

**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: Mount Carmel Pipeline Washout Repair Project
Certification Number R9-2017-0128
WDID: 9 000003211**

Reg. Meas. ID: 416110
Place ID: 839655
Party ID: 24287
Person ID: 568396

**APPLICANT: Kinder Morgan Energy Partners LC
1100 Town and Country
Orange, CA 92868**

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"/> Enrollment in Isolated Waters Order No. 2004-004-DWQ
<input checked="" type="checkbox"/> Enrollment in SWRCB GWDR Order No. 2003-017-DWQ	

PROJECT DESCRIPTION

An application dated August 31, 2017 was submitted by Kinder Morgan Energy Partners LC (hereinafter Applicant), for Water Quality Certification pursuant to section 401 of the Clean Water Act (United States Code (USC) Title 33, section 1341) for the proposed Mount Carmel Pipeline Washout Repair Project (Project). The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) deemed the application to be complete on October 8, 2018. 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 Applicant has also applied for a Clean Water Act section 404 Nationwide Permit No. 12 Linear Transport projects (Non-notifying) from the United States Army Corps of Engineers for the Project.

The Project is located within the City of San Diego, San Diego County, CA west of the intersection of East Ocean Air Dr. and Verada Sol Del Dios. The Project's center reading is at latitude 33.915617 and longitude -117.218370. The Applicant has paid all required application fees for this Certification in the amount of \$1,500.00. On an annual basis, the Applicant shall also pay all fees.¹ On October 9, 2018, 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

¹ Additional information regarding fees can be found electronically on the State Water Resources Control Board website at the following location: http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredgefillcalculator.xlsx

providing a period of twenty-one days for public review and comment. No comments were received.

A five-foot section of the Applicants petroleum pipeline is exposed due to erosion and channel incision caused by a concrete V-ditch and culvert outlet that discharges upstream of the pipeline. The Applicant proposes to recontour the channel and banks around exposed petroleum pipeline, rebury the exposed section of pipe, install concrete open cell matting over channel bottom, place rip-rap from the concrete V-ditch outlet to the upstream end of the mats, and place a rip-rap grade control structure at the downstream end of the mats. Stockpiled soils from the excavation will be used to fill the voids in between the spaces of the revetment mats and rip-rap. The bank slopes will be covered with erosion control blankets to prevent erosion and the streambed banks will be hydroseeded and revegetated with native plants.

The Project has maintained the channel's natural functions by incorporating ungrouted rip-rap and open cell concrete mats in the Project design. With the addition of rip-rap, a rock grade control structure, and widening of the streambed, the Project will reduce the storm water velocity through the Project site. Post-construction best management practices (BMPs) to manage and control the effects of these runoff increases will consist of placement of erosion control blankets, hydroseeding, and revegetation of both recontoured banks. These BMPs will be designed, constructed, and maintained to meet City of San Diego low impact development (LID) capture volume and hydromodification treatment requirements.

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 0.01 acre (90 linear feet) of streambed 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 0.01 acre of jurisdictional waters will be achieved through the Re-Establishment of 0.02 acres of waters of the United States and/or State by widening the bottom of the stream and bank stabilization through the Project site. 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 onsite located in the Miramar Reservoir hydrologic sub-area (HSA 906.10) at a minimum compensation ratio of 2:1 (area mitigated:area impacted).

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 *Habitat Mitigation and Monitoring Plan Line Section 126 Washout Repair at Mt. Carmel, San Diego, California* (Mitigation Plan), dated August 2018. 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 4 of this Certification.

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

I. STANDARD CONDITIONS

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

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

II. GENERAL CONDITIONS

- A. **Term of Certification.** Water Quality Certification No. R9-2017-0128 (Certification) shall expire upon a) the expiration or retraction of the Clean Water Act section 404 (33 USC Title 33, section 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 USC section 1313). The Basin Plan is accessible at:

http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

- F. **Project Modification.** The Applicant must submit any changes to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of this Certification, to the San Diego Water Board 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 Penasquitos 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.
- M. **Petitions.** Any person aggrieved by this action of the San Diego Water Board may petition the State Water Resources Control Board (State Water Board) to review the

action in accordance with the California Code of Regulations, title 23, sections 3867 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Certification. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

III. CONSTRUCTION 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/ip/inventory/>.
- 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 Penasquitos Creek and its tributaries. 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.
- Q. **Groundwater Dewatering.** If groundwater dewatering is required for the Project, the Applicant shall enroll in and comply with the requirements of San Diego Water Board Order No. R9-2015-0013 NPDES No. CAG919003, *General Waste Discharge Requirements For Groundwater Extraction Discharges to Surface Waters within the San Diego Region* or its successor permit.

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 on-site 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 requirements for priority development projects in section E.3 of the Regional MS4 Permit Order No. R9-2013-0001, *National Pollutant Discharge Elimination Systems*

Permit and Waste Discharge Requirements for Discharges of Urban Runoff from the MS4s Draining the Watersheds within the San Diego Region (Regional MS4 Permit) as well as the most current BMP Design Manual for the City of San Diego. Where conflict exists between the referenced documents the most stringent requirements shall apply.

- D. 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)² 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;
 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 Penasquitos Creek and its unnamed tributaries within the Penasquitos 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:

² 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]

C.

	Impacts (acres)	Impacts (linear ft.)	Mitigation for Impacts (acres)	Mitigation Ratio (area mitigated : area impacted)	Mitigation for Impacts (linear ft.)	Mitigation Ratio (linear feet mitigated : linear feet impacted)
Permanent Impacts						
Stream Channel	0.01	90	0.02 Re-Establishment ¹	2:1	90 Re-Establishment	1:1

1. Streambed Re-Establishment onsite within the Project area.
2. All areas of temporary impacts must be restored to pre-project contours and re-vegetated with native species.

D. 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.

E. Performance Standards. Compensatory mitigation required under this Certification shall be considered achieved once it has met the ecological success performance standards contained in the Mitigation Plan (Section 4.3, pages 4-5) to the satisfaction of the San Diego Water Board.

F. Compensatory Mitigation Site Design. The compensatory mitigation site(s) shall be designed 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 interspersation among plant zones and layers.

G. 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.

- H. **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.
- I. **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.

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:
1. The date, exact place, and time of sampling or measurements;
 2. The individual(s) who performed the sampling or measurements;
 3. The date(s) analyses were performed;
 4. The individual(s) who performed the analyses;
 5. The analytical techniques or methods used; and
 6. The results of such analyses.
- E. **Discharge Commencement Notification.** The Applicant must notify the San Diego Water Board in writing **at least 5 days prior to** the start of Project construction.
- F. **Geographic Information System Data.** The Applicant must submit Geographic Information System (GIS) shape files of the Project impact sites within 30 days of the start of project construction and GIS shape files of the Project mitigation sites within 30 days of mitigation installation. All impact and mitigation site shape files must be polygons. Two GPS readings (points) must be taken on each line of the polygon and the polygon must have a minimum of 10 points. GIS metadata must also be submitted.
- G. **Annual Project Progress Reports.** The Applicant must submit annual Project progress reports describing status of BMP implementation, compensatory mitigation, 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 Annual Project Progress Reports must contain compensatory mitigation monitoring information sufficient to demonstrate how the compensatory mitigation project is progressing towards accomplishing its objectives and meeting its performance standards. Annual Project Progress Reports must be submitted even if Project construction has not begun. The monitoring period for each Annual Project Progress Report shall be January 1st through December 31st of each year. Annual Project Progress Reports must include, at a minimum, the following:
1. **Project Status and Compliance Reporting.** The Annual Project Progress Report must include the following Project status and compliance information:
 - a. The names, qualifications, and affiliations of the persons contributing to the report;

- b. 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;
 - c. A description of Project construction delays encountered or anticipated that may affect the schedule for construction completion; and
 - d. 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.
2. **Compensatory Mitigation Monitoring Reporting.** Mitigation monitoring information must be submitted as part of the Annual Project Progress Report 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 Annual Project Progress Report must include the following compensatory mitigation monitoring information:
- a. Names, qualifications, and affiliations of the persons contributing to the report;
 - b. 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;
 - c. A description of the following mitigation site(s) characteristics:
 - i. Detritus cover;
 - ii. General topographic complexity;
 - iii. General upstream and downstream habitat and hydrologic connectivity; and
 - iv. Source of hydrology
 - d. 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;
 - e. 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;

- f. Qualitative and quantitative comparisons of current mitigation conditions with pre-construction conditions and previous mitigation monitoring results;
 - g. 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/401c/401PhotoDocRB9V713.pdf. In addition, photo documentation must include Geographic Positioning System (GPS) coordinates for each of the photo points referenced;
 - h. As-built drawings of the compensatory mitigation project site(s), no bigger than 11"X17"; and
 - i. A survey report documenting boundaries of the compensatory mitigation site(s).
- 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";
 - 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; and
- I. **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.
- J. **Electronic Document Submittal.** The Applicant must submit all reports and information required under this Certification in electronic format via e-mail to SanDiego@waterboards.ca.gov. Documents over 50 megabytes will not be accepted via e-mail and must be placed on a disc and delivered to:

California Regional Water Quality Control Board
San Diego Region
Attn: 401 Certification No. R9-2017-0128:839655:amonji
2375 Northside Drive, Suite 100
San Diego, California 92108

Each electronic document must be submitted as a single file, in Portable Document Format (PDF), converted to text searchable format using Optical Character Recognition (OCR), and not be password protected. All electronic documents must include scanned copies of all signature pages; electronic signatures will not be accepted. Electronic documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Certification No. R9-2017-0128:839655:amonji.

K. 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.

L. 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."

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 as provided in Water Code section 13271(b), 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 as provided in Water Code section 13272(b), 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 responsibility for compliance with this Certification in the event that a transferee fails to comply.

VIII. CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE

- A. The Regional Water Quality Control Board 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 Notice of Exemption dated November 19, 2018 for the Mount Carmel Pipeline Washout Repair Project. 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 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.

IX. SAN DIEGO WATER BOARD CONTACT PERSON

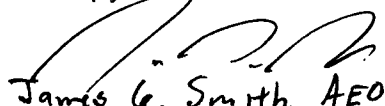
Alan Monji, Environmental Scientist
Telephone: (619) 521-3968
Email: Alan.Monji@waterboards.ca.gov

X. WATER QUALITY CERTIFICATION

I hereby certify that the proposed discharge from the **Mount Carmel Pipeline Washout Repair** (Certification No. R9-2017-0128) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Board Order No. 2003-0017-DWQ, "*Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have Received State Water Quality Certification (General WDRs)*," which requires compliance with all conditions of this Water Quality Certification. Please note that enrollment under Order No. 2003-017-DWQ is conditional and, should new information come to our attention that indicates a water quality problem, the San Diego Water Board may issue individual waste discharge requirements at that time.

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

I, David W. Gibson, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of Certification No. R9-2017-0128 issued on November 19, 2018.



DAVID W. GIBSON
Executive Officer
San Diego Water Board

19 Nov 2018
Date

ATTACHMENT 1

DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

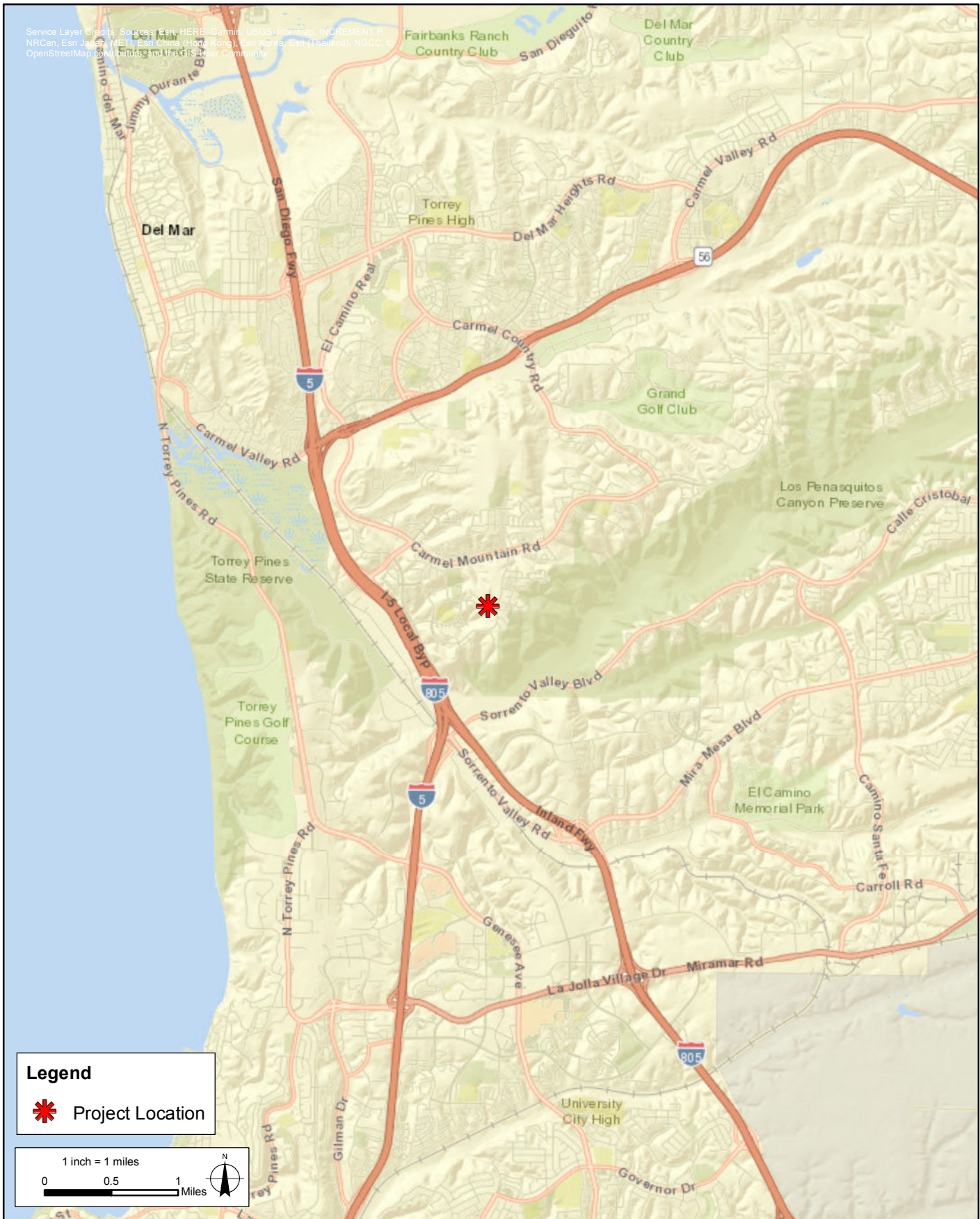
Water quality objectives and other appropriate requirements of state law – means the water quality objectives and beneficial uses as specified in the appropriate water quality control plan(s); the applicable provisions of sections 301, 302, 303, 306, and 307 of the Clean Water Act; and any other appropriate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

ATTACHMENT 2

LOCATION MAPS AND FIGURES

1. AMEC Foster Wheeler, Kinder Morgan, Project Location, Mt. Carmel LS 126 Pipeline Washout Repair Project, Figure 1.
2. AMEC Foster Wheeler, Kinder Morgan, Revegetation Areas, Mt. Carmel LS 126 Pipeline Washout Repair Project, Figure 2.

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Inarmap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, OpenStreetMap contributors, and the GIS User Community



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Project Location
Mt. Carmel LS 126 Pipeline Washout Repair Project
Kinder Morgan Energy Partners
San Diego County, CA

FIGURE

1

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

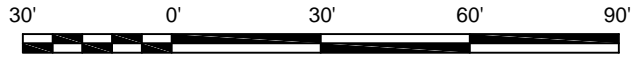
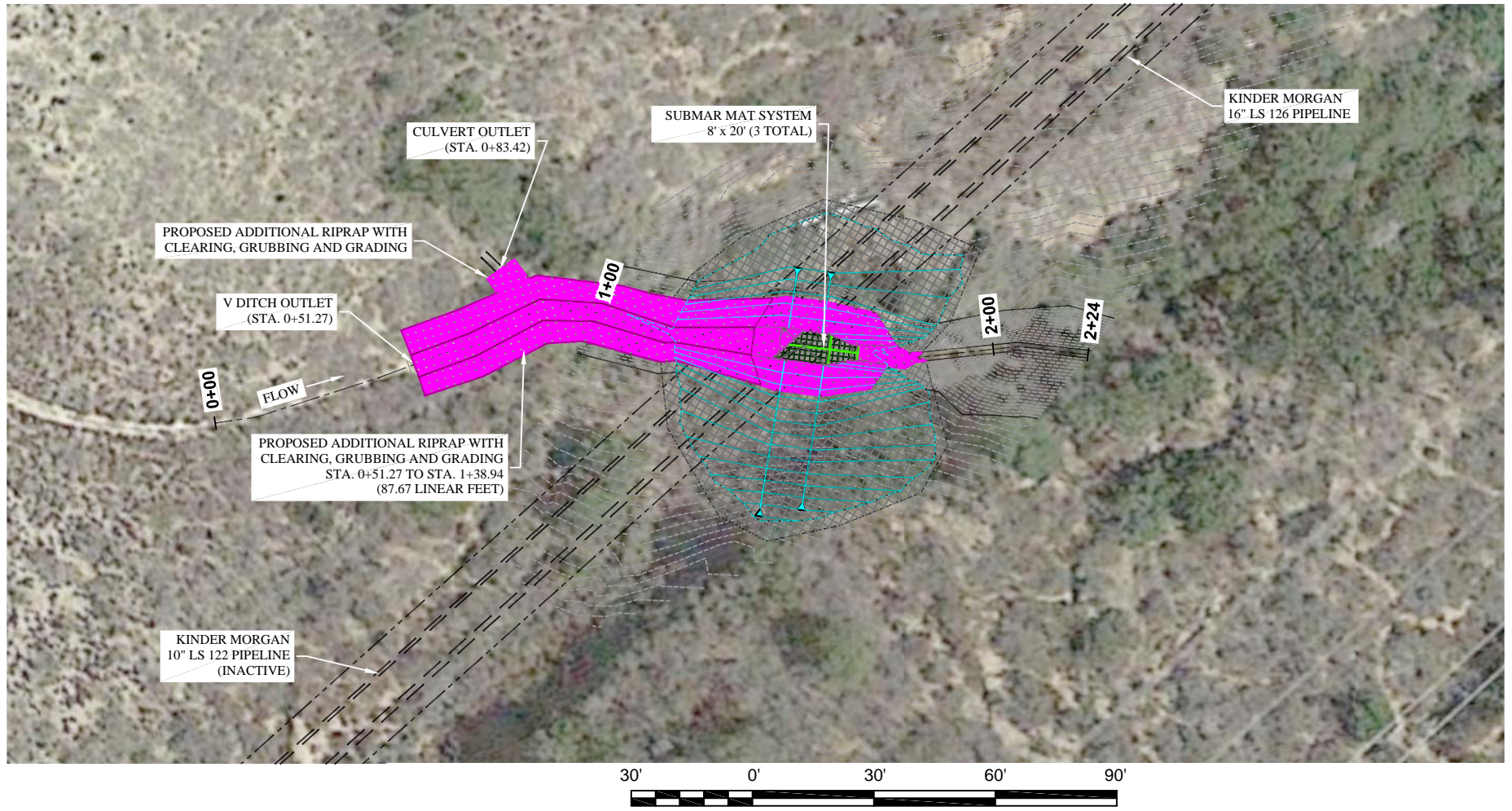


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ATTACHMENT 3

PROJECT FIGURES

1. AMEC Foster Wheeler, Kinder Morgan, Project Design, Mt. Carmel LS 126 Pipeline Washout Repair Project, Figure 3.
2. Kinder Morgan, Design Plans, Mt. Carmel LS 126 Pipeline Washout Repair Project, Sheets 2-10.



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CONSTRUCTION NOTES

- ALL WORK IS TO BE PERFORMED IN LOW FLOW CONDITIONS WHEN POSSIBLE. IT IS PREFERRED THAT WORK OCCURS DURING THE DRY SEASON (OR OTHERWISE UPSTREAM CONTROLS MANAGED TO MINIMIZE FLOW). CONTRACTOR SHALL MONITOR WEATHER CONDITIONS AND PLAN CONSTRUCTION ACTIVITIES ACCORDINGLY TO AVOID IN-STREAM WORK DURING RAIN EVENTS AND MINIMIZE EXPOSURE OF DISTURBED SOILS TO RAINFALL.
- CONSTRUCTION EQUIPMENT AND VEHICLES SHALL BE IN GOOD WORKING CONDITION AND FREE OF HYDRAULIC, FUEL OR OIL LEAKS. THERE SHOULD BE A PORT-O-POT ONSITE. FUEL, HEAVY EQUIPMENT AND ALL CHEMICAL PRODUCTS SHOULD HAVE ADEQUATE CONTAINMENT.
- PERIMETER EROSION AND SEDIMENT CONTROLS SHALL BE ESTABLISHED ALLOWING FOR SUBSEQUENT CLEARING AND GRUBBING WITHIN THE PROJECT AREA.
- SALVAGE, FURNISH AND WASTE MATERIALS SHALL BE TEMPORARILY STOCKPILED IN A DESIGNATED APPROVED AREA UNTIL FINAL HANDLING FOR ULTIMATE PLACEMENT. IT IS THE RESPONSIBILITY OF THE SELECTED CONTRACTOR TO ESTABLISH APPROVED STOCKPILE, STAGING AND ACCESS AREAS. IF A RAIN EVENT IS EMINENT, THEN A SILT FENCE SHALL BE INSTALLED BETWEEN THE STOCKPILE SOIL AND THE EXISTING STREAM.
- UPON COMPLETION OF WORK, ALL EXCESS OR TEMPORARILY STOCKPILED SOILS, STUMPS OR OTHER MATERIAL SHALL BE PERMANENTLY REMOVED AND PLACED IN UPLAND STORAGE AREAS, PER LOCAL, STATE AND FEDERAL REQUIREMENTS.
- IT MAY BE NECESSARY TO DIVERT STREAM FLOW AROUND THE WORKING AREA TO FACILITATE CONSTRUCTION USING A BYPASS PUMP OR JERSEY BARRIER. IN NO INSTANCE SHALL SILT LADEN WATER BE DISCHARGED INTO THE STREAM, DIRECTLY OR INDIRECTLY.
- ALL TEMPORARY ACCESS, STAGING, STOCKPILE OR OTHER TEMPORARILY DISTURBED AREAS SHALL BE STABILIZED AND REESTABLISHED TO THEIR PRE-CONSTRUCTION CONDITIONS, INCLUDING GRADE AND VEGETATION.
- ALTHOUGH THIS PLAN MAKES EVERY ATTEMPT TO ACCOUNT FOR EROSION AND SEDIMENT CONTROL, BANK STABILIZATION AND CONSTRUCTION LOGISTICS, UNFORESEEN CIRCUMSTANCES MAY ARISE THAT REQUIRE ADDITIONAL OR MODIFIED MEASURES TO CONTROL SEDIMENT, STABILIZE RIPARIAN STREAM BANKS AND FACILITATE STRUCTURE INSTALLATION. CONTRACTOR SHALL WORK WITH CLIENT AND ENGINEER, AS NECESSARY, TO ENSURE THAT THE PROJECT IS CONSTRUCTED IN ACCORDANCE WITH THE INTENT OF THESE PLANS.
- THE ENGINEER, OR QUALIFIED DESIGNEE, SHALL BE PRESENT DURING CONSTRUCTION OF IN-STREAM WORK TO ENSURE COMPLIANCE WITH CONSTRUCTION PLANS AND APPLICABLE REGULATIONS. CONTRACTOR SHALL GIVE 72 HOURS NOTICE TO CLIENT AND THE ENGINEER PRIOR TO CONSTRUCTION.

ENVIRONMENTAL NOTES

- THE OWNER SHALL NOTIFY ALL CONTRACTORS, SUBCONTRACTORS & MATERIAL SUPPLIERS THAT DUMPING OF CHEMICALS INTO THE STORM DRAIN SYSTEM IS PROHIBITED.
- PERMITTEE SHALL MAINTAIN CONSTRUCTION SITE IN SUCH A CONDITION THAT AN ANTICIPATED STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIMES, PESTICIDES, HERBICIDES, WOOD PRESERVATIVES AND SOLVENTS; ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; FERTILIZERS, VEHICLE/EQUIPMENT WASH WATER AND CONCRETE WASH WATER; CONCRETE, DETERGENT OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING; AND SUPER CHLORINATED POTABLE WATER LINE FLUSHING. DURING CONSTRUCTION, PERMITTEE SHALL DISPOSE OF SUCH MATERIALS IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE, PHYSICALLY SEPARATED FROM POTENTIAL STORM WATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
- CONTRACTOR SHALL CONSTRUCT PROJECT AS AUTHORIZED IN PERMITTED DRAWINGS. ANY CHANGES MUST FIRST BE APPROVED BY PROJECT MANAGER, OWNER AND INSPECTOR AND DOCUMENTED IN THE CONSTRUCTION CREW BOOK.

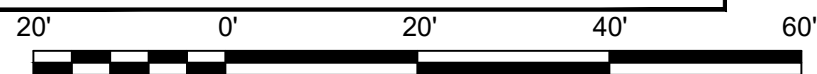
GRADING NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH ANY SPECIAL REQUIREMENTS OF THE PERMIT.
- NO EXCAVATION SHALL BE STARTED WITHOUT FIRST NOTIFYING ONE CALL 48 HOURS PRIOR TO COMMENCEMENT OF WORK. A PRE-GRADING MEETING SHALL BE SCHEDULED AT THE SITE BEFORE START OF GRADING WITH THE FOLLOWING PEOPLE PRESENT: OWNER, CONTRACTOR & INSPECTOR.
- PRIOR TO ANY CLEARING, BRUSHING OR DEMOLITION, OTHER THAN WHAT IS AUTHORIZED, APPROVAL MUST BE OBTAINED FROM THE PROJECT MANAGER AND INSPECTOR.
- CUT SLOPES SHALL NOT BE STEEPER THAN 1.5:1 SLOPE.
- ALL TRENCH BACKFILLS SHALL BE EXAMINED AND CERTIFIED BY THE SITE INSPECTOR PER THE GRADING PLAN.
- DUST ABATEMENT SHALL BE CONTROLLED BY WATERING.
- SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE PLUS CONTAINMENT.
- ALL PUBLIC ROADWAYS MUST BE MAINTAINED DAILY OF ALL DEBRIS DEPOSITED ON THEM AS A RESULT OF THE CONSTRUCTION OPERATION. CLEANING IS TO BE DONE TO THE SATISFACTION OF THE OWNER.

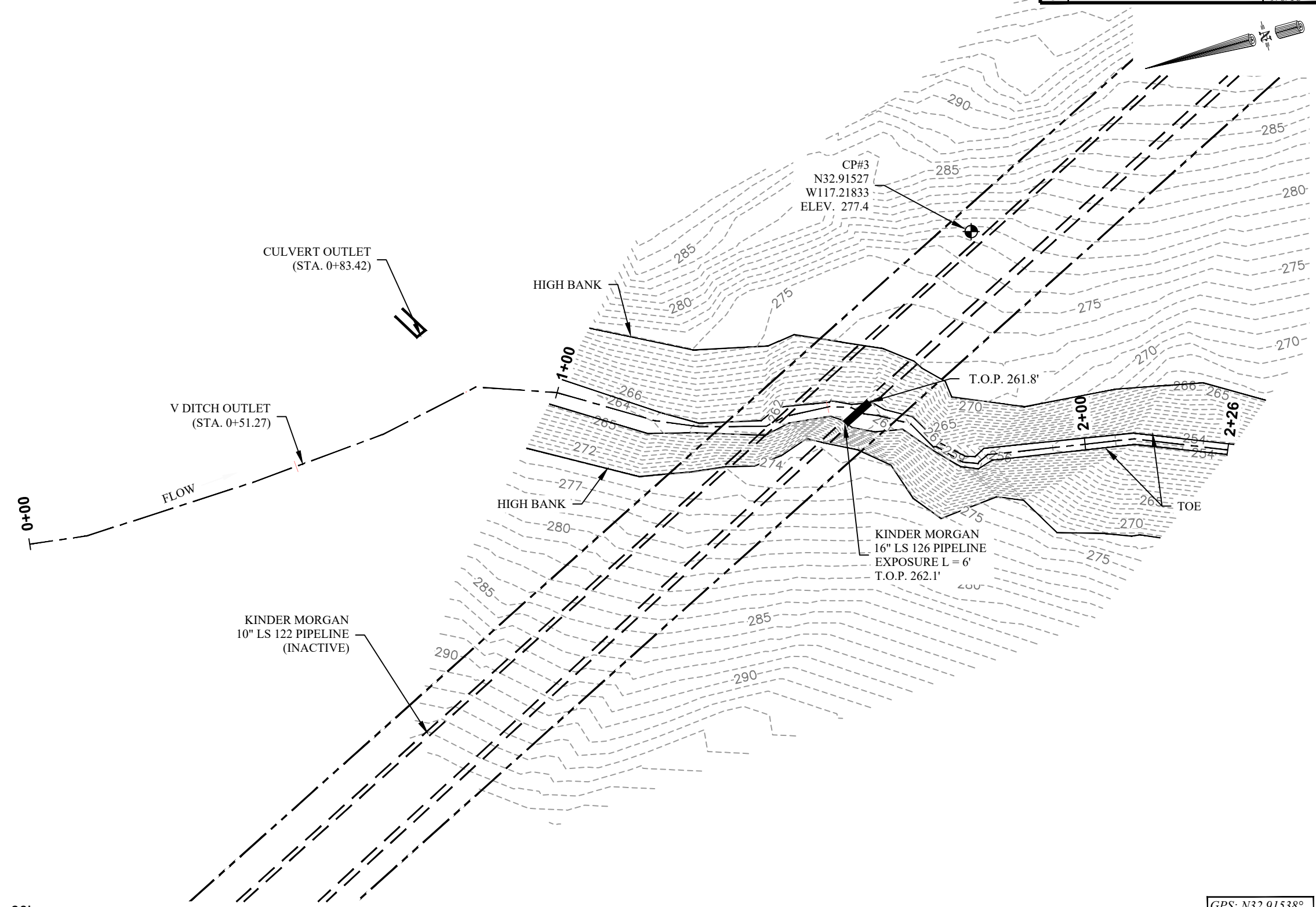
SURVEY NOTES

- ALL LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION.
- SURVEY WAS PERFORMED ON 12/17/2015.
- DATA COLLECTED WITH GPS+GLONASS
- ALL VERTICAL ELEVATIONS REFERENCED TO N.A.V.D. 88.
- STATE PLANE COORDINATE SYSTEM - NAD83 CALIFORNIA STATE PLANE ZONE VI

#	REVISION	DATE
1	ADDITIONAL CIVIL SITE IMPROVEMENTS	10/27/17
2	NO CHANGES THIS SHEET	4/11/18
3	NO CHANGES THIS SHEET	9/6/18



GPS: N32.91538°
W117.21840°



1711 Dunn Street
Houma, LA 70360
Ph. 985-868-0001
Fax 985-851-0108
Email: submar@submar.com
Website: www.submar.com

LS-126 16" MT. CARMEL SAN DIEGO
SAN DIEGO COUNTY
SAN DIEGO, CA

SHEET TITLE:
**EXISTING
CONDITIONS**

LEGEND:

- EXPOSED PIPELINE
- BURIED PIPELINE
- FLOW LINE
- RIGHT OF WAY
- TEMPORARY CONTROL POINT

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DATE: 1/19/16
SHEET: 2 of 10
SCALE: AS SHOWN

PROJECT #: 13343

DRAWING #: C-101

DWN BY: MJP

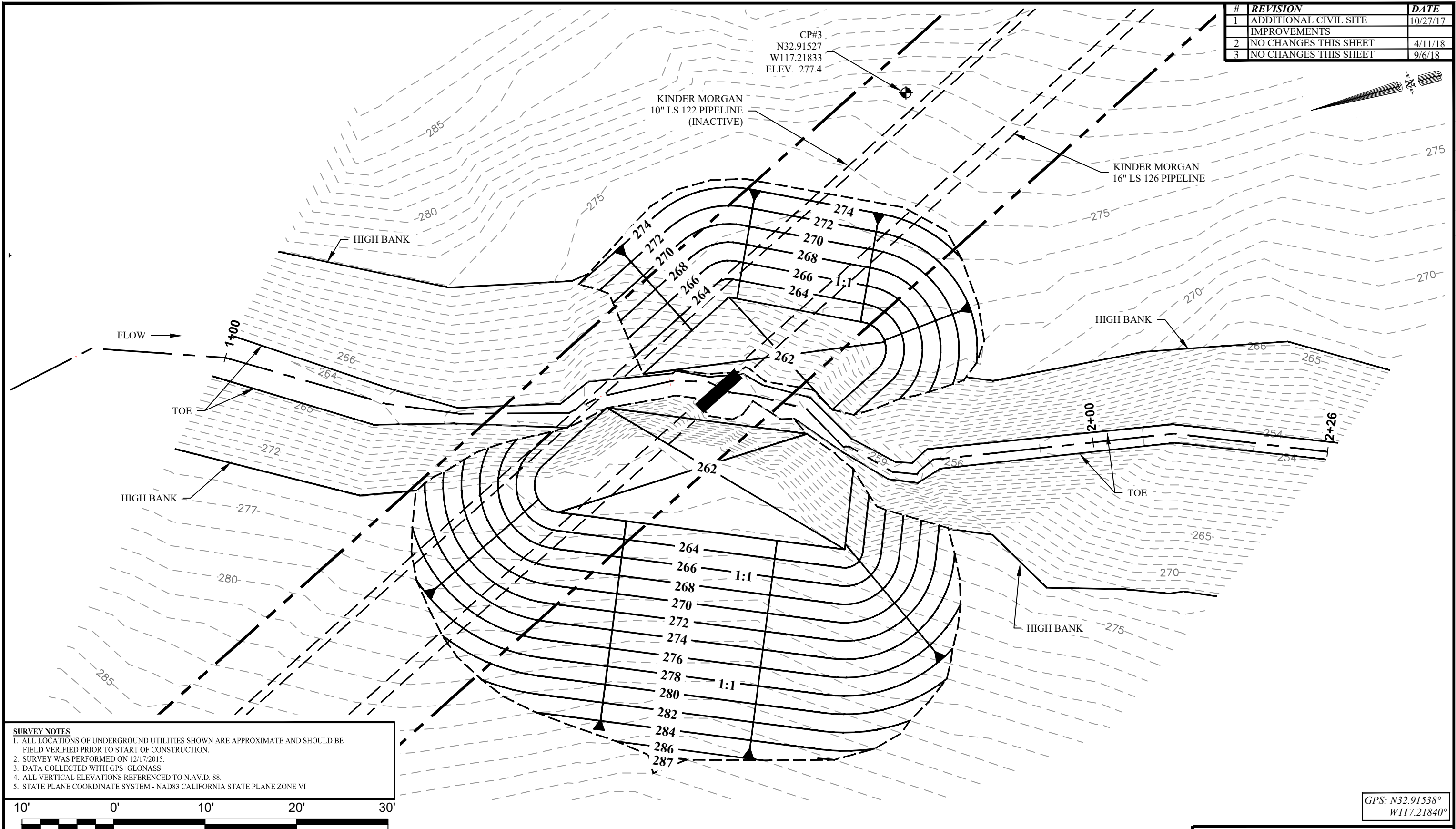
CKD BY: MPD

CONTACT: GREG BURNETT

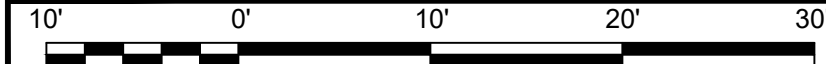
PHONE: 714-560-4994

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#	REVISION	DATE
1	ADDITIONAL CIVIL SITE IMPROVEMENTS	10/27/17
2	NO CHANGES THIS SHEET	4/11/18
3	NO CHANGES THIS SHEET	9/6/18



SURVEY NOTES
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 2. SURVEY WAS PERFORMED ON 12/17/2015.
 3. DATA COLLECTED WITH GPS+GLONASS
 4. ALL VERTICAL ELEVATIONS REFERENCED TO N.A.V.D. 88.
 5. STATE PLANE COORDINATE SYSTEM - NAD83 CALIFORNIA STATE PLANE ZONE VI



GPS: N32.91538°
 W117.21840°

1711 Dunn Street
 Houma, LA 70360
 Ph. 985-868-0001
 Fax 985-851-0108
 Email: submar@submar.com
 Website: www.submar.com

LS-126 16" MT. CARMEL SAN DIEGO
 SAN DIEGO COUNTY
 SAN DIEGO, CA

SHEET TITLE:
EXCAVATION PLAN

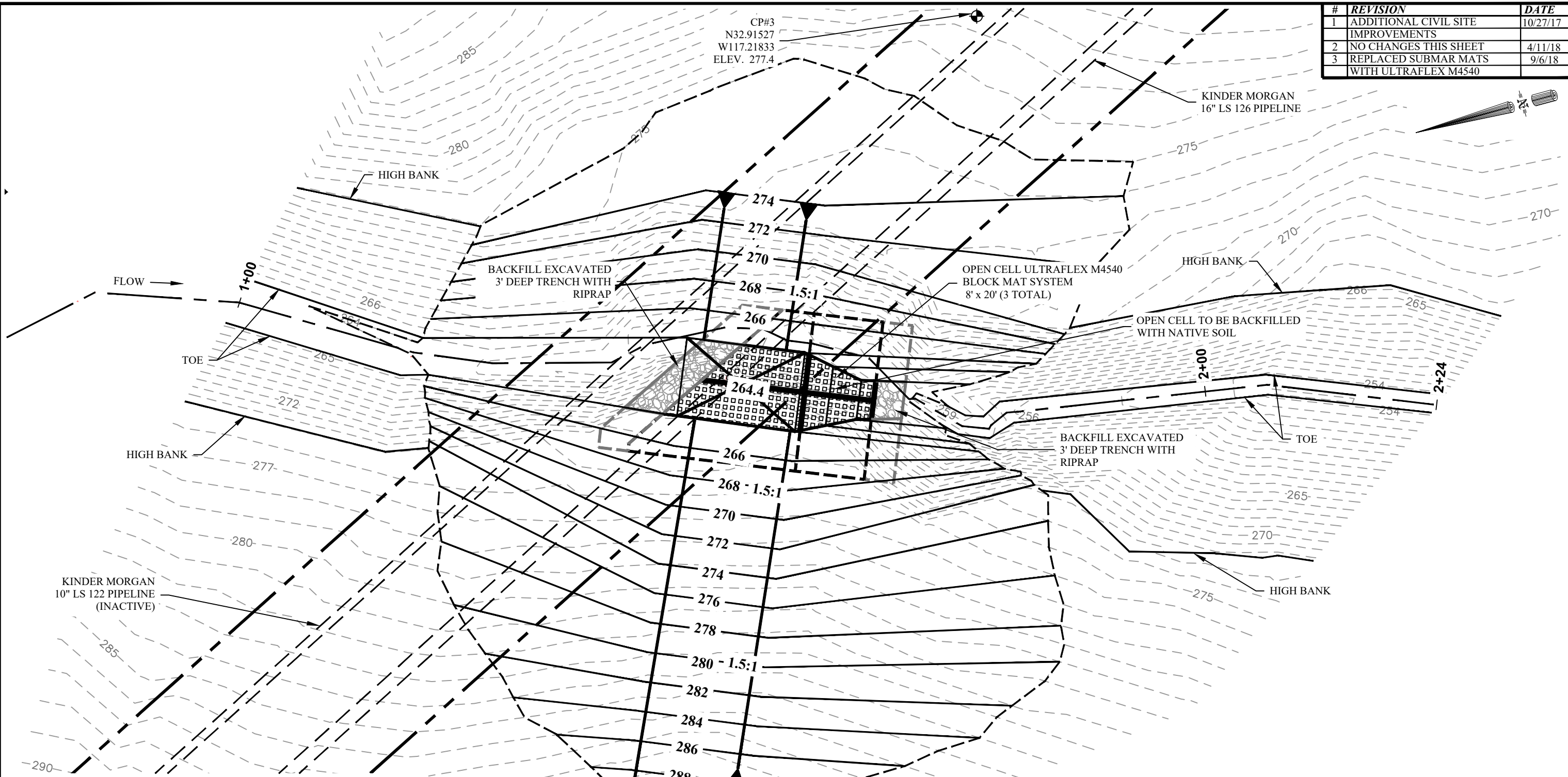
LEGEND:

	EXPOSED PIPELINE
	BURIED PIPELINE
	FLOW LINE
	RIGHT OF WAY
	TEMPORARY CONTROL POINT

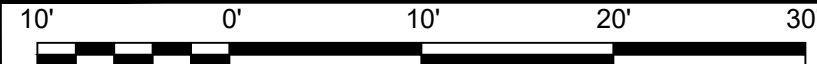
THESE DRAWINGS WERE PREPARED BY SUBMAR, INC. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC.	COPYRIGHT © SUBMAR, INC. 2017 ALL RIGHTS RESERVED.	DATE: 1/19/16	SHEET: 3 of 10	SCALE: AS SHOWN	PROJECT #: 13343	DRAWING #: C-102	DWN BY: MJP	CKD BY: MPD	CONTACT: GREG BURNETT	PHONE: 714-560-4994
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#	REVISION	DATE
1	ADDITIONAL CIVIL SITE IMPROVEMENTS	10/27/17
2	NO CHANGES THIS SHEET	4/11/18
3	REPLACED SUBMAR MATS WITH ULTRAFLEX M4540	9/6/18



SURVEY NOTES
 1. ALL LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION.
 2. SURVEY WAS PERFORMED ON 12/17/2015.
 3. DATA COLLECTED WITH GPS+GLONASS
 4. ALL VERTICAL ELEVATIONS REFERENCED TO N.A.V.D. 88.
 5. STATE PLANE COORDINATE SYSTEM - NAD83 CALIFORNIA STATE PLANE ZONE VI



GPS: N32.91538°
 W117.21840°

1711 Dunn Street
 Houma, LA 70360
 Ph. 985-868-0001
 Fax 985-851-0108
 Email: submar@submar.com
 Website: www.submar.com

LS-126 16" MT. CARMEL SAN DIEGO
 SAN DIEGO COUNTY
 SAN DIEGO, CA

SHEET TITLE:
PROPOSED SITE GRADING PLAN

LEGEND:

- == == == BURIED PIPELINE
- . . . → FLOW LINE
- RIGHT OF WAY
- ⊕ TEMPORARY CONTROL POINT

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DATE: 1/19/16
 SHEET: 4 of 10

SCALE: AS SHOWN

PROJECT #: 13343
 DRAWING #: C-103

DWN BY: MJP
 CKD BY: MPD

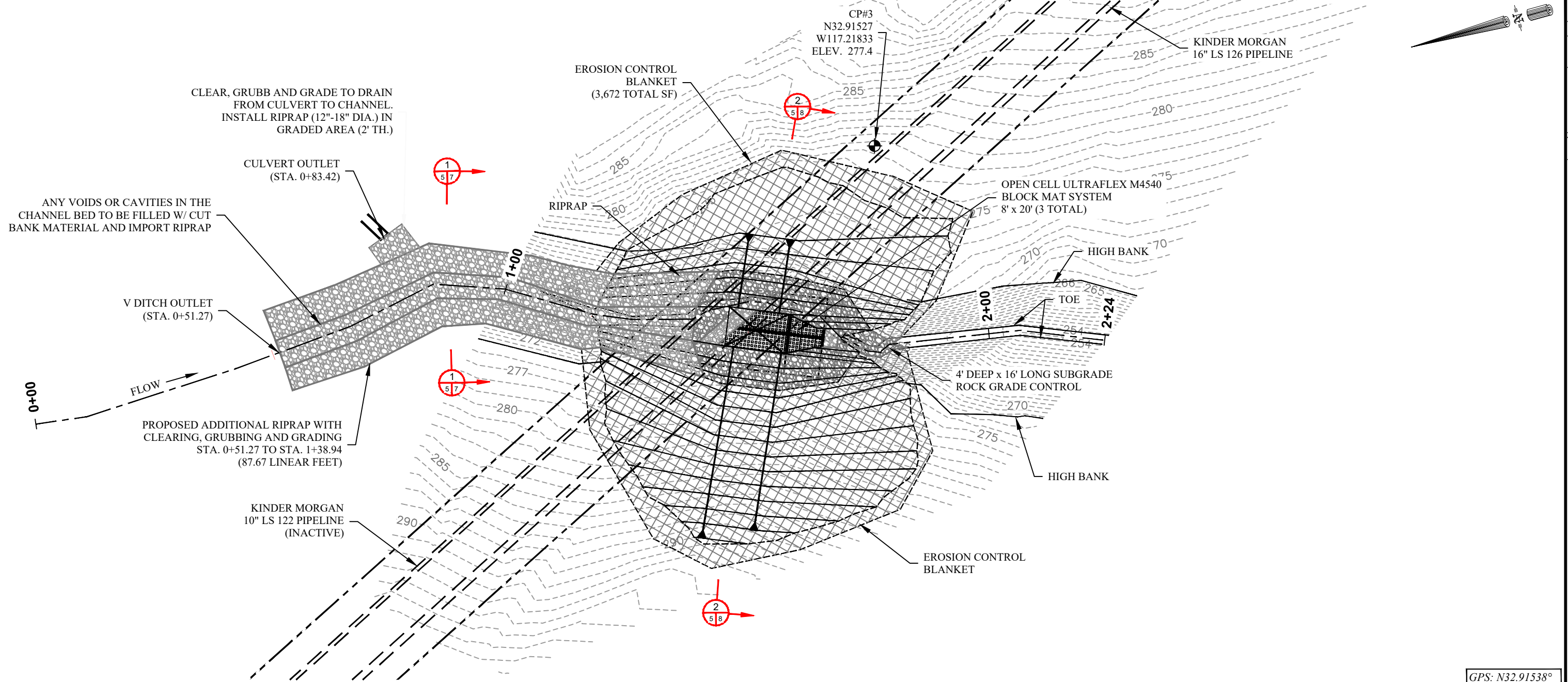
CONTACT: GREG BURNETT

PHONE: 714-560-4994

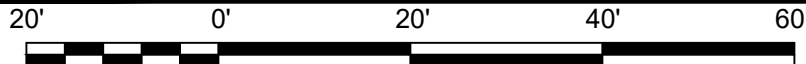
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NOTES:
 1. CLEAR, GRUB AND GRADE WHERE PROPOSED ADDITIONAL RIPRAP IS TO BE INSTALLED.

#	REVISION	DATE
1	ADDITIONAL CIVIL SITE IMPROVEMENTS	10/27/17
2	ADDED RIPRAP D/S OF EXISTING CULVERT	4/11/18
3	REPLACED SUBMAR MATS WITH ULTRAFLEX M4540	9/6/18



SURVEY NOTES
 1. ALL LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION.
 2. SURVEY WAS PERFORMED ON 12/17/2015.
 3. DATA COLLECTED WITH GPS+GLONASS
 4. ALL VERTICAL ELEVATIONS REFERENCED TO N.A.V.D. 88.
 5. STATE PLANE COORDINATE SYSTEM - NAD83 CALIFORNIA STATE PLANE ZONE VI



GPS: N32.91538°
 W117.21840°

LEGEND:

- SECTION # (with diagram of a section marker)
- SHEET # WHERE SECT. IS TAKEN FROM (with diagram of a section marker)
- SHEET # WHERE SECT. IS DRAWN (with diagram of a section marker)
- BURIED PIPELINE (represented by three parallel lines)
- FLOW LINE (represented by a dashed line with an arrow)
- RIGHT OF WAY (represented by a dashed line)
- TEMPORARY CONTROL POINT (represented by a circle with a crosshair)

SUBMAR
 Synergy with Nature

1711Dunn Street
 Houma, LA 70360
 Ph. 985-868-0001
 Fax 985-851-0108
 Email: submar@submar.com
 Website: www.submar.com

LS-126 16" MT. CARMEL SAN DIEGO
 SAN DIEGO COUNTY
 SAN DIEGO, CA

SHEET TITLE:
PROPOSED CIVIL SITE IMPROVEMENTS PLAN

KINDER MORGAN
 ENERGY PARTNERS, L.P.

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DATE: 1/19/16
 SHEET: 5 of 10
 SCALE: AS SHOWN

PROJECT #: 13343
 DRAWING #: C-104

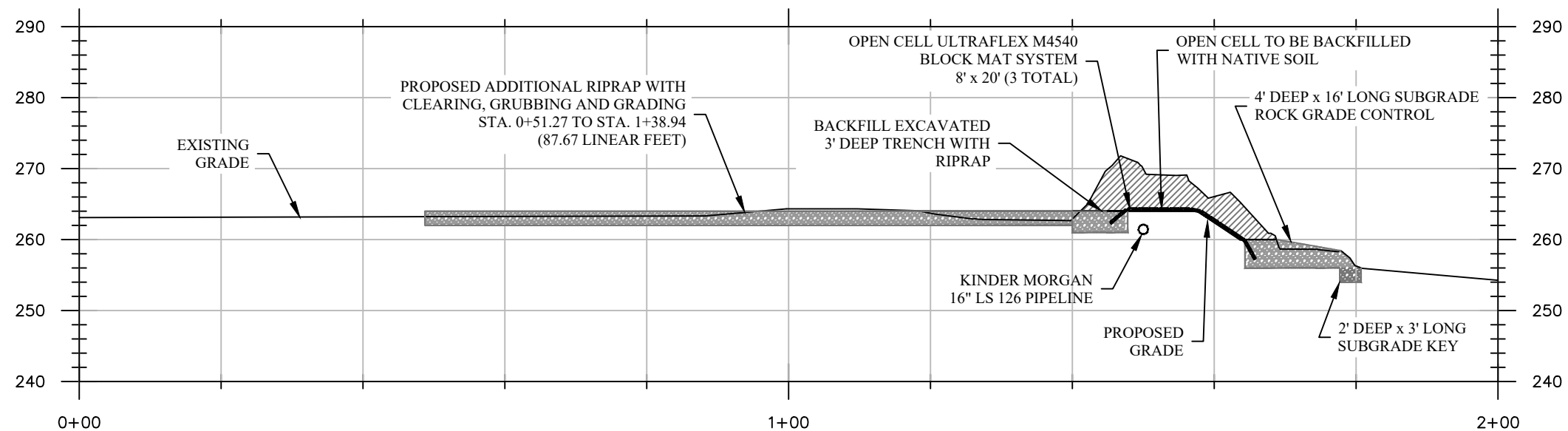
DWN BY: MJP
 CKD BY: MPD

CONTACT: GREG BURNETT

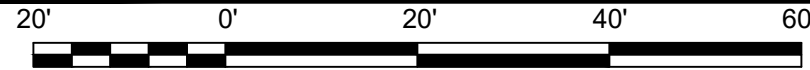
PHONE: 714-560-4994

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#	REVISION	DATE
1	ADDITIONAL CIVIL SITE IMPROVEMENTS	10/27/17
2	NO CHANGES THIS SHEET	4/11/18
3	REPLACED SUBMAR MATS WITH ULTRAFLEX M4540	9/6/18



SURVEY NOTES
 1. ALL LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION.
 2. SURVEY WAS PERFORMED ON 12/17/2015.
 3. DATA COLLECTED WITH GPS+GLONASS
 4. ALL VERTICAL ELEVATIONS REFERENCED TO N.A.V.D. 88.
 5. STATE PLANE COORDINATE SYSTEM - NAD83 CALIFORNIA STATE PLANE ZONE VI



GPS: N32.91538°
 W117.21840°

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 Synergy with Nature

1711 Dunn Street
 Houma, LA 70360
 Ph. 985-868-0001
 Fax 985-851-0108
 Email: submar@submar.com
 Website: www.submar.com

LS-126 16" MT. CARMEL SAN DIEGO
 SAN DIEGO COUNTY
 SAN DIEGO, CA

SHEET TITLE:
 PROFILE

KINDER MORGAN
 ENERGY PARTNERS, L.P.

LEGEND:

- BURIED PIPELINE
- PROPOSED FILL
- PROPOSED CUT

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DATE: 1/19/16
 SHEET: 6 of 10
 SCALE: AS SHOWN

PROJECT #: 13343

DRAWING #: C-105

DWN BY: MJP

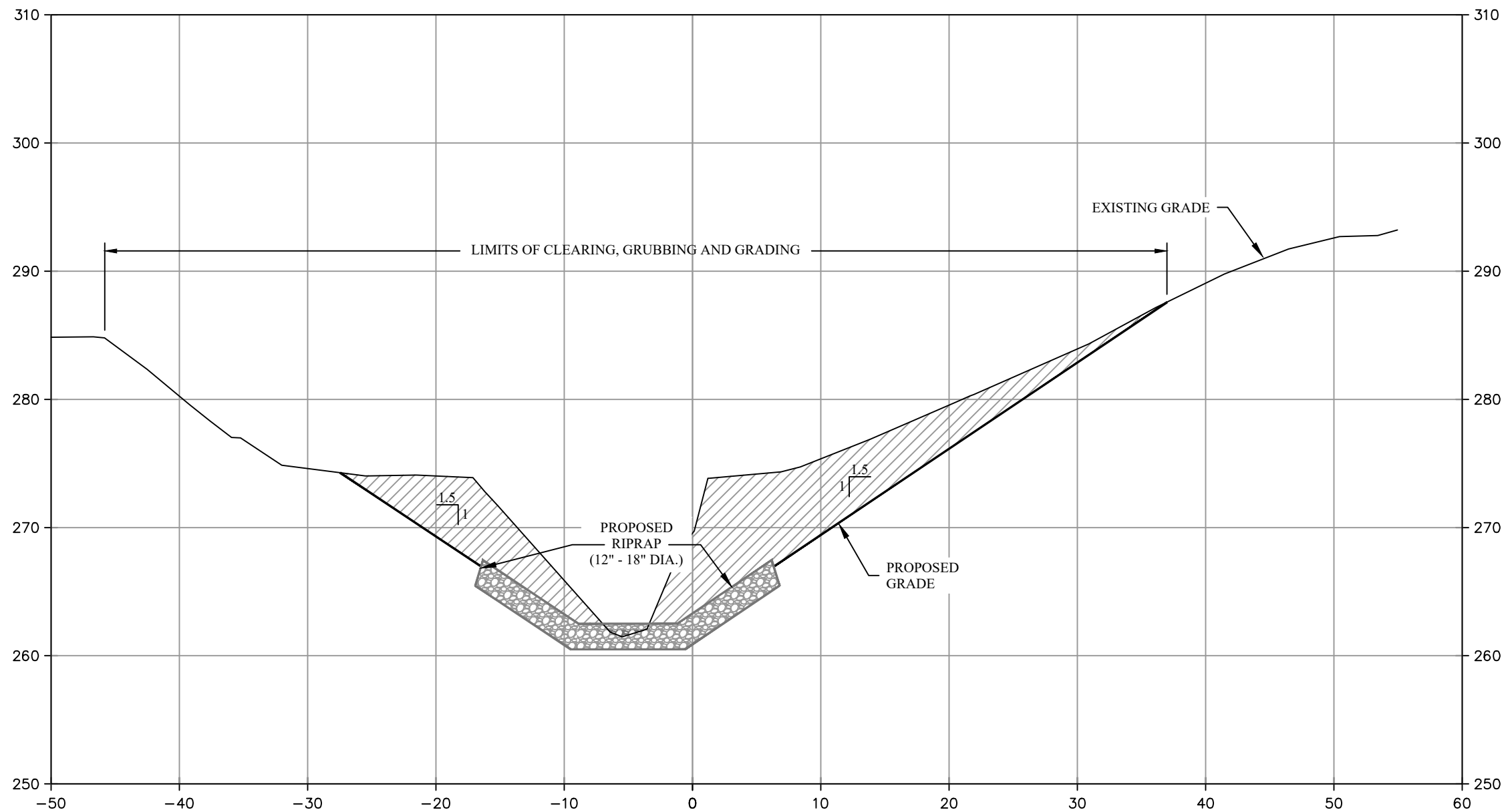
CKD BY: MPD

CONTACT: GREG BURNETT

PHONE: 714-560-4994

M:\33005\13343 MT 118.7 CA\DRAWINGS\CAD\13343_ML_SAN DIEGO CL-BISE-REG



#	REVISION	DATE
1	ADDITIONAL CIVIL SITE IMPROVEMENTS	10/27/17
2	NO CHANGES THIS SHEET	4/11/18
3	NO CHANGES THIS SHEET	9/6/18



SECTION 1
5 7

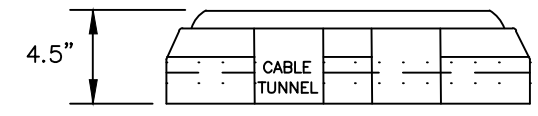
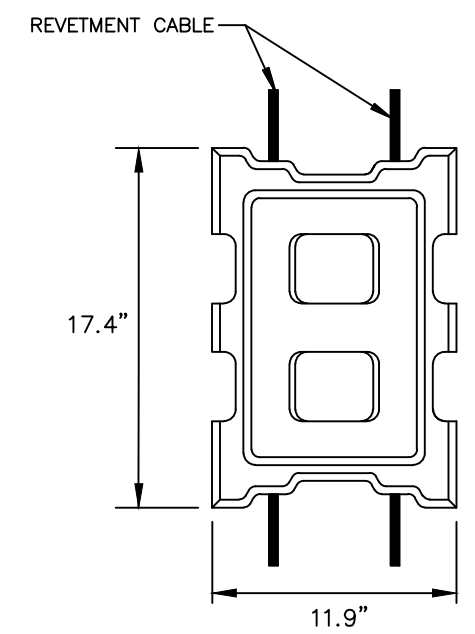
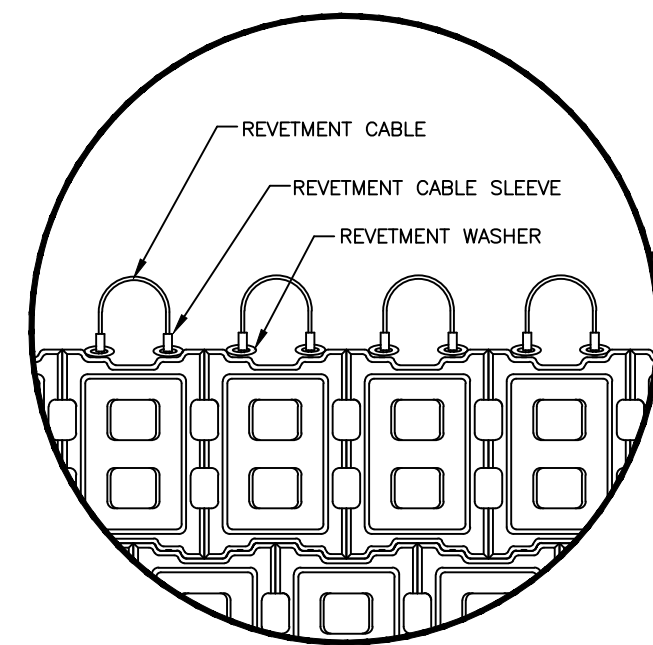


GPS: N32.91538°
W117.21840°

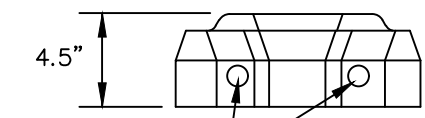
 Synergy with Nature	1711 Dunn Street Houma, LA 70360 Ph. 985-868-0001 Fax 985-851-0108 Email: submar@submar.com Website: www.submar.com	LS-126 16" MT. CARMEL SAN DIEGO SAN DIEGO COUNTY SAN DIEGO, CA	SHEET TITLE: CHANNEL ALIGNMENT - CROSS SECTION	 KINDER MORGAN ENERGY PARTNERS, L.P.	LEGEND: <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></div> <div style="margin-left: 5px;">PROPOSED FILL</div> </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px);"></div> <div style="margin-left: 5px;">PROPOSED CUT</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; border: 1px solid black; background: radial-gradient(circle, black 1px, transparent 1px); background-size: 4px 4px;"></div> <div style="margin-left: 5px;">PROPOSED RIPRAP</div> </div>
THESE DRAWINGS WERE PREPARED BY SUBMAR, INC. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC.		COPYRIGHT © SUBMAR, INC. 2017 ALL RIGHTS RESERVED.	DATE: 10/27/17 SHEET: 7 of 10 SCALE: AS SHOWN	PROJECT #: 13343 DRAWING #: C-106 DWN BY: MJP CKD BY: MPD	CONTACT: GREG BURNETT PHONE: 714-560-4994

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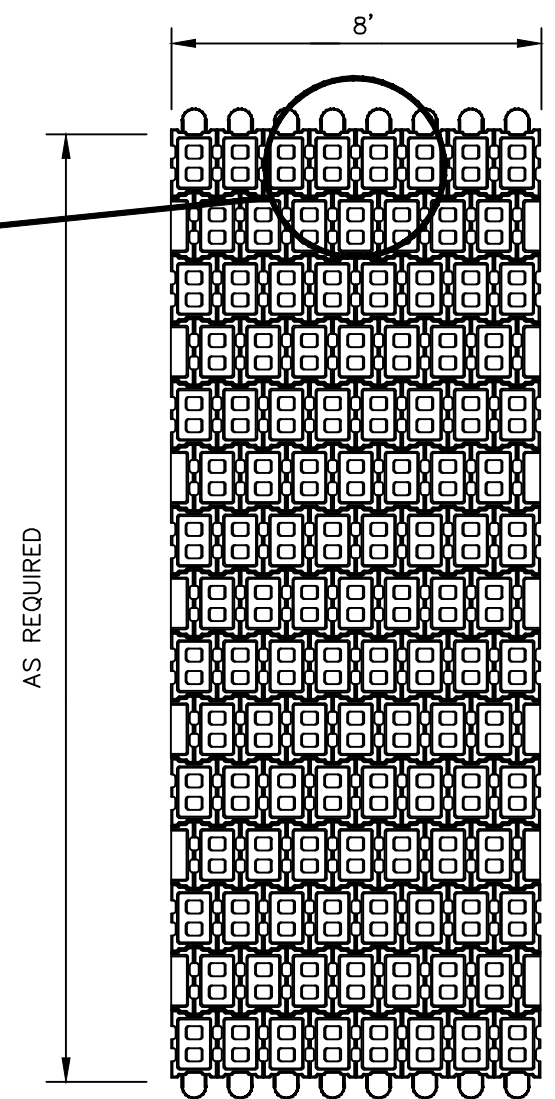
#	REVISION	DATE
1	ADDITIONAL CIVIL SITE IMPROVEMENTS	10/27/17
2	NO CHANGES THIS SHEET	4/11/18
3	REMOVED DETAILS	6/12/18
4	REPLACE SUBMAR MAT WITH BLOCK DETAIL	9/6/18



SIDE VIEW



END VIEW



PLAN

TYPICAL ULTRAFLEX MAT
NOT TO SCALE



1711 Dunn Street
Houma, LA 70360
Ph. 985-868-0001
Fax 985-851-0108
Email: submar@submar.com
Website: www.submar.com

LS-126 16" MT. CARMEL SAN DIEGO
SAN DIEGO COUNTY
SAN DIEGO, CA

SHEET TITLE:
**TYPICAL DETAILS -
ULTRAFLEX M4540 -
OPEN CELL**



LEGEND:

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DATE: 1/19/16

SHEET: 9 of 10

SCALE: N.T.S.

PROJECT #: 13343

DRAWING #: C-108

DWN BY: MJP

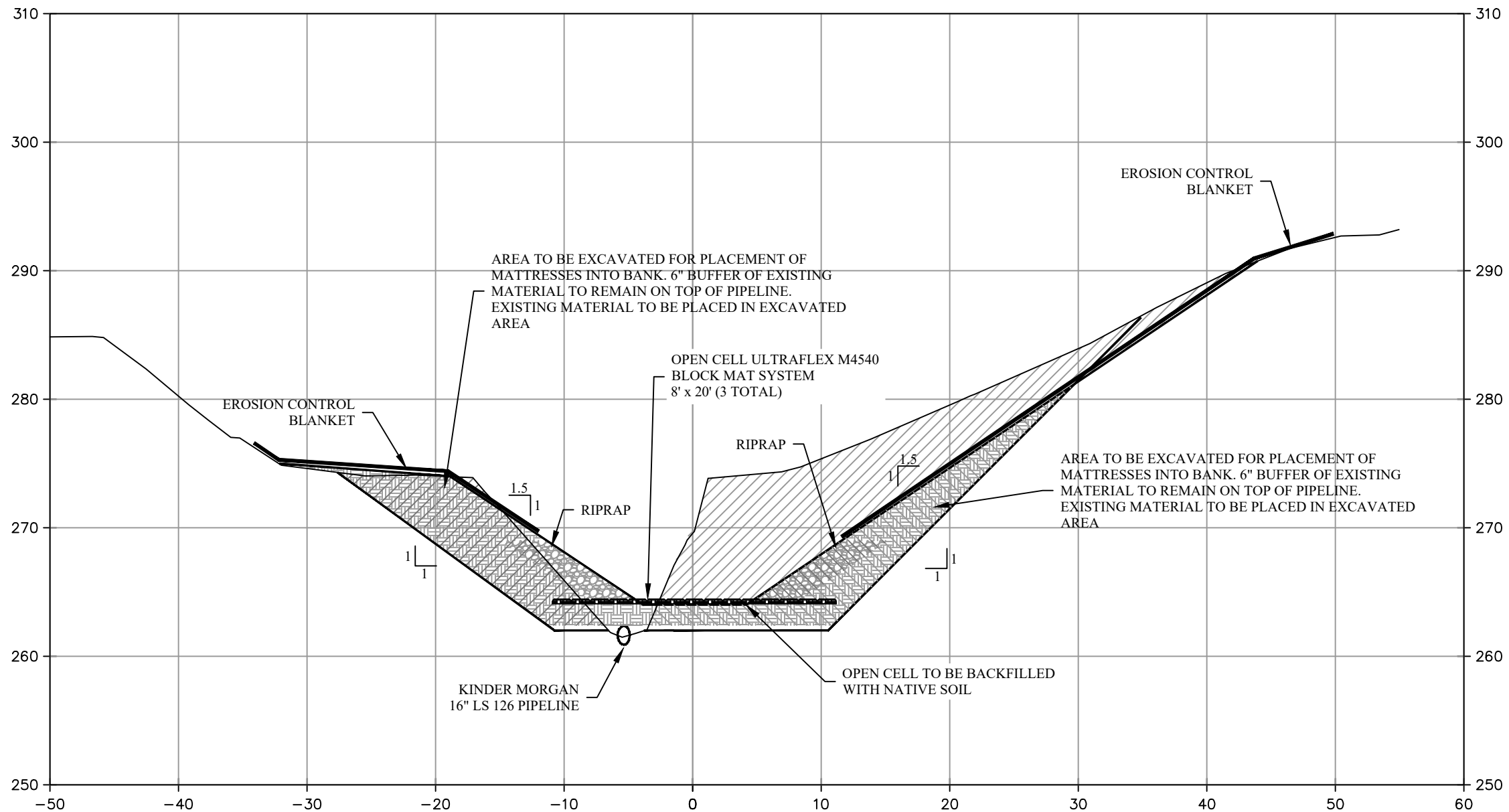
CKD BY: MPD

CONTACT: GREG BURNETT

PHONE: 714-560-4994

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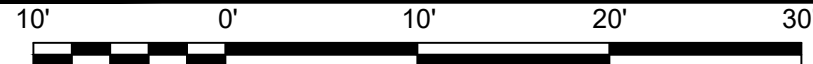
#	REVISION	DATE
1	ADDITIONAL CIVIL SITE IMPROVEMENTS	10/27/17
2	NO CHANGES THIS SHEET	4/11/18
3	REPLACED SUBMAR MATS WITH ULTRAFLEX M4540	9/6/18



SECTION 1
5 8


SURVEY NOTES
 1. ALL LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION.
 2. SURVEY WAS PERFORMED ON 12/17/2015.
 3. DATA COLLECTED WITH GPS+GLONASS
 4. ALL VERTICAL ELEVATIONS REFERENCED TO N.A.V.D. 88.
 5. STATE PLANE COORDINATE SYSTEM - NAD83 CALIFORNIA STATE PLANE ZONE VI

GPS: N32.91538°
 W117.21840°



LEGEND:

	PROPOSED FILL
	PROPOSED CUT
	PROPOSED CUT AND FILL



1711 Dunn Street
 Houma, LA 70360
 Ph. 985-868-0001
 Fax 985-851-0108
 Email: submar@submar.com
 Website: www.submar.com

LS-126 16" MT. CARMEL SAN DIEGO
 SAN DIEGO COUNTY
 SAN DIEGO, CA

SHEET TITLE:
CROSS SECTION



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DATE: 1/19/16
 SHEET: 8 of 10

SCALE: AS SHOWN
 PROJECT #: 13343
 DRAWING #: C-107

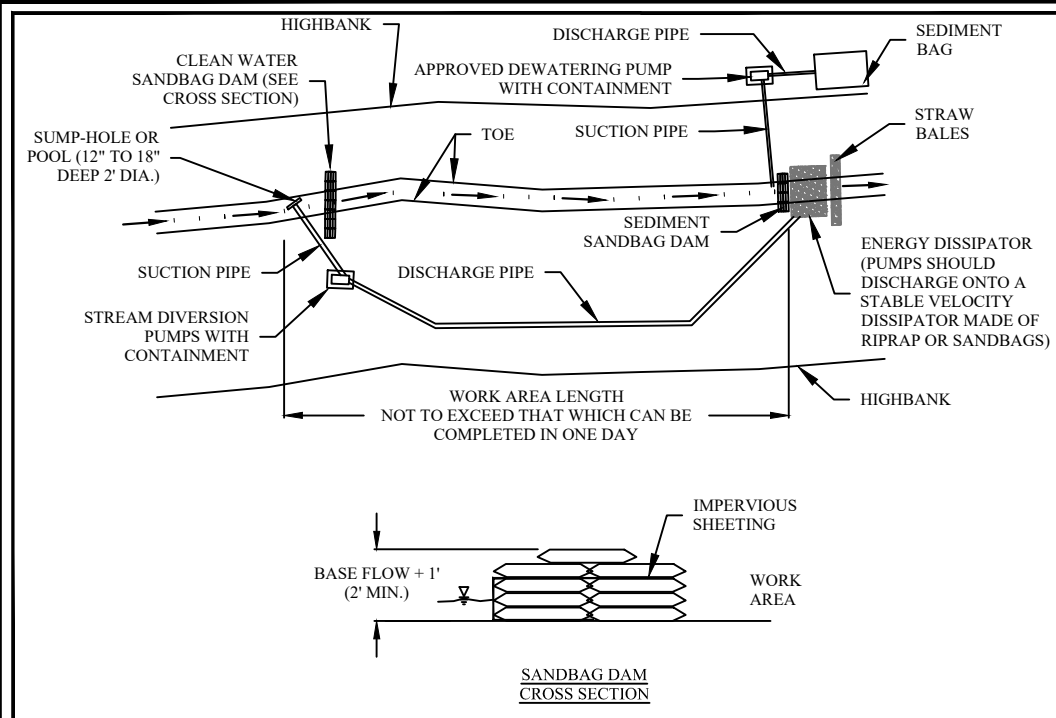
DWN BY: MJP
 CKD BY: MPD

CONTACT: GREG BURNETT

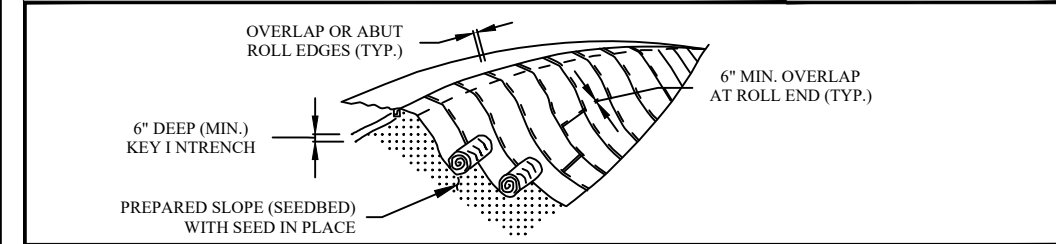
PHONE: 714-560-4994

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#	REVISION	DATE
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2	NO CHANGES THIS SHEET	4/11/18
3	NO CHANGES THIS SHEET	9/6/18



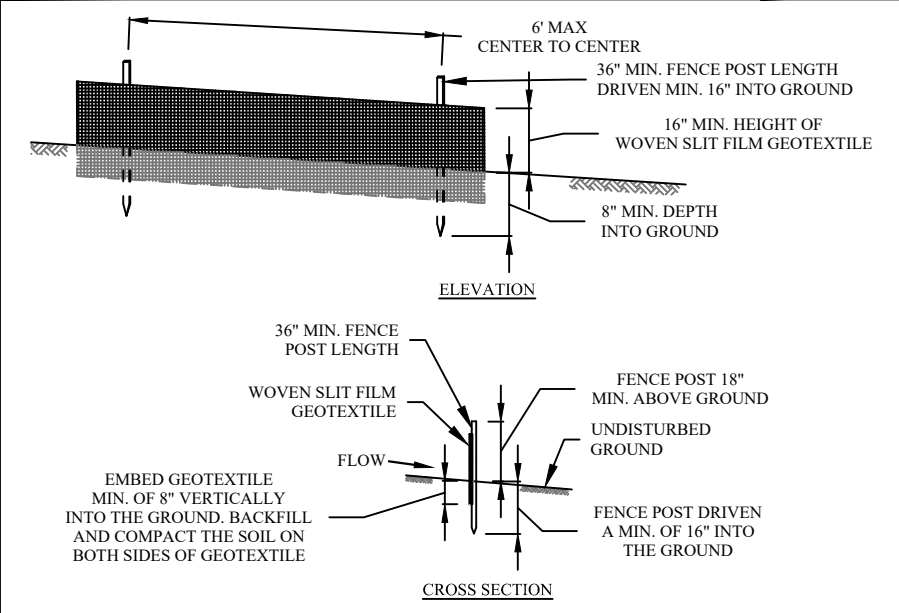
DEWATERING DETAIL
SCALE: N.T.S.



EROSION CONTROL BLANKET CONSTRUCTION SPECIFICATIONS

- USE TEMP. SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MOS. MIN.) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS & DISTRIBUTION OF FIBERS THROUGHOUT & BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING & NON-TOXIC TO VEGETATION & SEED GERMINATION & NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAX MESH OPENING OF 2"x2" & SUFFICIENTLY BONDED OR SEWN ON 2" CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES, WOOD STAKE OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MIN. GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY "U" SHAPED STAPLES MUST AVERAGE 1" TO 1-1/2" WIDE & BE A MIN. 6" LONG. "T" SHAPED STAPLES MUST HAVE A MIN. 8" MAIN LEG, A MIN. 1" SECONDARY LEG, & A MIN. 4" HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12" TO 24" IN LENGTH, 1" x 3" IN CROSS SECTION & WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREP. & PERMANENT SEEDING IN ACCORDANCE WITH SPECS. PLACE MATTING WITHIN 48 HRS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWN SLOPE. LAY MAT SMOOTHLY & FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURING RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6" (MIN.) WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6" (MIN.) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, & TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4' (MAX.) CENTERS THROUGHOUT & 2' (MAX.) CENTERS ALONG SEAMS, JOINTS & ROLL ENDS.
- ESTABLISH & MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

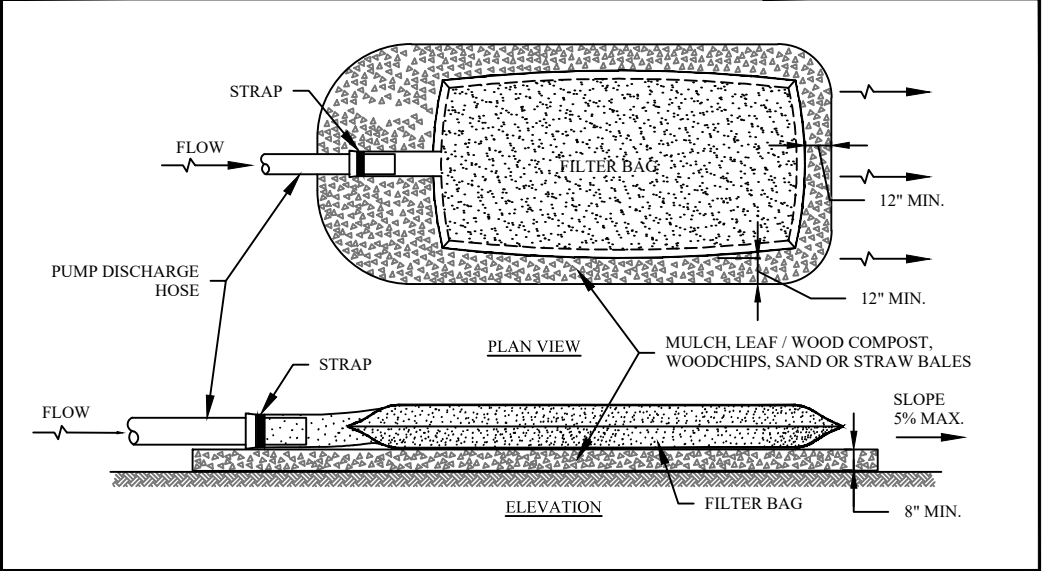
EROSION CONTROL BLANKET DETAIL
SCALE: N.T.S.



SILT FENCE CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1-3/4" x 1-3/4" ± 1/16" (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36" MINIMUM POSTS DRIVEN 16" MINIMUM INTO GROUND NO MORE THAN 6' APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8" VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE 2 SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF 5' HORIZONTAL UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

SILT FENCE DETAIL
SCALE: N.T.S.



FILTER BAG CONSTRUCTION SPECIFICATIONS

- TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
- PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOOD CHIPS, SAND OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAX. SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MIN. OF 12" FROM EDGES OF BAG.
- CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURING RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
- REMOVE & PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
- USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAX. 4" DIA. PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MIN. AVERAGE ROLL VAULES (MARV) FOR THE FOLLOWING:

GRAB TENISLE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT ²	ASTM D-4491
PERMITTIVITY (SEC ⁻¹)	1.2 SEC ⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15 - 0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632
- REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

FILTER BAG DETAIL
SCALE: N.T.S.

GPS: N32.91538°
W117.21840°

1711 Dunn Street
Houma, LA 70360
Ph. 985-868-0001
Fax 985-851-0108
Email: submar@submar.com
Website: www.submar.com

LS-126 16" MT. CARMEL SAN DIEGO
SAN DIEGO COUNTY
SAN DIEGO, CA

SHEET TITLE:
TYPICAL DETAILS

LEGEND:

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M:\13300\13343 KM 1187 CA\DRAWINGS\CD\13343_KM_1187_CAD\TYPICAL DETAILS-REV 4

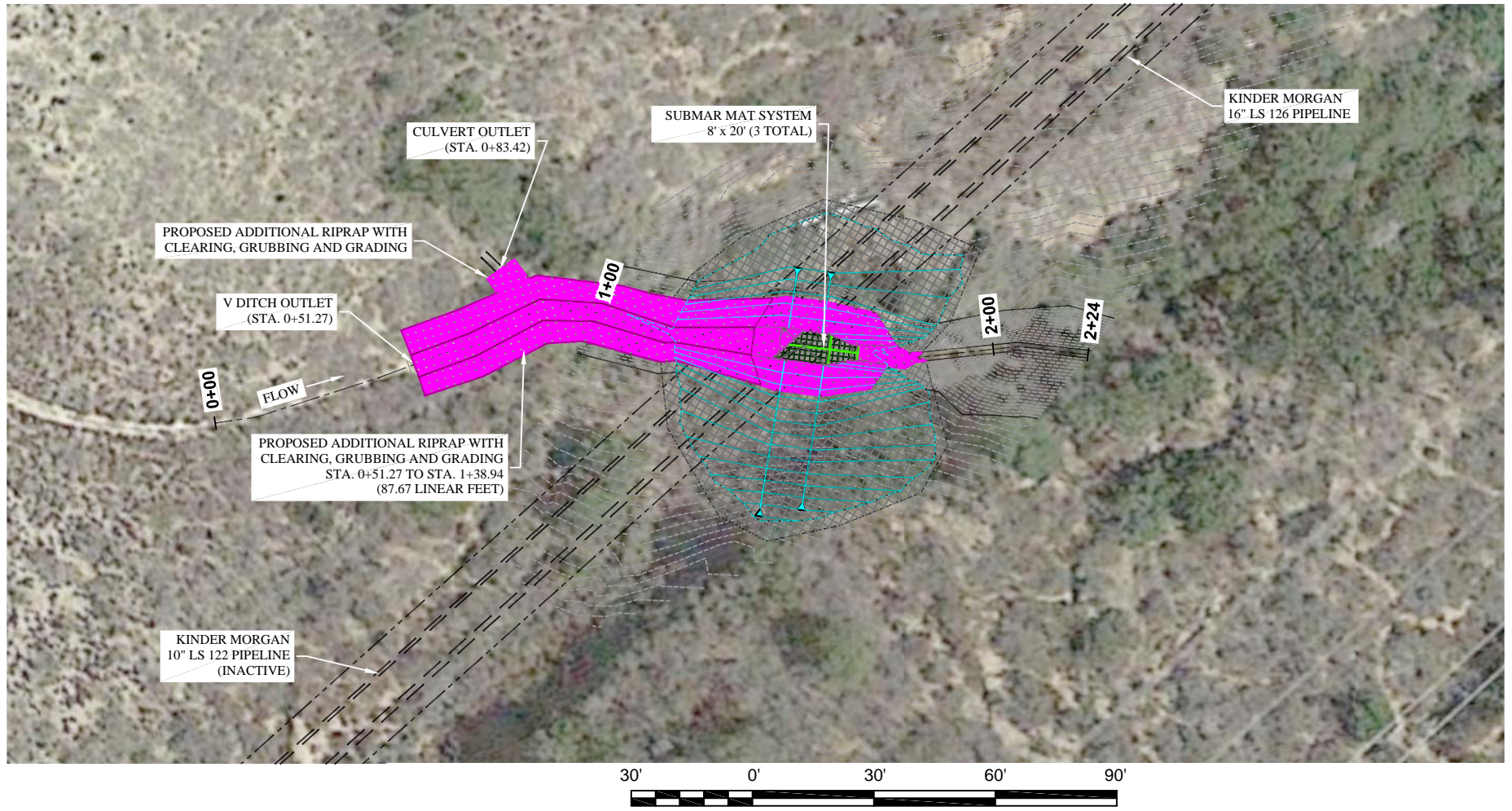
ATTACHMENT 4

MITIGATION FIGURES

1. AMEC Foster Wheeler, Kinder Morgan, Revegetation Areas, Mt. Carmel LS 126 Pipeline Washout Repair Project, Figure 2.
2. AMEC Foster Wheeler, Kinder Morgan, Project Design, Mt. Carmel LS 126 Pipeline Washout Repair Project, Figure 3.

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Q:\3554_NaturalResources\KinderMorgan_MtCarmelWashout\Graphics\Fig3_ProjectDesign.ai chris.nixon 04/16/2018

