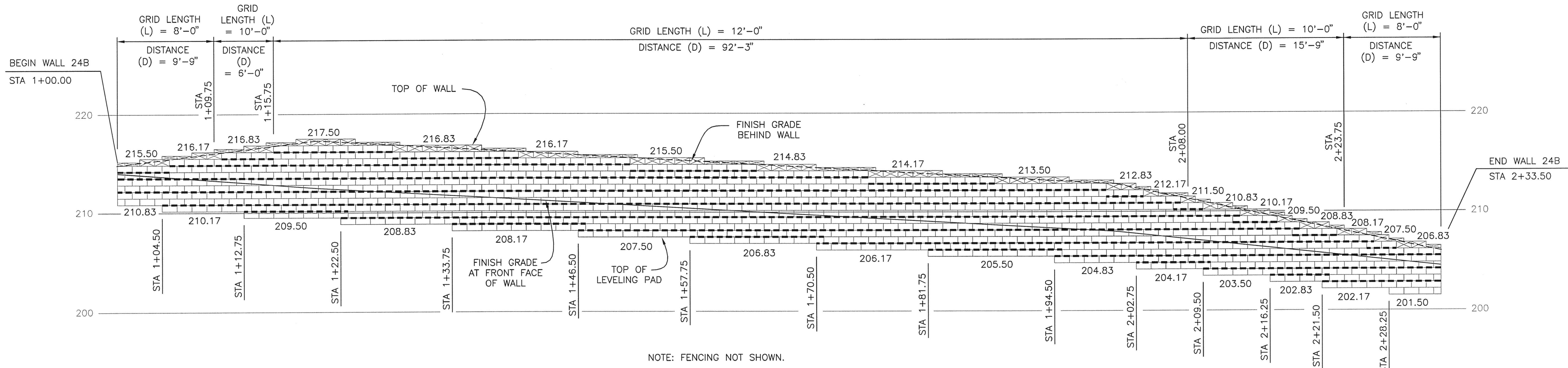
GRADING PLAN FOR: TM 4976-RPL4R

CA.COOR.INDEX 410-1695, 1701

APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER

ENGINEER OF WORK

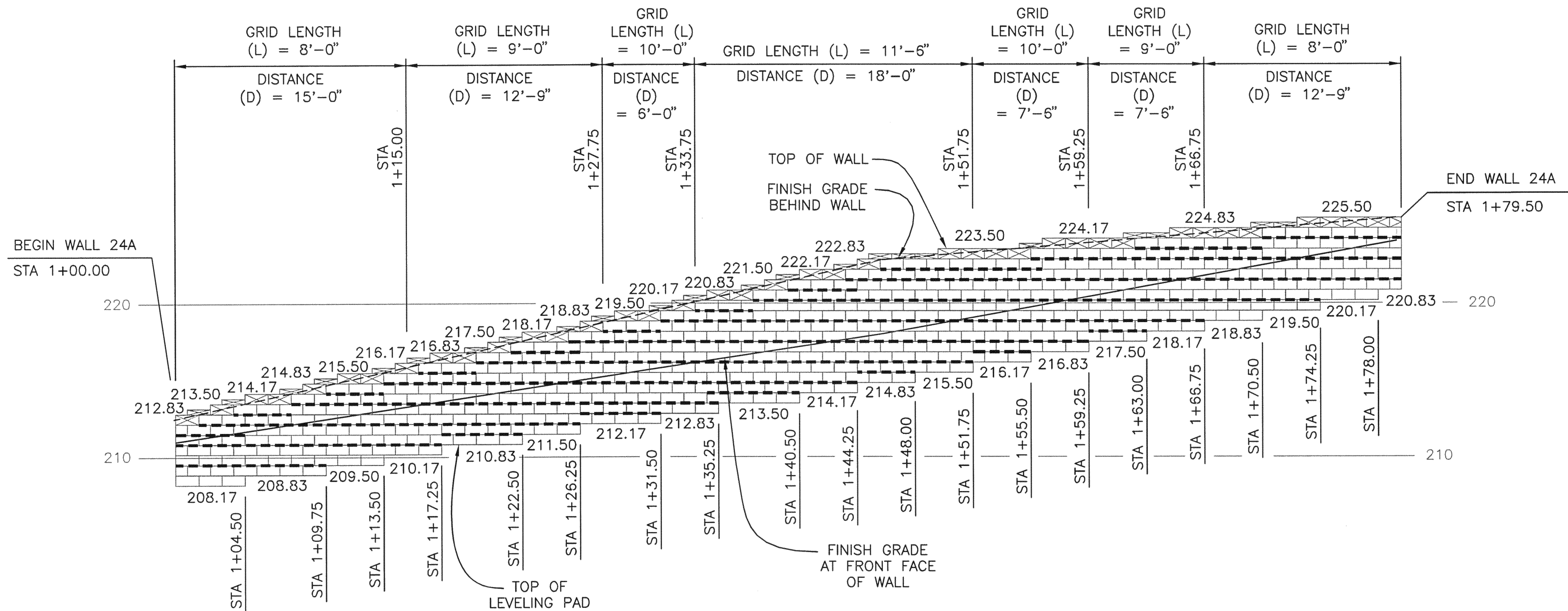
Date: GRADING PERMIT NO. L15060



NOTE: FENCING NOT SHOWN.

WALL PROFILE LOT 24 - WALL B

1" = 5'-0"



NOTE: FENCING NOT SHOWN.

WALL PROFILE LOT 24 - WALL A

1" = 5'-0"

LEGEND:

- MIRAFI GRID 3XT
- KEYSTONE COMPAC II UNIT
- ▣ KEYSTONE 8" CAP UNIT
- ▤ KEYSTONE 4" CAP UNIT

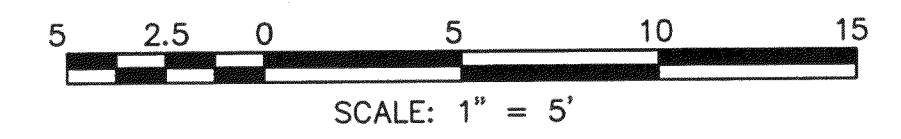
COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS	
N.O.I. NO.	937C344964
REZONE PERMIT NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4975-RPL 4R

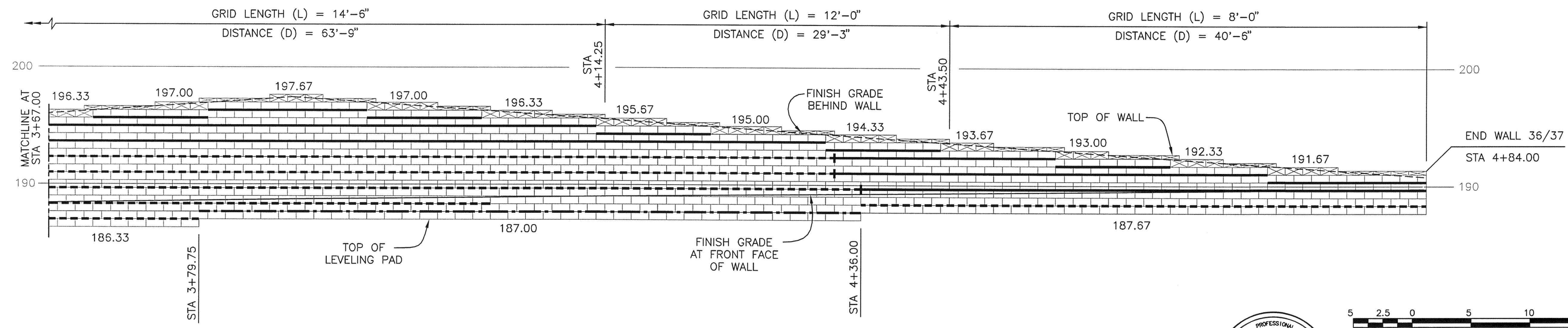
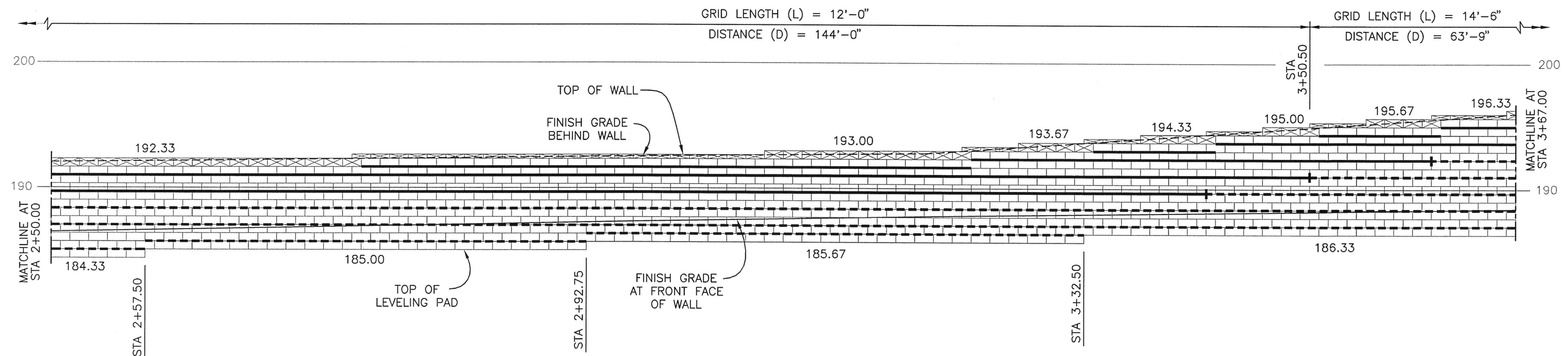
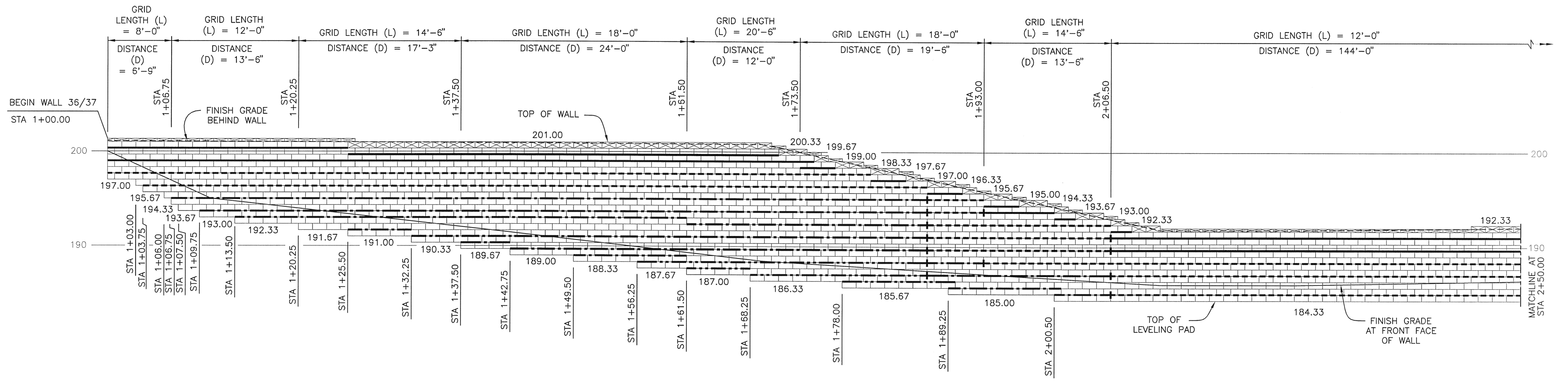
BENCH MARK	
DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS Q53 (ELEV.=809.293') AND TE 3 (ELEV.=535.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.	

PRIVATE CONTRACT	
SHEET	COUNTY OF SAN DIEGO
10	DEPARTMENT OF PUBLIC WORKS
KEYSTONE WALL PROFILES NO. 1 FOR:	19 SHEETS

TM 4976-RPL4R	
CA.COOR.INDEX 410-1695, 1701	
APPROVED MOHAMAD FAKHRRIDDINE COUNTY ENGINEER BY:	ENGINEER OF WORK CRAIG SHANNON RCE 55551
Date	GRADING PERMIT NO: L15060



SIMON WONG ENGINEERING
 9988 Hibert Street, Second Floor
 San Diego, CA 92131
 (858) 556-3113
 Job No. 520-027



LEGEND:

- MIRAFI GRID 2XT
- - - MIRAFI GRID 3XT
- · - · - MIRAFI GRID 5XT
- · - · - MIRAFI GRID 7XT
- · - · - GRID TYPE CHANGE
- KEYSTONE COMPAC II UNIT
- ▣ KEYSTONE 8" CAP UNIT
- ▤ KEYSTONE 4" CAP UNIT

COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS	
N.O.I. NO.	S37C344954
REZONE PERMIT NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4975-RPL 4R

BENCH MARK

DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS 053 (ELEV.=509.293') AND TE 3 (ELEV.=535.003') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT		
SHEET 11	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS

KEYSTONE WALL PROFILES NO. 2 FOR:	
TM 4976-RPL4R	
CA.COOR.INDEX 410-1695, 1701	
APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER	ENGINEER OF WORK CRAIG SHANNON RCE 55558
Date	GRADING PERMIT NO. L15060

NOTE: FENCING NOT SHOWN.

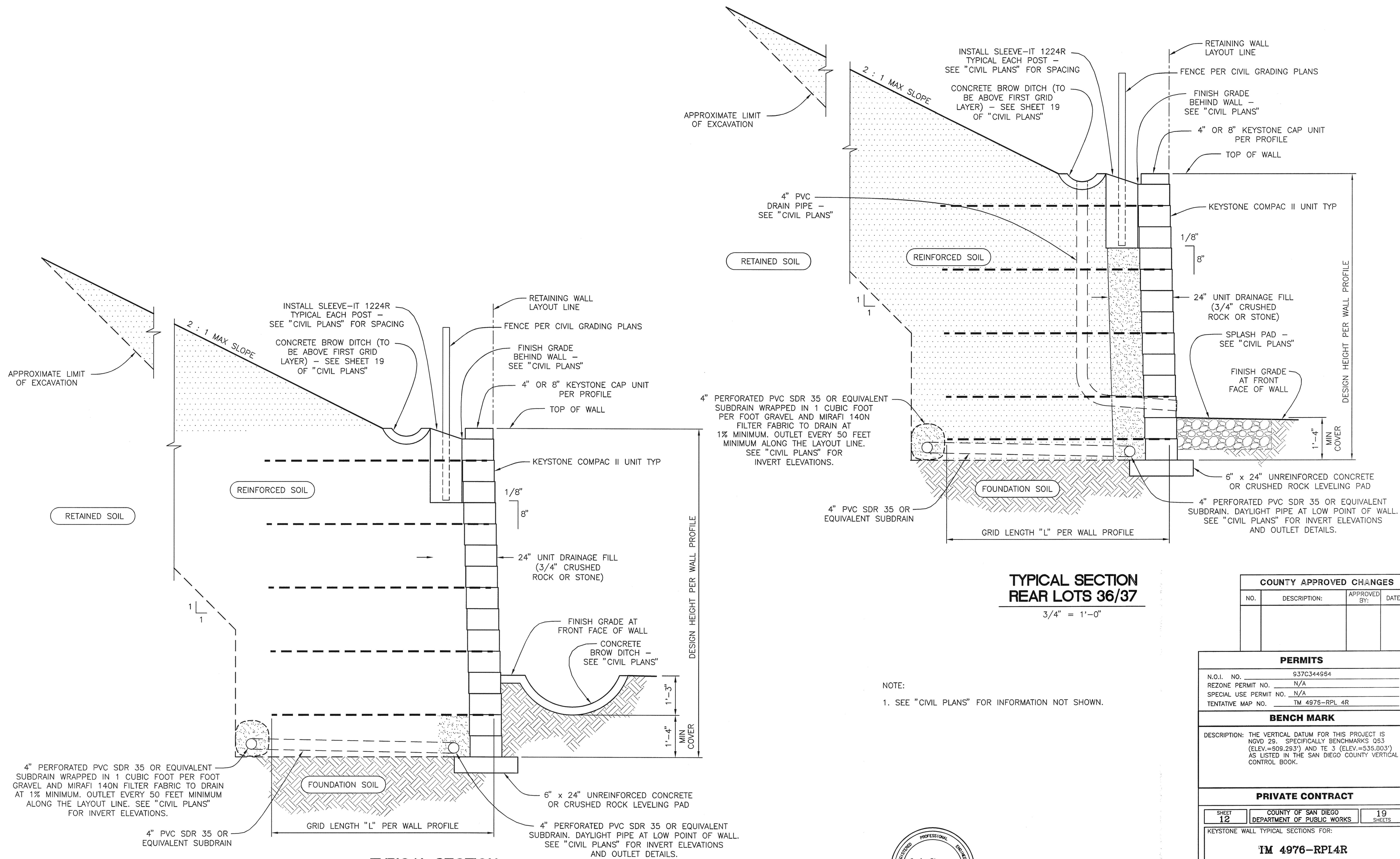
WALL PROFILE REAR LOTS 36/37

1" = 5'-0"



5 2.5 0 5 10 15
SCALE: 1" = 5'

SIMON WONG ENGINEERING
 9958 Hibert Street, Second Floor
 San Diego, CA 92131
 (858) 556-3113
 Job No. 520-027



**TYPICAL SECTION
LOT 24 - WALLS A AND B**
3/4" = 1'-0"

**TYPICAL SECTION
REAR LOTS 36/37**
3/4" = 1'-0"

NOTE:
1. SEE "CIVIL PLANS" FOR INFORMATION NOT SHOWN.

COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

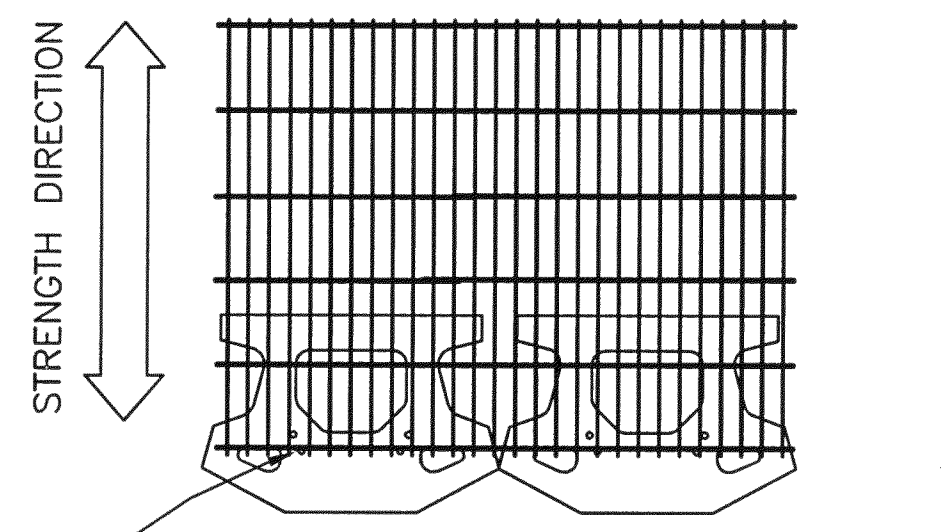
PERMITS	
N.O.I. NO.	937C344954
REZONE PERMIT NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4975-RPL 4R

BENCH MARK	
DESCRIPTION:	THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARK Q53 (ELEV.=509.293') AND TE 3 (ELEV.=535.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT		
SHEET 12	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
KEYSTONE WALL TYPICAL SECTIONS FOR: TM 4976-RPL4R		
CA.COOR.INDEX 410-1995, 1701		
APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER BY:	ENGINEER OF WORK CRAIG SHANNON RCE 55556	GRADING PERMIT NO: L15060
Date		



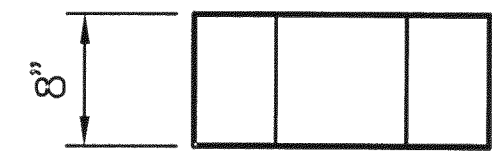
SIMON WONG ENGINEERING
9998 Hibert Street, Second Floor
San Diego, CA 92131
(858) 585-3113
Job No. 520-027



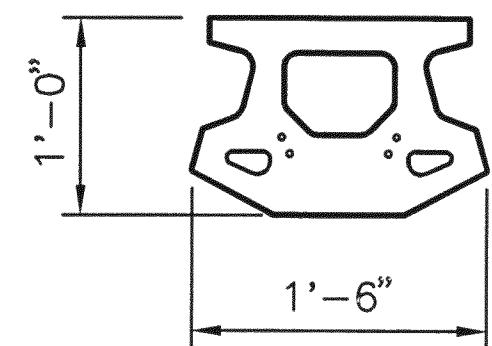
GEOGRID IS TO BE PLACED ON LEVEL BACKFILL AND EXTENDED OVER THE FIBERGLASS PINS. PLACE NEXT UNIT. PULL GRID TAUGHT AND BACKFILL. STAKE AS REQUIRED.

GRID AND PIN CONNECTION

NO SCALE



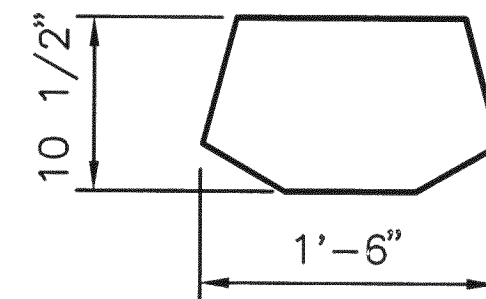
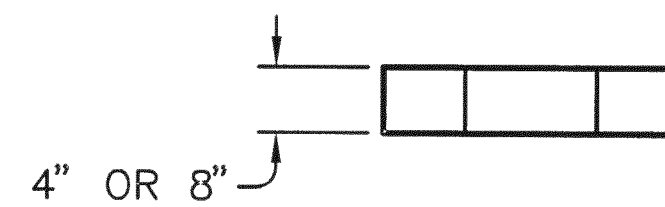
ELEVATION



PLAN

COMPAC II UNIT DETAILS

1" = 1'-0"



PLAN

CAP UNIT DETAILS

1" = 1'-0"

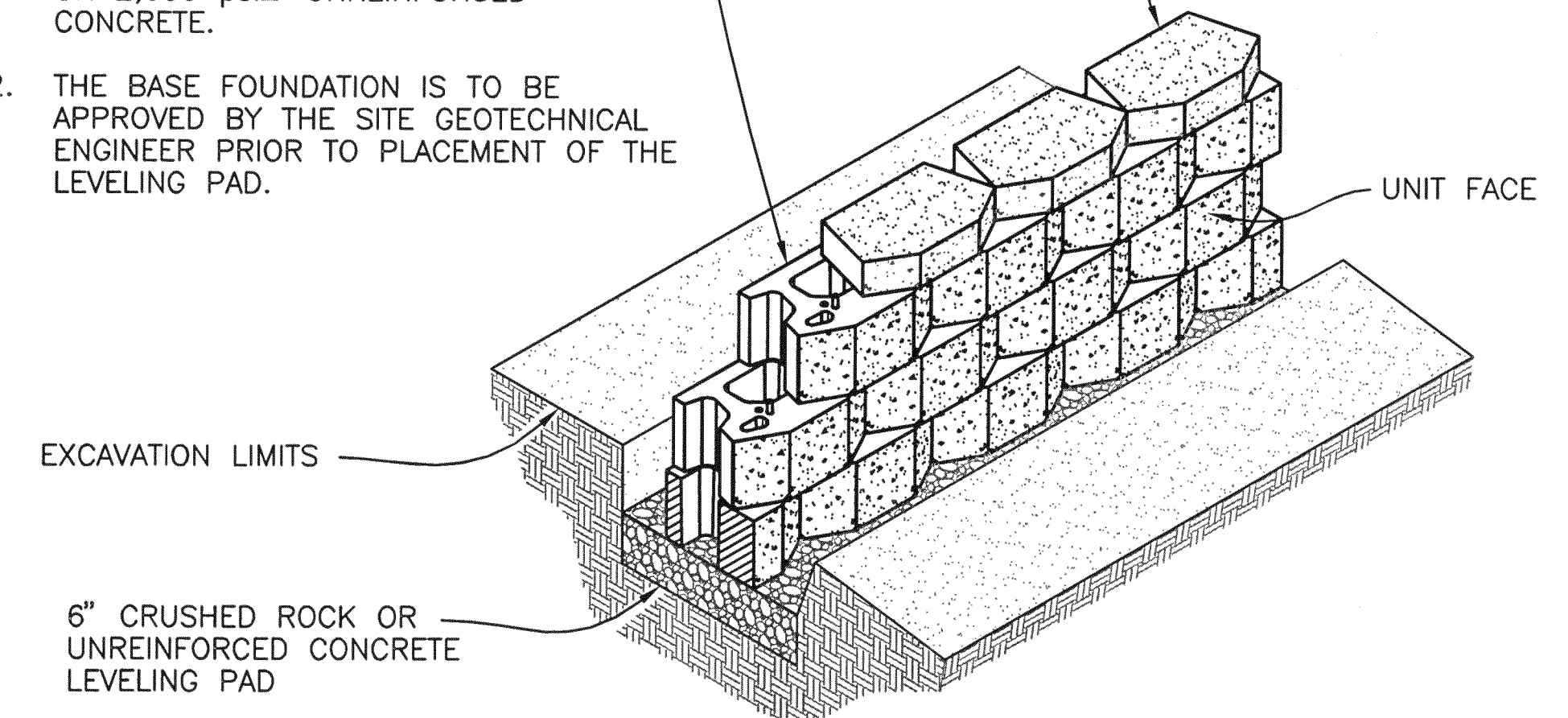
BASE LEVELING PAD NOTES:

1. THE LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED ROCK OR 2,000 psi± UNREINFORCED CONCRETE.
2. THE BASE FOUNDATION IS TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE LEVELING PAD.

COMPAC II UNIT
WIDTH 18"
DEPTH 12"
HEIGHT 8"
WEIGHT 82 LBS

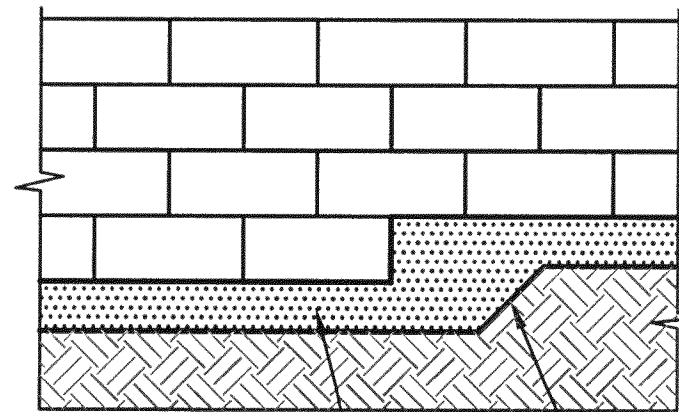
8" CAP UNIT OR 4" CAP UNIT
WIDTH 18"
DEPTH 10 1/2"
HEIGHT 8"
WEIGHT 95 LBS

4" CAP UNIT
WIDTH 18"
DEPTH 10 1/2"
HEIGHT 4"
WEIGHT 45 LBS



COMPAC II UNIT / BASE PAD DETAIL

NO SCALE

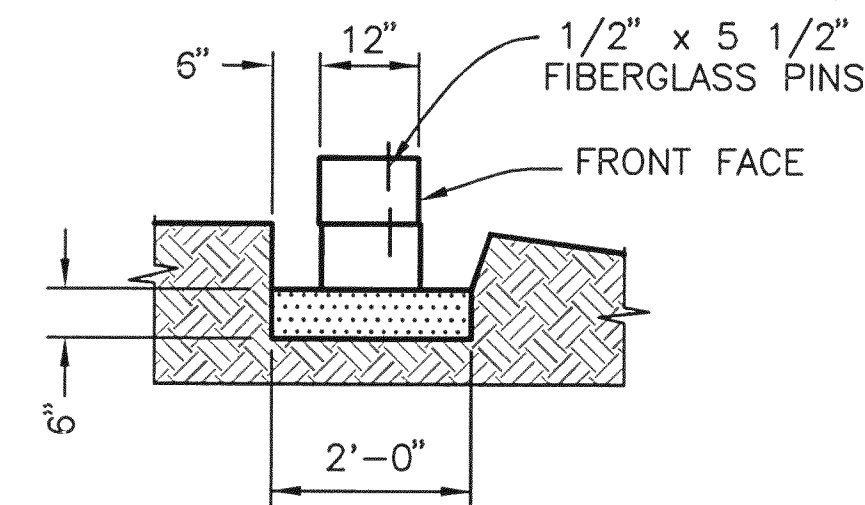


6" CRUSHED ROCK OR UNREINFORCED CONCRETE LEVELING PAD

8" STEP

NOTE: LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED STONE OR 2000± psi UNREINFORCED CONCRETE.

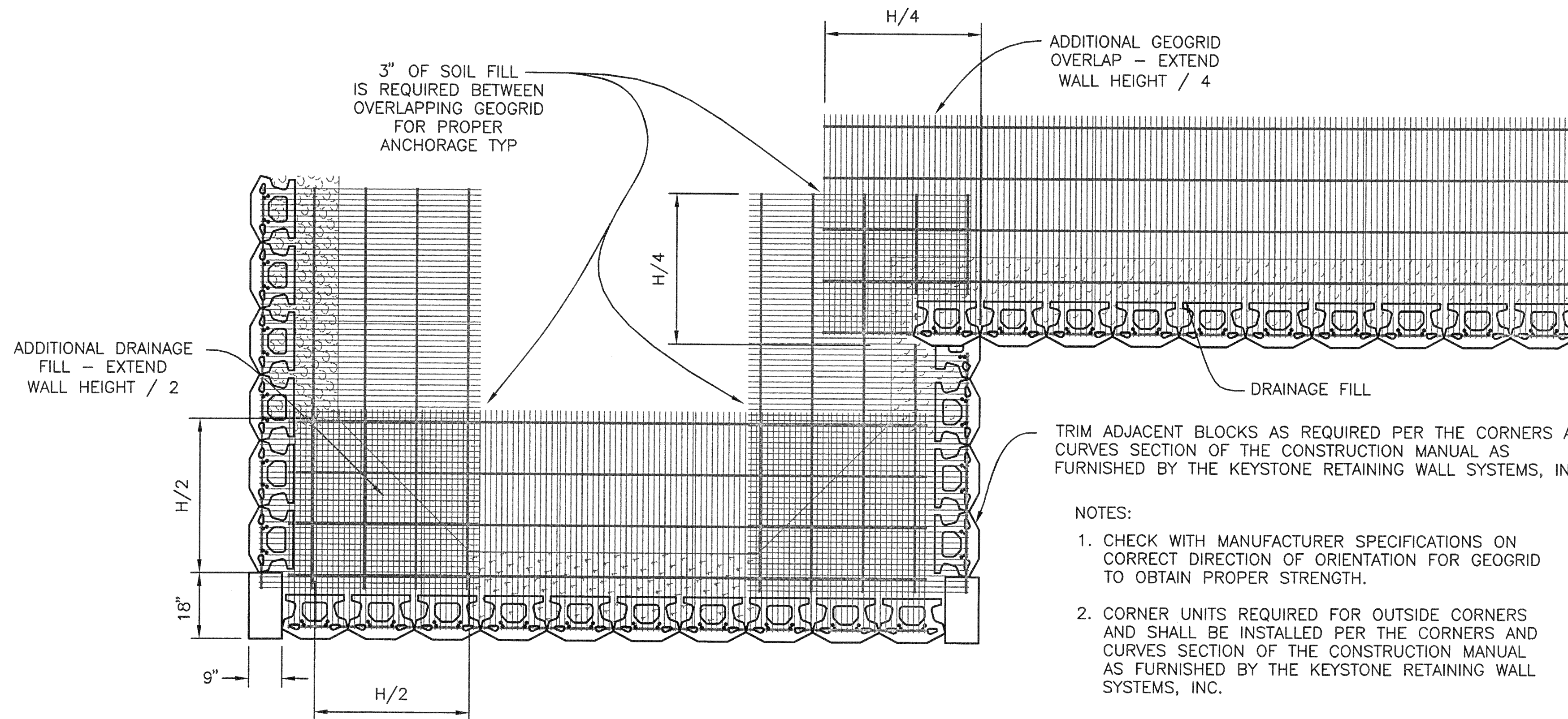
ELEVATION



SECTION

LEVELING PAD DETAIL

NO SCALE



GEOGRID INSTALLATION AT CORNERS

NO SCALE

TRIM ADJACENT BLOCKS AS REQUIRED PER THE CORNERS AND CURVES SECTION OF THE CONSTRUCTION MANUAL AS FURNISHED BY THE KEYSTONE RETAINING WALL SYSTEMS, INC.

NOTES:

1. CHECK WITH MANUFACTURER SPECIFICATIONS ON CORRECT DIRECTION OF ORIENTATION FOR GEOGRID TO OBTAIN PROPER STRENGTH.
2. CORNER UNITS REQUIRED FOR OUTSIDE CORNERS AND SHALL BE INSTALLED PER THE CORNERS AND CURVES SECTION OF THE CONSTRUCTION MANUAL AS FURNISHED BY THE KEYSTONE RETAINING WALL SYSTEMS, INC.

4" OR 8" CAP BLOCK AS SHOWN ON WALL PROFILE

1/2 BLOCK OVERLAP AT WALL STEP TYP

NOTE: SECURE ALL CAP UNITS WITH KEYSTONE KAPSEAL OR APPROVED EQUAL.

TOP OF WALL STEPS

NO SCALE

COUNTY APPROVED CHANGES

NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO.	937C344654
REZONE PERMIT NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4976-RPL 4R

BENCH MARK

DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS Q53 (ELEV.=809.253') AND TE 3 (ELEV.=535.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT

SHEET 13	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
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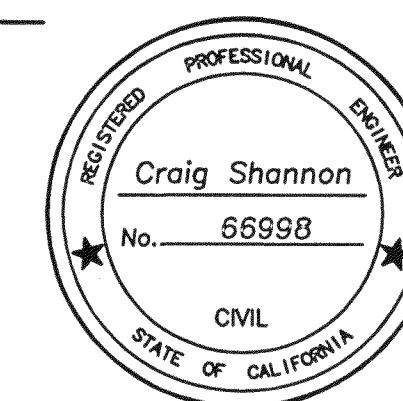
KEYSTONE WALL DETAILS FOR:

TM 4976-RPL4R

CA.COOR.INDEX 410-1595, 1701

APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER BY:	ENGINEER OF WORK CRAIG SHANNON RCE 55555
--	---

Date _____ GRADING PERMIT NO: L15060



SIMON WONG ENGINEERING

9968 Hibert Street, Second Floor
San Diego, CA 92131
(858) 586-3113

Job No. 520-027

KEYSTONE WALL NOTES

GENERAL NOTES

1. REFERENCE DOCUMENTATION

- OLIVE HILL TOPOGRAPHY, LAYOUT LINE, GRADING AND PROFILE DRAWINGS PROVIDED BY BHA, INC.
- "GEO TECHNICAL INVESTIGATION, OLIVE HILL ESTATES, SAN DIEGO COUNTY, TRACT NO. 4979-RPL 4, BONSALL, CALIFORNIA", (PROJECT NO. G1564-42-01), PROVIDED BY GEOCON, INCORPORATED, DATED JULY 19, 2013.
- "KEYSTONE CONSTRUCTION MANUAL", PROVIDED BY KEYSTONE RETAINING WALL SYSTEMS, INC., DATED 2012.
- "KEYSTONE DESIGN MANUAL", PROVIDED BY KEYSTONE RETAINING WALL SYSTEMS, INC., DATED FEBRUARY 2011 WITH ADDENDA.

2. DESIGN PARAMETERS

- DESIGN OF THE REINFORCED SOIL STRUCTURE IS BASED ON THE FOLLOWING PARAMETERS:

LOCATION	FRICTION ANGLE	COHESION	UNIT WEIGHT
REINFORCED BACKFILL	32°	0 psf	132 pcf
RETAINED BACKFILL	32°	0 psf	132 pcf
FOUNDATION	32°	0 psf	132 pcf

THE SITE GEOTECHNICAL ENGINEER SHALL VERIFY THE SITE SOIL CONDITIONS ARE IN SUBSTANTIAL CONFORMANCE WITH THE ABOVE DESIGN VALUES PRIOR TO WALL CONSTRUCTION.

HORIZONTAL PEAK GROUND ACCELERATION = 0.33 g

- EXTERNAL STABILITY OF WALLS

BACKFILL SLOPE = 2 : 1 MAX
LIVE LOAD SURCHARGE = 50 psf
NO HYDROSTATIC LOADING HAS BEEN APPLIED

3. MATERIALS

- MASONRY UNITS SHALL BE KEYSTONE COMPAC II TRIPLANE UNITS HAVING DIMENSIONS OF 18"W x 12"D x 8"H AND 4"H AND 8"H CAP UNITS AND SHALL BE MANUFACTURED IN ACCORDANCE WITH ICC EVALUATION SERVICE LEGACY REPORT NO. ESR-2113, DATED AUGUST 1, 2013.
- WALL UNIT CONNECTING PINS SHALL BE 1/2" DIAMETER NON-CORROSIVE FIBERGLASS RODS WITH A MINIMUM FLEXURAL STRENGTH OF 128,000 psi AND SHORT BEAM SHEAR STRENGTH OF 6,400 psi AND SHALL BE MANUFACTURED IN ACCORDANCE WITH ICC EVALUATION SERVICE LEGACY REPORT NO. ESR-2113, DATED AUGUST 1, 2013.
- GEOGRID MATERIAL SHALL BE MIRAFI 2XT, 3XT, 5XT, OR 7XT (OR APPROVED EQUAL) AS SHOWN ON THE WALL PROFILE AND SHALL HAVE THE PROPERTY REQUIREMENTS DESCRIBED WITHIN THE MANUFACTURER'S SPECIFICATIONS AND REQUIRED BY THE DESIGN.
- REINFORCED BACKFILL SHALL BE FREE OF DEBRIS OR ORGANIC MATERIAL WITH A PLASTICITY INDEX < 15, AND SHALL MEET THE FOLLOWING GRADATION IN ACCORDANCE WITH ASTM D-422:

SIEVE SIZE	% PASSING
2"	100
3/4"	75 - 100
No. 40	0 - 60
No. 200	0 - 35

ALL BACKFILL MATERIAL SHALL BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER.

- UNIT DRAINAGE FILL SHALL CONSIST OF CLEAN 1" MINUS CRUSHED STONE OR CRUSHED GRAVEL MEETING THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING
1"	100
3/4"	75 - 100
No. 4	0 - 10
No. 50	0 - 5

GRADATION OF THE FILL SHALL BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER.

- BASE LEVELING PAD MATERIAL SHALL CONSIST OF COMPACTED CRUSHED ROCK OR UNREINFORCED CONCRETE AS SHOWN ON THE PLANS.
- 4" DIA PERFORATED PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM D-3034.
- LATERAL EARTH PRESSURES ARE DETERMINED USING RANKINE EARTH PRESSURE THEORY

1. INTERNAL STABILITY OF WALLS

MINIMUM FACTOR OF SAFETY ON GEOGRID STRENGTH = 1.50
MINIMUM FACTOR OF SAFETY ON GEOGRID PULLOUT = 1.50
PERCENT COVERAGE OF GEOGRID = 100%

2. EXTERNAL STABILITY

MINIMUM FACTOR OF SAFETY AGAINST BASE SLIDING = 1.50
MINIMUM FACTOR OF SAFETY AGAINST OVERTURNING = 2.00
MINIMUM FACTOR OF SAFETY AGAINST SOIL BEARING OVERSTRESS = 2.50
UNIFORM SURCHARGE = AS SHOWN ON STRUCTURAL CALCULATIONS
BACKFILL SLOPE = 2 : 1 MAX

3. MATERIALS (CONTINUED)

- PRE-ENGINEERED FOUNDATION SYSTEM SHALL BE SLEEVE-IT 1224R 12" DIA FENCE POST FOUNDATION SYSTEM (OR APPROVED EQUAL) AS SHOWN ON THE WALL PROFILE AND SHALL BE MANUFACTURED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND SHALL BE DESIGNED IN COMPLIANCE WITH IBC SECTION 1013.1, 1013.2, AND 1607.7.1.

4. DELIVERY, STORAGE, AND HANDLING

- CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAVE BEEN RECEIVED.
- CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOB SITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS (I.E. CRACKS, CHIPS, AND SPOILS) SHALL NOT BE INCORPORATED INTO THE WORK.
- GEOGRIDS SHALL BE STORED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

5. WORK INCLUDED

THE WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTING KEYSTONE / GEOGRID REINFORCED SOIL RETAINING WALL SYSTEMS IN ACCORDANCE WITH THIS TECHNICAL SCOPE OF WORK AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES AND DIMENSIONS SHOWN ON THE GRADING PLANS BY BHA, INC.

- FURNISHING KEYSTONE SEGMENTAL CONCRETE FACING AND CAP UNITS AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- FURNISHING MIRAFI STRUCTURAL GEOGRID REINFORCEMENT OR EQUIVALENT AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- STORING, CUTTING, AND PLACING STRUCTURAL GEOGRID REINFORCEMENT AS SPECIFIED HEREIN AND AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- PLACEMENT AND COMPACTION OF UNIT WALL FILL AND BACKFILL WITHIN THE GEOGRID REINFORCED AREA AS SPECIFIED HEREIN AND AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- ERECTION OF KEYSTONE SEGMENTAL CONCRETE UNITS AND PLACEMENT OF STRUCTURAL GEOGRID.
- SUBGRADE PREPARATION FOR SLEEVE-IT 1224R FENCE POST FOUNDATION SYSTEM.
- ASSEMBLY AND INSTALLATION OF SLEEVE-IT 1224R FENCE POST FOUNDATION SYSTEM AND CONCRETE ANCHORAGES FOR POSTS.

INSTALLATION

1. EXECUTION

- CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE PLANS.
- EXCAVATED FOUNDATION SHALL BE OBSERVED AND APPROVED BY THE INSPECTOR TO CONFIRM THAT THE ACTUAL FOUNDATION SOIL CONDITIONS ARE CONSISTENT WITH CONDITIONS ASSUMED FOR DESIGN. UNACCEPTABLE FOUNDATION SOILS SHALL BE REMOVED AND REPLACED WITH APPROVED COMPACTED BACKFILL MATERIAL. FOUNDATION SOIL SHALL BE PROOF ROLLED PRIOR TO FILL AND GEOGRID PLACEMENT. OVER EXCAVATION AND REPLACEMENT OF UNSUITABLE FOUNDATION SOILS SHALL BE REPLACED WITH COMPACTED GRANULAR BACKFILL MATERIAL OR SOILS, APPROVED BY A QUALIFIED GEOTECHNICAL ENGINEER TO THE LINES AND GRADE SHOWN ON THE CONSTRUCTION DRAWINGS.
- LEVELING PAD MATERIALS SHALL CONSIST OF WELL GRADED ROCK (3/4" MAX SIZE), TO A MINIMUM THICKNESS OF 6" ON COMPACTED ENGINEERED FILL. DIMENSIONS SHOWN ON PLANS. FINISHED LEVELING PAD SHALL HAVE A SMOOTH LEVEL SURFACE TO PROVIDE COMPLETE SUPPORT OF THE FIRST COURSE OF RETAINING WALL UNITS.
- KEYSTONE WALL SHALL BE INSTALLED PER THE INSTALLATION SECTION OF THE KEYSTONE CONSTRUCTION MANUAL, DATED 2012, AS FURNISHED BY THE KEYSTONE RETAINING WALL SYSTEMS, INC. (OR APPROVED EQUAL). THE FIRST COURSE OF CONCRETE WALL UNITS SHALL BE CHECKED FOR LEVELNESS AND ALIGNMENT AND TO ENSURE THAT UNITS ARE IN FULL CONTACT WITH LEVELING PAD. UNITS SHALL BE PLACED SIDE BY SIDE FOR FULL LENGTH OF WALL. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALIGNMENT MAY BE ACCOMPLISHED BY MEANS OF A STRING LINE OR AN OFFSET FROM BASELINE. INSTALL FIBERGLASS CONNECTING PINS AND FILL ALL VOIDS WITH UNIT FILL MATERIAL. TAMP UNIT FILL. SWEEP ALL EXCESS MATERIAL FROM TOP OF UNITS AND INSTALL NEXT COURSE. ENSURE WALL UNITS OF EACH COURSE ARE COMPLETELY FILLED WITH UNIT FILL MATERIAL AND THAT THE BACKFILL HAS BEEN PLACED AND COMPACTED PRIOR TO PROCEEDING TO NEXT COURSE. ENSURE THAT CONNECTING PINS PROTRUDE A MINIMUM OF 1" INTO NEXT COURSE. TWO PINS ARE REQUIRED PER UNIT. PULL UPPER UNIT FORWARD (AWAY FROM THE EMBANKMENT) AGAINST PINS PROTRUDING FROM THE LOWER COURSE TO ACHIEVE CORRECT UNIT SETBACK SHOWN ON THE PLANS. WHERE THE WALL CHANGES ELEVATION, UNITS SHALL BE STEPPED WITH GRADE OR TURNED INTO THE EMBANKMENT WITH A CONVEX RETURN END. PROVIDE LEVELING PAD FOR UNITS IN AREA OF CONVEX RETURN END. EVERY COURSE OF WALL UNITS SHOULD BE CHECKED FOR LEVELNESS WITH MINOR SHIMMING DONE EVERY COURSE OR TWO TO ENSURE THAT THE UNITS REMAIN TRUE TO DESIGN BATTER. SHIMMING MATERIAL SHOULD BE SOMEWHAT FLEXIBLE, SUCH AS 1/4" NYLON ROPE, TO COMPRESS SLIGHTLY AND DISTRIBUTE LOAD EVENLY WHILE AVOIDING HARD MATERIALS WHICH CAN CREATE LOAD CONCENTRATION POINTS. UNFILLED SECTIONS OF WALL SHOULD NOT BE STACKED MORE THAN 2 FEET ABOVE THE FILL BEHIND THE WALL.
- KEYSTONE CAP UNITS SHALL BE PLACED OVER PROTECTING PINS FROM UNITS BELOW. PULL FORWARD TO CORRECT SET BACK POSITION. BACKFILL AND COMPACT TO FINISH GRADE. AS REQUIRED, PROVIDE PERMANENT MECHANICAL CONNECTION TO WALL UNITS WITH CONSTRUCTION ADHESIVE OR EPOXY.

COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO.	937C344964
REZONE PERMIT NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4975-RPL 4R

BENCH MARK

DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS 053 (ELEV.=809.293') AND TE 3 (ELEV.=535.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT

SHEET 14	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
KEYSTONE WALL NOTES NO. 1		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1595, 1701		
APPROVED MOHAMAD FAKHRRIDDINE COUNTY ENGINEER BY:	ENGINEER OF WORK CRAIG SHANNON RCE 55555	GRADING PERMIT NO. L15060
Date		



**SIMON WONG
ENGINEERING**

9968 Hibert Street, Second Floor
San Diego, CA 92131
(658) 565-3113

Job No. 520-027

KEYSTONE WALL NOTES

INSTALLATION (CONTINUED)

1. EXECUTION (CONTINUED)

- F. GEOGRID SHALL BE PLACED AT THE LOCATIONS AND ELEVATIONS AND TO THE EXTENTS SHOWN ON THE PLANS. GEOGRID SHALL BE ORIENTED WITH THE HIGH STRENGTH DIRECTION (ROLL DIRECTION) PERPENDICULAR TO THE RETAINING WALL ALIGNMENT. CORRECT ORIENTATION OF THE GEOGRID SHALL BE VERIFIED BY THE CONTRACTOR. THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND CONNECTED TO THE CONCRETE WALL UNITS BY HOOKING GEOGRID OVER CONNECTING PINS. GEOGRID SHALL BE PULLED TAUT WITH THE BACK EDGE ADEQUATELY ANCHORED TO MAINTAIN TAUTNESS DURING BACKFILL AND COMPACTION. MANUFACTURER'S GUIDELINES SHALL BE FOLLOWED REGARDING OVERLAP REQUIREMENTS. NO TENSIONING OF THE GEOGRID MATERIALS SHALL BE REQUIRED. GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTH. SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID WILL NOT BE ALLOWED UNLESS PRE-APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. NO CHANGES TO GEOGRID LAYOUT, INCLUDING, BUT NOT LIMITED TO, LENGTH, GEOGRID TYPE, OR ELEVATION, SHALL BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.
- G. BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE. REINFORCED BACKFILL SHALL BE COMPACTED IN LIFTS NOT TO EXCEED 8" AND SHALL BE COMPACTED TO MINIMUM 95% STANDARD PROCTOR DENSITY PER ASTM D-698 OR 92% MODIFIED PROCTOR DENSITY PER ASTM D1557. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE DRY OF OPTIMUM, + 0%, - 3%. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID. A MINIMUM UNCOMPACTED BACKFILL THICKNESS OF 6" IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. RUBBER-TIRED EQUIPMENT MAY PASS OVER THE GEOGRID AT SLOW SPEEDS, LESS THAN 10 MPH. AVOID SUDDEN BRAKING OR SHARP TURNING. ONLY LIGHTWEIGHT HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET OF THE KEYSTONE UNIT BACK SURFACE.

2. AS-BUILT CONSTRUCTION TOLERANCES

- A. VERTICAL ALIGNMENT: $\pm 1.5"$ OVER ANY 10' DISTANCE.
- B. WALL BATTER: WITHIN 2 DEGREES OF DESIGN BATTER.
- C. HORIZONTAL ALIGNMENT: $\pm 1.5"$ OVER ANY 10' DISTANCE.
CORNERS, BENDS AND CURVES: $\pm 1'-0"$ TO THEORETICAL LOCATION.
- D. MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE $1/2"$.

3. QUALITY ASSURANCE

- A. THE OWNER SHALL ENGAGE INSPECTION AND TESTING AGENCIES, INCLUDING INDEPENDENT LABORATORIES TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION OF THE PROJECT.
- B. QUALITY ASSURANCE SHOULD INCLUDE FOUNDATION SOIL INSPECTIONS, VERIFICATION OF GEOTECHNICAL DESIGN PARAMETERS, AND VERIFICATION THAT THE CONTRACTOR'S QUALITY CONTROL TESTING IS ADEQUATE. QUALITY ASSURANCE SHALL ALSO INCLUDE OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN PLANS AND PROJECT SPECIFICATIONS.
- C. TESTING AND INSPECTION SERVICES SHALL BE PERFORMED ONLY BY TRAINED AND EXPERIENCED TECHNICIANS CURRENTLY QUALIFIED FOR THE WORK THEY ARE TO PERFORM.
- D. THE TESTING SHALL INCLUDE SOIL AND BACKFILL TESTING TO VERIFY SOIL TYPES AND COMPACTION AND VERIFICATION THAT THE RETAINING WALL IS BEING CONSTRUCTED IN ACCORDANCE WITH THE DESIGN PLANS AND PROJECT SPECIFICATIONS.

SPECIAL INSPECTION

1. REQUIREMENTS

- A. ESR - 2113.4.3 SPECIAL INSPECTION:
SPECIAL INSPECTION MUST BE PROVIDED IN ACCORDANCE WITH IBC SECTION 1704.5 (IBC AND IRC) OR UBC SECTION 1701.5.7.1. AS APPLICABLE. THE INSPECTOR'S RESPONSIBILITIES INCLUDE VERIFYING THE FOLLOWING:
1. THE MODULAR CONCRETE UNIT DIMENSIONS.
 2. KEYSTONE UNIT IDENTIFICATION COMPLIANCE WITH ASTM C1372 AND UBC STANDARD 21-4, AS APPLICABLE, INCLUDING COMPRESSIVE STRENGTH AND WATER ABSORPTION, AS DESCRIBED IN SECTION 3.1 OF ESR-2113.
 3. FOUNDATION PREPARATION.
 4. KEYSTONE UNIT PLACEMENT, INCLUDING ALIGNMENT AND INCLINATION.
 5. GEOSYNTHETIC REINFORCEMENT TYPE (MANUFACTURER AND MODEL NUMBER) AND PLACEMENT.
 6. BACKFILL PLACEMENT AND COMPACTION.
 7. DRAINAGE PROVISIONS.
- B. SPECIAL INSPECTION SHALL BE PERFORMED ON A CONTINUOUS BASIS.
- C. TYPE AND EXTENT OF EACH TEST
1. MODULAR UNIT DIMENSION SHALL BE VERIFIED ONCE PER WALL PRIOR TO THE START OF CONSTRUCTION.
 2. CONCRETE UNIT IDENTIFICATION COMPLIANCE WITH ASTM C 1372 AND UBC STANDARD 21-4 FOR A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI SHALL BE VERIFIED FOR ALL BLOCK.
 3. FOUNDATION PREPARATION SHALL BE INSPECTED FOR COMPLIANCE WITH THE KEYSTONE RETAINING WALL DESIGN PARAMETERS AND GEOTECHNICAL ENGINEER OF RECORD RECOMMENDATIONS ONCE PER WALL PRIOR TO PLACEMENT OF CONTROLLED FILL.
 4. KEYSTONE UNIT ALIGNMENT AND INCLINATION SHALL BE VERIFIED BY CORRECT PIN PLACEMENT, FRONT OR REAR, AS SHOWN ON THE KEYSTONE RETAINING WALL PLANS. CORRECT PIN PLACEMENT SHALL BE VERIFIED FOR THE FIRST COURSE PIN PLACEMENT AND GENERALLY OBSERVED FOR THE REMAINDER OF WALL CONSTRUCTION.
 5. GEOSYNTHETIC REINFORCEMENT TYPE SHALL BE VERIFIED PRIOR TO CONSTRUCTION WITH AN INSPECTION OF GEOSYNTHETIC REINFORCEMENT DELIVERED TO THE SITE FOR WALL CONSTRUCTION. PLACEMENT OF GEOSYNTHETIC REINFORCEMENT SHALL BE CONTINUALLY OBSERVED DURING WALL CONSTRUCTION FOR COMPLIANCE WITH THE KEYSTONE RETAINING WALL PLANS.
 6. BACKFILL SOIL SHALL BE VERIFIED IN COMPLIANCE WITH THE KEYSTONE RETAINING WALL PLANS AND SOIL DESIGN PARAMETERS PRIOR TO AND PERIODICALLY DURING CONSTRUCTION. BACKFILL SOIL COMPACTION SHALL BE CONTINUOUSLY VERIFIED COMPACTED TO 92% MODIFIED PROCTOR DENSITY PER ASTM D1557 FOR EVERY 20-40 YARDS OF BACKFILL PLACED.
 7. ALL DRAINAGE PROVISIONS SHALL BE VERIFIED IN COMPLIANCE WITH THE KEYSTONE RETAINING WALL PLANS AND THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER OF RECORD AS CONSTRUCTED AND PRIOR TO BACKFILL.
- D. SPECIAL INSPECTION NOTES
1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/DEVELOPER TO INFORM THE SPECIAL INSPECTOR AND/OR MUNICIPAL INSPECTION AGENCY AT LEAST ONE WORKING DAY PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION.
 2. SOILS SPECIAL INSPECTIONS SHALL BE PERFORMED BY THE PROJECT GEOTECHNICAL ENGINEER OF RECORD WHO HAS PREPARED THE APPROVED GEOTECHNICAL INVESTIGATION REPORT.

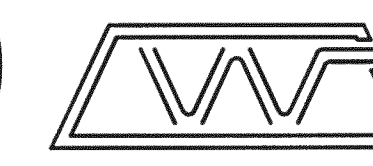
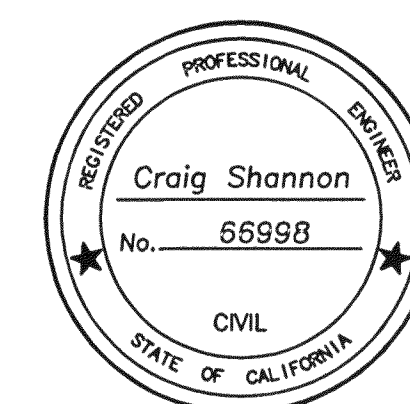
COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS	
N.O.I. NO. _____	937C344954
REZONE PERMIT NO. _____	N/A
SPECIAL USE PERMIT NO. _____	N/A
TENTATIVE MAP NO. _____	TM 4975-RPL 4R

BENCH MARK
DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NOVD 29. SPECIFICALLY BENCHMARKS Q83 (ELEV.=809.253') AND TE 3 (ELEV.=538.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT		
SHEET 15	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS

KEYSTONE WALL NOTES NO. 2	
TM 4976-RPL4R	
CA.COOR.INDEX 410-1895, 1701	
APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER BY: _____ Date _____	ENGINEER OF WORK CRAIG SHANNON RCE 5595B GRADING PERMIT NO: L15060



**SIMON WONG
ENGINEERING**

9958 Hibert Street, Second Floor
San Diego, CA 92131
(858) 555-3113

Job No. 520-027

EROSION CONTROL NOTES

1. ALL BUILDING PADS TO BE DIKED AND THE DIKES MAINTAINED TO PREVENT WATER FROM FLOWING FROM THE PAD UNTIL THE STREETS AND DRIVEWAYS ARE PAVED AND WATER CAN FLOW FROM THE PADS WITHOUT CAUSING EROSION, OR CONSTRUCT DRAINAGE FACILITIES TO THE SATISFACTION OF THE COUNTY DEPARTMENT OF PUBLIC WORKS THAT WILL ALLOW WATER TO DRAIN FROM THE PAD WITHOUT CAUSING EROSION.
2. TOPS OF ALL SLOPES TO BE DIKED OR TRENCHED TO PREVENT WATER FROM FLOWING OVER THE CREST OF SLOPES.
3. MANUFACTURED SLOPES AND PADS SHALL BE ROUNDED VERTICALLY AND HORIZONTALLY AS APPROPRIATE TO BLEND WITH THE SURROUNDING TOPOGRAPHY.
4. AS SOON AS CUTS OR EMBANKMENTS ARE COMPLETED, BUT NOT LATER THAN OCTOBER 1 ALL CUT AND FILL SLOPES SHALL BE STABILIZED WITH A HYDROMULCH MIXTURE OR AN EQUAL TREATMENT APPROVED BY THE COUNTY DEPARTMENT OF PUBLIC WORKS BETWEEN OCTOBER 1 AND APRIL 30. APPROVED SLOPE PROTECTION MEASURES SHALL PROCEED IMMEDIATELY BEHIND THE EXPOSURE OF CUT SLOPES AND/OR THE CREATION OF EMBANKMENT SLOPES.
5. CATCH BASINS, DESILTING BASINS AND STORM DRAIN SYSTEM SHALL BE INSTALLED TO THE SATISFACTION OF THE COUNTY DEPARTMENT OF PUBLIC WORKS.
6. GRAVEL BAG CHECK DAMS TO BE PLACED IN A MANNER APPROVED BY THE COUNTY DEPARTMENT OF PUBLIC WORKS IN UNPAVED STREETS WITH GRADIENTS IN EXCESS OF 2% AND ON OR IN OTHER GRADED OR EXCAVATED AREAS AS REQUIRED BY THE COUNTY DEPARTMENT OF PUBLIC WORKS.
7. THE DEVELOPER TO MAINTAIN THE PLANTING AND EROSION CONTROL MEASURES DESCRIBED ABOVE UNTIL RELIEF OF THE SAME BY THE COUNTY DEPARTMENT OF PUBLIC WORKS. THE DEVELOPER TO REMOVE ALL SOIL INTERCEPTED BY THE GRAVEL BAGS, CATCH BASINS AND DESILTING BASINS AND KEEP THESE FACILITIES CLEAN AND FREE OF SILT AND SAND AS DIRECTED BY THE COUNTY DEPARTMENT OF PUBLIC WORKS. THE DEVELOPER SHALL REPAIR ANY ERODED SLOPES AS DIRECTED BY THE COUNTY DEPARTMENT OF PUBLIC WORKS.

SILTATION AND SEDIMENT CONTROL MEASURES NOTES:

1. THE SEDIMENT BASINS SHALL BE PROVIDED AT THE LOWER END OF EVERY DRAINAGE AREA PRODUCING SEDIMENT RUNOFF. THE BASINS SHALL BE MAINTAINED AND CLEANED TO DESIGN CONTOURS AFTER EVERY RUNOFF PRODUCING STORM. THE BASINS SHOULD BE SEMI-PERMANENT STRUCTURES THAT WOULD REMAIN UNTIL SOIL STABILIZING VEGETATION HAS BECOME WELL ESTABLISHED ON ALL ERODIBLE SLOPES.
2. SEDIMENTATION BASINS MAY NOT BE REMOVED OR MADE INOPERATIVE WITHOUT PRIOR APPROVAL OF THE COUNTY ENGINEER.
3. UTILITY TRENCHES THAT ARE CUT THROUGH BASIN DIKES OR BASIN INLET DIKES SHALL BE PLUGGED WITH GRAVEL BAGS FROM TOP OF PIPE TO TOP OF DIKE.
4. ALL UTILITY TRENCHES SHALL BE BLOCKED AT THE PRESCRIBED INTERVALS WITH A DOUBLE ROW OF GRAVEL BAGS WITH A TOP ELEVATION TWO GRAVEL BAGS BELOW THE GRADED SURFACE OF THE STREET. GRAVEL BAGS ARE TO BE PLACED WITH LAPPED COURSES. THE INTERVALS PRESCRIBED BETWEEN GRAVEL BAG BLOCKING SHALL DEPEND ON THE SLOPE OF THE GROUND SURFACE BUT NOT TO EXCEED THE FOLLOWING:

GRADE OF THE STREET	INTERVAL	NO. OF BAGS HIGH
LESS THAN 2%	AS REQUIRED	1
2% TO 4%	100 FEET	1
4% TO 6%	50 FEET	1
6% TO 10%	50 FEET	2
OVER 10%	25 FEET	2

5. AFTER UTILITY TRENCHES ARE BACKFILLED AND COMPACTED, THE SURFACES OVER SUCH TRENCHES SHALL BE MOUNDING SLIGHTLY TO PREVENT CHANNELING OF WATER IN THE TRENCH AREA. CARE SHOULD BE EXERCISED TO PROVIDE FOR CROSS FLOW AT FREQUENT INTERVALS WHERE TRENCHES ARE NOT ON THE CENTERLINE OF A CROWNED STREET.
6. ALL BUILDING PADS SHOULD BE SLOPED TOWARDS THE DRIVEWAYS AND VELOCITY CHECK DAMS PROVIDED AT THE BASE OF ALL DRIVEWAYS DRAINING INTO THE STREET.
7. PROVIDE VELOCITY CHECK DAMS IN ALL UNPAVED GRADED CHANNELS AT THE INTERVALS INDICATED BELOW:

GRADE OF CHANNEL	INTERVALS BETWEEN CHECK DAMS
LESS THAN 3%	100 FEET
3% TO 6%	50 FEET
OVER 6%	25 FEET

8. PROVIDE VELOCITY CHECK DAMS IN ALL STREET AREAS ACCORDING TO INTERVALS INDICATED BELOW. VELOCITY CHECK DAMS MAY BE CONSTRUCTED OF GRAVEL, TIMBER, OR OTHER EROSION RESISTANT MATERIALS APPROVED BY THE COUNTY ENGINEER, AND SHALL EXTEND COMPLETELY ACROSS THE STREET OR CHANNEL AT RIGHT ANGLES TO THE CENTERLINE. VELOCITY CHECK DAMS MAY ALSO SERVE AS SEDIMENT TRAPS.
9. PROVIDE A GRAVEL BAG SILT BASIN OR TRAP BY EVERY STORM DRAIN INLET TO PREVENT SEDIMENT FROM ENTERING DRAIN SYSTEM.
10. GRAVEL BAGS AND FILL MATERIAL SHALL BE STOCKPILED AT INTERVALS, READY FOR USE WHEN REQUIRED.
11. CLEARED SLOPES FLATTER THAN 3 TO 1 MUST BE PROTECTED FROM EROSION USING EITHER AN APPROVED BMP OR BY USING HYDROMULCH WITH A GUAR BINDER. FLAT AREAS OF LESS THAN 5% (LIKE BUILDING PADS, PARKING AREAS, LEACH FIELDS) SHALL HAVE 100% PROTECTION USING GEOTEXTILES, MATS (SS-7 OR ESC20), OR OTHER MATERIAL APPROVED BY THE COUNTY FOR STABILIZING SLOPES, OS USING TRACKING AND SOIL STABILIZERS/BINDERS (SS-5), TEMPORARY SEEDING (SS-4), MULCH/WOOD CHIPS (SS-3, SS-6, SS-8), OR JUTE MATTING (SS-7).
12. ALL EROSION CONTROL DEVICES WITHIN THE DEVELOPMENT SHOULD BE MAINTAINED DURING AND AFTER EVERY RUNOFF PRODUCING STORM, IF POSSIBLE, MAINTENANCE CREWS WOULD BE REQUIRED TO HAVE ACCESS TO ALL AREAS.
13. PROVIDE ROCK RIPRAP ON CURVES AND STEEP DROPS IN ALL EROSION PRONE DRAINAGE CHANNELS DOWNSTREAM FROM THE DEVELOPMENT. THIS PROTECTION WOULD REDUCE EROSION CAUSED BY THE INCREASED FLOWS THAT MAY BE ANTICIPATED FROM DENUDED SLOPES, OR FROM IMPERVIOUS SURFACES.
14. ANY PROPOSED ALTERNATE CONTROL MEASURES MUST BE APPROVED IN ADVANCE BY ALL RESPONSIBLE AGENCIES, I.E., COUNTY ENGINEER, DEPARTMENT OF SANITATION AND FLOOD CONTROL, OFFICE OF ENVIRONMENTAL MANAGEMENT, ETC.

STABILIZED FIBER MATRIX (SFM)

- THE USE OF SFM IS SUBJECT TO THE FOLLOWING LIMITATIONS AND RESTRICTIONS:**
- SFM MAY BE USED FOR TEMPORARY EROSION CONTROL FOR DISTURBED AREAS WITH A SLOPE RATIO OF 1 VERTICAL TO 2 HORIZONTAL OR SHALLOWER, INCLUDING PAD AND SEPTIC FIELD AREAS.
 - THE SFM SHALL BE APPLIED AT LEAST 24 HOURS BEFORE OR AFTER RAINFALL AND SHALL BE APPLIED TO PROVIDE 100% COVERAGE (I. E. APPLIED FROM MULTIPLE DIRECTIONS AND ANGLES).
 - THE APPLICATION AREA MUST BE PROTECTED BY BROW DITCHES AND OR DIVERSION BERMS AT TOP OF SLOPES TO DIVERT FLOW FROM THE FACE OF THE PROTECTED SLOPE.
 - FOR PERMANENT EROSION CONTROL PURPOSES, SFM MUST BE INSTALLED IN CONJUNCTION WITH SEEDED EROSION CONTROL VEGETATION OR HAND PLANTINGS, AS WITH ALL OTHER APPLICATIONS, SFM WILL NOT BE CONSIDERED PERMANENT UNTIL VEGETATION ESTABLISHMENT.
 - APPLICATION RATES SHALL BE 3500 POUNDS PER ACRE MINIMUM FOR 2:1 OR SHALLOWER SLOPES AND 4000 POUNDS PER ACRE FOR SLOPES STEEPER THAN 2:1.
 - A LETTER FROM THE HYDROSEED CONTRACTOR CERTIFYING THE SFM WAS INSTALLED ACCORDANCE WITH APPROVED APPLICATION RATES, COVERAGE, AND MANUFACTURER'S ILLUSION RATIO SHALL BE SUBMITTED TO THE COUNTY INSPECTOR FOR APPROVAL.

EROSION CONTROL PLANS COUNTY OF SAN DIEGO

STORMWATER PROTECTION NOTES

1. DURING THE RAINY SEASON THE AMOUNT OF EXPOSED SOIL ALLOWED AT ONE TIME SHALL NOT EXCEED THAT WHICH CAN BE ADEQUATELY PROTECTED BY THE PROPERTY OWNER IN THE EVENT OF RAINSTORM. 125% OF ALL SUPPLIES NEEDED FOR BMP MEASURES SHALL BE RETAINED ON THE JOB SITE IN A MANNER THAT ALLOWS FULL DEPLOYMENT AND COMPLETE INSTALLATION IN 48 HOURS OR LESS OF A FORECAST RAIN. ALL OTHER BMP'S SHALL BE DEPLOYED ON AN ON-GOING BASIS.
2. THE ACTIVE DISTURBED AREA SHALL NOT EXCEED 50 ACRES AT ANY GIVEN TIME WITHOUT DEMONSTRATING TO THE SAN DIEGO COUNTY DPW DIRECTOR'S SATISFACTION THAT ADEQUATE EROSION AND SEDIMENT CONTROL CAN BE MAINTAINED. ANY DISTURBED AREA THAT IS NOT ACTIVELY GRADED FOR 10 DAYS MUST BE FULLY PROTECTED FROM EROSION. UNTIL ADEQUATE LONG-TERM PROTECTIONS ARE INSTALLED, THE DISTURBED AREA SHALL BE INCLUDED WHEN CALCULATING THE ACTIVE DISTURBANCE AREA. ALL EROSION CONTROL MEASURES SHALL REMAIN INSTALLED AND MAINTAINED DURING ANY INACTIVE PERIOD.
3. THE PROPERTY OWNER IS OBLIGATED TO INSURE COMPLIANCE WITH ALL APPLICABLE STORMWATER REGULATIONS AT ALL TIMES. THE BMP'S (BEST MANAGEMENT PRACTICES) THAT HAVE BEEN INCORPORATED INTO THIS PLAN SHALL BE IMPLEMENTED AND MAINTAINED TO EFFECTIVELY PREVENT THE POTENTIALLY NEGATIVE IMPACTS OF THIS PROJECT'S CONSTRUCTION ACTIVITIES ON STORMWATER QUALITY. THE MAINTENANCE OF THE BMP'S IS THE PERMITTEE'S RESPONSIBILITY, AND FAILURE TO PROPERLY INSTALL OR MAINTAIN THE BMP'S MAY RESULT IN ENFORCEMENT ACTION BY THE COUNTY OF SAN DIEGO OR OTHERS. IF INSTALLED BMP'S FAIL, THEY MUST BE REPAIRED OR REPLACED WITH AN ACCEPTABLE ALTERNATE WITHIN 24 HOURS, OR AS SOON AS SAFE TO DO SO.
4. A NOTICE OF INTENT (NOI) HAS BEEN, OR WILL BE FILED WITH THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) AND THAT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN OR WILL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF CALIFORNIA GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (PERMIT NO. CAS000002) FOR ALL OPERATIONS ASSOCIATED WITH THESE PLANS. THE NOI NUMBER ASSIGNED BY SWRCB FOR THIS PROJECT IS WDF # (TO BE PROVIDED). THE PERMITTEE SHALL KEEP A COPY OF THE SWPPP ON SITE AND AVAILABLE FOR REVIEW BY COUNTY.

EROSION CONTROL PLANTING AND IRRIGATION OPTION 1

ALL PERMANENT AND TEMPORARY EROSION CONTROL PLANTING AND GEOTEXTILE MATTING SHALL BE INSTALLED AND MAINTAINED AS REQUIRED AND AS FOLLOWS:

A. GEOTEXTILE MATTING SHALL BE APPLIED TO:

- ALL SLOPES THAT ARE GRADED STEEPER THAN 3:1 (HORIZONTAL TO VERTICAL)
 - AREAS GRADED FLATTER THAN 3:1 WHEN ANY OF THE FOLLOWING CONDITIONS EXIST:
 - NOT SCHEDULED FOR IMPROVEMENTS (CONSTRUCTION OR GENERAL LANDSCAPING) WITHIN 60 DAYS OF ROUGH GRADING.
 - IDENTIFIED BY THE DIRECTOR OF PUBLIC WORKS AS HIGHLY VISIBLE TO THE PUBLIC.
 - HAVE ANY SPECIAL CONDITION IDENTIFIED BY THE DIRECTOR OF PUBLIC WORKS THAT WARRANTS IMMEDIATE TREATMENT.
- B. GEOTEXTILE MATERIAL SHALL BE TO THE SATISFACTION OF THE COUNTY DIRECTOR OF PUBLIC WORKS.
- C. GEOTEXTILE MATTING INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
- D. AREAS TO RECEIVE GEOTEXTILE MATTING SHALL BE PREPARED PRIOR TO INSTALLATION PER MANUFACTURER'S RECOMMENDATION.
- E. GEOTEXTILE MATTING AREAS SHALL BE MAINTAINED UNTIL THE PROJECT IS PERMANENTLY LANDSCAPED AND THE PROJECT IS COMPLETED.

EROSION CONTROL PLANTING AND IRRIGATION OPTION 2

THE FOLLOWING BONDED FIBER MATRIX (B.F.M.) EROSION CONTROL MATERIAL HAS BEEN APPROVED FOR USE BY THE COUNTY OF SAN DIEGO ON ALL SOIL SLOPE SURFACES FOR THE PURPOSE OF EROSION CONTROL. THE USE OF B.F.M. IS SUBJECT TO THE FOLLOWING LIMITATION AND RESTRICTIONS:

- APPLICATION RATES SHALL BE 3500 POUNDS PER ACRE MINIMUM FOR 2:1 OR SHALLOWER SLOPES AND 4000 POUNDS PER ACRE FOR SLOPES STEEPER THAN 2:1.
- B.F.M. SHALL BE APPLIED AT LEAST 24 HOURS BEFORE OR AFTER RAINFALL.
- THE SITE MUST BE PROTECTED WITH BROW DITCHES AND/OR DIVERSION BERMS AT THE TOP OF SLOPES TO DIVERT FLOW FROM THE FACE OF THE SLOPE.
- B.F.M. SHALL BE APPLIED TO PROVIDE 100% COVERAGE (I.E. APPLICATION FROM MULTIPLE ANGLES).
- FOR PERMANENT EROSION CONTROL PURPOSES, B.F.M. MUST BE INSTALLED IN CONJUNCTION WITH SEEDED EROSION CONTROL VEGETATION.
- A LETTER FROM THE HYDROSEED CONTRACTOR CERTIFYING THAT THE B.F.M. HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED APPLICATION RATES AND COVERAGE REQUIREMENTS SHALL BE SUBMITTED TO THE COUNTY INSPECTOR FOR APPROVAL.

RAINY SEASON REQUIREMENTS (OCTOBER 1 THROUGH APRIL 30)

- IN ADDITION TO THE REQUIREMENTS LISTED UNDER THE DRY SEASON REQUIREMENTS:
- PERIMETER PROTECTION AND SEDIMENT CONTROL BMP'S MUST BE UPGRADED IF NECESSARY TO PROVIDE SUFFICIENT PROTECTION FOR STORMS LIKELY TO OCCUR DURING THE RAINY SEASON.
 - ADEQUATE PHYSICAL OR VEGETATION EROSION CONTROL BMP'S MUST BE INSTALLED AND ESTABLISHED FOR ALL COMPLETED SLOPES PRIOR TO THE START OF THE RAINY SEASON. THESE BMP'S MUST BE MAINTAINED THROUGHOUT THE RAINY SEASON. IF A SELECTED BMP FAILS, IT MUST BE REPAIRED AND IMPROVED, OR REPLACED WITH AN ACCEPTABLE ALTERNATE AS SOON AS IT IS SAFE TO DO SO. THE FAILURE OF A BMP SHOWS THAT THE BMP, AS INSTALLED, WAS NOT ADEQUATE FOR THE CIRCUMSTANCES IN WHICH IT WAS USED. REPAIRS OR REPLACEMENTS MUST THEREFORE PUT A MORE ROBUST BMP IN PLACE.
 - THE AMOUNT OF EXPOSED SOIL ALLOWED AT ONE TIME SHALL NOT EXCEED THAT WHICH CAN BE ADEQUATELY PROTECTED BY DEPLOYING STANDBY EROSION CONTROL AND SEDIMENT CONTROL BMP'S PRIOR TO A RAINSTORM.
 - A DISTURBED AREA THAT IS NOT COMPLETED BUT THAT IS NOT BEING ACTIVELY GRADED MUST BE FULLY PROTECTED FROM EROSION IF LEFT FOR 15 OR MORE DAYS. THE ABILITY TO DEPLOY STANDBY BMP MATERIALS IS NOT SUFFICIENT FOR THESE AREAS. BMP'S MUST ACTUALLY BE DEPLOYED.

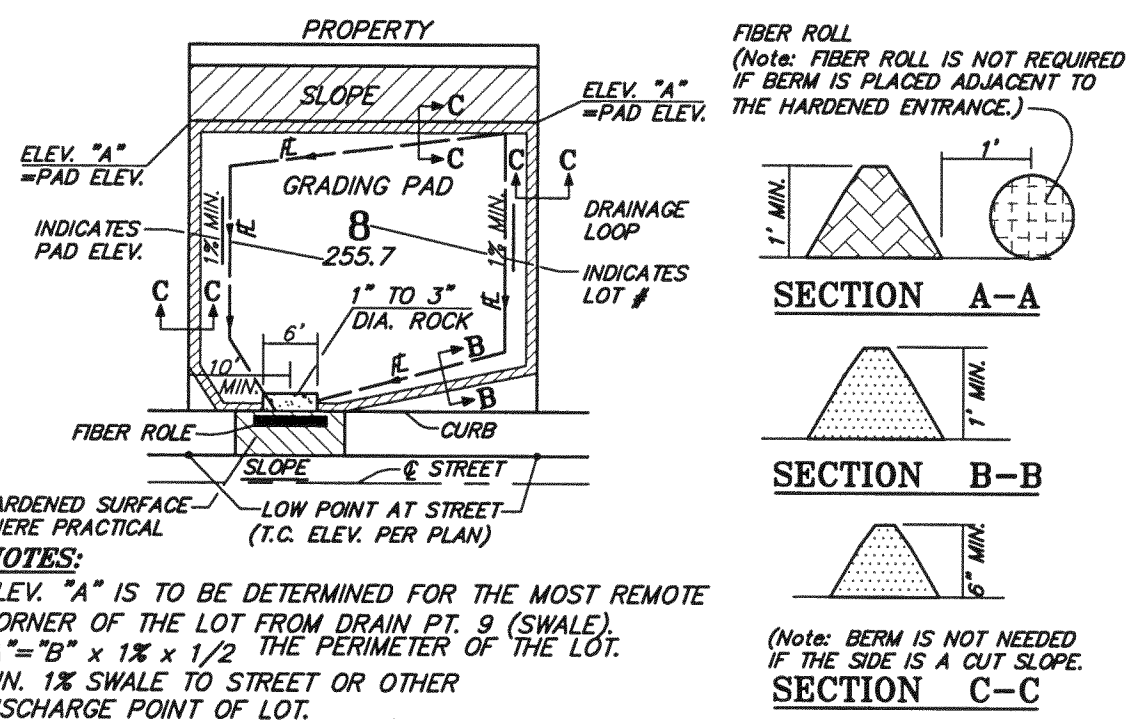
GENERAL EROSION CONTROL NOTES

1. IN CASE EMERGENCY WORK IS REQUIRED, CONTACT PAULETTE BOTTI, AT (858) 792-0708
2. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. ALL NECESSARY MATERIALS SHALL BE STOCKPILED ON SITE AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
3. DEVICES SHOWN ON PLANS SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE ENGINEERING INSPECTOR.
4. THE CONTRACTOR SHALL RESTORE ALL EROSION CONTROL DEVICES TO WORKING ORDER TO THE SATISFACTION OF THE PROJECT ENGINEER AFTER EACH RUN-OFF PRODUCING RAINFALL.
5. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL MEASURES AS MAY BE REQUIRED BY THE COUNTY DIRECTOR OF PUBLIC WORKS DUE TO UNCOMPLETED GRADING OPERATIONS OR UNFORESEEN CIRCUMSTANCES WHICH MAY ARISE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.
7. ALL EROSION CONTROL MEASURES PROVIDED PER THE APPROVED GRADING PLAN SHALL BE INCORPORATED HEREON.
8. GRADED AREAS AROUND THE PROJECT PERIMETER MUST DRAIN AWAY FROM THE FACE OF SLOPE AT THE CONCLUSION OF EACH WORKING DAY.
9. ALL REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE FIVE (5) DAY RAIN PROBABILITY FORECAST EXCEEDS FORTY PERCENT (40%). SILT AND OTHER DEBRIS SHALL BE REMOVED AFTER EACH RAINFALL.
10. ALL GRAVEL BAGS SHALL BE BURLAP TYPE OR NYLON MESH WITH 3/4 INCH MINIMUM AGGREGATE.
11. SHOULD GERMINATION OF HYDROSEEDS SLOPES FAIL TO PROVIDE EFFECTIVE EFFECTIVE COVERAGE OF GRADED SLOPES (50% COVERAGE) PRIOR TO AUGUST 15 AND ESTABLISHED BY OCTOBER 1, THE SLOPES SHALL BE STABILIZED BY PUNCH STRAW INSTALLED IN ACCORDANCE WITH SECTION 35.023 OF THE EROSION AND SEDIMENT CONTROL HANDBOOK OF THE DEPARTMENT OF CONSERVATION, STATE OF CALIFORNIA, BY GEOTEXTILES, FIBER ROLLS OR B.F.M. MATS OR OTHER MATERIAL APPROVED BY THE COUNTY OF SAN DIEGO.

STANDARD GRADED PAD PERIMETER CRITERIA

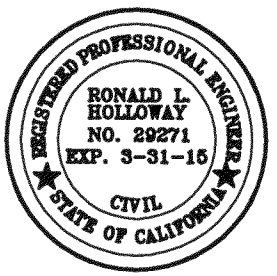
ALL GRADED PADS SHOWN HEREON SHALL OPERATE AS INDIVIDUAL DESILTATION BASINS BASED UPON THE FOLLOWING REQUIREMENTS AND INSTALLATION CRITERIA IN ALLOWANCE WITH THE TYPICAL SKETCH DETAIL SHOWN BELOW.

- MINIMUM CONSTRUCTION STANDARDS:**
- MAXIMUM HOLDING TIME IS 72 HOURS.
 - MAXIMUM SIZE FOR USING LOT PERIMETER PROTECTION IS 1 ACRE OF DISTURBED AREA.
 - BASIN SHALL BE SIZED FOR THE ENTIRE PAD. EACH PAD SHALL BE TREATED SEPARATELY.
 - A BERM WITH A MINIMUM HEIGHT OF 1 FOOT, SHALL BE PLACED AND COMPACTED ALONG THE OUTLET SIDE, A BERM, WITH A MINIMUM HEIGHT OF 6 INCHES, SHALL BE INSTALLED AND COMPACTED AROUND THE REMAINING PERIMETER OF THE PAD.
 - A ROCK FILTER SHALL BE PLACED AT THE OUTLET LOCATION TO SLOWLY RELEASE THE CAPTURED FLOWS. THE ROCK FILTER SHALL BE 6 FEET IN LENGTH.
 - THE ROCK FILTER SHALL HAVE A MINIMUM WIDTH OF 1 FOOT.
 - THE MINIMUM HEIGHT OF THE ROCK FILTER SHALL BE 1 FOOT.
 - THE ROCK SIZE SHALL BE BETWEEN 1 TO 3 INCHES IN DIAMETER.
 - FIBER ROLL WITH THE EQUIVALENT LENGTH OF THE ROCK FILTER SHALL BE PROPERLY PLACED 1 FOOT DOWNSTREAM OF THE ROCK FILTER.
 - ACCESS TO THE PAD SHALL BE RESTRICTED TO PREVENT TRACKING OF THE PAD OR APPROPRIATE TRACKING CONTROL INSTALLED.
- SEE TYPICAL DETAIL BELOW:



TYPICAL LOT GRADING & PERIMETER PROTECTION DETAIL NOT TO SCALE

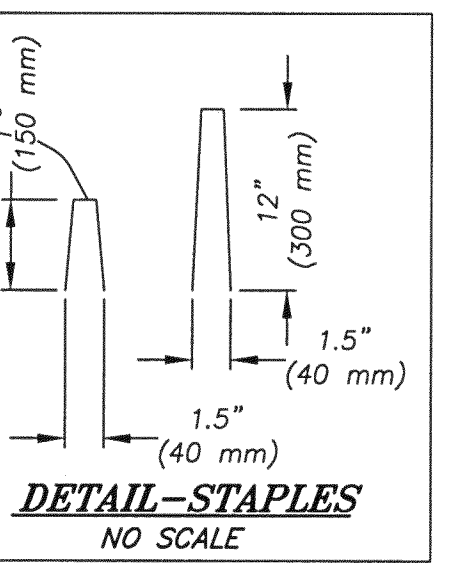
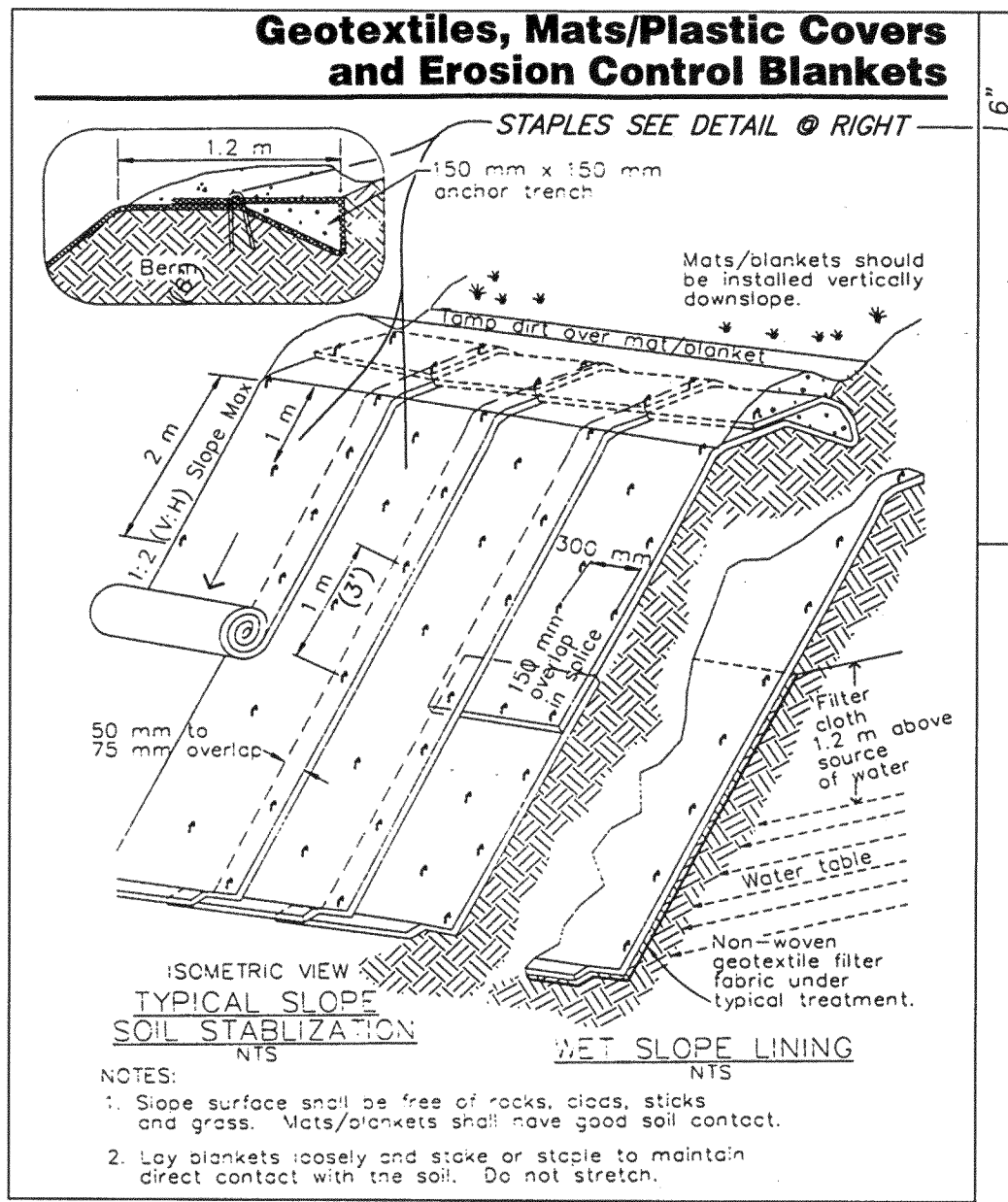
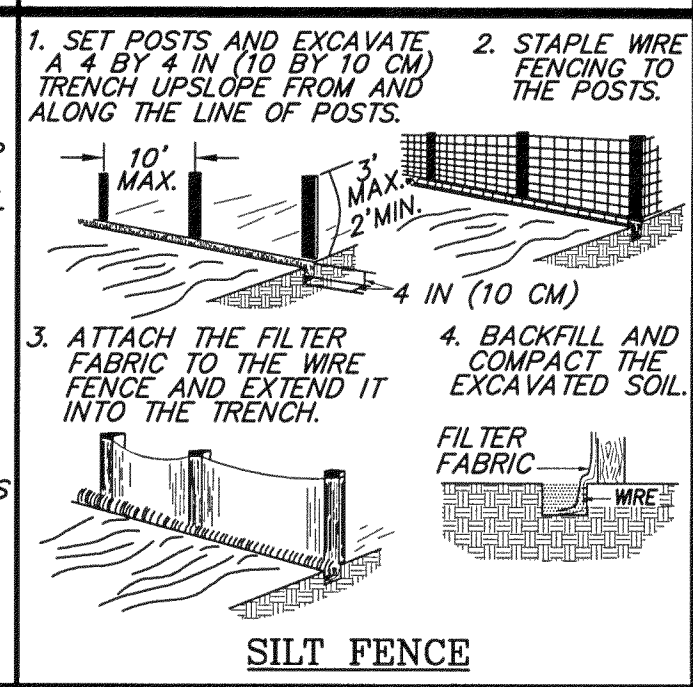
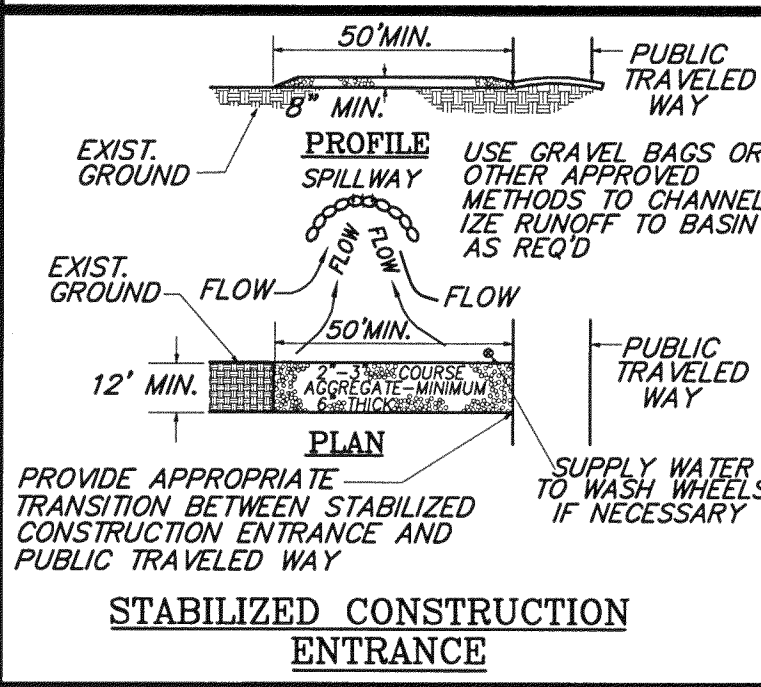
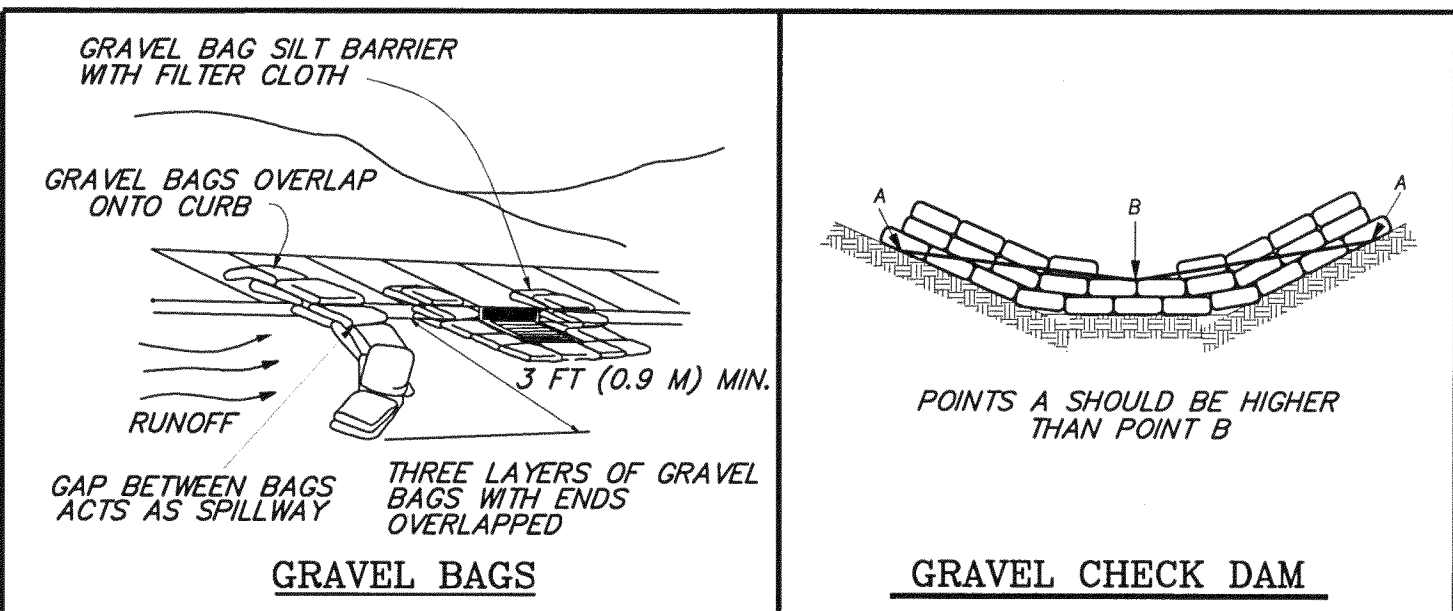
NOTE: SEE SHEETS 17 AND 18 FOR EROSION CONTROL PLANS.



bha inc.
land planning, civil engineering, surveying
5115 AVENIDA ENCINAS
SUITE "L"
CARLSBAD, CA. 92008-4387
(760) 931-8700

LEGEND

DESCRIPTION	CALTRANS NO.	SYMBOL	QUANTITY
STABILIZED CONSTRUCTION ENTRANCE	TC-1		
GRAVEL BAG CHECK DAM	SC-6 & 8		
SILT FENCE	SC-1		
UNLINED SWALE & BERM	SS-9		
D-75 LINED BROW DITCH (TYPE B)			
LIMITS OF CLEARING & GRUBBING			
GRAVEL BAGS	SC-6 & 8		
ROCK RIPRAP PER D-40	SS-10		
VEHICLE & EQUIPMENT STORAGE AREA, GENERAL SITE MANAGEMENT AND MATERIAL STORAGE AREA	NS-8,9 & 10 WM-1,5,6,8 & 9		
GEOTEXTILE MATTING OR BONDED FIBER MATRIX (B.F.M.) W/ VEGETATION STABILIZATION PLANTING.	SS-3,4 & 7		
BIORETENTION BASIN			
STORM DRAIN INLET PROTECTION (PER SWMP)			



BMP STENCIL PLACEMENT NOTES:

- ALL STORM DRAIN INLETS AND CATCH BASINS WITHIN THE PROJECT AREA SHALL HAVE A STENCIL OR TILE PLACED WITH PROHIBITIVE LANGUAGE (SUCH AS "NO-DUMPING-I LIVE IN <NAME RECEIVED WATER>") AND/OR GRAPHICAL ICONS, TO DISCOURAGE ILLEGAL DUMPING.
- SIGNS AND PROHIBITIVE LANGUAGE AND/OR GRAPHICAL ICONS, WHICH PROHIBIT ILLEGAL DUMPING, MUST BE POSTED AT PUBLIC ACCESS POINTS ALONG CHANNELS AND CREEKS WITHIN THE PROJECT AREA.
- LEGIBILITY OF STENCILS, TILES AND SIGNS MUST BE MAINTAINED AND TILES MUST BE PLACED FLUSH WITH THE TOP OF CONCRETE TO REDUCE TRIPPING BY PEDESTRIANS.

STANDARD BMP REVIEW COMMENT:

PROPOSALS THAT INCREASE IMPERVIOUS SURFACE SHALL PROVIDE A BMP PLAN SHOWING DRAINAGE FROM THESE SURFACES BEING DIRECTED TO FLAT VEGETATED AREAS (BIO-SWALES) IN THE DIRECTION OF RUNOFF FLOW. BMP PLAN SHALL INDICATE THAT NEW WALKWAYS, AND OTHER LOW TRAFFIC AREAS SHALL BE CONSTRUCTED WITH PERMEABLE SURFACES, SUCH AS PERVIOUS CONCRETE, POROUS ASPHALT, UNIT PAVERS, OR GRANULAR MATERIALS THAT ALLOW INFILTRATION. BMP PLAN SHALL PROVIDE A SYMBOL FOR LANDSCAPED/BIOFILTRATION AREAS. SHOW THIS SYMBOL ON THE DRAINAGE LEGEND AND ON THE PLANS. SITE PLAN SHALL SHOW DRAINAGE FROM IMPERVIOUS SURFACES AND ROOFTOP DOWN DRAINS ROLLED THROUGH LANDSCAPED/BIOFILTER AREAS PRIOR TO LEAVING PROJECT SITE OR ENTERING THE STORM WATER CONVEYANCE SYSTEM.

FOR BIO SWALES NOTE:

PERMANENT POST-CONSTRUCTION BMP DEVICES (BIO-SWALES SHOWN ON THIS SHEET) SHOWN ON PLAN SHALL NOT BE REMOVED OR MODIFIED WITHOUT THE APPROVAL OF THE COUNTY OF SAN DIEGO.

NOTE:

"ENERGY DISSIPATORS SHALL BE INSTALLED IN SUCH A WEAY AS TO MINIMIZE IMPACTS TO RECEIVING WATERS AND RUNOFF CONVEYED SAFELY TO NATURAL VEGETATED AREAS, WHICH ACT AS VEGETATED SWALE TREATMENT BMP'S.

DRAINAGE NOTE

THE DEVELOPER SHALL EXERCISE SPECIAL CARE DURING THE CONSTRUCTION PHASE OF THIS PROJECT TO PREVENT ANY OFFSITE SILTATION. THE DEVELOPER SHALL PROVIDE EROSION CONTROL MEASURES AND SHALL CONSTRUCT TEMPORARY DESILTATION/DETENTION BASINS OF TYPE, SIZE & LOCATION AS APPROVED BY THE ENGINEERING SERVICES DIRECTOR/COUNTY ENGINEER. THE BASINS AND EROSION CONTROL MEASURES SHALL BE SHOWN AND SPECIFIED ON THE GRADING PLAN AND SHALL BE CONSTRUCTED TO THE SATISFACTION OF THE ENGINEERING SERVICES DIRECTOR/COUNTY ENGINEER PRIOR TO THE START OF ANY OTHER GRADING OPERATIONS. PRIOR TO THE REMOVAL OF ANY BASINS OR FACILITIES SO CONSTRUCTED THE AREA SERVED SHALL BE PROTECTED BY REMOVAL OF ANY BASINS OR FACILITIES. SLOPE EROSION CONTROL MEASURES AND OTHER METHODS REQUIRED OR APPROVED BY THE ENGINEERING SERVICES DIRECTOR/COUNTY ENGINEER. THE DEVELOPER SHALL MAINTAIN THE TEMPORARY BASINS AND EROSION CONTROL MEASURES FOR A PERIOD OF TIME SATISFACTORY TO THE ENGINEERING SERVICES DIRECTOR/COUNTY ENGINEER AND SHALL GUARANTEE THEIR MAINTENANCE AND SATISFACTORY PERFORMANCE THROUGH CASH DEPOSIT AND BONDING IN AMOUNTS AND TYPES SUITABLE TO THE ENGINEERING SERVICES DIRECTOR/COUNTY ENGINEER.

STORMWATER PROTECTION NOTE

ALL CURB INLETS SHOWN TO BE CONSTRUCTED PER THIS PLAN, SHALL BE FITTED WITH FILTERS AS MANUFACTURED BY CLEAR WATER SOLUTIONS, OR EQUIVALENT AS APPROVED BY THE COUNTY OF SAN DIEGO.

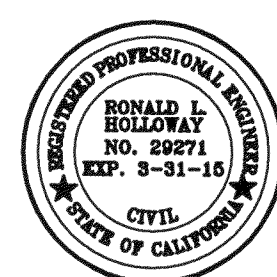
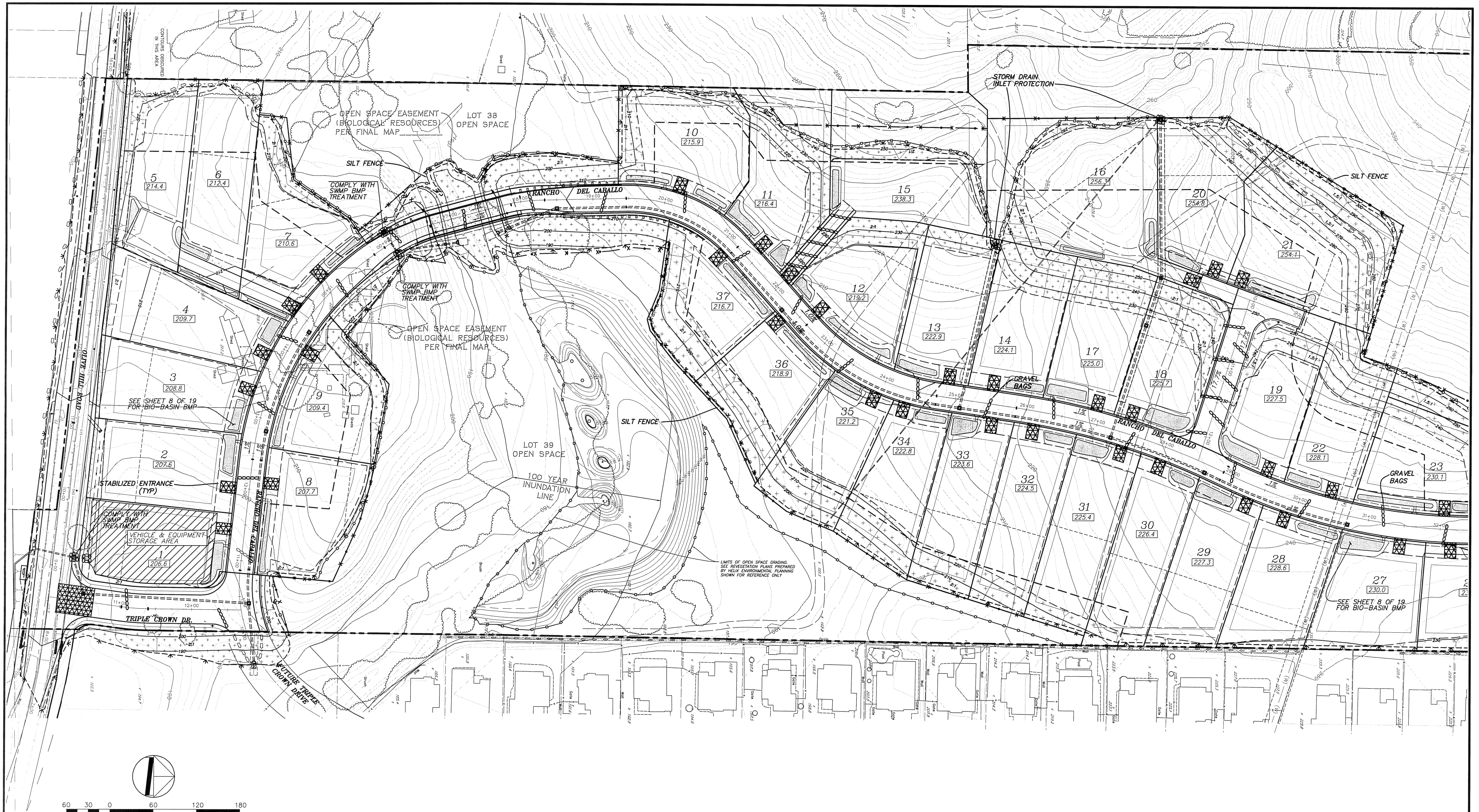
COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS	
N.O.I. NO.	2006 PDS 2007-3967-07-001
LANDSCAPE NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4976 RPL 4R
IMPROVEMENT PERMIT NO.	PDS 2006-2140-4976-1

BENCH MARK	
DESCRIPTION:	THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARK Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.

PRIVATE CONTRACT		
SHEET 16	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
EROSION CONTROL & BMP NOTES & DETAILS FOR:		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1695.1701		
APPROVED MOHAMMAD FAKHRIDDINE COUNTY ENGINEER	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 29271	
	GRADING PERMIT NO. PDS 2006-2700-15060	
Date		

bha inc. 5115 AVENIDA ENCINAS CARLSBAD, CA. 92008 (760) 931-8700

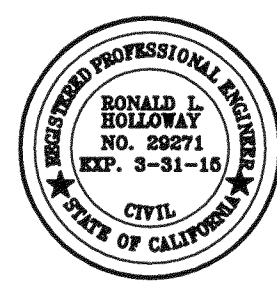
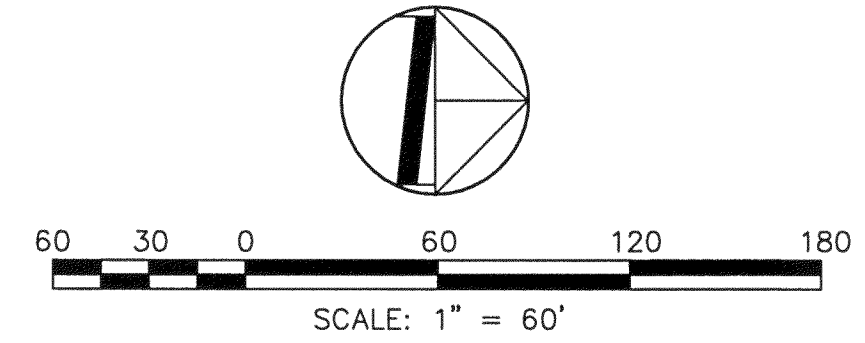
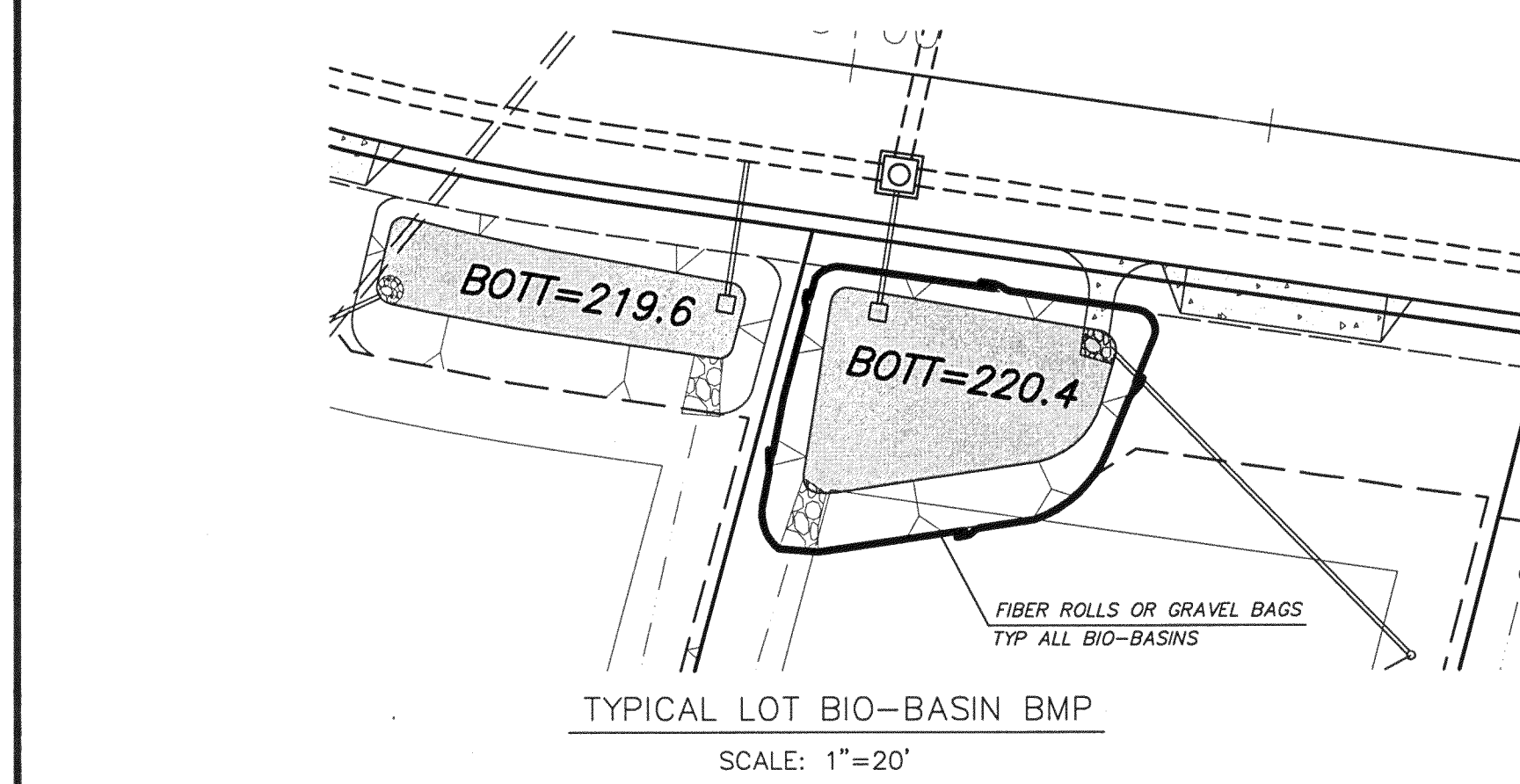
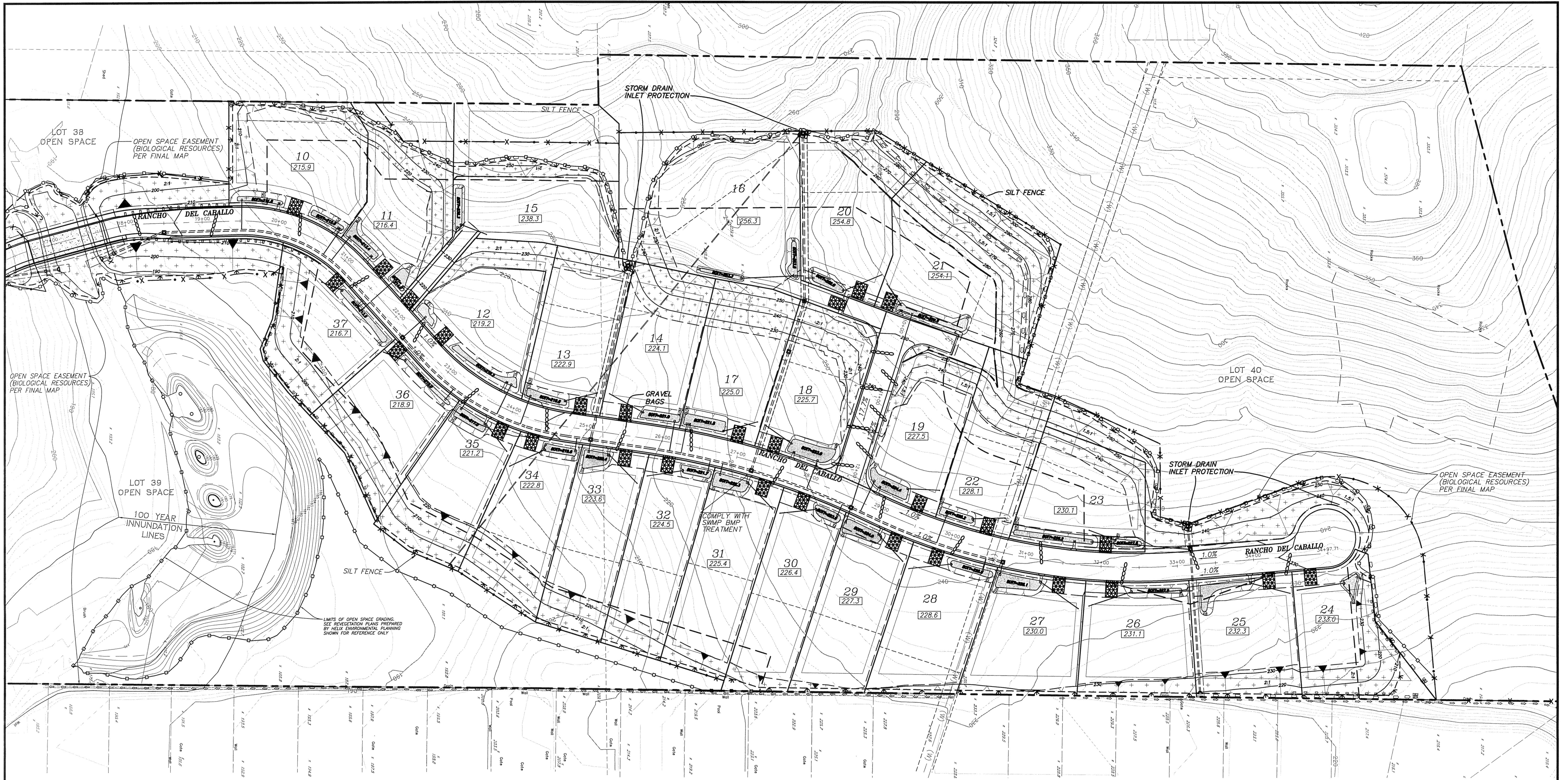


bha, inc.
 land planning, civil engineering, surveying
 5115 AVENIDA ENCINAS
 SUITE "A"
 CARLSBAD, CA. 92008-4387
 (760) 931-8700

COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS	
N.O.I. NO.	2006 PDS 2007-3967-07-001
LANDSCAPE NO.	N/A
SPECIAL USE PERMIT NO.	TM 4976 RPL 4R
TENTATIVE MAP NO.	PDS 2006-2140-4976-1
IMPROVEMENT PERMIT NO.	
BENCH MARK	
DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.	

PRIVATE CONTRACT		
SHEET 17	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
EROSION CONTROL & BMP PLAN FOR:		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1695, 1701		
APPROVED MOHAMAD FAKHRRODINE COUNTY ENGINEER	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 29271	
	GRADING PERMIT NO. PDS 2006-2700-15060	

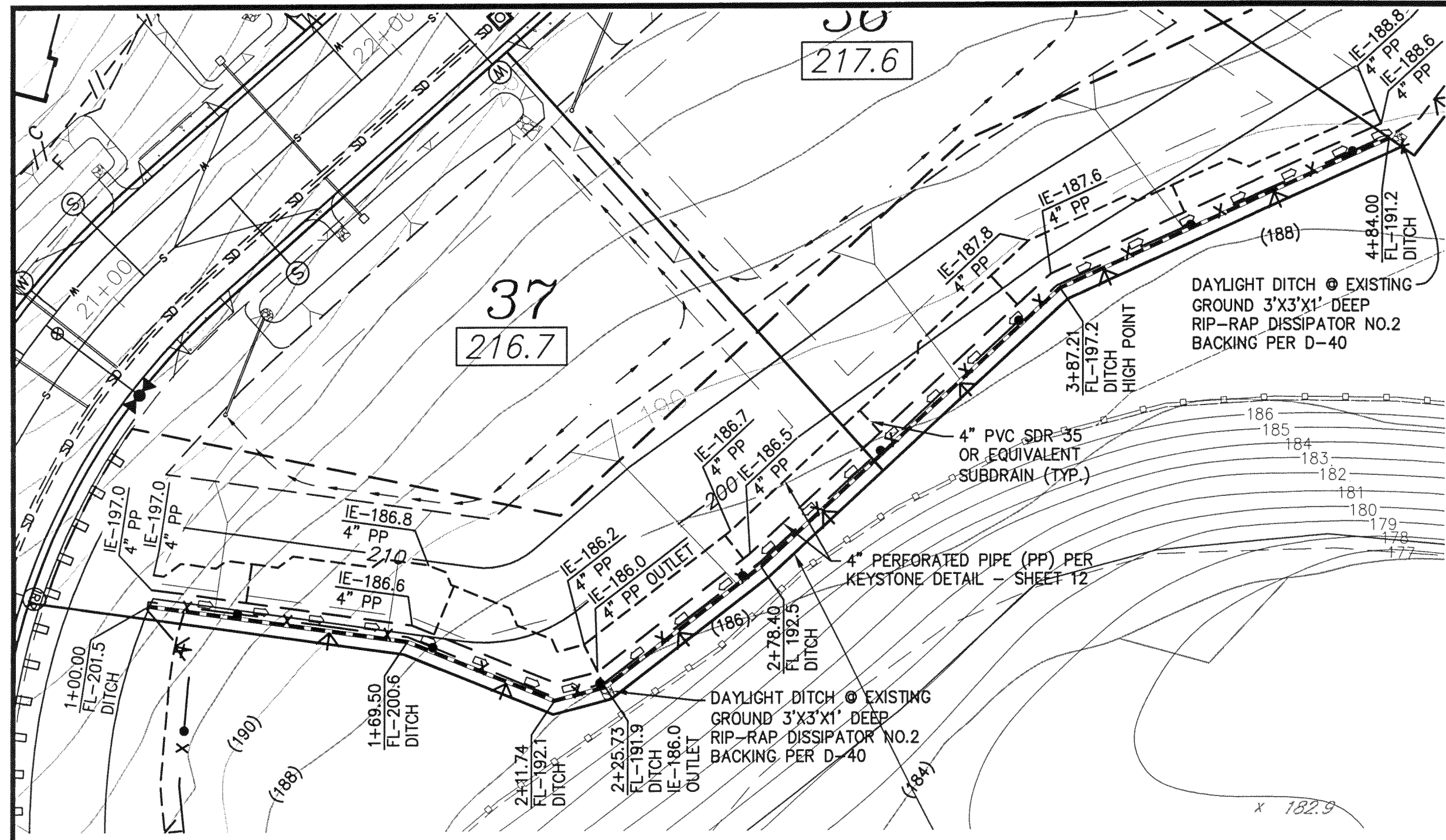


bHA, Inc.
 land planning, civil engineering, surveying
 5115 AVENIDA ENCINAS
 SUITE "L"
 CARLSBAD, CA. 92008-4387
 (760) 931-8700

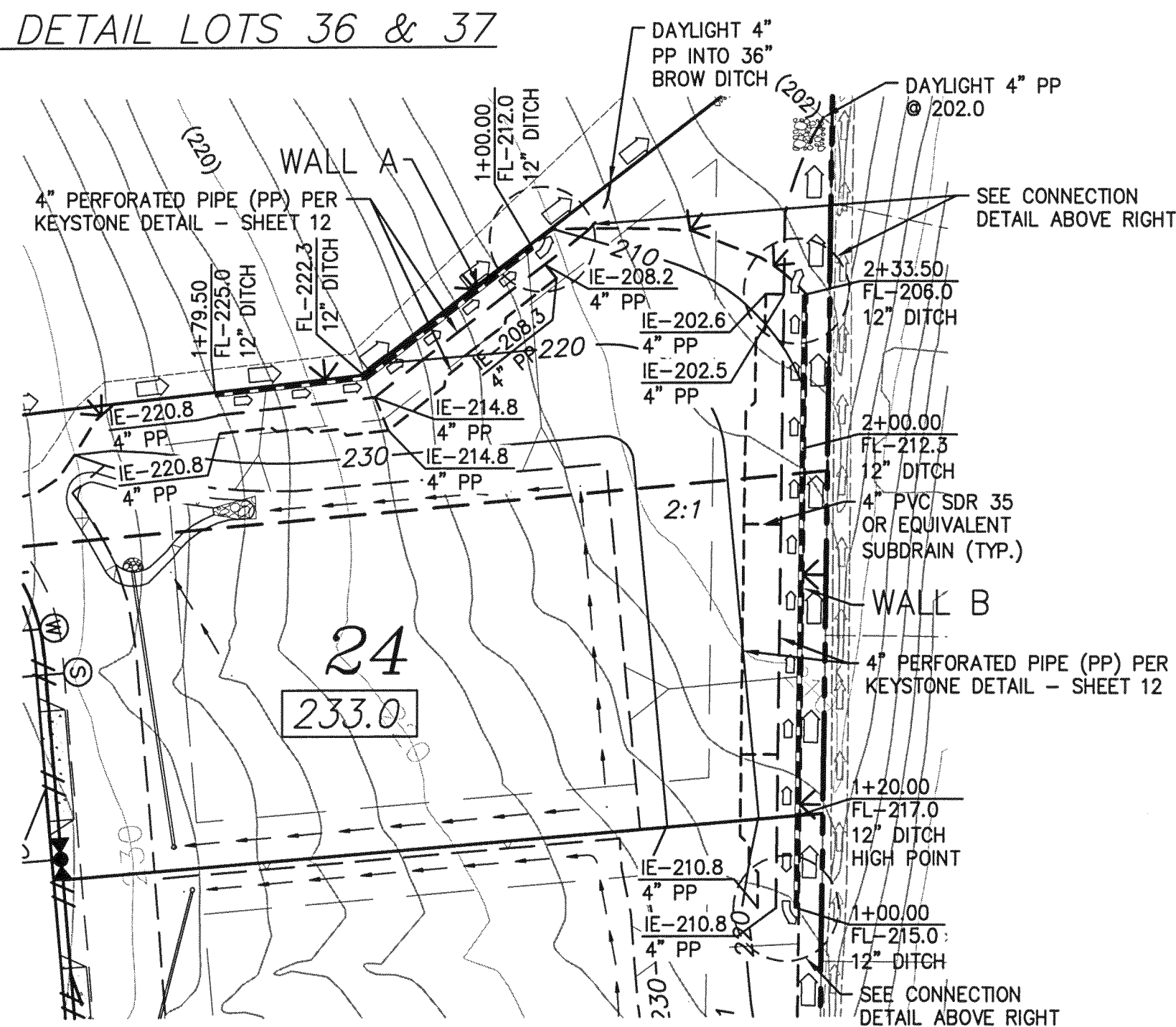
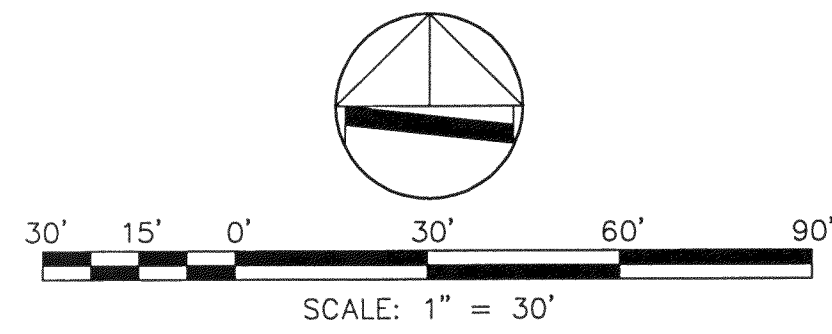
COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS	
N.O.I. NO.	2006 PDS 2007-3967-07-001
LANDSCAPE NO.	N/A
SPECIAL USE PERMIT NO.	TM 4976 RPL 4R
TENTATIVE MAP NO.	TM 4976 RPL 4R
IMPROVEMENT PERMIT NO.	PDS 2006-2140-4976-1
BENCHMARK	
DESCRIPTION: THE VERTICAL DATUM FOR THIS PROJECT IS NGVD 29. SPECIFICALLY BENCHMARKS Q63 (ELEV.=609.293') AND TE 3 (ELEV.=536.803') AS LISTED IN THE SAN DIEGO COUNTY VERTICAL CONTROL BOOK.	

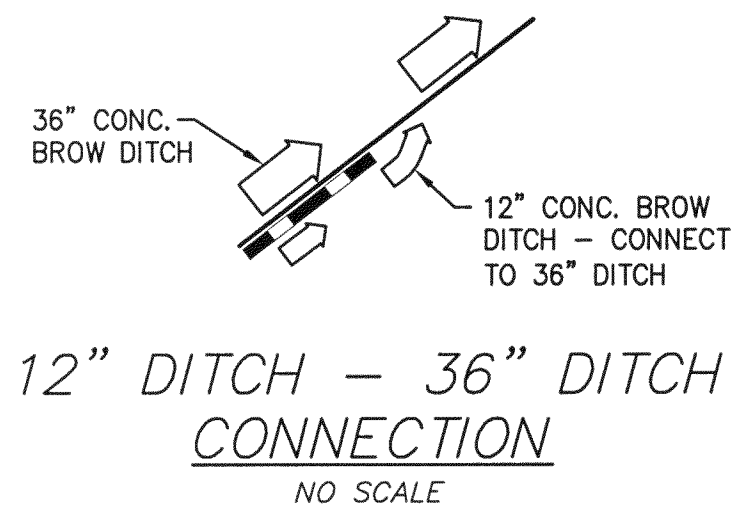
PRIVATE CONTRACT		
SHEET 18	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
EROSION CONTROL & BMP PLAN		
TM 4976-RPL4R		
CA.COOR.INDEX 410-1695, 1701		
APPROVED MOHAMAD FAKHRRIDDINE COUNTY ENGINEER BY:	ENGINEER OF WORK RONALD L. HOLLOWAY RCE 29271	
	GRADING PERMIT NO: PDS 2006-2700-15060	



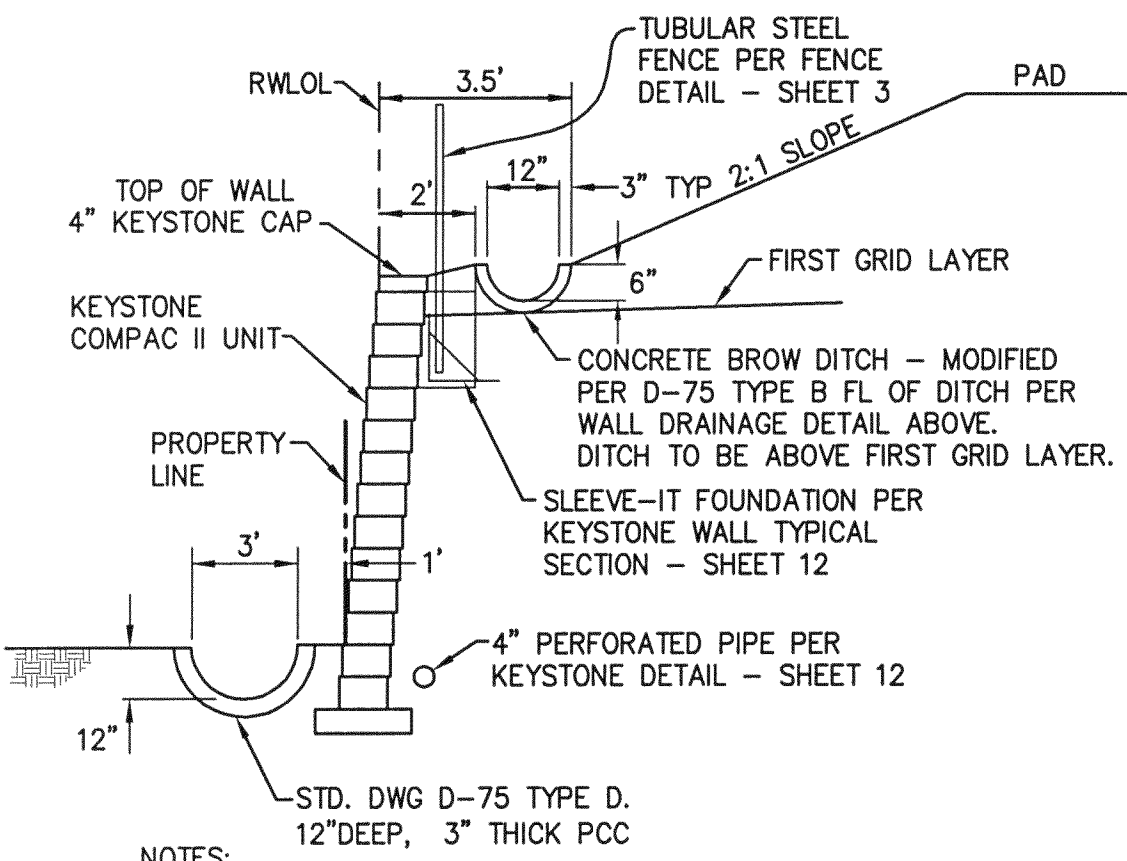
WALL DRAINAGE DETAIL LOTS 36 & 37



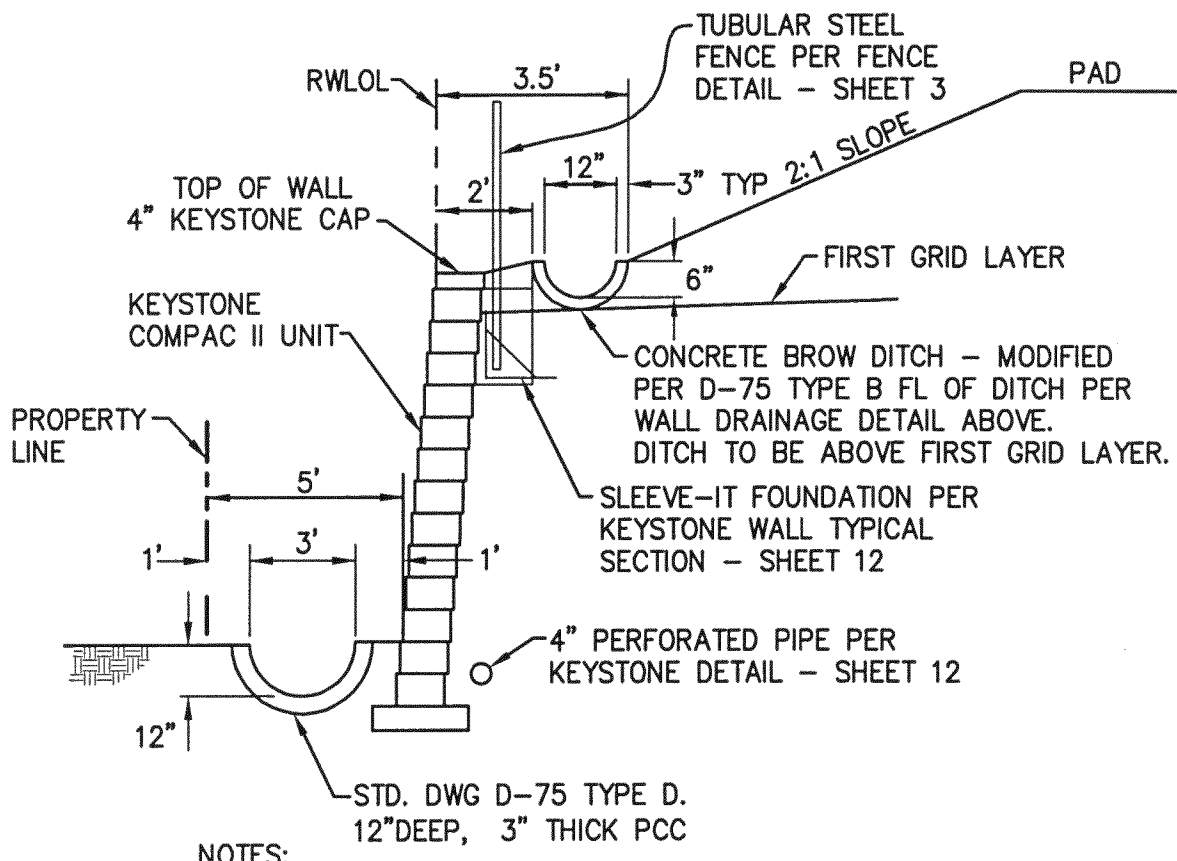
WALL A & B DRAINAGE DETAIL LOT 24



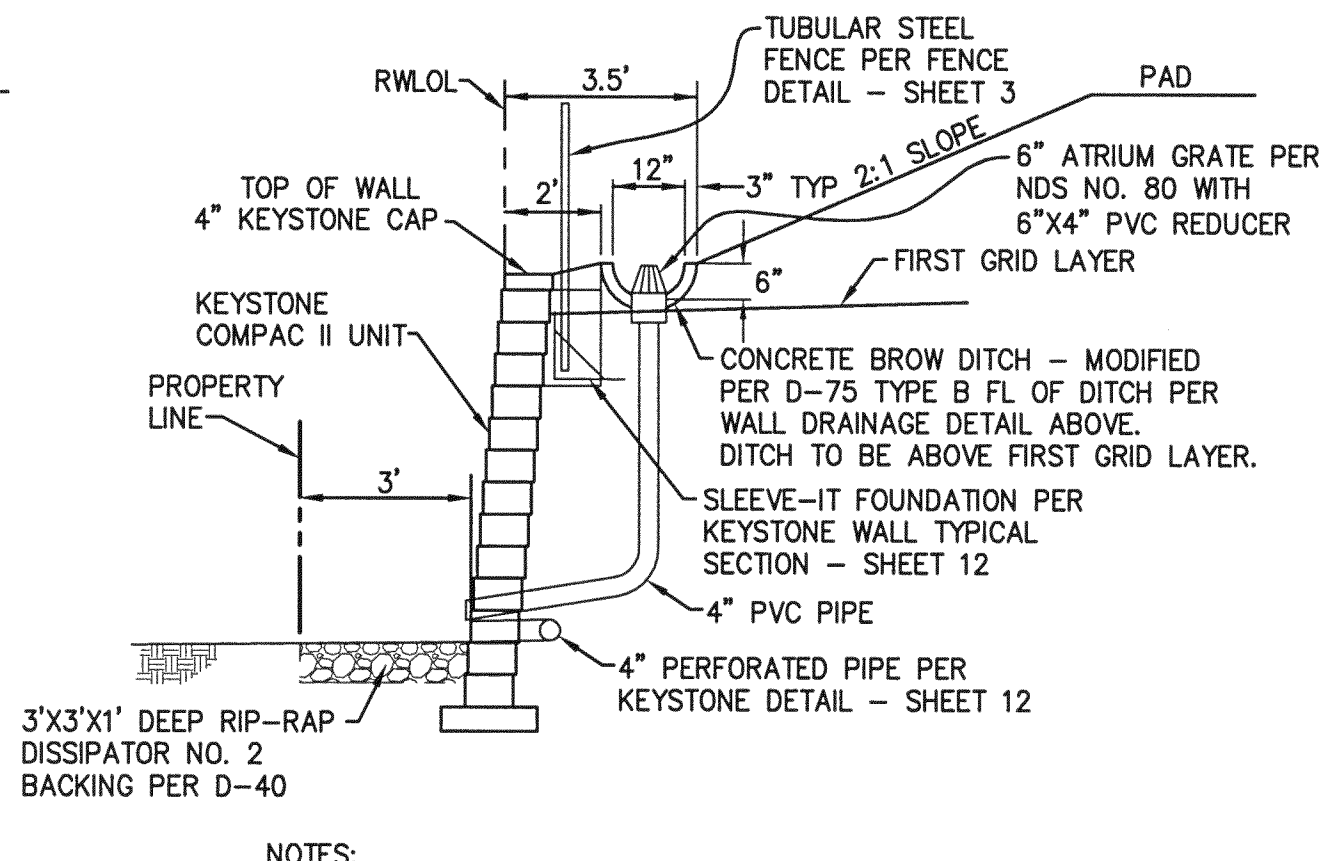
12" DITCH - 36" DITCH CONNECTION
NO SCALE



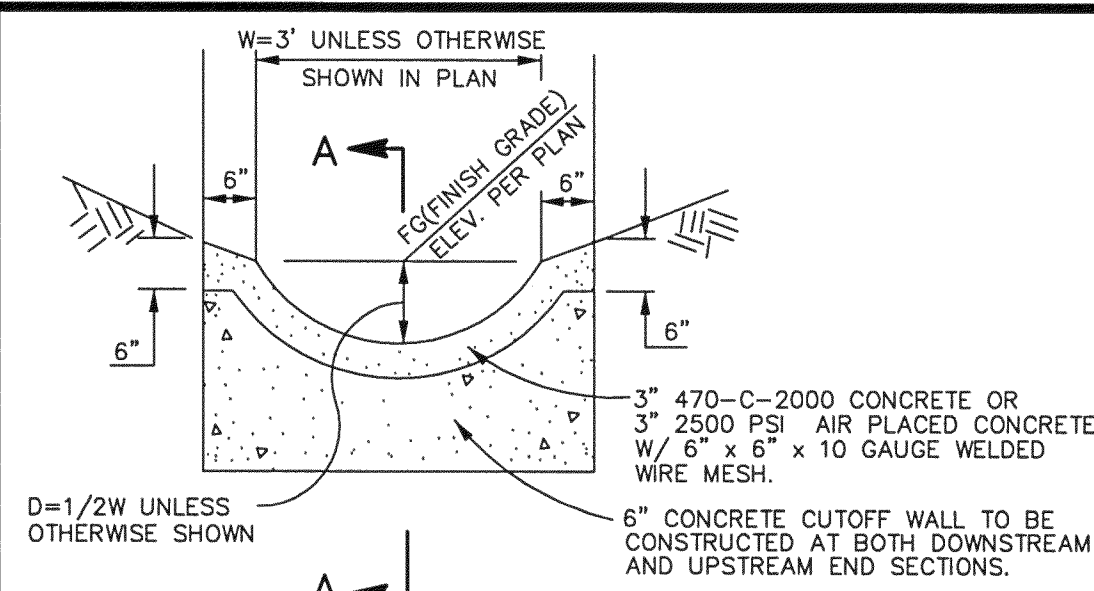
TYPICAL WALL SECTION
LOT 24 WALL A
NO SCALE



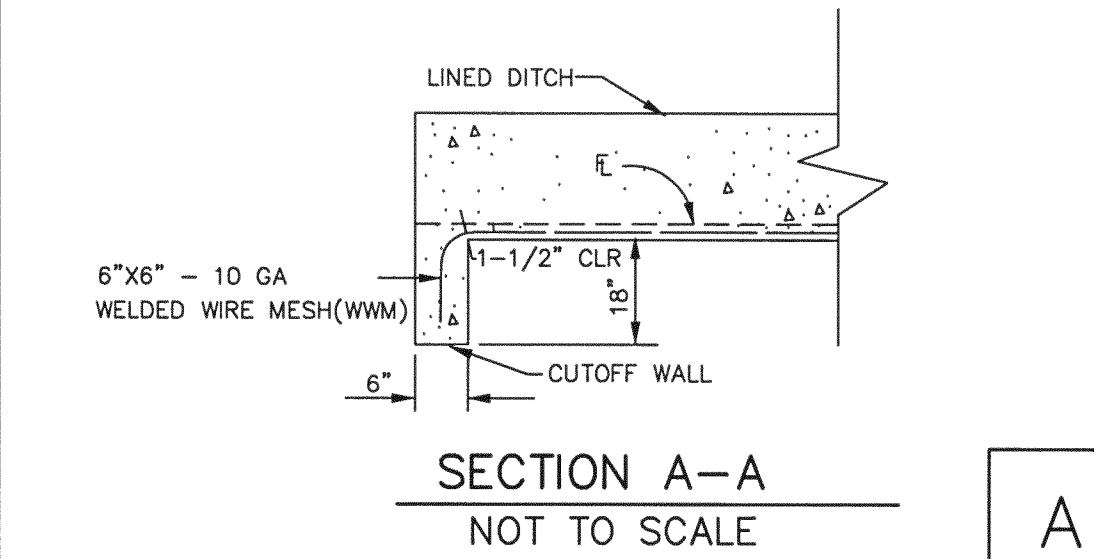
TYPICAL WALL SECTION
LOT 24 WALL B
NO SCALE



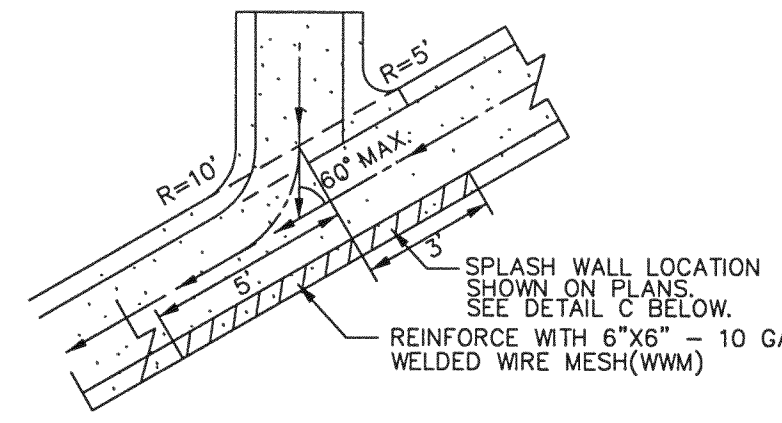
WALL SECTION - STATION 2+25.73
LOT 36-37
NO SCALE



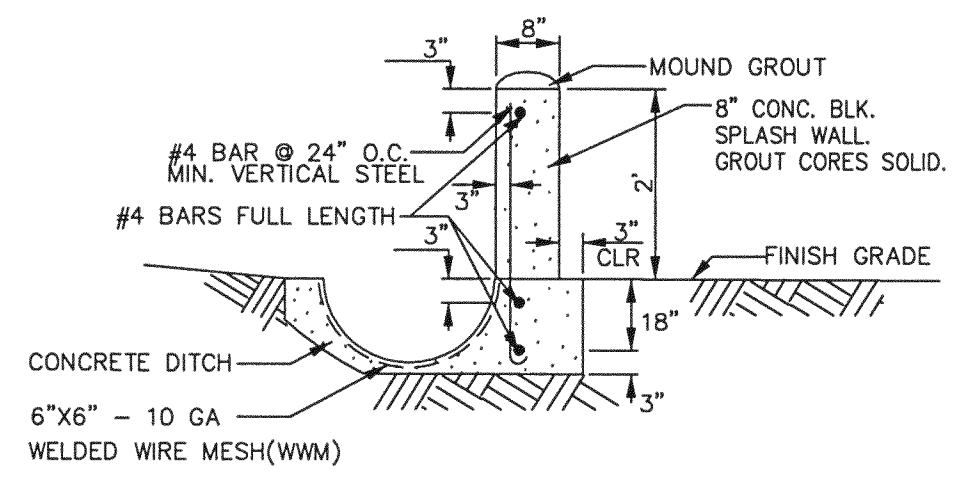
MODIFIED TYPE D TERRACE
DITCH PER SDRSD D-75
NOT TO SCALE



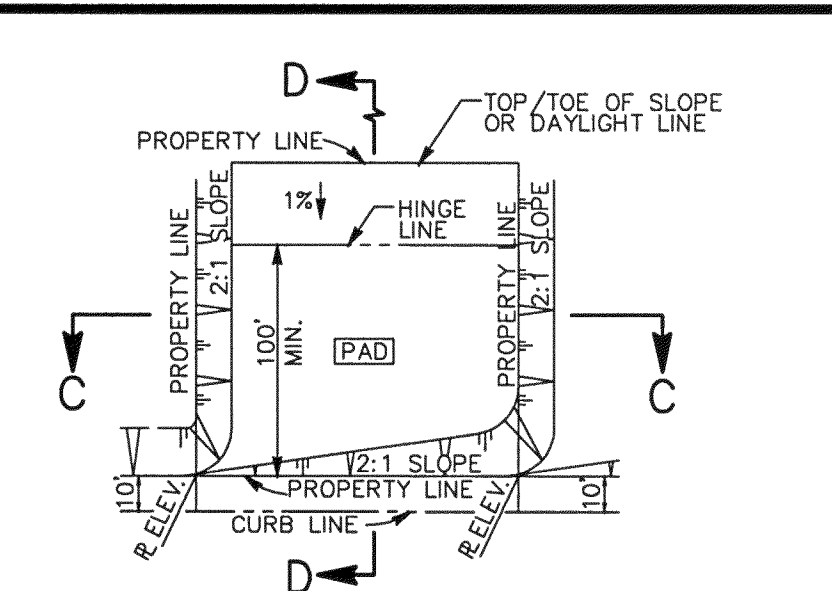
SECTION A-A
NOT TO SCALE



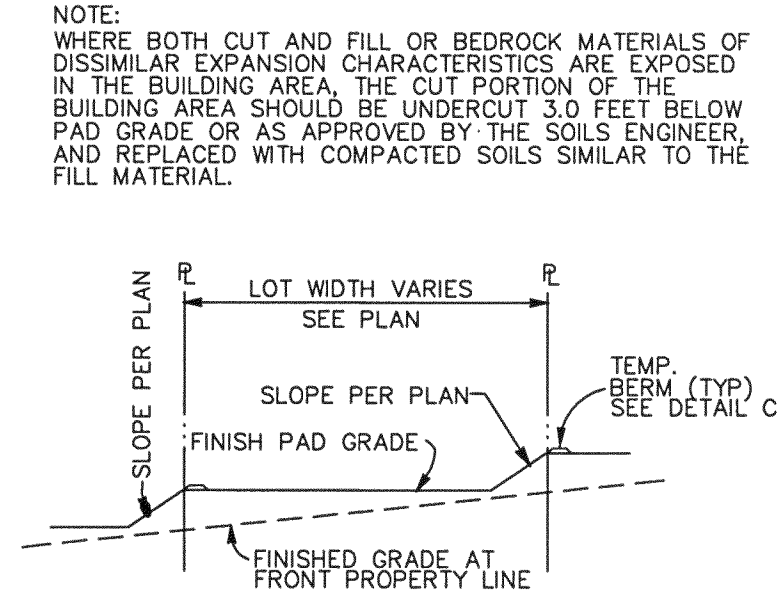
LINED DITCH CONFLUENCE
NOT TO SCALE



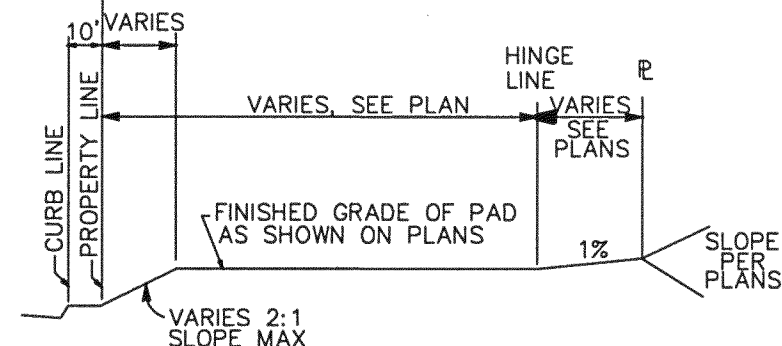
SPLASH WALL
NOT TO SCALE



TYPICAL LOT ROUGH GRADING
NOT TO SCALE

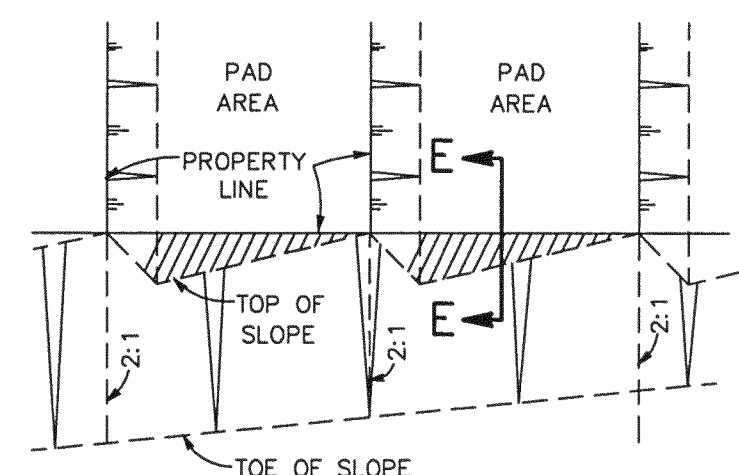


SECTION C-C
NOT TO SCALE

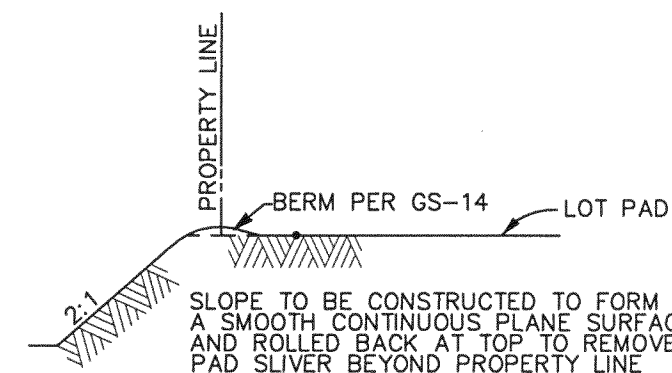


SECTION D-D
NOT TO SCALE

NOTE: FINISH LOT GRADING SHALL BE PER GS-15



TYPICAL LOT GRADING
REAR OF LOTS
NOT TO SCALE



SECTION E-E
NOT TO SCALE

RETAINING WALL WITH ROUND CONCRETE DITCH
NOT TO SCALE

OUTLET ALTERNATIVES

- CASE 1) SIDE YARD- EXTEND PERF PIPE AROUND WALL IN FRONT YARD AND DISCHARGE ONTO F.S.
- CASE 2) REAR YARD- INDIVIDUAL WALL- EXTEND PERF PIPE AROUND WALL @ SIDE PROPERTY LINE AND DISCHARGE ONTO F.S.
- CASE 3) REAR YARD- CONTINUOUS WALL- CONSTRUCT 3" TEE AND DISCHARGE PIPE THROUGH WALL @ F.S. NEAR SIDE PROPERTY LINE.
- CASE 4) PUBLIC R/W- CONSTRUCT 3" TEE AND CONNECT 3" PVC @ 2% TO D-27 PER IMP. PLANS.

COUNTY APPROVED CHANGES

NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS

N.O.I. NO.	
REZONE PERMIT NO.	N/A
SPECIAL USE PERMIT NO.	N/A
TENTATIVE MAP NO.	TM 4976 RPL 4R

BENCH MARK

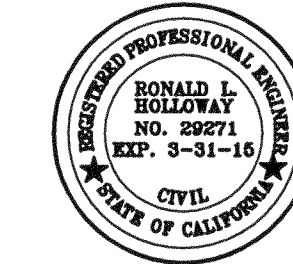
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PRIVATE CONTRACT

SHEET 19	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	19 SHEETS
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TM 4976-RPL4R

CA.COOR.INDEX 410-1695, 1701	ENGINEER OF WORK
APPROVED MOHAMAD FAKHRIDDINE COUNTY ENGINEER	RONALD L. HOLLOWAY RCE 29271
By: _____	GRADING PERMIT NO: PDS 2006-2700-15060



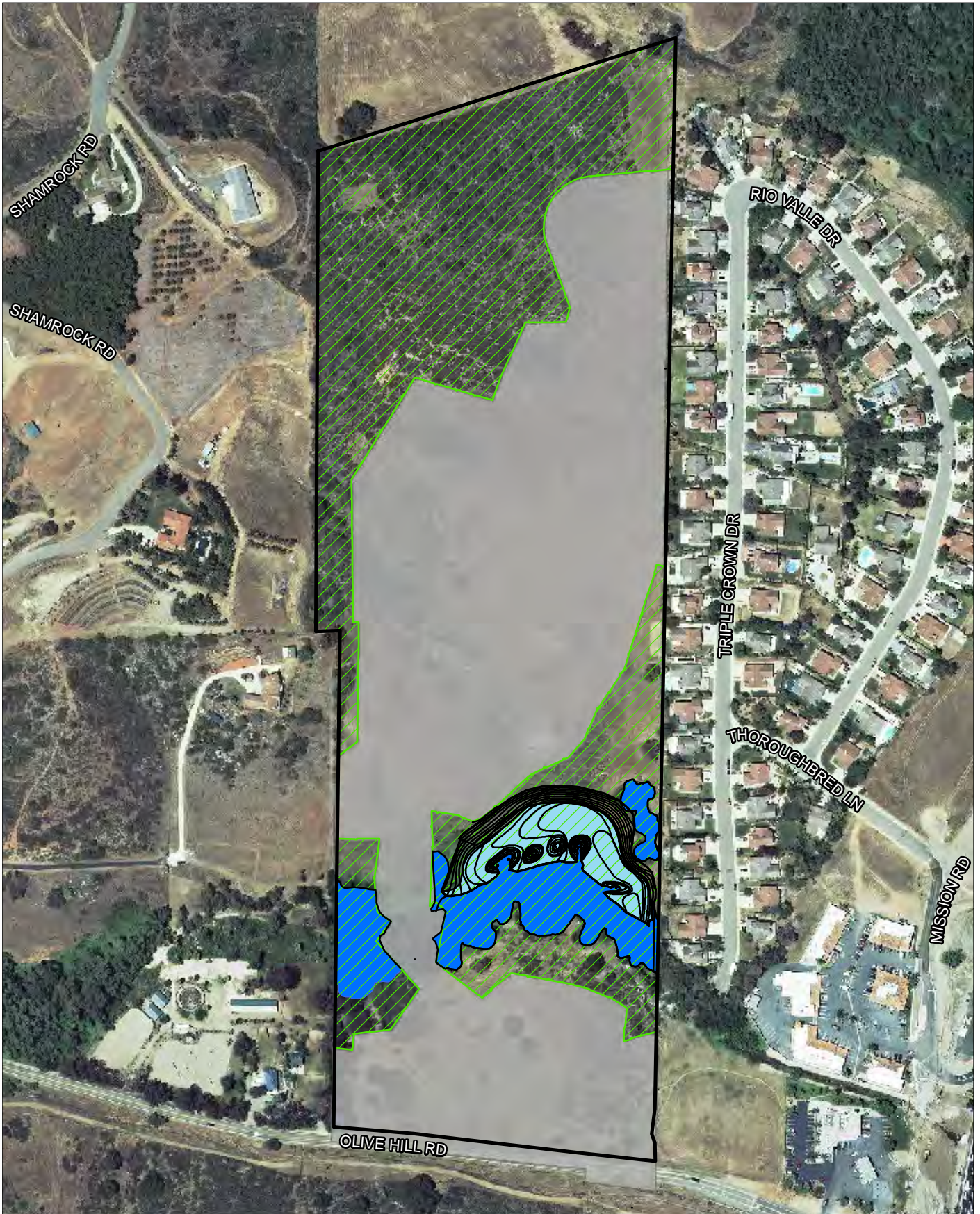
bha, inc.
land planning, civil engineering, surveying
5115 AVENIDA ENCINAS
SUITE "L"
CARLSBAD, CA. 92008-4387
(760) 931-8700

Pardee Homes
Olive Hill
Certification No. R9-2013-0160

- 1 -

ATTACHMENT 4
MITIGATION DESIGN PLANS

Image source: SanGIS (flown May 2012)



- Project Boundary
- Biological Open Space
- Development Area
- Wetland Creation/Establishment
- Riparian Enhancement

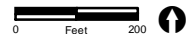


FIGURE 1

OLIVE HILL

RIPARIAN AND ARROYO TOAD HABITAT RESTORATION

GENERAL NOTES

- WORK TO BE DONE**
 - CREATION OF APPROXIMATELY 130 ACRES OF RIPARIAN HABITAT
 - ENHANCEMENT OF APPROXIMATELY 2.69 ACRES OF RIPARIAN HABITAT.
 - CREATION OF APPROXIMATELY 235 ACRES OF LOW FUEL NATIVE PLANTING AREAS.
 - APPROXIMATELY 136 ACRES OF ARROYO TOAD ENHANCEMENT AREAS.
 - ALL WORK TO BE DONE ACCORDING TO THE PLANS, CONTRACT DOCUMENTS, AND SPECIFICATIONS.
 - ALL RESTORATION ACTIVITIES TO BE CONDUCTED UNDER THE DIRECT SUPERVISION OF THE RESTORATION SPECIALIST

- ORDER OF WORK**
 - GRADING (APPROX. 191 ACRES)
 - WEED REMOVAL WITHIN APPROXIMATELY 2.69 ACRES OF RIPARIAN AREA AND APPROXIMATELY 352 ACRES OF UPLAND AREAS OUTSIDE GRADING DAYLIGHT LINES (6.21 ACRES TOTAL)
 - INSTALLATION OF TEMPORARY IRRIGATION SYSTEM IN 130 ACRES OF RIPARIAN HABITAT AND 4.13 ACRES OF LOW FUEL BUFFER AREA (5.43 ACRES TOTAL)
 - CONTAINER STOCK INSTALLATION IN 130 ACRES OF RIPARIAN HABITAT
 - HAND SEEDING OF 130 ACRES OF RIPARIAN HABITAT, 4.13 ACRES OF LOW FUEL BUFFER AREA (5.43 ACRES TOTAL)
 - DISTRIBUTION OF CUTTINGS AND 10 PERCENT EXCESS SEED WITHIN ENHANCEMENT AREAS PER DIRECTION OF RESTORATION SPECIALIST.

- STANDARD SPECIFICATIONS AND STANDARD DRAWINGS**
 - GENERAL SPECIFICATIONS AND SPECIAL PROVISIONS OF THE CONTRACT DOCUMENTS.
 - STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2006 EDITION).

- FEES AND PERMITS**
 - CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND PAY ALL FEES ASSOCIATED WITH THE SCOPE AND WORK OF THE PROJECT.

- DEFINITIONS OF TERMS**
 - AGENCY = U.S. ARMY CORP. OF ENGINEERS (ACOE)
 - CONSULTANTS = LANDSCAPE ARCHITECT, RESTORATION SPECIALIST, PROJECT ARCHAEOLOGIST, AND/OR ENGINEERS EMPLOYED BY THE APPLICANT FOR PROJECT DESIGN AND OTHER SPECIALIZED SERVICES AND WHO FUNCTION UNDER THE DIRECTION OF THE APPLICANT.
 - PROJECT MANAGER = REPRESENTATIVE DESIGNATED BY THE APPLICANT.
 - RESTORATION SPECIALIST = A LANDSCAPE ARCHITECT OR BIOLOGIST EXPERIENCED IN THE RESTORATION OF NATIVE HABITATS.
 - APPLICANT = OWNER = CHARTERSTONE, LLC.

- SAFETY**
 - CONTRACTOR SHALL ACCEPT SOLE RESPONSIBILITY FOR THE SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY, AND THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD THE PERMITEE AND THEIR CONSULTANTS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.

- ANY PROPOSED WORK THAT IS INCONSISTENT WITH COMMON, SAFE CONSTRUCTION PRACTICES SHALL BE BROUGHT TO THE ATTENTION OF THE RESTORATION SPECIALIST PRIOR TO COMMENCING WORK. FAILURE TO ADDRESS THESE ISSUES PRIOR TO BEGINNING WORK SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.
 - CONTRACTOR SHALL DESIGN, CONSTRUCT, AND MAINTAIN SAFETY DEVICES, AND SHALL HAVE THE SOLE RESPONSIBILITY FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS, AND REGULATIONS.

- INSTRUCTION AND OBSERVATION**
 - ALL CHANGES AND DEVIATIONS TO THE PLANS AND SPECIFICATIONS BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE RESTORATION SPECIALIST.
 - THE CONTRACTOR'S SUPERVISOR SHALL BE AVAILABLE ON CALL TO MAKE A JOINT OBSERVATION WITH THE RESTORATION SPECIALIST. THE CONTRACTOR SHALL HAVE SUFFICIENT WORK PERSONNEL AVAILABLE DURING NORMAL WORKING HOURS TO CORRECT DEFICIENCIES IMMEDIATELY UPON REQUEST OF THE RESTORATION SPECIALIST. SUCH REPAIR OR RE-WORK SERVICES ARE TO BE PERFORMED WITHOUT INTERFERENCE OF REGULAR PROJECT SCHEDULE OR ADDITIONAL COST TO THE APPLICANT.

- SITE OBSERVATIONS HEREIN SPECIFIED SHALL BE MADE BY THE RESTORATION SPECIALIST AND/OR APPLICABLE CONSULTANT. THE CONTRACTOR SHALL NOTIFY THE RESTORATION SPECIALIST AT LEAST 48 HOURS IN ADVANCE OF AN OBSERVATION. AN OBSERVATION WILL BE MADE BY THE RESTORATION SPECIALIST DURING OFFICE WORKING HOURS ON EACH OF THE STEPS LISTED BELOW. THE CONTRACTOR OR HIS AUTHORIZED AGENT SHALL BE ON SITE AT THE TIME OF EACH OBSERVATION. THE CONTRACTOR WILL NOT BE PERMITTED TO INITIATE THE SUCCEEDING STEP OF WORK UNTIL HE HAS RECEIVED APPROVAL TO PROCEED BY THE RESTORATION SPECIALIST. SITE OBSERVATIONS SHALL INCLUDE:
 - PRE-CONSTRUCTION MEETING: IMMEDIATELY PRIOR TO THE COMMENCEMENT OF WORK OF THIS SECTION, THE CONTRACTOR SHALL RECEIVE APPROVAL OF MATERIALS AND EQUIPMENT TO BE USED, AND METHODS OF INSTALLATION.
 - PRIOR TO AND AT THE COMPLETION OF IRRIGATION SYSTEM INSTALLATION.
 - PRIOR TO AND AT THE COMPLETION OF SEEDING.
 - PRIOR TO AND AT THE COMPLETION OF CONTAINER STOCK INSTALLATION.
 - ACCEPTANCE: UPON COMPLETION OF THE FINAL OBSERVATION AND THE WORK OF THIS SECTION, THE CONTRACTOR WILL BE NOTIFIED IN WRITING WHETHER THE WORK IS ACCEPTABLE AND OF ANY REQUIREMENTS NECESSARY FOR COMPLETION AND ACCEPTANCE.

- SUSPENSION OF WORK**
 - THE RESTORATION SPECIALIST SHALL RECOMMEND TO THE PROJECT MANAGER ANY NECESSITY TO SUSPEND THE WORK WHOLLY, OR IN PART, FOR SUCH A PERIOD OR PERIODS AS HE MAY DEEM NECESSARY DUE TO UNSUITABLE WEATHER, OR SUCH OTHER CONDITIONS AS ARE CONSIDERED UNFAVORABLE FOR THE REASONABLE PERFORMANCE OF THE WORK, OR FOR SUCH TIME AS NECESSARY DUE TO THE FAILURE ON THE PART OF THE CONTRACTOR TO CARRY OUT ORDERS GIVEN OR TO PERFORM ANY OR ALL PROVISIONS OF THE CONTRACT.

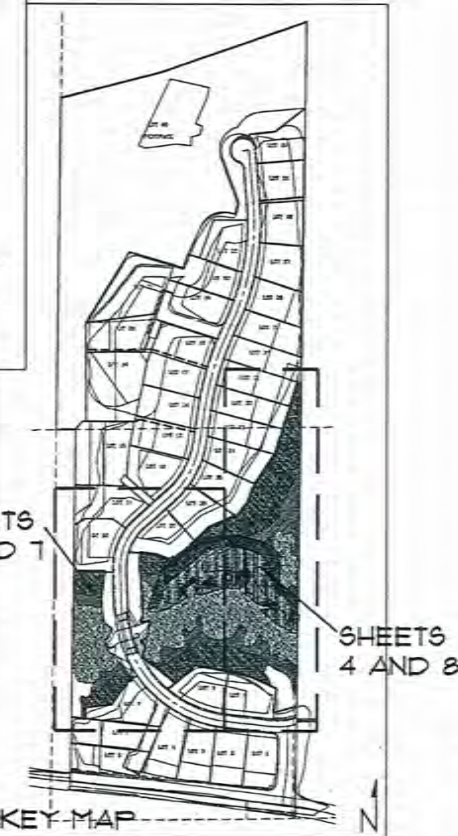
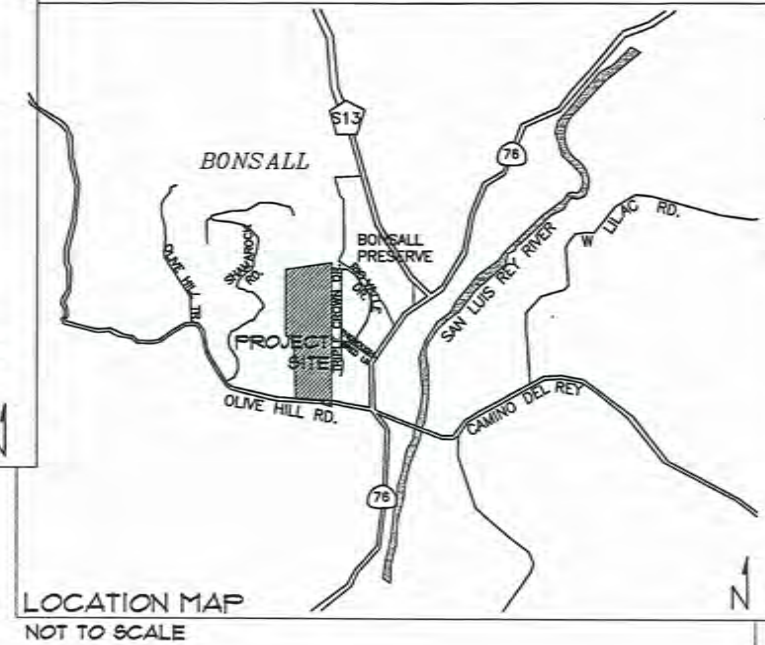
- IF IT SHOULD BECOME NECESSARY TO STOP WORK FOR AN INDEFINITE PERIOD, THE CONTRACTOR SHALL STORE ALL MATERIALS IN SUCH A MANNER THAT THEY WILL NOT OBSTRUCT NOR BECOME DAMAGED IN ANY WAY, AND HE/SHE SHALL TAKE EVERY PRECAUTION TO PREVENT DAMAGE OR DETERIORATION OF THE WORK PERFORMED. THE CONTRACTOR SHALL COVER ALL OPEN EXCAVATIONS AND SHALL PROVIDE SUITABLE DRAINAGE BY OPENING DITCHES, ETC., AND ERECTING TEMPORARY STRUCTURES WHERE NECESSARY.

- GRADING SHALL BE PERFORMED ONLY DURING PERIODS WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. IF THE MOISTURE CONTENT OF THE SOIL SHOULD REACH A LEVEL THAT WORKING IT WOULD DESTROY THE SOIL STRUCTURE, SPREADING GRADING AND TILLING OPERATIONS SHALL BE SUSPENDED UNTIL THE MOISTURE CONTENT REACHES ACCEPTABLE LEVELS AND THE DESIRED RESULTS ARE ATTAINABLE AS DETERMINED BY THE RESTORATION SPECIALIST.

- AS-BUILT - RECORD DRAWINGS**
 - A SET OF CONTRACT DRAWINGS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION. ALL WORK THAT IS INSTALLED SHALL BE REVIEWED FOR CONFORMANCE WITH THE PLANS. IF NEW WORK OR WORK AS SHOWN ON THE PLANS IS DIFFERENT, THE CONTRACTOR SHALL NOTE THE INSTALLATION "AS-BUILT". THE MARKED DRAWINGS SHALL BE KEPT AS THE WORK PROGRESSES AND SHALL BE AVAILABLE FOR THE RESTORATION SPECIALIST'S INSPECTION UPON REQUEST. AT CLOSE OF GRADING, THESE OR A COPY OF THESE DRAWINGS SHALL BE TURNED OVER TO THE RESTORATION SPECIALIST FOR USE IN PREPARING RECORD DRAWINGS.

- UTILITIES**
 - THE CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO BEGINNING WORK. 48 HOURS PRIOR TO EXCAVATION WORK ON OR NEAR THE PROPERTY, CONTACT UNDERGROUND SERVICE ALERT (800-422-4133). THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY SUCH DAMAGES CAUSED TO UTILITIES AND SHALL BEAR THE COST OF SUCH REPAIRS.

- MISCELLANEOUS**
 - APPROVAL OF THESE PLANS AS SHOWN DOES NOT CONSTITUTE APPROVAL OF ANY CONSTRUCTION OUTSIDE THE PROJECT BOUNDARY.
 - THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING FACILITIES SHOWN HEREON, OR ANY OTHER WHICH IS NOT OF RECORD OR NOT SHOWN ON THE PLANS.
 - LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION. CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES.

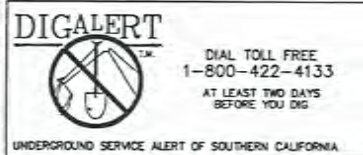


SHEET INDEX	
SHEET TITLE	SHEET NO.
TITLE SHEET	1
GRADING PLAN	2
IRRIGATION PLAN	3-4
IRRIGATION DETAILS, LEGEND, NOTES	5
IRRIGATION SPECIFICATIONS	6
PLANTING PLAN	7-8
PLANTING SPECIFICATIONS AND DETAIL	9

PREPARED FOR:
 CHARTERSTONE, LLC.
 462 STEVENS AVE, SUITE 311
 SOLANA BEACH, CA 92075
 (951) 752-0708

PREPARED BY:
 HELIX ENVIRONMENTAL PLANNING, INC.
 1578 EL CAJON BLVD., SUITE 200
 LA MESA, CALIFORNIA 91941
 619-462-1515

LANDSCAPE ARCHITECT CERTIFICATION
 I, L. R. BRADLEY LEWIS, FIND THAT THIS SHEET CONFORMS TO THE ACCEPTED LANDSCAPE ARCHITECTURAL STANDARDS OF PRACTICE AND IS IN COMPLIANCE WITH THE REQUIREMENTS LISTED IN SECTION 6136.1 (1 THROUGH V) OF THE SAN DIEGO COUNTY ZONING ORDINANCE.



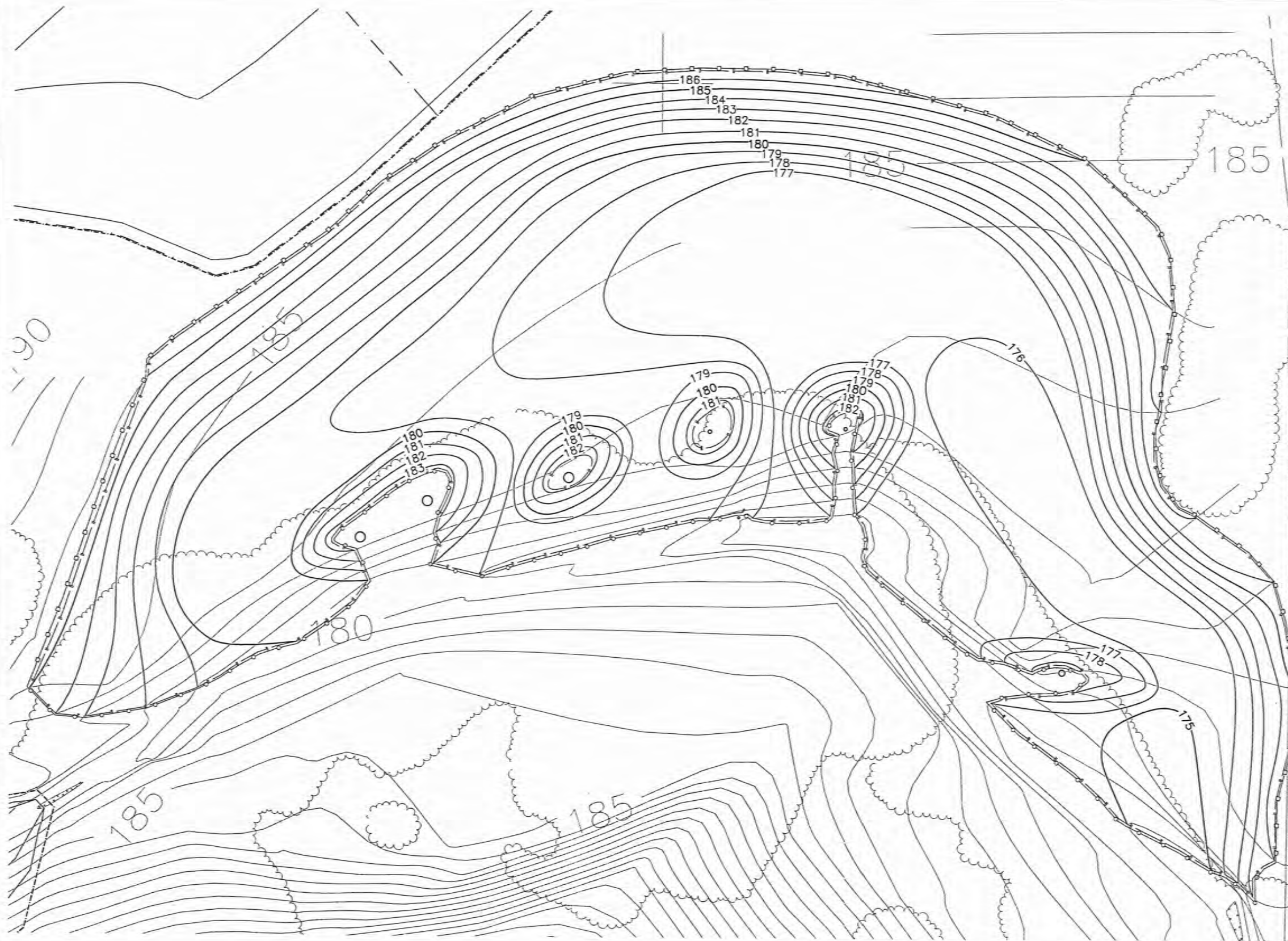
SEWER AGENCY Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency BY: _____ DATE _____ JOB NUMBER _____ NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE	WATER AGENCY Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency RCE _____ DATE _____ JOB NUMBER _____ NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE
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DEPT. OF PLANNING AND LAND USE APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW. APPROVED BY: _____ DATE: _____	COUNTY APPROVED CHANGES <table border="1"> <tr> <th>NO.</th> <th>DESCRIPTION:</th> <th>APPROVED BY:</th> <th>DATE:</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DESCRIPTION:	APPROVED BY:	DATE:				
NO.	DESCRIPTION:	APPROVED BY:	DATE:						

PERMITS N.O.I. _____ GPA NO. N/A REZONE NO. N/A TENTATIVE MAP NO. _____ TRACT NO. 4976 RPL 5R	PRIVATE CONTRACT SHEET 7 OF 9 SHEETS COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS REVEGETATION PLANS FOR: TITLE SHEET ASSESSOR'S PARCEL NUMBER(S) 126-310-01 and 126-050-54 APPROVED: DOUGLAS K. SEILL FOR COUNTY ENGINEER L. R. BRADLEY LEWIS LIA 2007 SIGNATURE PHONE NO. N/A
--	---

LEGAL DESCRIPTION DESCRIPTION: A PORTION OF SECTION 18, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA





GRADING NOTES

1. ACTUAL GRADING AROUND EXISTING TREES DEPENDS ON ROOT SYSTEMS AND COULD BE MORE OR LESS THAN SHOWN.
2. ALL OPERATIONS CONDUCTED ON THE PREMISES, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTH-MOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED GRADING EQUIPMENT SHALL BE LIMITED TO THE PERIOD BETWEEN 1:00 AM AND 6:00 PM EACH DAY, MONDAY THROUGH FRIDAY, AND NO EARTH-MOVING OR GRADING OPERATIONS SHALL BE CONDUCTED ON THE PREMISES ON OTHER DAYS.
3. ALL SLOPES SHALL BE ROUNDED INTO EXISTING TERRAIN TO PRODUCE A CONTOURED TRANSITION FROM CUT TO FILL FACES TO NATURAL GROUND AND ABUTTING CUT OR FILL SURFACES.
4. NOTWITHSTANDING THE MINIMUM STANDARDS SET FORTH IN THE GRADING ORDINANCE AND NOT WITHSTANDING THE APPROVAL OF THESE GRADING PLANS, THE PERMITTEE IS RESPONSIBLE FOR THE PREVENTION OF DAMAGE TO ADJACENT PROPERTY. NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY, 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 COUNTY WILL HOLD THE PERMITTEE RESPONSIBLE FOR CORRECTION OF NON-DEDICATED IMPROVEMENTS WHICH DAMAGE ADJACENT PROPERTY.
5. ONLY CUT PERMITTED. MAXIMUM SLOPE RATIO: 2:1
PREFERRED SLOPE RATIO: 4:1
6. LIMITS OF GRADING SHALL BE PROTECTED BY 4' CONSTRUCTION FENCING (1/2 ORANGE NETTING), OR SILT FENCING ALONG THE DOWNSTREAM EDGE AS INDICATED ON THE PLANS.
7. ALL GRADING OPERATIONS SHALL BE OBSERVED AND APPROVED BY THE RESTORATION SPECIALIST AND PROJECT MANAGER.
8. GRADING SHALL OCCUR IN RESTORATION AREA ONLY. NO GRADING SHALL OCCUR IN AREAS DESIGNATED BY THE RESTORATION SPECIALIST AS EXISTING HABITAT.
9. ALL AREAS AFFECTED BY DEMOLITION, GRADING, OR TEMPORARY ACCESS SHALL HAVE THE SOILS DECOMPACTED AND LEFT IN A PLANTABLE STATE TO THE SATISFACTION OF THE RESTORATION SPECIALIST, AT THE CONCLUSION OF THOSE ACTIVITIES.
10. EQUIPMENT ONLY ALLOWED IN RESTORATION AREA WHEN WORKING. NO PARKING OR MAINTENANCE OF EQUIPMENT, TRUCKS OR CARS ALLOWED IN RESTORATION AREA.
11. PRIOR TO INITIATION OF WORK, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE RESTORATION SPECIALIST AND PROJECT MANAGER.
12. ON-SITE EQUIPMENT FUELING SHALL ONLY BE USED WHERE IT'S IMPRACTICAL TO SEND EQUIPMENT OFF-SITE FOR FUELING. WHEN FUELING MUST OCCUR ON-SITE THE CONTRACTOR SHALL SELECT AND DESIGNATE AN AREA WITHIN THE STAGING AREA, SUBJECT TO APPROVAL OF THE RESTORATION SPECIALIST. EQUIPMENT SHALL BE INSPECTED DAILY FOR LEAKS. LEAKS SHALL BE REPAIRED IMMEDIATELY OR PROBLEM EQUIPMENT SHALL BE REMOVED FROM THE PROJECT SITE. ABSORBENT SPILL CLEAN-UP MATERIALS AND CLEAN-UP KITS SHALL BE AVAILABLE IN FUELING AREAS AND ON FUELING TRUCKS.
13. ALL CONTRACTOR EMPLOYEES SHALL USE A DESIGNATED STAGING AREA APPROVED BY THE RESTORATION SPECIALIST. PARKING WILL NOT BE ALLOWED AT OTHER LOCATIONS. PORTABLE TOILETS SHALL BE LOCATED IN STAGING AREA.

EDGE OF BIOLOGICAL OPEN SPACE BOUNDARY

LEGEND:	
— 423 —	EXISTING CONTOUR
— 423 —	PROPOSED CONTOUR
— 425 —	PROPOSED INDEX CONTOUR
—	GRADING DAYLIGHT LINE
—	SILT FENCE (860 LF. TOTAL) LOCATE LIGHT WEIGHT MESH CLOTH FENCE AT THE DOWN STREAM GRADED EDGE UNDER THE DIRECTION OF THE RESTORATION SPECIALIST AND AS APPROVED BY PROJECT MANAGER.
—	ORANGE CONSTRUCTION FENCING (875 LF. TOTAL) LOCATED AT ALL GRADED EDGES NOT BOUND BY SILT FENCE AND ANY OTHER LOCATION INDICATED BY THE RESTORATION SPECIALIST.
---	PROPERTY BOUNDARY
---	BIOLOGICAL OPEN SPACE AREA
---	LOT LINE
○	EXISTING TREE TO BE PRESERVED.

DIGALERT
DIAL TOLL FREE
1-800-422-4133
AT LEAST TWO DAYS
BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

0 15 30 60
SCALE: 1"=30'

LICENSED LANDSCAPE ARCHITECT
IN THE STATE OF CALIFORNIA
No. 21867

SEWER AGENCY
Rainbow Municipal Water District
3707 S. Highway 395 • Fallbrook, Ca • 92028
Water & Sewer Agency
BY: _____ DATE _____ JOB NUMBER _____
NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE

WATER AGENCY
Rainbow Municipal Water District
3707 S. Highway 395 • Fallbrook, Ca • 92028
Water & Sewer Agency
BY: _____ DATE _____ JOB NUMBER _____
NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE

DEPT. OF PLANNING AND LAND USE
APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW.
APPROVED BY: _____ DATE: _____

COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

PERMITS
N.O.I. _____
GPA NO. N/A
REZONE NO. N/A
TENTATIVE MAP NO. TRACT NO. 4976 RPL 5R

LEGAL DESCRIPTION
DESCRIPTION:
A PORTION OF SECTION 19, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA

PRIVATE CONTRACT

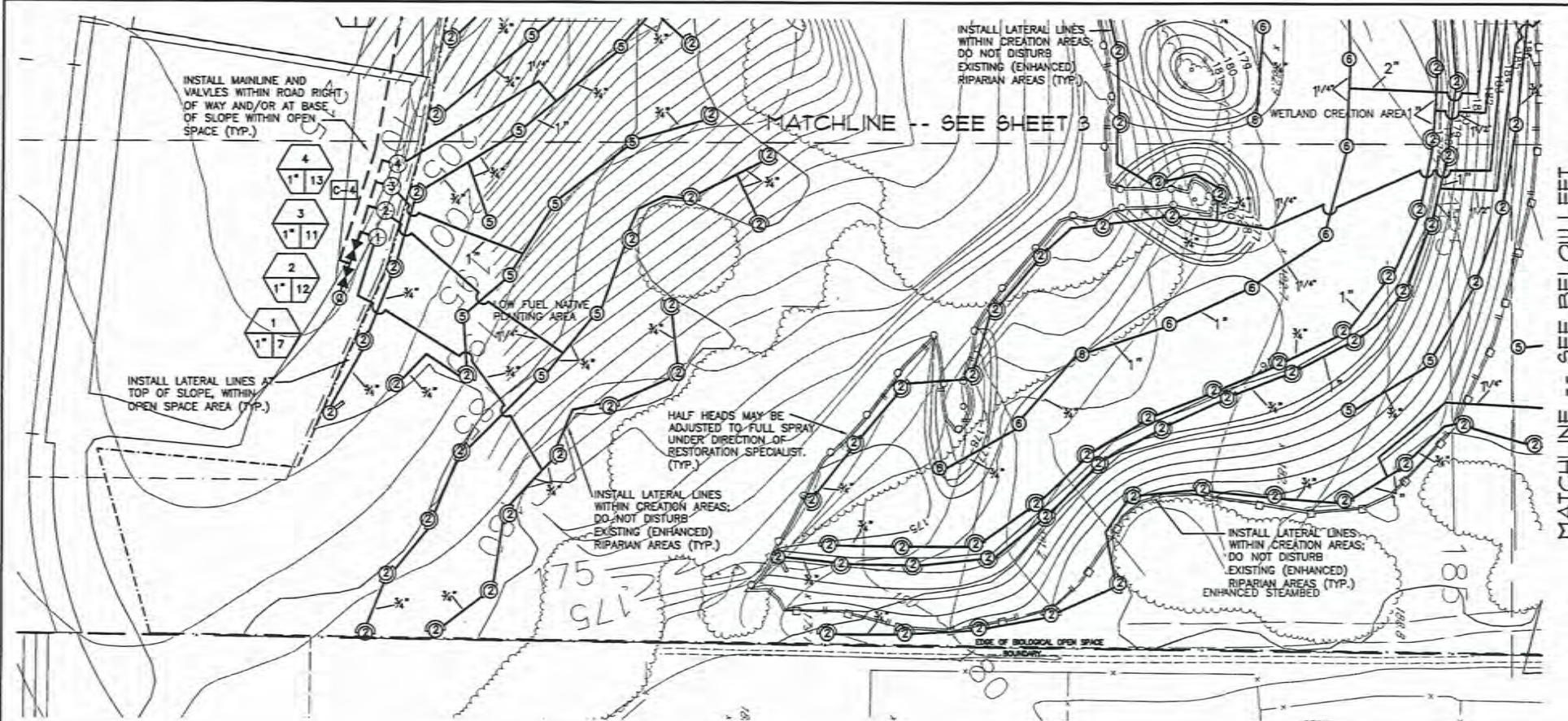
SHEET 2 COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS 0 SHEETS

REVEGETATION PLANS FOR: **OLIVE HILL GRADING PLAN**
ASSESSOR'S PARCEL NUMBER(S) 126-310-03 and 126-050-54

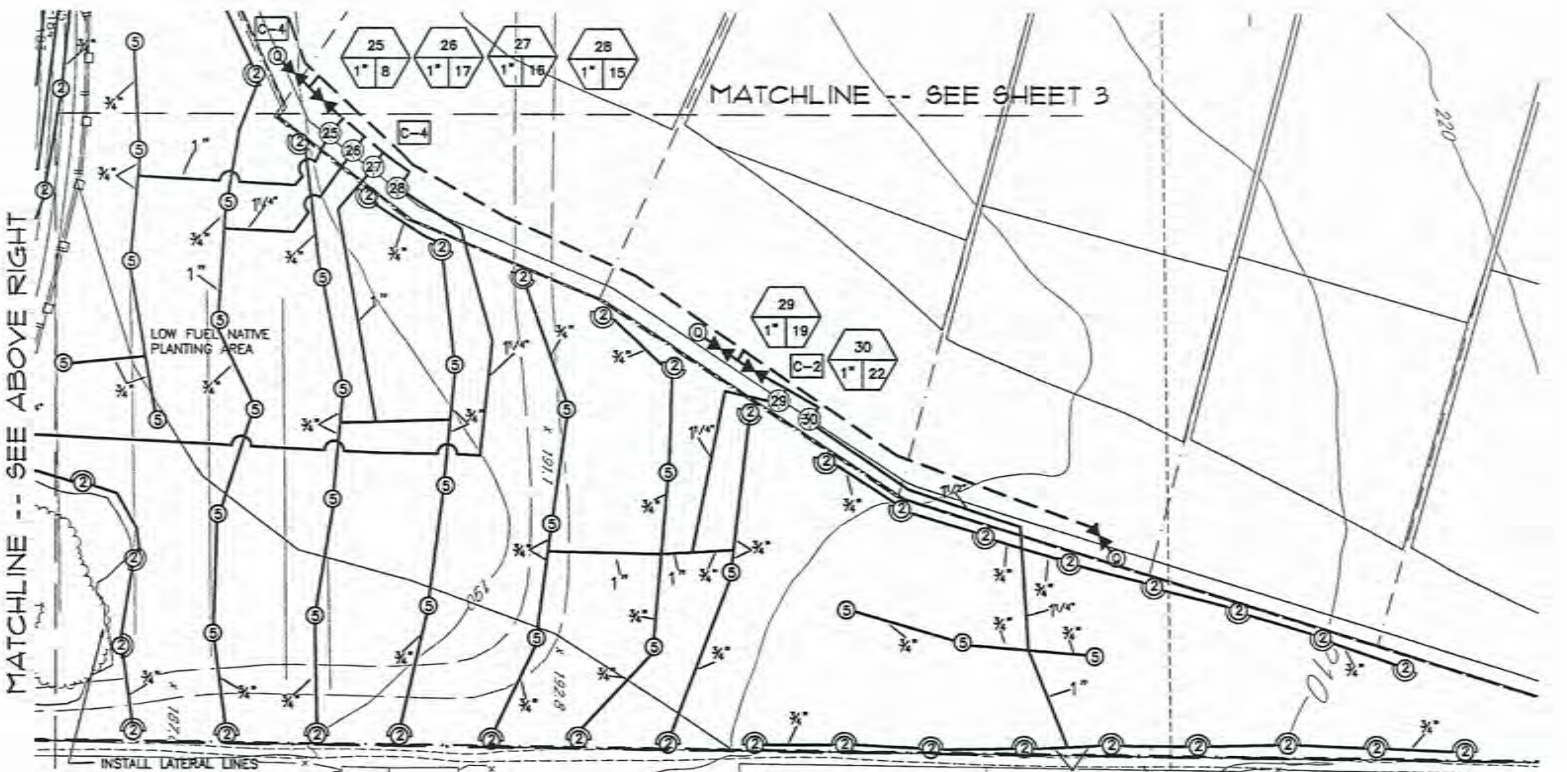
APPROVED FOR COUNTY ENGINEER: _____
DATE: _____

LICENSURE PROJECT OF WORK: DR. 52/2/05
E. BRADLEY LEWIS RLA 2657
DRAWING POINT NO. N/A

HELIX
environmental planning inc.
7518 El Cajon Blvd, Suite 200
La Mesa, California 91941
CA Lic 26571
(619) 462-1515
Fax (619) 462-0502
Job No. CCL-02
Date: 02-06-08



MATCHLINE -- SEE BELOW LEFT



MATCHLINE -- SEE ABOVE RIGHT

ALL NOTES AND LEGENDS APPLY -- SEE SHEET 5

DIGALERT
 DIAL TOLL FREE
 1-800-422-4133
 AT LEAST TWO DAYS
 BEFORE YOU DIG
 UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

NORTH
 0 15 30 60
 SCALE: 1"=30'

LICENSED LANDSCAPE ARCHITECT
 R. BRADLEY LEWIS
 4/17/07
 STATE OF CALIFORNIA

SEWER AGENCY
 Rainbow Municipal Water District
 3707 S. Highway 395 • Fallbrook, Ca • 92028
 Water & Sewer Agency
 BY: _____ DATE _____ JOB NUMBER _____
 NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE

WATER AGENCY
 Rainbow Municipal Water District
 3707 S. Highway 395 • Fallbrook, Ca • 92028
 Water & Sewer Agency
 RCE _____ DATE _____ JOB NUMBER _____
 NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE

DEPT. OF PLANNING AND LAND USE
 APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW.
 APPROVED BY: _____ DATE: _____

COUNTY APPROVED CHANGES			
NO.	DESCRIPTION:	APPROVED BY:	DATE:

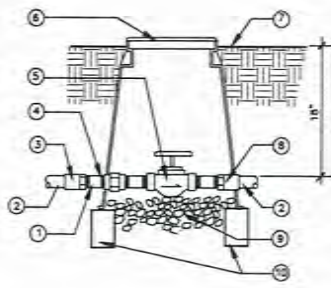
LEGAL DESCRIPTION
 DESCRIPTION:
 A PORTION OF SECTION 19, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA

HELIX
 environmental planning, inc.

7378 El Cajon Blvd, Suite 200
 La Mesa, California 91941
 CA Lic 26971
 (619) 462-3355
 Fax (619) 462-0552
 Job No. COL-02
 Date: 02-06-08

PERMITS
 N.O.I. _____
 GPA NO. N/A
 REZONE NO. N/A
 TENTATIVE MAP NO. _____ TRACT NO. 4976 RPL 5R

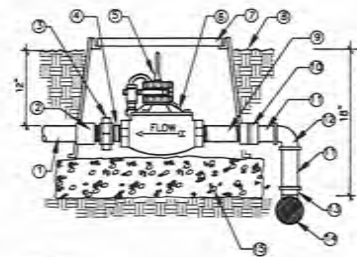
PRIVATE CONTRACT
 SHEET 4 COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS 9 SHEETS
 REVEGETATION PLANS FOR: **OLIVE HILL IRRIGATION PLAN**
 ASSESSOR'S PARCEL NUMBER(S) 126-310-03 and 126-050-54
 APPROVED: DOUGLAS M. BRILL FOR COUNTY ENGINEER
 DATE: 02/20/08
 LICENSED LANDSCAPE ARCHITECT R. BRADLEY LEWIS RLA 26971
 DRAWING POINT NO. N/A



- LEGEND:**
- 1 THREADED PVC SCH 80 NIPPLES (NO CLOSE NIPPLES, TYP.)
 - 2 PRESSURIZED PVC MAINLINE
 - 3 PVC FEMALE 5/8" ADAPTER
 - 4 PVC SCH 80 UNION
 - 5 VALVE AS SPECIFIED ON PLANS POSITION VALVE IN BOX SO THAT HANDLE IS FREE TO OPERATE
 - 6 10" NCH ROUND PLASTIC VALVE BOX (PER SPECIFICATIONS) INSTALL 1" NCH ABOVE FINISHED GRADE
 - 7 FINISHED GRADE
 - 8 PVC FEMALE ADAPTER
 - 9 PEA GRAVEL 1/2" DIAMETER (APPROX 1 CU FT.)
 - 10 BRICK SUPPORT FOR VALVE BOX

A BALL VALVE

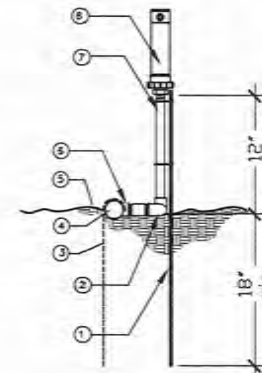
NO SCALE



- LEGEND:**
- 1 PVC LATERAL LINE, SIZE PER PLAN
 - 2 PVC ADAPTER, F1PT x SLIP
 - 3 SCH 80 PVC UNION (TYP) O-RINGS TYPE LARGO OR EQUIV
 - 4 SCH 80 PVC NIPPLE, SAME SIZE AS VALVE
 - 5 HANTER WIRELESS VALVE CONTROLLER PER LEGEND
 - 6 REMOTE CONTROL VALVE ELECTRIC VALVE PER LEGEND
 - 7 LARGE RECTANGULAR PLASTIC VALVE BOX WITH LOCKING LID & RCV. HEAT BRANDED INTO TOP INSTALL 1" NCH ABOVE FINISHED GRADE
 - 8 FINISH GRADE
 - 9 SCH 80 PVC NIPPLE
 - 10 SCH 80 FEMALE ADAPTER (TYP)
 - 11 SCH 80 PVC PIPE
 - 12 SCH 80 PVC ELL (5x5)
 - 13 SCH 80 PVC TEE MAINLINE
 - 14 MAINLINE (5x5x5) PER LEGEND
 - 15 1 CUBIC FOOT PEA GRAVEL MIN SUPPORTING VALVE BOX

B REMOTE CONTROL VALVE WITH BATTERY OPERATED CONTROLLER

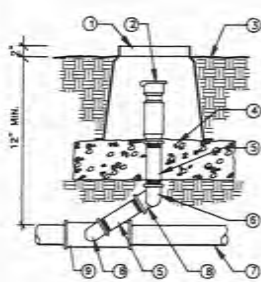
NO SCALE



- LEGEND:**
- 1 1/4" REBAR ATTACH TO RISER WITH CLAMPS, INSERT MIN 18 INCHES OR INTO FIRM SOIL
 - 2 (1/2) MARLEX STREET ELLS
 - 3 SECURE LATERAL LINE TO FINISHED GRADE WITH 1/4" REBAR J-HOOK AT 10' ON CENTER TYPICAL, INSERT MIN 18 INCHES OR INTO FIRM SOIL
 - 4 PVC LATERAL LINE PER PLAN
 - 5 FINISH GRADE
 - 6 SCH 40 PVC TEE (5x5x7) OR ELL (5x7)
 - 7 SCH 80 PVC RISER (2' LENGTH)
 - 8 ROTOR HEAD PER LEGEND
- NOTE:**
A. PVC RISER SHALL BE THE SAME SIZE AS THE INLET OF THE SPRINKLER HEAD PER PLAN.

C ON-GRADE SPRAYHEAD

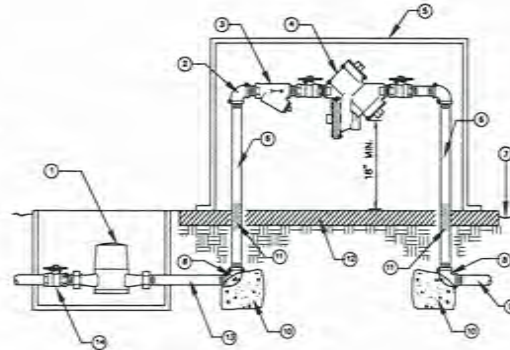
NO SCALE



- LEGEND:**
- 1 10" NCH ROUND PLASTIC VALVE BOX WITH LOCKING COVER AND "100" HEAT BRANDED INTO TOP, INSTALL 1" NCH ABOVE FINISHED GRADE
 - 2 QUICK COUPLER VALVE WITH ACME THREADS PER PLANS
 - 3 FINISH GRADE, ALLOW 2" NCH DEPTH FOR TOP MULCH
 - 4 ONE CUBIC FOOT PEA GRAVEL
 - 5 SCH 80 PVC NIPPLE
 - 6 PVC ELL (TYP)
 - 7 MAINLINE PER LEGEND
 - 8 MARLEX STREET ELLS (2) REQUIRED PER QUICK COUPLER
 - 9 SCH 40 PVC TEE (5x5x7)
- NOTES:**
A. ALL PVC FITTINGS SHALL BE SCH 40 EXCEPT WHERE NOTED.
B. ALL SCH 40 PVC THREADS SHALL BE WRAPPED WITH TEFLON TAPE.

D QUICK COUPLER

NO SCALE

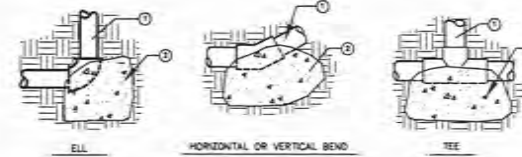


- LEGEND:**
- 1 WATER METER
 - 2 BRASS ELL (TYP) LINE SIZE (4 REQUIRED)
 - 3 BRONZE Y" STRAINER
 - 4 REDUCED PRESSURE BACKFLOW ASSEMBLY PER PLANS
 - 5 PROTECTIVE ENCLOSURE PER PLANS INSTALL PER MANUFACTURER'S SPEC'S
 - 6 BRASS RISERS LENGTH AS NEEDED
 - 7 FINISH GRADE, COMPACT ALL BACKFILL
 - 8 SCH 40 PVC MALE ADAPTER
 - 9 PVC MAINLINE PER PLANS
 - 10 CONCRETE THRUST BLOCKS, 1 CUBIC FT. MIN
 - 11 BRASS FITTING WITH 20 MIL PIPE WRAP TAPE
 - 12 4" NCH CONCRETE PAVING (1' CLEAR ALL SIDES)
 - 13 PVC MAINLINE PER PLANS FROM METER
 - 14 INLET SHUT-OFF

- NOTES:**
A. ALL VALVES, FITTINGS & PIPES SHOWN ARE TO BE LINE SIZED EXCEPT WHERE INDICATED.
B. INSTALLATION SPECIFICATIONS SHOWN ARE SCHEMATIC AND DO NOT SUPERSEDE OR REPLACE ANY CITY OR STATE REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE CODES.
C. ALL THREADED CONNECTIONS SHALL BE SEALED WITH OVERLAPPING TURNS OF TEFLON TAPE SUFFICIENT TO PREVENT LEAKAGE.

E BACKFLOW PREVENTER ASSEMBLY WILKINS MODEL 975XL6

NO SCALE



- LEGEND:**
- 1 PVC PRESSURIZED MAINLINE
 - 2 CONCRETE THRUST BLOCK 4"X8"X16" (1 CUBIC FOOT MINIMUM)

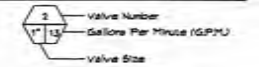
F CONCRETE THRUST BLOCKS

NO SCALE

IRRIGATION LEGEND

SYMBOL	MANUFACTURER	MODEL #	DESCRIPTION	GPM	RAD.	ARC	DETAIL ALL DETAILS THIS SHEET
2	HANTER	PG6-ADV-01	ADJUSTABLE ROTOR HEAD ON SHRUB BODY WITH 2" RISER AND CHECK VALVE	0.9	30'	90-180-360	C
5	HANTER	PG6-ADV-05	ADJUSTABLE ROTOR HEAD ON SHRUB BODY WITH 2" RISER AND CHECK VALVE	2.0	36'	360	C
6	HANTER	PG6-ADV-06	ADJUSTABLE ROTOR HEAD ON SHRUB BODY WITH 2" RISER AND CHECK VALVE	2.7	36'	360	C
P.O.C.			POINT OF CONNECTION AT NEW 8" MAIN LINE IN BRANCH DEL CABALLO (BY OTHERS) CONTRACTOR TO VERIFY LOCATION				NA
M	METER		1" WATER METER INSTALLED BY DISTRICT, CONTRACTOR TO VERIFY.				NA
8	WILKINS	975-XL6	1" NCH REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER ASSEMBLY WITH BRONZE Y" STRAINER 100 MESH, LOCATE AT POINT OF CONNECTION, SET PRESSURE REGULATOR AT 100 P.S.I.				E
NA	STRONGBOX	BC-5CR	BACKFLOW ENCLOSURE				E
NA	RAN BIRD	PEB	1" NCH MASTER VALVE; PEB SERIES AUTOMATIC VALVE				B
NA	KING BROS.	BTJ SERIES	LINE SIZE TRUE UNION BALL VALVE WITH SLIP ENDS				A
NA	RAN BIRD	PEB	1" NCH PEB SERIES AUTOMATIC VALVE				B
NA	HANTER	UVC-300	2 STATION WIRELESS VALVE CONTROLLER				B
NA	HANTER	UVC-400	4 STATION WIRELESS VALVE CONTROLLER				B
NA	HANTER	RAIN-CLK	HANTER RAIN-CLK MOISTURE SENSOR WITH MASTER VALVE CONTROLLER ONLY				B
NA	HANTER	4S-02-00	DC LATCHING SOLENOIDS (ALL VALVES)				NA
NA	HANTER	UVP	WIRELESS VALVE PROGRAMMER				NA
NA	RAN BIRD	44-RC	QUICK-COUPING VALVE				D
---	PVC		3/4" NCH PVC PRESSURE MAINLINE, DOWNSTREAM OF P.O.C. WITH MINIMUM 18 INCHES COVER, LOCATE WITHIN RIGHT OF WAY ALONG ROAD AND AT TOE OR TOP OF SLOPES ELSEWHERE.				NA
---	LARGO OR EQUIVALENT	SCHEDULE 40 PVC	3/4" NCH OR LARGER PVC LATERAL LINE, INSTALL ON GRADE, SEE DETAIL. ALL PVC LATERAL LINE SIZES ARE NOTED ON PLAN.				C
---	PACIFIC WESTERN	SCHEDULE 40 PVC	PVC SLEEVE 2X PIPE SIZE, SEE NOTE B				NA

STATIC PRESSURE AT POINT OF CONNECTION ASSUMED TO BE 263 P.S.I., REGULATED TO 100 P.S.I. SEE PRESSURE CALCULATIONS, THIS SHEET. HANTER HEAD DESIGN WORKING PRESSURE 50 P.S.I.



irrigation system pressure requirements
worst case operation/friction loss calculation

PIPE SECTION (Sch. 40)	PIPE SIZE	SECTION LENGTH	SECTION GPM FLOW	SECTION MULT. FACTOR	SECTION PRESSURE FRICTION LOSS
1	3/4"	135	5.00	0.0215	2.90
2	1"	30	9.00	0.0197	0.59
3	1-1/4"	30	15.00	0.015	0.45
4	1-1/2"	80	22.00	0.0132	1.06
5	2"	0	0.00	0	0.00
6	2-1/2"	0	0	0	0.00
TOTAL LATERAL LINE LOSS					5.00
MAINLINE PIPE SECTION (CL 315)	PIPE SIZE	SECTION LENGTH	SECTION GPM FLOW	SECTION MULT. FACTOR	SECTION PRESSURE FRICTION LOSS
1	2-1/2"	725	35	0.0039	2.83
TOTAL MAINLINE LOSS					2.83
TOTAL IRRIGATION LINE LOSS					7.83

SYSTEM PRESSURE LOSS CALCULATION

METER 1"	1"
METER SIZE	1"
STATIC PRESSURE AT POC	263.00
Elevation @ METER	200.0
Elevation @ LAST HEAD	212.0
ELEVATION PSI GAIN / LOSS	-12.0
WATER METER LOSS	7.80
BACKFLOW PREVENTER LOSS	12.00
MASTER VALVE LOSS	8.00
MAINLINE LOSS	2.83
REMOTE CONTROL VALVE LOSS	8.00
LATERAL LINE LOSS	5.00
FRICION LOSS SUBTOTAL =	43.63
FITTING LOSSES 10%	0.78
ELEVATION GAIN / LOSS	-5.16
MINIMUM OPERATIONAL PSI	50.00
FRICION LOSS SUBTOTAL	43.63
SYSTEM OPERATIONAL TOTAL =	99.57
STATIC PSI	263.00
PRESSURE REGULATOR SETTING	100.00
SYSTEM OPERATIONAL REQ	99.57
RESIDUAL PSI =	6.43

IRRIGATION NOTES

1. PLANS ARE DIAGRAMMATIC AND APPROXIMATE. ALL VALVES AND OTHER IRRIGATION EQUIPMENT SHALL BE LOCATED IN PLANTING AREAS, AND WITHIN THE RESPECTIVE PROPERTIES.
2. CONTRACTOR SHALL REVIEW IRRIGATION SPECIFICATIONS PRIOR TO BEGINNING WORK. REFER TO TECHNICAL SPECIFICATIONS AND CONSTRUCTION DETAILS FOR INSTALLATION PROCEDURES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS/HER WORK WITH OTHER TRADES.
4. CONTRACTOR SHALL CHECK AND VERIFY ALL EXISTING SITE CONDITIONS, UTILITIES, AND SERVICES PRIOR TO TRENCHING, AND SHALL NOTIFY THE RESTORATION SPECIALIST OF ANY DISCREPANCIES IMMEDIATELY.
5. CONTRACTOR SHALL VERIFY STATIC WATER PRESSURE, METER, MAIN LOCATIONS, SIZES, ETC. PRIOR TO BEGINNING WORK, AND SHALL NOTIFY RESTORATION SPECIALIST OF ANY DISCREPANCIES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PLUMBING PERMIT AND ALL NECESSARY PERMITS PRIOR TO COMMENCING INSTALLATION.
7. CONTRACTOR SHALL INSTALL SYSTEMS THAT ARE COMPLETE AND FUNCTIONING PROPERLY IN EVERY WAY.
8. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING AGENCIES.
9. CONTRACTOR SHALL BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING PROJECT.
10. POINTS OF CONNECTION AS SHOWN ON PLANS ARE APPROXIMATE- CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND CONNECTIONS.
11. INSTALL ONLY ONE REMOTE CONTROL VALVE PER VALVE BOX. GROUP TOGETHER PARALLEL TO EACH OTHER AND OUTSIDE OF HEAD SPRAY WHERE EVER POSSIBLE. BOXES SHALL BE SET 1" NCH ABOVE FINISHED GRADE.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR SLEEVES AND CHASES UNDER PAVING, THROUGH WALLS, ETC., UNLESS OTHERWISE NOTED.
13. ALL PIPING UNDER EXISTING OR FUTURE PAVING SHALL BE INSTALLED PRIOR TO PAVING OR REPAVING. INSTALL IN SCHEDULE 40 PVC SLEEVES 2x PIPE DIAMETER, AND EXTEND 2'-FEET OUTSIDE EDGE OF PAVING. NO TEES, ELLS, OR OTHER TURNS IN PIPING SHALL BE LOCATED UNDER PAVING UNLESS PLANS NOTE OTHERWISE.
14. CONTRACTOR SHALL ADJUST ALL IRRIGATION HEADS TO FULLY COVER ALL PLANTING AREAS.
15. FLUSH ALL PIPE CLEAN PRIOR TO INSTALLING IRRIGATION HEADS.
16. ALL SPRAY IRRIGATION MUST BE FULLY INSTALLED AND OPERATIONAL PRIOR TO INSTALLATION OF PLANT MATERIAL.
17. EXISTING TREES AND/OR SHRUBS TO REMAIN TAKE PRECEDENCE OVER IRRIGATION LINES. STAKE ALL EXISTING TREE AND/OR SHRUB LOCATIONS, UNDER DIRECTION OF RESTORATION SPECIALIST.

HEAD RADIUS LEGEND

- 1 360 DEGREE RADIUS
- 2 180 DEGREE RADIUS
- 3 90 DEGREE RADIUS

ALIGN ARCS IN DIRECTION INDICATED. ALL HEADS SHALL BE ADJUSTABLE. HALF HEADS INDICATED AT EDGE BETWEEN CREATION AND ENHANCEMENT AREAS MAY BE ADJUSTED TO FULL SPRAY UNDER THE DIRECTION OF THE RESTORATION SPECIALIST.



1518 El Cajon Blvd, Suite 200
La Mesa, CA 91941
CA Lic 76571
(619) 467-5155
Fax (619) 467-0592
Job No. COL-02
Date: 07-06-06

PERMITS		PRIVATE CONTRACT	
N.O.I.		SHEET	9
GPA NO.	N/A	COUNTY OF SAN DIEGO	9
REZONE NO.	N/A	DEPARTMENT OF PUBLIC WORKS	SHEETS
TENTATIVE MAP NO.	TRACT NO. 4976 RPL 5R	REVEGETATION PLANS FOR: OLIVE HILL IRRIGATION DETAILS, NOTES, AND LEGEND	
LEGAL DESCRIPTION		ASSESSOR'S PARCEL NUMBER(S) 128-110-01 and 128-050-54	
DESCRIPTION: A PORTION OF SECTION 19, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA		APPROVED: THOMAS H. WELLS FOR COUNTY ENGINEER	LANDSCAPE ARCHITECT OF RECORD: DR. BRADLEY L. JONES R.A. 2617
		ISSUE PERIOD: N/A	

SEWER AGENCY	WATER AGENCY	DEPT. OF PLANNING AND LAND USE	COUNTY APPROVED CHANGES
Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency	Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency	APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW. APPROVED BY: _____ DATE: _____	NO. 7/07 DESCRIPTION: Location of moisture sensor APPROVED BY: _____ DATE: _____
BY: _____ DATE _____ JOB NUMBER _____ NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE	RCE: _____ DATE _____ JOB NUMBER _____ NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE		



PART 1.00 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MACHINERY, MATERIALS, AND PROCESSES NECESSARY TO COMPLETE THE IRRIGATION SYSTEM DESCRIBED HEREIN AND SHOWN ON THE CONTRACT DOCUMENTS.
- B. CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND SITE RESTRICTIONS.
- C. CONTRACTOR SHALL DETERMINE THE LOCATION AND DEPTH OF ALL SITE UTILITIES. ANY UTILITY OR GRADING INFORMATION PROVIDED ON THE CONTRACT DOCUMENTS IS FOR THE CONTRACTOR'S REFERENCE. THERE IS NO GUARANTEE AS TO THE ACCURACY OF THE INFORMATION. CONTRACTOR SHALL LOCATE AND VERIFY UTILITY LOCATIONS TO HIS SATISFACTION.
- D. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL REPAIRS MADE NECESSARY BY THE NEGLIGENCE OF HIS CREWS.
- E. THE GENERAL AND SPECIAL CONDITIONS AND NOTES OF THE CONTRACT APPLY TO THE WORK OF THIS SECTION THE SAME AS THOUGH WRITTEN HEREIN.

1.02 ORDINANCES AND REGULATIONS

A. ALL LOCAL, MUNICIPAL AND STATE LAWS AND RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK. SUCH SPECIFICATIONS ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR. ANYTHING CONTAINED IN THESE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CONFLICT WITH ANY OF THE ABOVE RULES, REGULATIONS, OR REQUIREMENTS OF THE SAME. HOWEVER, WHEN THE SPECIFICATIONS AND/OR CONTRACT DOCUMENTS CALL FOR OR DESCRIBE MATERIALS, WORKMANSHIP OR CONSTRUCTION OF HIGHER QUALITY, HIGHER STANDARDS OR A LARGER SIZE, SPECIFICATIONS AND/OR CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE OVER THE REQUIREMENTS OF THE SAID RULES AND REGULATIONS.

1.03 SCOPE OF WORK

- A. THE WORK INCLUDES ALL SERVICES, LABOR, MATERIALS, EQUIPMENT AND TRANSPORTATION NECESSARY TO PERFORM THE WORK ON THE CONTRACT DOCUMENTS AND AS SPECIFIED HEREIN AND AS REQUIRED TO COMPLETE THE CONTRACT PROPERLY.
- B. THE CONTRACTOR SHALL PROTECT THE WORK, ADJACENT PROPERTY AND THE PUBLIC, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE, INJURY AND LOSS DUE TO HIS ACTS OR NEGLIGENCE.
- C. THE CONTRACTOR SHALL SUBMIT UNIT COSTS TO THE OWNER FOR ADDITIONS OR DELETIONS TO THE CONTRACT DOCUMENTS.
- D. WORK NOT INCLUDED: N/C, BY OTHERS, EXISTING

1.04 SCHEDULE OF WORK

- A. UPON AWARD OF THE CONTRACT A WORK SCHEDULE SHALL BE SUBMITTED TO THE OWNER FOR CARRYING OUT THE WORK. UPON APPROVAL, NO MODIFICATIONS SHALL BE MADE TO THIS SCHEDULE WITHOUT THE WRITTEN APPROVAL OF THE OWNER.
- B. FINISH GRADING AND LANDSCAPE INSTALLATION SCHEDULE OF WORK SHALL BE PERFORMED DURING THOSE PERIODS WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE IN ACCORDANCE WITH LOCALLY ACCEPTED HORTICULTURAL PRACTICE.

1.05 COORDINATION

- A. CONTRACTOR SHALL REPORT TO THE LANDSCAPE ARCHITECT ANY DEVIATIONS BETWEEN CONSTRUCTION CONTRACT DOCUMENTS, SPECIFICATIONS, AND THE SITE. FAILURE TO DO SO PRIOR TO THE INSTALLATION OF THE IMPROVEMENTS AND RESULTING IN REPLACING, AND/OR RELOCATING IMPROVEMENTS, SHALL BE AT THE CONTRACTOR'S EXPENSE.
- B. CONTRACTOR SHALL COORDINATE THE WORK AT ALL TIMES WITH OTHER CONTRACTORS WORKING IN AND ADJACENT TO THE AREAS IN THIS CONTRACT, THIS IS TO ENSURE AN ORDERLY AND EFFICIENT INSTALLATION PROCEDURE, AND TO MINIMIZE CONFLICTS WITH OTHER CONSTRUCTION OPERATIONS.

1.06 EXPLANATION OF CONTRACT DOCUMENTS

A. DUE TO THE SCALE OF CONTRACT DOCUMENTS, IT IS NOT POSSIBLE TO SHOW ALL OFFSETS, FITTINGS, OR SLEEVES WHICH MAY BE REQUIRED. CAREFULLY INSPECT ALL CONDITIONS OF WORK ACCORDING TO THE ACTUAL SITE AND PLAN INSTALLATION ACCORDINGLY. ADJUSTING ALL PIPE AND FITTINGS TO MEET THE SYSTEM'S REQUIREMENTS. CONTRACTOR SHALL REPORT ANY CONFLICTS PRIOR TO BEGINNING WORK. WORK SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID CONFLICTS BETWEEN IRRIGATION SYSTEMS, PLANTING AND ARCHITECTURAL FEATURES.

1.07 SUBSTITUTIONS

- A. NO SUBSTITUTIONS OF IRRIGATION EQUIPMENT OR OTHER CONSTRUCTION MATERIALS WILL BE PERMITTED WITHOUT THE WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT. IF IRRIGATION EQUIPMENT SUBSTITUTIONS ARE ACCEPTED AND ARE OF LESS VALUE THAN THOSE SPECIFIED, THE CONTRACT PRICE WILL BE ADJUSTED IN ACCORDANCE WITH THE PROVISIONS OF THE CONTRACT.
- B. THE RIGHT TO CHANGE: THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO CHANGE THE MANUFACTURER, MODEL, AND/OR SIZES OF IRRIGATION EQUIPMENT TO BE FURNISHED, PROVIDED THAT THE COST OF SUCH EQUIPMENT CHANGES DOES NOT EXCEED THE COST OF THE IRRIGATION EQUIPMENT IN THE ORIGINAL BID. THE CONTRACTOR SHALL BE NOTIFIED AND THE CHANGES CONFIRMED IN WRITING PRIOR TO THE IRRIGATION INSTALLATION OPERATION COMMENCING. CHANGES IN ANY IRRIGATION EQUIPMENT FURNISHED THAT REQUIRES A REDUCTION OR ADDITION IN COST SHALL REQUIRE AN ADJUSTMENT IN THE CONTRACT COST.

1.08 REJECTION

A. ANY IRRIGATION EQUIPMENT AND/OR WORK MAY BE REJECTED IF, IN THE OPINION OF THE LANDSCAPE ARCHITECT, SUCH DOES NOT MEET THE REQUIREMENT AND THE SPECIFICATIONS. ALL REJECTED WORK AND/OR IRRIGATION EQUIPMENT SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT HIS EXPENSE. REJECTED WORK SHALL BE REDONE IN A TIMELY MANNER AND APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.

1.09 SUBMITTALS

- A. COMPLETE MATERIAL LIST SHALL BE SUBMITTED PRIOR TO PERFORMING ANY WORK.
- B. SUBSTITUTIONS: SUBMIT 3 COPIES OF CATALOG INFORMATION ON MATERIALS THAT ARE TO BE SUBMITTED FOR SUBSTITUTION. NO SUBSTITUTION WILL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL BY THE LANDSCAPE ARCHITECT.

1.10 RECORD CONTRACT DOCUMENTS (AS-BUILT) INFORMATION

A. A SET OF CONTRACT DRAWINGS THAT ARE VERIFIED BY THE CONTRACTOR TO BE A SET APPROVED BY THE GOVERNING AGENCY SHALL BE KEPT AT THE SITE OFFICE DURING CONSTRUCTION. ALL WORK THAT IS INSTALLED SHALL BE REVIEWED FOR CONFORMANCE WITH THE PLANS. IF NEW WORK OR WORK AS SHOWN ON THE PLANS IS DIFFERENT, THE CONTRACTOR SHALL NOTE THE INSTALLATION ON THE RECORD DRAWINGS. THE MARKED DRAWINGS SHALL BE KEPT CURRENT AS THE WORK PROGRESSES AND SHALL BE AVAILABLE FOR INSPECTION BY THE OWNER'S REPRESENTATIVE UPON REQUEST. AT 2 WEEKS PRIOR TO THE NOTICE OF COMPLETION, THESE OR A COPY OF THE AS-BUILT DRAWINGS SHALL BE DELIVERED TO THE OWNER'S REPRESENTATIVE.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. DELIVER, UNLOAD, STORE, AND HANDLE MATERIALS, PACKAGING, BUNDLING, PRODUCTS, IN DRY, WEATHERPROOF, WATERPROOF CONDITION IN MANNER TO PREVENT DAMAGE, BREAKAGE, DETERIORATION, INTRUSION, IGNITION, EXCESSIVE EXPOSURE TO SUN, AND VANDALISM. DELIVER IN ORIGINAL UNOPENED PACKAGING CONTAINERS PROMINENTLY DISPLAYING MANUFACTURER NAME, VOLUME, QUANTITY, CONTENTS, INSTRUCTIONS, AND CONFORMANCE TO LOCAL, STATE, AND FEDERAL LAWS. REMOVE AND REPLACE CRACKED, BROKEN, OR CONTAMINATED ITEMS OR ELEMENTS PREMATURELY EXPOSED TO MOISTURE, UNCLEAN WEATHER, SNOW, ICE, TEMPERATURE EXTREMES, FIRE, OR JOB SITE DAMAGE.
- B. HANDLING OF PVC PIPE - EXERCISE CARE IN HANDLING, LOADING AND STORING OF PVC PIPE. ALL PVC PIPE SHALL BE TRANSPORTED IN A VEHICLE WHICH ALLOWS LENGTH OF PIPE TO LIE FLAT SO AS NOT TO SUBJECT IT TO UNCLE BENDING OR CONCENTRATED EXTERNAL LOADS. ALL SECTIONS OF PIPE THAT HAVE BEEN DENTED OR DAMAGED SHALL BE DISCARDED, AND IF INSTALLED, SHALL BE REMOVED AND REPLACED WITH NEW PIPING.

1.12 PUBLIC SAFETY

A. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO ENSURE THE SAFETY OF ALL WORKERS, PEDESTRIANS AND ADJACENT PROPERTY IN ACCORDANCE WITH CALIFORNIA/OSHA REQUIREMENTS. THE LANDSCAPE ARCHITECT AND/OR CONSULTANTS DO NOT PRACTICE OR CONSULT IN THE FIELD OF SAFETY ENGINEERING. THE LANDSCAPE ARCHITECT DOES NOT DIRECT THE CONTRACTOR'S OPERATIONS AND IS NOT BE RESPONSIBLE FOR PERSONNEL OTHER THAN OUR OWN ON THE SITE. THE SAFETY OF OTHERS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IF HE CONSIDERS ANY OF THE RECOMMENDED ACTIONS IN THE CONTRACT DOCUMENTS TO BE UNSAFE.

B. PROTECTION OF PROPERTY:

- 1. PRESERVE AND PROTECT ALL TREES, PLANTS, MONUMENTS, STRUCTURES, AND PAVED AREAS FROM DAMAGE DUE TO WORK OF THIS SECTION. IN THE EVENT DAMAGE DOES OCCUR, ALL DAMAGE SHALL BE COMPLETELY REPAIRED OR REPLACED TO SATISFACTION OF OWNER AND PAID BY CONTRACTOR.
- 2. PROTECT BUILDINGS, WALKS, WALLS, AND OTHER PROPERTY FROM DAMAGE. MARK AND BARRICADE OPEN DITCHES. DAMAGE CAUSED TO ASPHALT, CONCRETE, OR OTHER BUILDING MATERIAL SURFACES SHALL BE REPAIRED OR REPLACED AT NO COST TO OWNER. RESTORE DISTURBED AREAS TO ORIGINAL CONDITION. REPLACEMENT OF PAVING AND CURBS OR PERSONNEL SHALL BE DONE BY HAND. ROOTS 2 INCHES OR LARGER IN DIAMETER, EXCEPT DIRECTLY IN THE PATH OF PIPE OR CONDUIT, SHALL BE TUNNELED UNDER AND SHALL BE HEAVILY WRAPPED WITH BURLAP TO PREVENT SCARRING OR EXCESSIVE DRYING. WHERE A TRENCHING MACHINE IS OPERATED CLOSE TO TREES HAVING ROOTS SMALLER THAN 2 INCHES IN DIAMETER, WALL OF TRENCH ADJACENT TO TREE SHALL BE HAND TRIMMED, MAKING CLEAN CUTS THROUGH ROOTS. TRENCHES ADJACENT TO TREES SHALL BE CLOSED WITHIN 24 HOURS, AND WHEN THIS IS NOT POSSIBLE, SIDE OF TRENCH ADJACENT TO TREE SHALL BE KEPT SHADED WITH MOISTENED BURLAP OR CANVAS.

C. EXISTING TREES:

- 1. ALL TRENCHING OR OTHER WORK UNDER LIMBS SPREAD OF ANY AND ALL TREES SHALL BE DONE BY HAND OR BY OTHER METHODS APPROVED IN WRITING BY LANDSCAPE ARCHITECT SO AS TO PREVENT DAMAGE TO LIMBS OR BRANCHES.
- 2. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE ALL POSSIBLE CARE TO AVOID HARM TO TREE ROOTS. EXCAVATION IN AREAS WHERE 2 INCH AND LARGER ROOTS OCCUR SHALL BE DONE BY HAND. ROOTS 2 INCHES OR LARGER IN DIAMETER, EXCEPT DIRECTLY IN THE PATH OF PIPE OR CONDUIT, SHALL BE TUNNELED UNDER AND SHALL BE HEAVILY WRAPPED WITH BURLAP TO PREVENT SCARRING OR EXCESSIVE DRYING. WHERE A TRENCHING MACHINE IS OPERATED CLOSE TO TREES HAVING ROOTS SMALLER THAN 2 INCHES IN DIAMETER, WALL OF TRENCH ADJACENT TO TREE SHALL BE HAND TRIMMED, MAKING CLEAN CUTS THROUGH ROOTS. TRENCHES ADJACENT TO TREES SHALL BE CLOSED WITHIN 24 HOURS, AND WHEN THIS IS NOT POSSIBLE, SIDE OF TRENCH ADJACENT TO TREE SHALL BE KEPT SHADED WITH MOISTENED BURLAP OR CANVAS.

D. PROTECTION AND REPAIR OF UNDERGROUND LINES

1. REQUEST PROPER UTILITY COMPANY TO TAKE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND ELECTRIC, GAS, OR TELEPHONE LINES. TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO PROTECT THE UNDERGROUND LINES FROM DAMAGE. IN THE EVENT DAMAGE DOES OCCUR, ALL DAMAGE SHALL BE REPAIRED BY CONTRACTOR, AND ALL COSTS OF SUCH REPAIRS SHALL BE PAID BY CONTRACTOR.

1.13 WARRANTY/GUARANTEE

- A. CONTRACTOR SHALL WARRANT MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM NOTICE OF COMPLETION. CONTRACTOR SHALL GUARANTEE WORKMANSHIP FOR SIMILAR PERIOD. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL WARRANTY ITEMS WITH MANUFACTURER/DISTRIBUTOR.
- B. SETTLING OF BACKFILLED TRENCHES WHICH MAY OCCUR DURING GUARANTEE PERIOD SHALL BE REPAIRED BY CONTRACTOR AT NO EXPENSE TO OWNER, INCLUDING COMPLETE RESTORATION OF DAMAGED PROPERTY.
- C. EXPENSES DUE TO VANDALISM PRIOR TO NOTICE OF COMPLETION SHALL BE BORNE BY CONTRACTOR.

1.14 MAINTENANCE

- A. FURNISH THE FOLLOWING MAINTENANCE ITEMS TO OWNER PRIOR TO NOTICE OF COMPLETION:
 - 1. TWO (2) SETS OF SPECIAL TOOLS REQUIRED FOR REMOVING, DISASSEMBLING, AND ADJUSTING EACH TYPE OF SPRINKLER HEAD AND VALVE SUPPLIED ON THIS PROJECT.
 - 2. TWO (2) KEYS FOR EACH BATTERY-OPERATED CONTROLLER, LOCKING VALVE BOXES AND LOCKING QUICK COUPLERS.
 - 3. FOUR (4) IRRIGATION HEADS WITH NOZZLES (OF EACH TYPE USED).
 - 4. OPERATION MANUALS FOR CONTROLLERS AND ANY OTHER EQUIPMENT USED ON PROJECT.

PART 2.00 - MATERIALS

2.01 PIPE AND FITTINGS

- A. MAIN LINES (CONSTANT PRESSURE) SHALL BE POLYVINYL-CHLORIDE (PVC) CLASS 315 WITH SOLVENT WELD CONNECTIONS.
 - 1. SOLVENT WELD MAIN LINE: AT CHANGES IN DIRECTION OR BRANCH MAINS, USE APPROPRIATE SCHEDULE 40 PVC FITTINGS AS APPROVED BY THE UNIFORM PLUMBING CODE.
- B. LATERAL LINES (NON-PRESSURE) 3/4" AND LARGER SHALL BE SCHEDULE 40 PVC PLASTIC PIPE.
 - 1. SOLVENT WELD LATERAL LINE: AT CHANGES IN DIRECTION OR BRANCH MAINS, USE APPROPRIATE SCHEDULE 40 PVC FITTINGS AS APPROVED BY THE UNIFORM PLUMBING CODE.
- C. CONNECTIONS BETWEEN MAIN LINES AND REMOTE CONTROL VALVES SHALL BE OF SCHEDULE 80 PVC (THREADED BOTH ENDS) NIPPLES AND FITTINGS.
- D. RISERS SHALL BE AS FOLLOWS: SCHEDULE 80 PVC THREADED NIPPLES AND SCHEDULE 80 PVC ELLS AS SHOWN IN THE CONSTRUCTION DETAILS.
- E. ON GRADE PIPE AND FITTINGS SHALL BE AS SPECIFIED IN CONTRACT DOCUMENTS.

2.02 MISCELLANEOUS INSTALLATION MATERIALS

- A. SOLVENT CEMENT AND PRIMER FOR SOLVENT WELD JOINTS SHALL BE OF MAKE AND TYPE APPROVED BY MANUFACTURER(S) OF PIPE AND FITTINGS. CEMENT SHALL BE MAINTAINED AT PROPER CONSISTENCY THROUGHOUT USE.
- B. LUBRICANT FOR ASSEMBLING RUBBER RING SEAL JOINTS SHALL BE OF MAKE AND TYPE APPROVED BY MANUFACTURER OF PIPE.
- C. PIPE JOINT COMPOUND SHALL BE NON-HARDENING, NON-TOXIC MATERIALS DESIGNED SPECIFICALLY FOR USE ON THREADED CONNECTIONS IN WATER CARRYING PIPE. PERFORMANCE SHALL BE SAME AS TEFLON TAPE.

2.03 MISCELLANEOUS EQUIPMENT

- A. PROVIDE ALL EQUIPMENT CALLED FOR BY THE CONTRACT DOCUMENTS.
- B. VALVE BOXES: AMETEK 2" STANDARD BOX.
- C. BATTERY-OPERATED CONTROL VALVES - AS SPECIFIED IN CONTRACT DOCUMENTS. NIPPLES OF SAME SIZE AS RISER OPENING IN SPRINKLER BODY.
- D. SPRINKLER HEADS - SHALL BE AS SPECIFIED IN CONTRACT DOCUMENTS. FABRICATE RISER UNITS IN ACCORDANCE WITH DETAILS IN CONTRACT DOCUMENTS, WITH RISER NIPPLES OF SAME SIZE AS RISER OPENING IN SPRINKLER BODY.
- E. PRESSURE REDUCING VALVE - AS SPECIFIED IN CONTRACT DOCUMENTS.
- F. BALL VALVES - AS SPECIFIED IN CONTRACT DOCUMENTS.
- G. BACKFLOW PREVENTION DEVICE - AS SPECIFIED IN CONTRACT DOCUMENTS.
- H. BATTERY OPERATED CONTROLLER - AS SPECIFIED IN CONTRACT DOCUMENTS.

PART 3.00 - INSTALLATION

3.01 PREPARATION

A. SCHEDULE AND COORDINATE PLACEMENT OF MATERIALS AND EQUIPMENT IN MANNER TO EFFECT THE EARLIEST COMPLETION OF WORK IN CONFORMANCE WITH CONSTRUCTION AND PROGRESS SCHEDULE.

3.02 LAYOUT

A. LAY OUT WORK AS ACCURATELY AS POSSIBLE IN ACCORDANCE WITH DIAGRAMMATIC CONTRACT DOCUMENTS. WHERE CONDITIONS DO NOT PERMIT LOCATION OF PIPING, VALVES AND HEADS WHERE SHOWN, NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY AND DETERMINE RELOCATION IN JOINT CONFERENCE.

3.03 STAKING OF ABOVE GROUND PIPE

A. ABOVE-GROUND MAINLINE AND LATERAL LINES SHALL BE SECURED TO THE GROUND WITH #4 REBAR J-HOOKS. SECURE MAINLINE EVERY 20 FEET. SECURE LATERAL LINES EVERY 10 FEET. REBAR SHALL EXTEND 18 INCHES MIN. AND INTO FIRM SOIL.

3.04 ASSEMBLING PIPELINES

- A. ALL PIPE SHALL BE ASSEMBLED FREE FROM DIRT AND FINE SCALE. FIELD CUT ENDS SHALL BE REAMED ONLY TO FULL DIAMETER WITH ROUGH EDGES AND BURRS REMOVED.
- B. SOLVENT WELD JOINT: EACH INSTALLER SHALL BE PROPERLY TRAINED IN TECHNIQUES FOR MAKING CORRECT JOINTS PRIOR TO PERFORMING WORK ON THE SITE:
 - 1. PREPARE JOINT BY FIRST MAKING SURE THE PIPE END IS SQUARE, THEN DEBURRING THE PIPE END AND CLEANING PIPE AND FITTING OF DIRT, DUST AND MOISTURE.
 - 2. SNAKE PIPE IN TRENCH AS MUCH AS POSSIBLE TO ALLOW FOR EXPANSION AND CONTRACTION.
 - 3. DRY-INSERT PIPE INTO FITTING TO CHECK FOR MIS-SIZING. PIPE SHOULD ENTER FITTING 1/3 TO 2/3 DEPTH OF SOCKET.
 - 4. LAY PIPE AND MAKE ALL PLASTIC TO PLASTIC JOINTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - 5. SOLVENT WELD JOINTS SHALL BE MADE BY PROCESS AND MATERIALS AS RECOMMENDED BY THE MANUFACTURER.
 - 6. CURE JOINT A MINIMUM OF THIRTY (30) MINUTES BEFORE HANDLING AND AT LEAST 24 HOURS BEFORE ALLOWING WATER IN THE PIPE.

C. THREADED JOINT:

- 1. FIELD THREADING OF PLASTIC PIPE OR FITTINGS IS NOT PERMITTED. FACTORY-FORMED THREADS ONLY WILL BE PERMITTED.
- 2. FACTORY-MADE NIPPLES SHALL BE USED WHEREVER POSSIBLE. FIELD-CUT THREADS IN METALLIC PIPE WILL BE PERMITTED ONLY WHERE ABSOLUTELY NECESSARY. WHEN FIELD THREADING, CUT THREADS ACCURATELY ON AXIS WITH SHARP DIES.
- 3. ALL THREADED JOINTS SHALL BE MADE UP WITH PIPE JOINT COMPOUND. APPLY COMPOUND TO MALE THREADS ONLY.
- 4. WHERE ASSEMBLING METALLIC PIPE TO METALLIC FITTING OR VALVE, NO MORE THAN THREE (3) FULL THREADS SHALL BE VISIBLE WHEN JOINT IS MADE UP.
- 5. WHERE ASSEMBLING SOFT METAL (BRASS OR COPPER) OR PLASTIC PIPE, USE STRAP TYPE FRICTION WRENCH ONLY. DO NOT USE METAL-JAWED WRENCH.

D. CAP OR PLUG OPENINGS AS PIPELINE IS ASSEMBLED TO PREVENT ENTRANCE OF DIRT OBSTRUCTION. REMOVE CAPS OR PLUGS ONLY WHEN NECESSARY TO CONTINUE ASSEMBLY.

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D. CAP OR PLUG OPENINGS AS PIPELINE IS ASSEMBLED TO PREVENT ENTRANCE OF DIRT OBSTRUCTION. REMOVE CAPS OR PLUGS ONLY WHEN NECESSARY TO CONTINUE ASSEMBLY.

3.05 REMOTE CONTROL VALVES

- A. INSTALL WHERE SHOWN IN CONTRACT DOCUMENTS AND GROUP TOGETHER WHERE PRACTICAL. LIMIT ONE BATTERY-OPERATED CONTROL VALVE PER BOX.
- B. THOROUGHLY FLUSH MAIN LINE BEFORE INSTALLING VALVE.
- C. INSTALL VALVE BOXES 1 INCH ABOVE GRADE.

3.06 CONTROLLER

- A. INSTALL AS SPECIFIED ON PLANS
- 3.07 SPRINKLER HEADS
 - A. THOROUGHLY FLUSH LINES BEFORE INSTALLING HEADS.
 - B. LOCATE HEADS AS SHOWN IN THE CONTRACT DOCUMENTS AND DETAILS.
 - C. ADJUST HEADS FOR PROPER FLOW RATE.
 - D. LANDSCAPE ARCHITECT MAY REQUEST NOZZLE CHANGES OR ADJUSTMENTS WITHOUT ADDITIONAL COSTS TO THE OWNER.

3.08 TESTS

- A. NOTIFY LANDSCAPE ARCHITECT AT LEAST 48 HOURS IN ADVANCE OF TESTING.
- B. PERFORM TESTING AT CONTRACTOR'S OWN EXPENSE.
- C. FLUSHING - AFTER PIPING, RISERS, AND VALVES ARE IN PLACE AND CONNECTED, BUT PRIOR TO INSTALLATION OF SPRINKLER HEADS, THOROUGHLY FLUSH PIPING SYSTEM UNDER FULL HEAD OF WATER PRESSURE FROM DEAD END FITTINGS. MAINTAIN FLUSHING FOR 5 MINUTES THROUGH FURTHERMOST VALVES. CAP RISERS AFTER FLUSHING.
- D. APPLY THE FOLLOWING TESTS AFTER SOLVENT WELD PLASTIC PIPE JOINTS HAVE CURED AT LEAST 24 HOURS.
- E. TESTING - CONDUCT TESTS IN PRESENCE OF LANDSCAPE ARCHITECT. ARRANGE FOR PRESENCE OF LANDSCAPE ARCHITECT 48 HOURS IN ADVANCE OF TESTING. SUPPLY FORCE PUMP AND ALL OTHER TEST EQUIPMENT.

1. AFTER BACKFILLING AND INSTALLATION OF ALL CONTROL VALVES, IN PRESENCE OF LANDSCAPE ARCHITECT, FILL SYSTEM WITH WATER, AND PRESSURIZE TO 40 P.S.I. OVER THE DESIGNATED STATIC PRESSURE OR 125 P.S.I., WHICHEVER IS GREATER, FOR A PERIOD OF 6 HOURS.

2. LEAKAGE, PRESSURE LOSS - TEST IS ACCEPTABLE IF NO LEAKAGE OR LOSS OF PRESSURE IS EVIDENT DURING TEST PERIOD.

3. LEAKS - DETECT AND REPAIR LEAKS.

4. RETEST SYSTEM UNTIL TEST PRESSURE CAN BE MAINTAINED FOR DURATION OF TEST.

5. TEST REMOTELY CONTROLLED LATERAL LINES WITH WATER AT 100 P.S.I. FOR 2 HOURS AND VISUALLY INSPECT FOR LEAKS. RETEST AFTER CORRECTING DEFECTS.

3.09 ADJUSTING

A. UPON COMPLETION OF INSTALLATION, "TUNE-TUNE" ENTIRE SYSTEM BY REGULATING VALVES, ADJUSTING PATTERNS AND BREAK-UP AIR-BUSSELS, AND SETTING PRESSURE REDUCING VALVES AT PROPER PRESSURE TO PROVIDE OPTIMUM AND EFFICIENT COVERAGE.

B. IF IT IS DETERMINED THAT IRRIGATION ADJUSTMENTS WILL PROVIDE PROPER AND MORE ADEQUATE COVERAGE, MAKE SUCH ADJUSTMENTS PRIOR TO NOTICE OF COMPLETION, AT NO ADDITIONAL COST TO OWNER.

C. AREAS WHICH DO NOT CONFORM TO DESIGNATED OPERATION REQUIREMENTS DUE TO UNAUTHORIZED CHANGES OR POOR INSTALLATION PRACTICES SHALL BE IMMEDIATELY CORRECTED AT NO ADDITIONAL COST TO THE OWNER.

3.10 CLEANING

A. MAINTAIN CONTINUOUS CLEANING OPERATION THROUGHOUT WORK. DISPOSE OF ALL TRASH OR DEBRIS GENERATED BY INSTALLATION OF IRRIGATION SYSTEM OFF-SITE AT LEGAL DISPOSAL SITE AND AT NO ADDITIONAL COST TO OWNER.

-END OF SECTION-

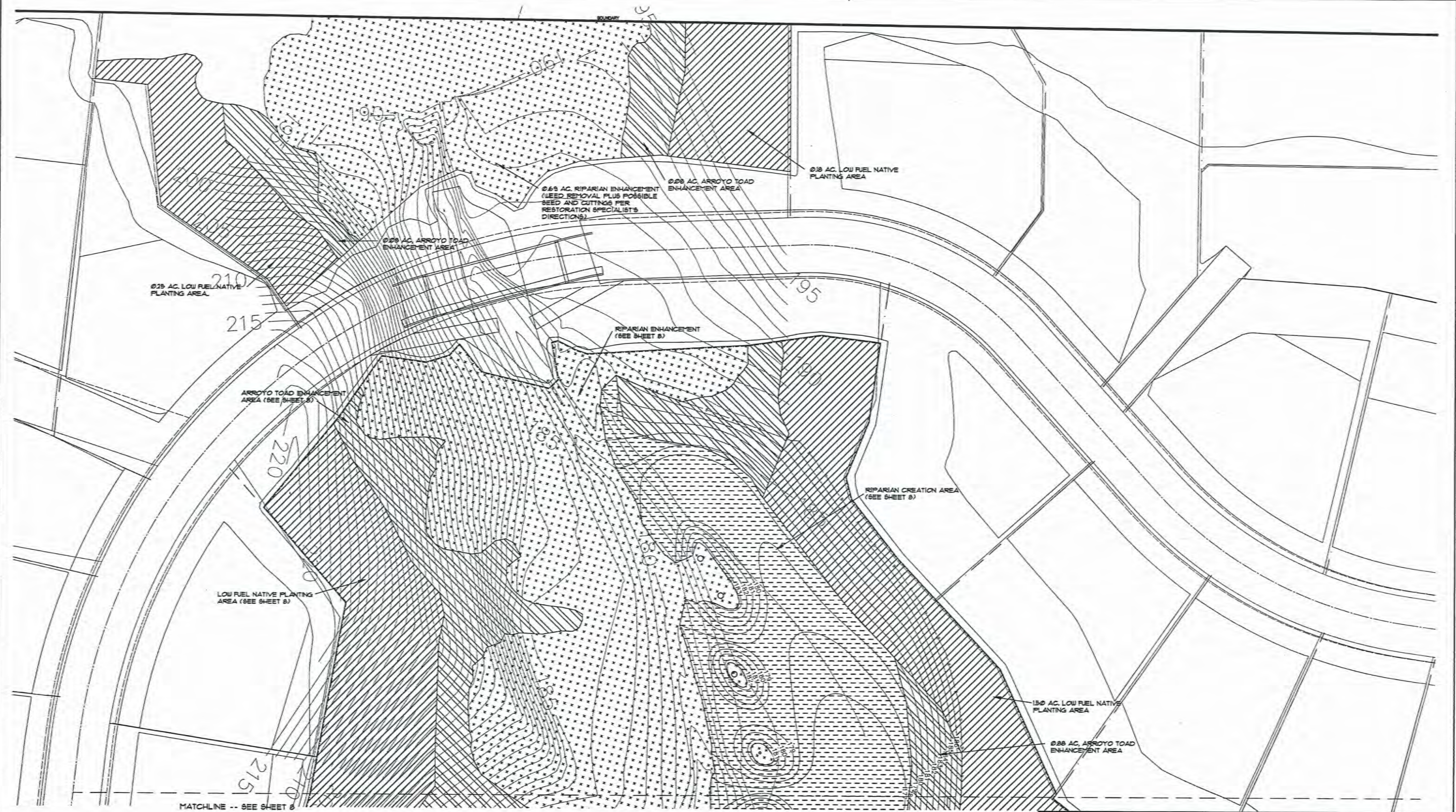


SEWER AGENCY	WATER AGENCY
Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency	Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency
BY: _____ DATE _____ JOB NUMBER _____	BY: _____ DATE _____ JOB NUMBER _____
NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE	NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE

DEPT. OF PLANNING AND LAND USE	COUNTY APPROVED CHANGES
APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW. APPROVED BY: _____ DATE: _____	NO. _____ DESCRIPTION: _____ APPROVED BY: _____ DATE: _____

HELIX Environmental planning, inc.	7578 El Cajon Blvd, Suite 200 La Mesa, California 91541 CA Lic 26871 (619) 462-5515 Fax (619) 462-0992 Job No. COL-02 Date: 02-06-08
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PERMITS	PRIVATE CONTRACT
N.O.I. _____ GPA NO. N/A REZONE NO. N/A TENTATIVE MAP NO. _____ TRACT NO. 4976 RPL 5R	SHEET 6 COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS 9 SHEETS REVEGETATION PLANS FOR: OLIVE HILL IRRIGATION SPECIFICATIONS ASSESSOR'S PARCEL NUMBER(S) 126-310-01 and 126-050-54 APPROVED: DONALD M. BELL FOR COUNTY ENGINEER DATE: _____ LICENSED PROFESSIONAL ENGINEER: R. BRADLEY LEWIS No. 10707 DRAWING NUMBER: N/A
LEGAL DESCRIPTION	DESCRIPTION: A PORTION OF SECTION 19, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA.

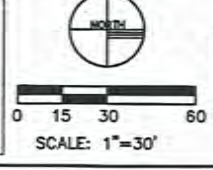


7518 El Cajon Blvd, Suite 200
 La Mesa, California 91541
 CA Lic 36971
 (619) 462-1915
 Fax (619) 462-0592
 Job No. COL-02
 Date: 02-06-08

PERMITS	
N.O.I.	
GPA NO.	N/A
REZONE NO.	N/A
TENTATIVE MAP NO.	TRACT NO. 4976 RPL 5R

PRIVATE CONTRACT	
SHEET 7	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS 9 SHEETS
REVEGETATION PLANS FOR: OLIVE HILL PLANTING PLAN	
ASSESSOR'S PARCEL NUMBER(S) 126-310-03 and 126-050-54	
APPROVED FOR COUNTY ENGINEER	LANDSCAPE ARCHITECT OF RECORD: DR. DE/24/08 <i>[Signature]</i> E. BRIDLEY LEWIS RLA 2657 DRAWING PERMIT NO. N/A

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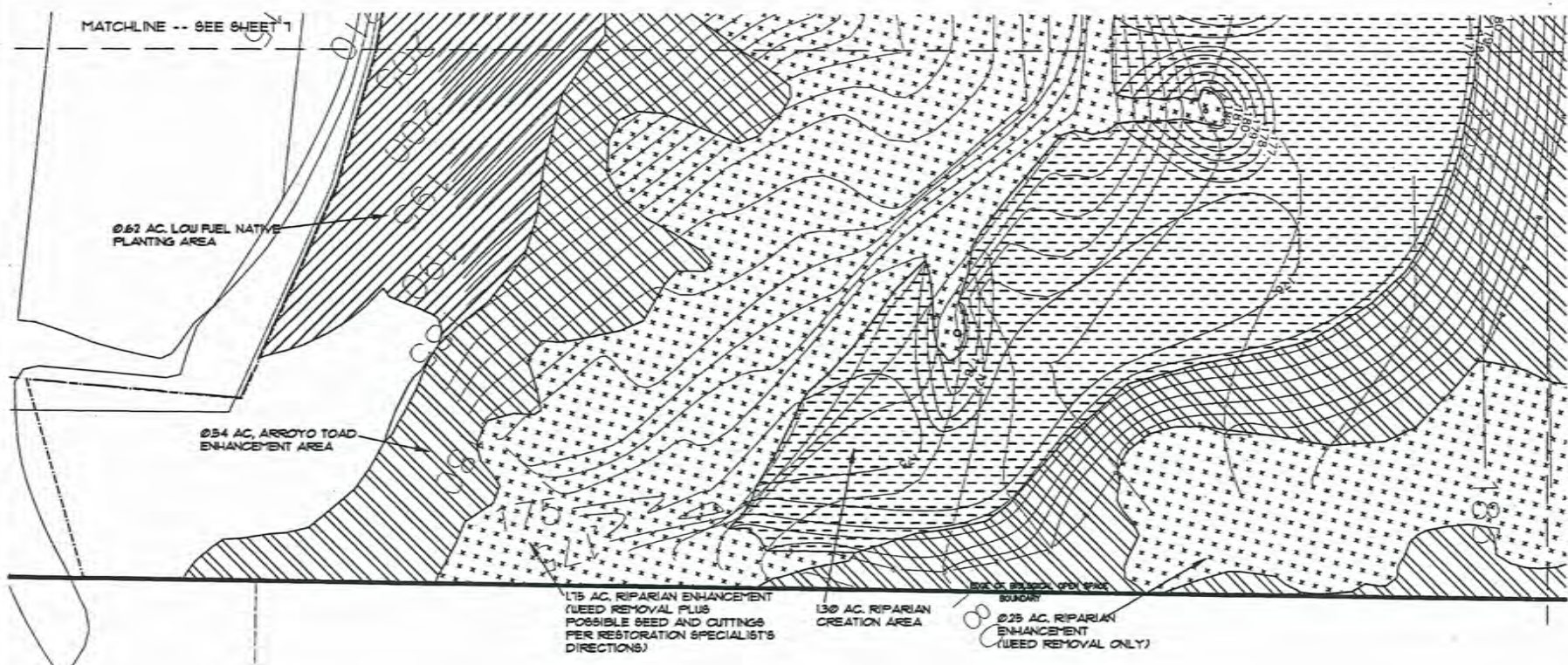
SEWER AGENCY
Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency
BY: _____ DATE _____ JOB NUMBER _____
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WATER AGENCY
Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency
BY: _____ DATE _____ JOB NUMBER _____
NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE

DEPT. OF PLANNING AND LAND USE
APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW. APPROVED BY: _____ DATE: _____

COUNTY APPROVED CHANGES
NO. DESCRIPTION APPROVED BY DATE

LEGAL DESCRIPTION
DESCRIPTION: A PORTION OF SECTION 18, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA



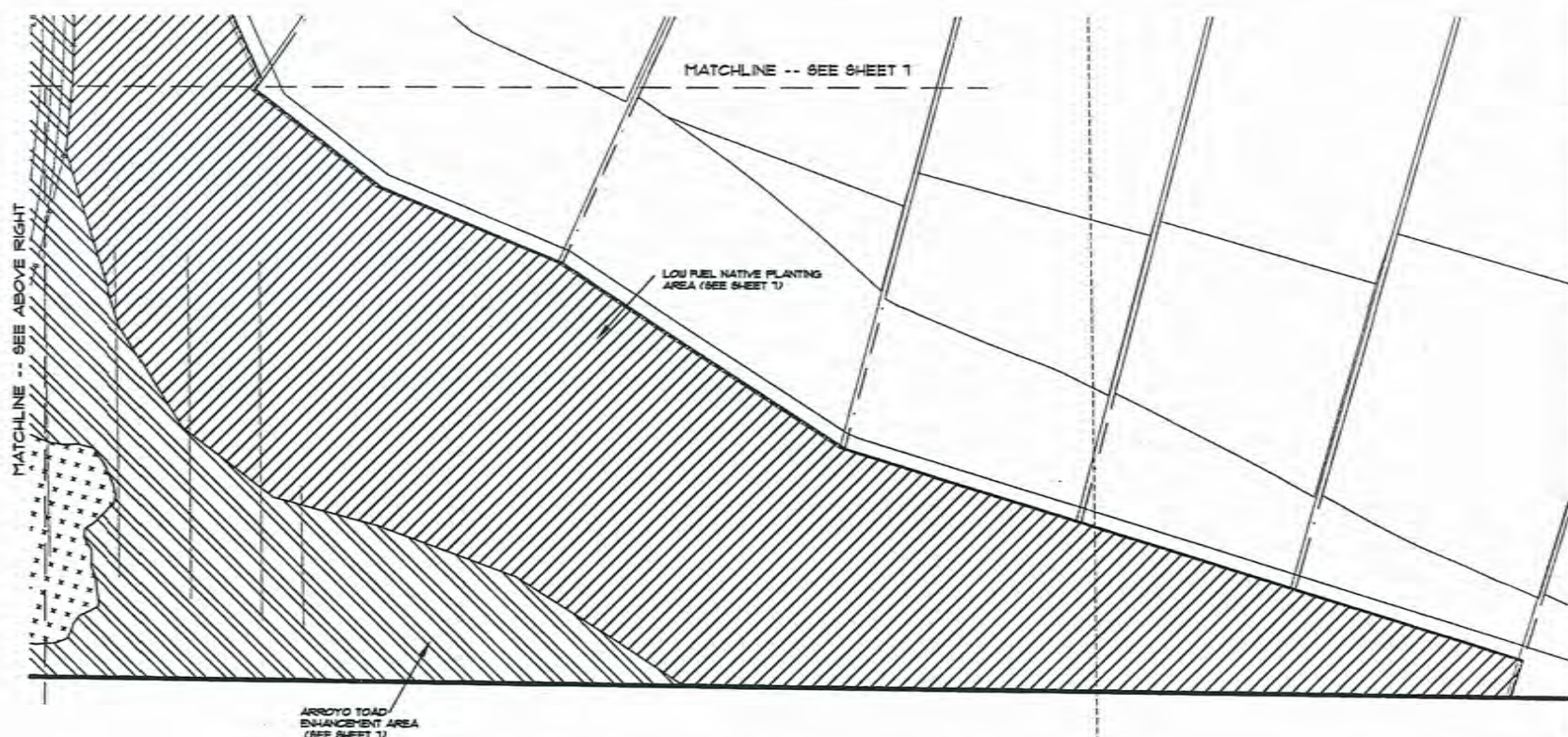
RIPARIAN CREATION AREAS CONTAINER PLANT PALETTE				
Scientific Name	Common Name	Spacing on Center	Size	Number/Acre
<i>Baccharis salicifolia</i>	Mulefat	6	1-gallon	150
<i>Platanus racemosa</i>	Western Sycamore	25	5-gallon	25
<i>Populus fremontii</i>	Fremont Cottonwood	30	5-gallon	25
<i>Salix gooddingii</i>	Black Willow	15	1-gallon	150
<i>Salix lasiolepis</i>	Arroyo Willow	12	1-gallon	200
<i>Sambucus mexicana</i>	Blue Elderberry	8	5-gallon	25
<i>Quercus agrifolia</i>	Coast Live Oak	20	15-gallon	25
TOTAL				600

NOTE: Obtain 2500 extra cuttings for use in the Riparian Enhancement Areas under the direction of the restoration specialist.

RIPARIAN CREATION AND ENHANCEMENT AREAS SEED LIST			
Scientific Name	Common Name	% Live Seed	Lbs/Acre
<i>Ambrosia psilostachya</i>	Western Ragweed	6	5
<i>Arenaria californica</i>	Yerba Mansa	50	2
<i>Baccharis salicifolia</i>	Mulefat	3	6
<i>Baccharis sarothroides</i>	Broom Baccharis	3	4
<i>Distichlis spicata</i>	Salt Grass	70	1
<i>Lycium mexicanum</i> var. <i>mexicanum</i>	San Diego Goldenbush	15	2
<i>Muhlenbergia ripens</i>	Deergrass	60	1
<i>Salix gooddingii</i>	Black Willow		4
<i>Salix lasiolepis</i>	Arroyo Willow		4
<i>Syrinchium bellum</i>	Blue-Eyed Grass	80	1
TOTAL			30

LOW FUEL/NATIVE PLANT BUFFER SEED MIX			
SCIENTIFIC NAME	COMMON NAME	PERCENT LIVE SEED	LBS PER ACRE
<i>Dichelostemma capitatum</i>	Blue Dicks	80	2
<i>Distichlis spicata</i>	Saltgrass	70	3
<i>Euchobolzia californica</i>	California Poppy	85	2
<i>Lesqueria glabrata</i>	Goldfields	85	2
<i>Lycium condensatum</i>	Giant Wild Rye	70	1
<i>Lupinus bicolor</i>	Lupine	90	1
<i>Melica imperfecta</i>	Melic	70	2
<i>Muhlenbergia microperma</i>	Littleseed Muhly	50	1
<i>Nassella pulchra</i>	Purple Needle-Grass	75	1
<i>Syrinchium bellum</i>	Blue-Eyed Grass	80	1
TOTAL			16

TOAD HABITAT SEED MIX			
SCIENTIFIC NAME	COMMON NAME	PERCENT LIVE SEED	LBS PER ACRE
<i>Ambrosia psilostachya</i>	Western Ragweed	6	2
<i>Artemisia californica</i>	California Sagebrush	10	2
<i>Artemisia douglasiana</i>	Mugwort	10	1
<i>Baccharis pilularis</i>	Coyote Brush	1	2
<i>Baccharis salicifolia</i>	Mulefat	3	3
<i>Baccharis sarothroides</i>	Broom Baccharis	3	1
<i>Chaenactis glabriuscula</i>	Yellow Pincushion	10	2
<i>Dichelostemma capitatum</i>	blue dicks	80	2
<i>Distichlis spicata</i>	saltgrass	70	3
<i>Euchobolzia californica</i>	California poppy	50	2
<i>Eucrypta chrysanthemifolia</i>	Common Eucrypta	25	2
<i>Lesqueria californica</i>	Goldfields	80	2
<i>Lycium condensatum</i>	Giant Wild Rye	70	1
<i>Lycium scoparium</i>	Deerweed	85	1
<i>Lupinus bicolor</i>	Lupine	90	1
<i>Melica imperfecta</i>	Melic	70	2
<i>Mimulus aurantiacus</i>	Monkeyflower	2	2
<i>Muhlenbergia microperma</i>	Littleseed Muhly	50	1
<i>Nassella pulchra</i>	Purple Needle-Grass	75	1
<i>Plagiobotrys ciliata</i>	Popcorn Flower	20	2
<i>Syrinchium bellum</i>	Blue-Eyed Grass	80	1
TOTAL			36



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LICENSED LANDSCAPE ARCHITECT
E. BRADLEY LEWIS
STATE OF CALIFORNIA

ALL LEGENDS APPLY -- SEE SHEET 1

SEWER AGENCY Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency BY: _____ DATE _____ JOB NUMBER _____ NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE.	WATER AGENCY Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency RCE: _____ DATE _____ JOB NUMBER _____ NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE.
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DEPT. OF PLANNING AND LAND USE APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW. APPROVED BY: _____ DATE: _____	COUNTY APPROVED CHANGES <table border="1"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>APPROVED BY:</th> <th>DATE:</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DESCRIPTION	APPROVED BY:	DATE:				
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PERMITS N.O.I. _____ GPA NO. N/A REZONE NO. N/A TENTATIVE MAP NO. _____ TRACT NO. 4976 RPL 5R	LEGAL DESCRIPTION DESCRIPTION: A PORTION OF SECTION 18, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA.
--	--

PRIVATE CONTRACT SHEET 8 COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS REVEGETATION PLANS FOR: OLIVE HILL PLANTING PLAN ASSESSOR'S PARCEL NUMBER(S) 128-310-03 and 128-050-54 APPROVED FOR COUNTY ENGINEER: _____ LICENSED ARCHITECT OF WORK: E. BRADLEY LEWIS LICENSE NO. 154 2857 DRAWING PERMIT NO. N/A
--

HELIX
environmental planning inc.

7516 El Cajon Blvd, Suite 200
La Mesa, California 91941
CA Lic 36571
(619) 462-1515
Fax (619) 462-0592
Job No. COL-02
Date: 02-06-08

PART 1 - GENERAL

101 GENERAL REQUIREMENTS

- A. CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND SITE RESTRICTIONS.
- B. CONTRACTOR SHALL DETERMINE THE LOCATION AND DEPTH OF ALL SITE UTILITIES. ANY UTILITY OR GRADING INFORMATION PROVIDED ON THE CONTRACT DOCUMENTS IS FOR THE CONTRACTOR'S REFERENCE. THERE IS NO GUARANTEE AS TO THE ACCURACY OF THE INFORMATION. CONTRACTOR SHALL LOCATE AND VERIFY UTILITY LOCATIONS TO HIS SATISFACTION.
- C. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL REPAIRS MADE NECESSARY BY THE NEGLIGENCE OF HIS CREW.
- D. THE GENERAL AND SPECIAL CONDITIONS AND NOTES OF THE CONTRACT APPLY TO THE WORK OF THIS SECTION THE SAME AS THOUGH WRITTEN HEREIN.
- E. THE RESTORATION SPECIALIST SHALL BE NOTIFIED PRIOR TO BEGINNING WORK AS TO ANY DISCREPANCIES BETWEEN THE RECOMMENDATIONS ON THE CONTRACT DOCUMENTS AND THE SITE CONDITION UNDER WHICH WORK IS TO BE PERFORMED.

102 ORDINANCES AND REGULATIONS

- A. ALL LOCAL, MUNICIPAL AND STATE LAWS AND RULES & REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.
- B. ANYTHING CONTAINED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CONFLICT WITH ANY OF THE ABOVE RULES, REGULATIONS, OR REQUIREMENTS OF THE SAME. HOWEVER, WHEN THE SPECIFICATIONS AND/OR DRAWINGS CALL FOR OR DESCRIBE MATERIALS, WORKMANSHIP OR CONSTRUCTION OF BETTER QUALITY, HIGHER STANDARDS OR A LARGER SIZE, SPECIFICATIONS AND/OR DRAWINGS SHALL TAKE PRECEDENCE OVER THE REQUIREMENTS OF THE SAID RULES AND REGULATIONS.
- C. CONTRACTOR SHALL OBTAIN PERMITS AND PAY ALL FEES ASSOCIATED WITH THE CONSTRUCTION OF THE IMPROVEMENTS.

103 SCOPE OF WORK

- A. THE WORK INCLUDES ALL SERVICES, LABOR, MATERIALS, EQUIPMENT AND TRANSPORTATION NECESSARY TO PERFORM THE WORK ON THE CONTRACT DOCUMENTS AS SPECIFIED HEREIN AND AS REQUIRED TO COMPLETE THE CONTRACT PROPERLY.
- B. THE CONTRACTOR SHALL PROTECT THE WORK, ADJACENT PROPERTY AND THE PUBLIC, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE, INJURY AND LOSS DUE TO HIS ACTS OR NEGLIGENCE.
- C. THE CONTRACTOR SHALL SUBMIT UNIT COSTS TO THE APPLICANT FOR ADDITIONS OR DELETIONS TO THE CONTRACT DRAWINGS.
- D. WORK NOT INCLUDED: N/C, BY OTHERS, EXISTING.

104 SCHEDULE OF WORK

- A. UPON AWARD OF THE CONTRACT A WORK SCHEDULE SHALL BE SUBMITTED TO THE RESTORATION SPECIALIST FOR CARRYING OUT THE WORK. UPON APPROVAL, NO MODIFICATIONS SHALL BE MADE TO THIS SCHEDULE WITHOUT THE WRITTEN APPROVAL OF THE RESTORATION SPECIALIST.
- B. FINISH GRADING, SITE PREPARATION, INSTALLATION OF CONTAINER STOCK, AND SEEDING INSTALLATION SCHEDULE OF WORK SHALL BE PERFORMED DURING THOSE PERIODS WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE, AS DETERMINED BY THE RESTORATION SPECIALIST.

105 COORDINATION

- A. CONTRACTOR SHALL REPORT TO THE RESTORATION SPECIALIST ANY DEVIATIONS BETWEEN CONSTRUCTION DOCUMENTS, SPECIFICATIONS, AND THE SITE. FAILURE TO DO SO PRIOR TO THE INSTALLATION OF THE IMPROVEMENTS AND RESULTING IN REPLACING, AND/OR RELOCATING IMPROVEMENTS, SHALL BE AT THE CONTRACTOR'S EXPENSE.
- B. CARE SHALL BE TAKEN TO COORDINATE THE WORK AT ALL TIMES WITH OTHER CONTRACTORS WORKING IN AND ADJACENT TO THE AREAS IN THIS CONTRACT. THIS IS TO ENSURE AN ORDERLY AND EFFICIENT INSTALLATION PROCEDURE, AND TO MINIMIZE CONFLICTS WITH OTHER CONSTRUCTION OPERATIONS.

106 STANDARDS

- A. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH SOUND NURSERY PRACTICE. PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH THE SPECIES AND SHALL BE UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN. THE CONTRACTOR SHALL PROVIDE THE NAME, ADDRESS AND PHONE NUMBER OF THE JOB SUPERVISOR FOR 24 HOUR AVAILABILITY. THE SUPERVISOR SHALL BE AVAILABLE TO ALLEViate EMERGENCY SITUATIONS AS THEY ARISE AND SHALL BE ON THE JOB SITE WHENEVER SITE PREPARATION AND PLANTING ARE IN PROGRESS.
- B. PROVIDE PLANT MATERIALS TRUE TO NAME AND VARIETY ESTABLISHED BY THE PLANTING PLANS.
- C. PLANT MATERIALS SHALL COMPLY WITH THE RECOMMENDATIONS AND REQUIREMENTS OF ANSI STANDARDS FOR TYPE AND SPECIES CALLED FOR ON PLANTING PLAN.

107 SUBSTITUTIONS

- A. NO SUBSTITUTIONS OF PLANT MATERIALS OR OTHER CONSTRUCTION MATERIALS WILL BE PERMITTED WITHOUT THE WRITTEN PERMISSION OF THE RESTORATION SPECIALIST. IF PLANT MATERIAL SUBSTITUTIONS ARE ACCEPTED AND ARE OF LESS VALUE THAN THOSE INDICATED OR SPECIFIED, THE CONTRACT PRICE WILL BE ADJUSTED IN ACCORDANCE WITH THE PROVISIONS OF THE CONTRACT.
- B. THE RIGHT TO CHANGE: THE RESTORATION SPECIALIST RESERVES THE RIGHT TO CHANGE THE SPECIES, VARIETY, AND/OR SIZES OF PLANT MATERIALS TO BE FURNISHED, PROVIDED THAT THE COST OF SUCH PLANT CHANGES DOES NOT EXCEED THE COST OF THE PLANTS IN THE ORIGINAL BID. THE CONTRACTOR SHALL BE NOTIFIED AND THE CHANGES CONFIRMED IN WRITING PRIOR TO THE PLANTING OPERATION COMMENCING. CHANGES IN THE SIZE OR VARIETY OF ANY PLANT MATERIAL FURNISHED THAT REQUIRES A REDUCTION OR ADDITION IN COST SHALL REQUIRE AN ADJUSTMENT IN THE CONTRACT COST PRIOR TO PLANTING.

108 REJECTIONS

- A. ANY MATERIAL AND/OR WORK MAY BE REJECTED IF IN THE OPINION OF THE RESTORATION SPECIALIST SUCH DOES NOT MEET THE REQUIREMENTS AND THE SPECIFICATIONS. ALL REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT HIS EXPENSE. REJECTED WORK SHALL BE REDONE IN A TIMELY MANNER AND APPROVED BY THE CITY'S REPRESENTATIVE. THIS INCLUDES MATERIALS THAT HAVE BEEN PLANTED WITHOUT PRIOR ACCEPTANCE.

109 PROTECTION OF PLANTS, EXISTING WORK AND IMPROVEMENTS

- A. THROUGHOUT CONSTRUCTION AND MAINTENANCE THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PROTECT AND AVOID DAMAGE TO UTILITIES, PAVING, PLANTING, STRUCTURES, FIXTURES, AND DRAINAGE ETC. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGE TO SUCH IMPROVEMENTS AND SHALL COMPLETELY REPAIR OR REPLACE THE SAME AT NO COST TO THE CITY, APPLICANT, OR OWNER.
- B. EXISTING PLANT MATERIALS, PLANTING AREAS, AND PLANTS SHALL BE PROTECTED AGAINST TRESPASSING, THEFT, VANDALISM, AND DAMAGE OF ANY KIND. IF ANY PLANTS BECOME DAMAGED, STOLEN, OR INJURED THEY SHALL BE TREATED OR REPLACED AT THE CONTRACTOR'S EXPENSE. REPLACEMENT PLANTS SHALL BE OF EQUAL VALUE OF THE ORIGINAL PLANT MATERIAL OR IF NO REPLACEMENT IS AVAILABLE, THE CONTRACTOR SHALL REIMBURSE THE OWNER FOR THE COST OF THE MATERIAL AND INSTALLATION. THE RESTORATION SPECIALIST SHALL BE THE RESPONSIBLE PARTY IN DETERMINING THE CONDITION OF THE PLANT MATERIAL, SIZE OF REPLACEMENT AND/OR COST COMPENSATION.

110 CLEAN UP

- A. DURING THE COURSE OF PLANTING OPERATIONS, EXCESS CONSTRUCTION WASTE MATERIALS SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT A LEGAL DISPOSAL SITE.
 - B. PRIOR TO NOTICE OF COMPLETION, THE ENTIRE LANDSCAPED AREA SHALL BE CLEANED TO THE SATISFACTION OF THE RESTORATION SPECIALIST.
- 111 SITE OBSERVATIONS**
- A. CONTRACTOR SHALL GIVE FORTY-EIGHT (48) HOURS NOTICE AND SET APPOINTMENTS FOR ALL SITE OBSERVATIONS.
 - B. SITE OBSERVATIONS BY THE RESTORATION SPECIALIST SHALL BE SCHEDULED AS SPECIFIED IN THE NOTES ON PLANS OR AS DIRECTED BY THE RESTORATION SPECIALIST.

- C. THE PURPOSE OF SAID OBSERVATIONS SHALL BE FOR DETERMINING COMPLIANCE WITH PLANS AND SPECIFICATIONS, INTENT, WORKMANSHIP, AND CLEANUP. CONTRACTOR SHALL SECURE WRITTEN VERIFICATION OF OBSERVATION DATA, AND MAKE ANY CORRECTIONS REQUIRED TO WORK BEFORE BEGINNING THE ESTABLISHMENT PERIOD.
- D. IN THE EVENT THE CONTRACTOR REQUESTS OBSERVATION OF WORK AND SAID WORK IS INCOMPLETE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBSERVATION COSTS INCURRED BY THE RESTORATION SPECIALIST.

112 FINAL SITE OBSERVATION AND ACCEPTANCE

- A. FINAL SITE OBSERVATION WILL BE MADE AT THE CONTRACTOR'S REQUEST AND UPON COMPLETION OF THE ESTABLISHMENT PERIOD.
- B. THE WORK UNDER THIS CONTRACT WILL BE ACCEPTED BY RESTORATION SPECIALIST UPON THE SATISFACTORY COMPLETION OF ALL WORK INCLUDING MAINTENANCE, BUT EXCLUSIVE OF THE GUARANTEE OF PLANT MATERIALS.

113 GUARANTEE AND REPLACEMENT

- A. THE CONTRACTOR SHALL GUARANTEE THAT ALL PLANT SPECIES SEEDED UNDER THIS CONTRACT SHALL HAVE GERMINATED AND BE IN GOOD, HEALTHY AND FLOURISHING CONDITION OF ACTIVE GROWTH.
- B. IF REQUIRED, REPLACEMENT PLANTING SHALL BE OF COMPARABLE QUALITY TO THAT WHICH WAS ORIGINALLY INSTALLED. ALL REPLANTED AREAS SHALL BE GUARANTEED FOR THE ORIGINAL PERIOD, STARTING FROM THE DATE OF REPLANTING.

114 SUBMITTALS

- A. SUBMIT LIST WITH SOURCES AND QUANTITIES TO RESTORATION SPECIALIST OF PLANT MATERIALS, MULCH, AND SEEDS, WITH QUANTITIES OF EACH TO BE USED ON THE JOB. RETAIN AND SUBMIT RECEIPTS AS REQUESTED BY THE RESTORATION SPECIALIST.

115 PUBLIC SAFETY

- A. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO ENSURE THE SAFETY OF ALL WORKERS, PEDESTRIANS, AND ADJACENT PROPERTY IN ACCORDANCE WITH CALIFORNIA/OSHA REQUIREMENTS. THE RESTORATION SPECIALIST AND HIS/HER CONSULTANTS DO NOT PRACTICE OR CONSULT IN THE FIELD OF SAFETY ENGINEERING. WE DO NOT DIRECT THE CONTRACTOR'S OPERATIONS AND WE CAN NOT BE RESPONSIBLE FOR PERSONNEL OTHER THAN OUR OWN ON THE SITE. THE SAFETY OF OTHERS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE RESTORATION SPECIALIST IF HE CONSIDERS ANY OF THE RECOMMENDED ACTIONS IN THE CONTRACT DOCUMENTS TO BE UNSAFE.

116 RECORD CONTRACT DOCUMENTS (AS-BUILT) INFORMATION

- A. A SET OF CONTRACT DRAWINGS THAT ARE VERIFIED BY THE CONTRACTOR TO BE AN APPROVED SET OF THE GOVERNING AGENCY SHALL BE KEPT AT THE SITE OFFICE DURING CONSTRUCTION. ALL WORK THAT IS INSTALLED SHALL BE REVIEWED FOR CONFORMANCE WITH THE PLANS. IF NEW WORK OR WORK AS SHOWN ON THE PLANS IS DIFFERENT, THE CONTRACTOR SHALL NOTE THE INSTALLATION ON THE RECORD DRAWINGS. THE MARKED DRAWINGS SHALL BE KEPT CURRENT AS THE WORK PROGRESSES AND SHALL BE AVAILABLE FOR INSPECTION BY THE APPLICANT REPRESENTATIVE UPON REQUEST. AT 2 WEEKS PRIOR TO THE 'NOTICE OF COMPLETION', THESE OR A COPY OF THE AS-BUILT DRAWINGS SHALL BE DELIVERED TO THE APPLICANT'S REPRESENTATIVE.

PART 2 - MATERIALS

2.01 SEED MIX

- A. PLANT SPECIES SHALL BE AS INDICATED ON PLANS. CONTRACTOR SHALL VERIFY THAT SEED WAS COLLECTED FROM ON-SITE OR NEARBY SOURCES, AND TESTED BY A SEED LABORATORY CERTIFIED BY THE ASSOCIATION OF OFFICIAL SEED ANALYSTS OR A SEED TECHNOLOGIST CERTIFIED BY THE SOCIETY OF COMMERCIAL SEED TECHNOLOGISTS, AS PER THE STANDARDS OF THE CALIFORNIA FOOD AND AGRICULTURAL CODE FOR PURITY AND GERMINATION NOT MORE THAN ONE YEAR PRIOR TO APPLICATION AND SHALL CONFORM TO THE GERMINATION AND PURITY REQUIREMENTS OF THESE PLANS.

2.02 CONTAINER STOCK

- A. ALL PLANTS SHALL BE NURSERY GROWN, PROPAGATED FROM ON-SITE OR NEARBY SOURCES, IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES AND SHALL BE GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT.
- B. PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE NORMAL HABITS OF GROWTH.
- C. ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED ON THE PLANTING PLAN, AND BE FREE FROM PEST AND DISEASE.

2.03 HERBICIDE

- A. SYSTEMIC HERBICIDE SHALL BE 'RODOE' OR APPROVED EQUIVALENT.

PART 3 - INSTALLATION

3.01 GENERAL REQUIREMENTS

- A. INSTALLER MUST EXAMINE THE SUBGRADE, VERIFY THE ELEVATION AND OBSERVE THE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. IF SITE CONDITIONS VARY FROM THOSE SHOWN ON THE DRAWINGS, CONTRACTOR SHALL NOTIFY THE RESTORATION SPECIALIST AND GENERAL CONTRACTOR BEFORE COMMENCING WORK.
- B. THE FINAL GRADES IN ALL AREAS SHALL BE COMPLETED BY THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE ADEQUACY OF THE FINAL GRADES AND SOIL CONDITIONS PRIOR TO REVEGETATION WORK.
- C. ALL TEMPORARY PVC DRAINAGE PIPE SHALL BE REMOVED AND NATURAL DRAINAGE FLOWLINES RESTORED. ALL GRADES WITHIN WORK AREA SHALL MATCH EXISTING GRADES AT THE PERIMETER OF THE WORK AREA.

- D. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED OR PRESEEN SUCH AS, BUT NOT LIMITED TO, PAVING, RUBBLE FILL, ENGINEERING FILL, ADVERSE DRAINAGE CONDITIONS, TOXIC SUBSTANCES OR OBSTRUCTIONS, NOTIFY THE RESTORATION SPECIALIST BEFORE PLANTING.
 - E. WATER SHALL BE APPLIED TO REVEGETATION AREAS (WHERE FEASIBLE) TO ACHIEVE SOIL MOISTURE CONDITIONS CONDUCTIVE TO THE APPLICATION OF SEED.
- 3.02 EXOTIC PLANT REMOVAL**
- A. ENTIRE EXOTIC PLANT REMOVAL PROCEDURE SHALL BE UNDER THE DIRECTION OF THE RESTORATION SPECIALIST.
 - B. AFTER INITIAL GERMINATION OF FALL SEASON WEEDS THE CONTRACTOR SHALL APPLY SYSTEMIC HERBICIDE PER MANUFACTURER'S SPECIFICATIONS OVER RESTORATION AREAS. REPEAT THIS PROCEDURE UNTIL WEED GERMINATION IS ELIMINATED.
 - C. WHEN ALL WEEDS HAVE FERTISHED AND THE ACTIVE PERIOD OF HERBICIDE HAS EXPIRED ALL DEAD WEEDS ABOVE 4 INCHES TALL SHALL BE COMPLETELY REMOVED FROM SITE.

3.03 FINISH GRADING

- A. FINISH GRADING AFTER PLANTING SHALL ESTABLISH FINAL FLOW LINES AND GRADIENTS FOR UNIFORM WATER DRAINAGE.

3.04 LAYOUT

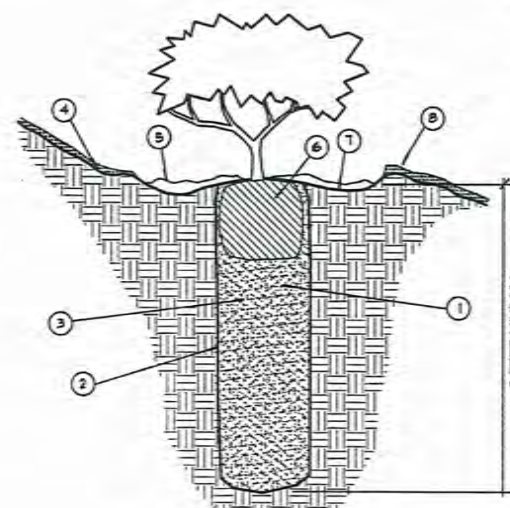
- A. LIMITS OF ALL REVEGETATION AREAS AND ALL EXISTING VEGETATION TO REMAIN SHALL BE STAKED BY THE CONTRACTOR IN THE FIELD FOR APPROVAL BY THE RESTORATION SPECIALIST PRIOR TO INSTALLATION. CONTRACTOR WILL MAKE ANY NECESSARY ADJUSTMENTS TO THE LAYOUT AS REQUESTED BY THE RESTORATION SPECIALIST.
- B. REVEGETATION AREAS ARE SHOWN ON DRAWINGS. HOWEVER, FINAL LOCATION AND/OR ORIENTATION OF REVEGETATION AREAS SHALL BE AS DIRECTED BY THE RESTORATION SPECIALIST AND APPROVED BY THE PROJECT MANAGER.
- C. PRIOR TO SEEDING, CONTRACTOR SHALL SURVEY SITE FOR POTENTIAL SEEDING CONFLICTS. POTENTIAL CONFLICTS INCLUDE, BUT ARE NOT LIMITED TO, PLANT MATERIAL OBSTRUCTIONS, SIGNS, AND PEDESTRIAN AND VEHICULAR TRAFFIC.

3.05 SEEDING

- A. SEED MIX: SEE PLANTING PLAN
- B. SEED SHALL BE APPLIED BY A WHIRLING SEED DISPENSER AT THE RATES SPECIFIED AND RAKED IN TO A DEPTH OF 1/2 INCH MINIMUM.

3.06 CONTAINER PLANTING INSTALLATION (SEE DETAIL A, THIS SHEET)

- A. INSTALL CONTAINER STOCK PER DETAIL A, THIS SHEET.
- B. PLANTS WILL BE SET UNDER DIRECTION OF RESTORATION SPECIALIST.
- C. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THE APPROPRIATE NUMBER AND SPECIES OF PLANTS SPECIFIED AS CONTRACT GROWN MATERIALS AS NOTED ON THE PLANS. SUBSTITUTION OF PLANT MATERIALS MUST BE APPROVED IN WRITING BY THE RESTORATION SPECIALIST. THE RESTORATION SPECIALIST WILL ALSO INSPECT ALL PLANTS PRIOR TO PLANTING TO DETERMINE THAT THEY ARE SUITABLE. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING HEALTHY REPLACEMENT MATERIALS IN A TIMELY FASHION.
- D. PRUNING WILL BE DONE ONLY IF RECOMMENDED BY THE RESTORATION SPECIALIST.
- E. PLANTING HOLES SHOULD BE FILLED WITH WATER AND ALLOWED TO DRAIN. THIS PROCESS SHOULD BE COMPLETED TWICE, THE SECOND TIME IMMEDIATELY BEFORE PLANTING.
- F. BACKFILL FOR ALL PLANTING PITS SHALL BE NATIVE SOIL.
- G. TIMING: ACTUAL PLANTING SHALL BE PERFORMED DURING THOSE PERIODS WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH LOCALLY ACCEPTABLE PRACTICE AND AS DETERMINED BY THE RESTORATION SPECIALIST TO BE BENEFICIAL TO PLANT GROWTH. THE UNDERSTORY SEEDING SHALL BE COMPLETED AFTER CONTAINER PLANTS ARE IN PLACE.



DETAIL LEGEND

- 1 AUGER PIT MIN. 2 FEET DEEP
- 2 ROUGHEN SIDES AND BOTTOM OF PIT.
- 3 BACKFILL WITH NATIVE SOIL
- 4 FINISHED GRADE.
- 5 (2) INCH MULCH LAYER PLACE WITHIN PLANTING BASIN ONLY DO NOT PLACE AGAINST CROWN OF PLANT
- 6 ROOTBALL SLIGHTLY HIGHER THAN FINISHED GRADE.
- 7 WATER BASIN.
- 8 SEEDING AREA

PERMITS

N.O.I. _____
 GPA NO. N/A
 REZONE NO. N/A
 TENTATIVE MAP NO. _____ TRACT NO. 4976 RPL 5R

PRIVATE CONTRACT

SHEET 8 OF 9 SHEETS
 COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS
 REVEGETATION PLANS FOR: **OLIVE HILL**
PLANTING SPECIFICATIONS
 ASSESSOR'S PARCEL NUMBER(S) 126-310-01 and 126-050-54
 APPROVED: [Signature] DATE: 02/06/08
 LICENSED ARCHITECT OF CALIFORNIA
 [Signature] RLA 2857
 DRAWING PERIOD: N/A



7515 El Cajon Blvd, Suite 200
 La Mesa, California 92041
 CA Lic 36871
 (619) 462-1515
 Fax (619) 462-0992
 Job No. CCL-07
 Date: 02-06-08

<p>SEWER AGENCY</p> <p>Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency</p> <p>BY: _____ DATE _____ JOB NUMBER _____ NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE</p>	<p>WATER AGENCY</p> <p>Rainbow Municipal Water District 3707 S. Highway 395 • Fallbrook, Ca • 92028 Water & Sewer Agency</p> <p>RCE _____ DATE _____ JOB NUMBER _____ NOTE: SIGNATURE EXPIRES TWO YEARS AFTER APPROVAL DATE</p>
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DEPT. OF PLANNING AND LAND USE

APPROVED FOR COMPLIANCE WITH THE ENVIRONMENTAL REVIEW.
 APPROVED BY: _____ DATE: _____

COUNTY APPROVED CHANGES	
NO.	DESCRIPTION

LEGAL DESCRIPTION

DESCRIPTION:
 A PORTION OF SECTION 19, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA



Pardee Homes
Olive Hill
Certification No. R9-2013-0160

**ATTACHMENT 5
CEQA MITIGATION REQUIREMENTS**



GARY L. PRYOR
DIRECTOR
(858) 694-2962

County of San Diego

DEPARTMENT OF PLANNING AND LAND USE

5201 RUFFIN ROAD, SUITE B, SAN DIEGO, CALIFORNIA 92123-1666
INFORMATION (858) 694-2960
TOLL FREE (800) 411-0017

SAN MARCOS OFFICE
338 VIA VERA CRUZ - SUITE 201
SAN MARCOS, CA 92069-2620
(760) 471-0730

EL CAJON OFFICE
200 EAST MAIN ST. - SIXTH FLOOR
EL CAJON, CA 92020-3912
(619) 441-4030

FINAL

MITIGATED NEGATIVE DECLARATION

March 15, 2001

Project Name: Leeds and Strauss

Project Number(s): TM 4976RPL³, Log No. 91-2-032

This Mitigated Negative Declaration is comprised of this form along with the Environmental Initial Study that includes the following:

- a. Initial Study Form
- b. Environmental Analysis Form and attached extended studies for Biological Resources

1. California Environmental Quality Act Mitigated Negative Declaration Findings:

Find, that this Mitigated Negative Declaration reflects the decision-making body's independent judgement and analysis, and; that the decision-making body has reviewed and considered the information contained in this Mitigated Negative Declaration and the comments received during the public review period; and that revisions in the project plans or proposals made by or agreed to by the project applicant would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and, on the basis of the whole record before the decision-making body (including this Mitigated Negative Declaration) that there is no substantial evidence that the project as revised will have a significant effect on the environment.

2. Required Mitigation Measures:

Refer to the attached Environmental Initial Study for the rationale for requiring the following measures:

FILE COPY

ENVIRONMENTAL-DOCUMENTS



Prior to approval of grading plans or improvement plans, prior to recordation of the Final Map, or on the Final Map, whichever comes first, the applicant shall:

- a. Grant to the County of San Diego an Open Space Easement over portions of Parcels 1, 2 and 11-17 as shown on Exhibit "A" Open Space Easement Map. This easement is for the protection of biological resources including Coastal sage scrub and wetlands and prohibits all of the following on any portion of the land subject to said easement: grading; excavation; placement of soil, sand, rock, gravel, or other material; clearing of vegetation; construction, erection, or placement of any building or structure; vehicular activities; trash dumping; or use for any purpose other than as open space.

The sole exception(s) to this prohibition is:

- (1) Selective clearing of vegetation by hand to the extent required by written order of the fire authorities for the express purpose of reducing an identified fire hazard.
 - (2) Activities required to be conducted pursuant to a revegetation, habitat management, or landscaping plan approved by the Director of Planning and Land Use.
- b. Provide for the approval of the Director of Planning and Land Use the following:
 - (1) Evidence that 13 acres of non-native grasslands and 25.6 acres of Coastal sage scrub habitat credit has been secured in a County approved mitigation bank or land trust in the North San Diego County area. This will constitute acceptable off-site mitigation for the impacts to 25.89 acres of non-native grassland (0.5:1 mitigation) and 12.8 acres of Coastal sage scrub (2:1 mitigation).
 - (2) An accounting of the status of the County Approved Mitigation Bank or land trust. This shall include the total amount of credits available at the bank, the amount required by this project and the amount remaining after utilization by this project. This shall also identify the entity responsible for the maintenance and management of this bank and must include information regarding how the land will be protected in perpetuity.

- c. Submit to the Director, Department of Planning and Land Use a signed, stamped statement from a California Registered Engineer, or licensed surveyor that permanent fences or walls have been placed to protect from inadvertent disturbance all Open Space Easement(s) that do not allow grading, brushing or clearing. Permanent fencing or walls are required in all locations of the project as shown in the Open Space Fencing Plan on file as Log No. 91-2-032 with the Department of Planning and Land Use. The permanent fence location(s) shall be identified in the field by a California Registered Engineer or licensed surveyor and positioned just outside of the Open Space Easement. Photographs and a brief description of design and materials used shall be submitted with the statement from the California Registered Engineer. Construction materials and fence and/or wall design are subject to approval by the Department of Planning and Land Use. Minimum fence or wall height shall be four feet.
- d. Submit to the Director, Department of Planning and Land Use evidence that permanent signs have been placed to protect all Open Space Easements for in accordance with on the Open Space Signage exhibit on file with the Department of Planning and Land Use as File Number Log No. 91-2-32. Evidence shall include photographs of a sign placed on the project and a stamped, signed statement from a California Registered Engineer, or licensed surveyor that permanent signs have been placed on the Open Space Easement boundaries in accordance with the requirements of this condition. The signs must be corrosion resistant and 6 inches by 9 inches minimum in size, on posts not less than three feet in height from the ground surface and must state the following:

**“Sensitive Environmental Resources
Disturbance Beyond this Point is Restricted
by Easement**

Information:
Contact County of San Diego, Department of Planning and Land Use
Ref: 91-2-32^a

- e. Submit to the Director, Department of Planning and Land Use a signed, stamped statement from a California Registered Engineer, or licensed surveyor that temporary fences have been placed to protect from inadvertent disturbance all Open Space Easement(s) that do not allow grading, brushing or clearing. Temporary fencing is required in all locations of the project where proposed grading or clearing is within 100 feet of an Open Space Easement boundary. The temporary fence

location shall be identified in the field by a California Registered Engineer or licensed surveyor and positioned between the Open Space Easement boundary and any area of proposed disturbance. All temporary fencing shall be removed only after the conclusion of such activity. This condition is intended to be applied on a parcel-by-parcel basis and shall not be released until final inspection is approved for individual structures. The removal of temporary fencing shall be accomplished prior to release of the covenant.

- f. Submit and receive approval from the Director of Planning and Land Use of a Revegetation Plan for 1.33 acres of wetland habitat which mitigates for the loss of 0.52 acres of wetlands (2.5:1 ratio). The Revegetation Plan shall include, but not be limited to, the following to ensure the establishment of the vegetation: objectives, blue-line Tentative Parcel Map showing the revegetation areas; site preparation information; type of planting material (e.g. species ratios, source, size, material); planting program; 80 percent success criteria; and a detailed cost estimate. The cost estimate shall include planting, plant materials, irrigation, maintenance, fencing around the area to be revegetated, monitoring, and report preparation. The report shall be prepared by a County certified biologist and a State of California licensed landscape architect.

Submit to the Department of Planning and Land Use a security consisting of an instrument of credit, lien contract, letter of credit (up to \$100,000.00), or bond for 100 percent of the estimated costs associated with the implementation of the Revegetation Plan and a 10 percent cash deposit (for site inspections, plan review and monitoring report review) not to exceed \$30,000.00. A cost estimate shall be submitted to and approved by the Director of Planning and Land Use which includes the cost of plant stock and installation, irrigation system and installation, cost of monitoring and maintenance of the revegetated area for the required five year period, and report preparation. This security is intended to guarantee project completion and success. The monitoring time and the length of time the security and cash deposit will be in effect starts at the time the installation is accepted by a County staff representative. The security and remaining cash deposit shall be released upon completion of the Revegetation Plan implementation provided that the success criteria stated in the Plan has been met.

3. Critical Project Design Elements That Must Become Conditions of Approval:

The following project design elements were either proposed in the project application or the result of compliance with specific environmental laws and regulations and were essential in reaching the conclusions within the attached Environmental Initial Study. While the following are not technically mitigation measures, their implementation must be assured to avoid potentially significant environmental effects.

Prior to approval of grading plans or improvement plans, prior to recordation of the Final Map, or on the Final Map, whichever comes first, the applicant shall:

- a. Grant to the County of San Diego an easement which prohibits the construction or placement of any residence, garage, or other accessory structure designed or intended for occupancy by humans or animals, within those portions of Parcels 1-8 and Parcels 15-17 as shown on Exhibit "A" Open Space Easement Map. The purpose of this easement is to prohibit such structures, because an area containing sensitive biological resources (encumbered by an Open Space Easement) exists adjacent to said area, and the clearing of vegetation or other fuel modification measures which are normally required by fire protection officials within a specified distance of such structures, is potentially damaging to the integrity of those biological resources. The easement shall permit the construction or placement of only the following:
 - (1) Decking, fences, and similar facilities.
 - (2) Sheds, gazebos, and detached garages, less than 250 square feet in total floor area, that are designed, constructed and placed so that they do not require clearing or fuel modification within the Biological Open Space Easement, beyond the clearing/fuel modification required for the primary structures on the property.
 - (3) Structures located no less than thirty feet from the nearest Biological Open Space Easement boundary, provided that the structures meet the minimum Fire-Resistive Construction Requirements as defined by the Fire Protection Authority (FPA) having jurisdiction over the property and that FPA has approved in writing a reduction in the vegetation clearing/fuel modification requirements so that they will not be required within any portion of the Biological Open Space Easement.

- b. Grant to the County of San Diego an Open Space Easement over portions of Parcels 6-9 as shown on Exhibit A Open Space Easement Map. This easement is for the protection of steep slope lands and prohibits all of the following on any portion of the land subject to said easement: grading; excavation; placement of soil, sand, rock, gravel, or other material; clearing of vegetation; construction, erection, or placement of any building or structure; vehicular activities; trash dumping; or use for any purpose other than as open space.

The sole exceptions to this prohibition are as follows:

- (1) Selective clearing of vegetation by hand to the extent required by written order of the fire authorities for the express purpose of reducing an identified fire hazard.
- (2) Any agricultural operation defined as an operation that includes the cultivation, growing, and harvesting of crops and animals. The following shall be considered crops for the purpose of this Ordinance: nursery products and flower crops; fruit and nut crops; livestock and poultry products; vegetable crops; livestock and poultry (including their associated enclosures); field crops; apiary products; timber and firewood; and nonbearing fruit and nut crops;
- (3) Cause to be placed on all future grading and/or improvement plans, plot plans and the Final Map, the following: "Restrict all brushing, clearing and/or grading such that none will be allowed during the breeding season of the California gnatcatcher. This is defined as occurring between March 1 – August 15. The Director of Planning and Land Use, may waive this condition, through written concurrence from the United States Fish and Wildlife Service and the California Department of Fish and Game, that no Gnatcatchers are present in the vicinity of the brushing, clearing or grading."

Negative Declaration,
TM 4976, Log No. 91-2-032

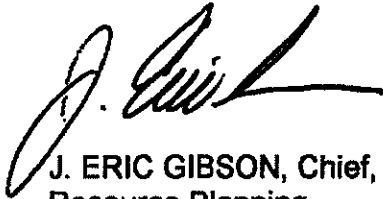
- 7 -

March 15, 2001

ADOPTION STATEMENT: This Mitigated Negative Declaration was adopted and above California Environmental Quality Act findings made by the:

Planning and Environmental Review Board (Decision-Making Body)

on September 13, 2001, Item 4



J. ERIC GIBSON, Chief,
Resource Planning

JEG:LB:br

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