

San Diego Regional Water Quality Control Board

**Amendment No. 1 to Clean Water Act Section 401
Water Quality Certification No. R9-2015-0033**

**PROJECT: Coastal Treatment Plant Export Sludge Force Main Replacement
Certification Number R9-2015-0033**

**APPLICANT: South Orange County Wastewater Authority
34156 Del Obispo Road
Dana Point, CA 92629**

Reg. Meas. ID: 399726
Place ID: 812895
Party ID: 41359
Person ID: 541770
WDID: 9000002810

On January 7, 2016, Clean Water Act Section 401 Water Quality Certification No. R9-2015-0033 (Certification) was issued to South Orange County Wastewater Authority (Applicant) for the Coastal Treatment Plant Export Sludge Force Main Replacement Project (Project).

By letter dated September 21, 2018, Tricia Wotipka of Dudek, on behalf of the Applicant, requested the Certification be amended to move the compensatory mitigation site roughly 0.25 mile upstream of the approved location within the Aliso and Wood Canyons Wilderness Park.

Water Quality Certification No. R9-2015-0033 requires 0.48 acre of wetlands establishment along Wood Canyon along the west side of Aliso Creek in the Aliso and Wood Canyons Wilderness Park. However, the California Coastal Commission imposed a 4:1 ratio on all wetland impacts and as such the Applicant's mitigation burden increased from 0.48 acre to 0.82 acre. This additional acreage could not be accommodated at the original location. A site roughly 0.25 mile upstream of the approved location along Wood Canyon will accommodate the full 0.82 acre of wetland establishment.

Based on the Applicant's request, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) is amending the Certification to move the compensatory mitigation site roughly 0.25 mile upstream of the previously approved location. Except as modified or superseded by the Certification modifications set forth below, all of the findings, provisions and other requirements of Certification No. R9-2015-0033 remain in full force and effect. The following changes are made to Certification No. R9-2015-0033 and are shown in underline/strikeout format to indicate added and removed language:

Page 3, PROJECT DESCRIPTION is modified as follows:

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 for the Coastal Treatment Plant Export Sludge Force Main Replacement Project* (Mitigation Plan), dated August 2015~~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.

Page 11, PROJECT IMPACTS AND COMPENSATORY MITIGATION condition V.D is modified as follows:

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 10.2, page 45~~51~~) to the satisfaction of the San Diego Water Board.

Page 13, PROJECT IMPACTS AND COMPENSATORY MITIGATION condition V.I is modified as follows:

Mitigation Site(s) Preservation Mechanism. **Within 90 days from the issuance of this Certification**, the Applicant must provide the San Diego Water Board with 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~~five years~~ of the start of Project construction**, 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.

Notification: 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 Amendment. 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.

I, David W. Gibson, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of Amendment No. 1 to Certification No. R9-2015-0033 issued on October 25, 2018.



DAVID W. GIBSON
Executive Officer
San Diego Water Board

25 October 2018
Date

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

2375 Northside Drive, Suite.100, San Diego, CA 92108
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Clean Water Act Section 401 Water Quality Certification
and Waste Discharge Requirements
for Discharge of Dredged and/or Fill Materials

**PROJECT: Coastal Treatment Plant Export Sludge Force Main Replacement Project
Certification Number R9-2015-0033
WDID: 9000002810**

Reg. Meas. ID: 399726 Place ID: 812895 Party ID: 41359 Person ID: 541770

**APPLICANT: South Orange County Wastewater Authority
34156 Del Obispo Road
Dana Point, CA 92629**

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 January 30, 2015 was submitted by South Orange County Wastewater Authority (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 Coastal Treatment Plant Export Sludge Force Main Replacement Project (Project). The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) deemed the application to be complete on December 7, 2015. 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 permit from the United States Army Corps of Engineers for the Project (USACE File No. SPL-2015-00128-GS).

The Project is located within the City of Laguna Niguel and unincorporated Orange County, California. The Project center reading is located at latitude 33.5502 and longitude -117.7172. The Applicant has paid all required application fees for this Certification in the amount of \$2,579.00. On an annual basis, the Applicant shall also pay all active discharge fees and post discharge monitoring fees, as appropriate¹. On December 7, 2015, the San Diego Water

¹ The Applicant shall pay an annual active discharge fee each fiscal year or portion of a fiscal year during which discharges occur until the regional board or the State Board issues a Notice of Completion of Discharges Letter to the discharger. Dischargers shall pay an annual post-discharge monitoring fee each fiscal year or portion of a fiscal year commencing with the first fiscal year following the fiscal year in which the regional board or State Board issued a Notice of Completion of Discharges
(footnote continued on next page)

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 replace approximately 16,600 feet of existing force main along the lower portion of the export sludge handling system. The system currently consists of two 4-inch ductile iron pipelines which run along the eastern side of Aliso Creek. The Project will replace the existing force mains with a single high density polyethylene (HDPE) 6-inch force main. Construction of the export sludge force main will be contained within a temporary 30-foot easement. Three rock groins will be installed to redirect flows along the channel bank away from the bank and allow for sediment deposition to occur upstream of the groins resulting in the creation of a depositional berm along the lower bank. The rock groins will provide protection of the force main infrastructure and allows for natural revegetation to occur along the berm.

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 0.16 acre (136 linear feet) of 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 0.16 acre (136 linear feet) of jurisdictional waters will be achieved through the establishment of 0.48 acres (595 linear feet) of wetland waters of the United States and/or State. 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 along the western side of Wood Creek within the Aliso and Wood Canyons Wilderness Park (AWCWP) located in the Aliso Creek hydrologic sub-area (HSA 901.13) at a minimum compensation ratio of 3:1 (area mitigated:area impacted).

(footnote continued from previous page)

Letter to the discharger, but continued water quality monitoring or compensatory mitigation monitoring is required. Dischargers shall pay the annual post-discharge monitoring fee each fiscal year until the regional board or the State Board issues a Notice of Project Complete Letter to the discharger. Additional information regarding fees can be found electronically at the following location: http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredgefillcalculator.xlsx

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 for the Coastal Treatment Plant Export Sludge Force Main Replacement Project* (Mitigation Plan), dated August 2015. 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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- 1. Definitions**
- 2. Project Location Maps**
- 3. Project Site Plans**
- 4. Mitigation Figures**
- 5. CEQA Mitigation Monitoring and Reporting Program**

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. R9-2015-0033 (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 Aliso 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 Aliso Creek and its unnamed 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. R9-2008-0002 NPDES No. CAG919002, *General Waste Discharge Requirements For Groundwater Extraction Waste Discharges From Construction, Remediation, and Permanent Groundwater Extraction Projects to Surface Waters within the San Diego Region Except for San Diego Bay* 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.

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 Aliso Creek and its unnamed tributaries within the San Juan 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:

	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						
Wetland	0.16	136	0.48 Establishment ¹	3:1	595 Establishment	4.36:1
Temporary Impacts²						
Streambed and Riparian	0.0002	6	NA	NA	NA	NA
Wetland	0.0012	49	NA	NA	NA	NA

1. Wetland establishment along the western side of Wood Creek within the Aliso and Wood Canyons Wilderness Park (AWCWP).
2. All areas of temporary impacts must be restored to pre-project contours and re-vegetated with native species.

- 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 achieved once it has met the ecological success performance standards contained in the Mitigation Plan (Section 10.2, page 45) to the satisfaction of the San Diego Water Board.
- E. 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 interspersions 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 90 days from the issuance of this Certification, the Applicant must provide the San Diego Water Board with 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 start of Project construction, 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:
 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. 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 annually following construction completion for a period of 5 years. The annual CRAM monitoring results shall be submitted with the Annual Project Progress Report. An evaluation, interpretation, and tabulation of all CRAM assessment data shall be submitted with the Final Project Completion Report.
- F. 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.
- G. 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.
- H. 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

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/>

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. A qualitative comparison to adjacent preserved streambed areas;
 - i. The results of the California Rapid Assessment Method (CRAM) monitoring required under section VI.E of this Certification;
 - j. As-built drawings of the compensatory mitigation project site(s), no bigger than 11"X17"; and
 - k. A survey report documenting boundaries of the compensatory mitigation site(s).
- I. **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
 - 6. An evaluation, interpretation, and tabulation of all California Rapid Assessment Method (CRAM) data collected throughout the term of Project construction in accordance with section VI.E and VI.F of this Certification.
- 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 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. R9-2015-0033: 812895:dbradford
2375 Northside Drive, Suite 100
San Diego, California 92108

Each electronic document must be submitted as a single file, in Portable Document Format (PDF), and converted to text searchable format using Optical Character Recognition (OCR). All electronic documents must include scanned copies of all signature pages; electronic signatures will not be accepted. Electronic documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Certification No. R9-2015-0033: 812895:dbradford.

- 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."

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 Orange, 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 responsibility for compliance with this Certification in the event that a transferee fails to comply.

VIII. CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE

- A. The South Orange County Wastewater Authority 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 Determination dated March 13, 2013 for the Final Environmental Impact Report (FEIR) titled *Final Environmental Impact Report for the Coastal Treatment Plant Export Sludge Force Main Replacement Project* (State Clearing House Number 2011051010). 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 FEIR 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 adopted a mitigation monitoring and reporting program pursuant to Public Resources Code section 21081.6 and CEQA Guidelines section 15097 to ensure that mitigation measures and revisions to the Project identified in the FEIR are implemented. The Mitigation Monitoring and Reporting Program (MMRP) is included and incorporated by reference in Attachment 5 to this Certification. The Applicant shall implement the Lead Agency's MMRP described in the FEIR, as it pertains to resources within the San Diego Water Board's purview. The San Diego Water Board has imposed additional MMRP requirements as specified in sections V and 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

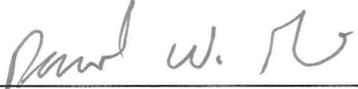
Darren Bradford, Environmental Scientist
Telephone: (619) 521-3356
Email: darren.bradford@waterboards.ca.gov

X. WATER QUALITY CERTIFICATION

I hereby certify that the proposed discharge from the **Coastal Treatment Plant Export Sludge Force Main Replacement Project** (Certification No. R9-2015-0033) 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. R9-2015-0033 issued on January 7, 2016.



DAVID W. GIBSON
Executive Officer
San Diego Water Board

7 January 2016
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.

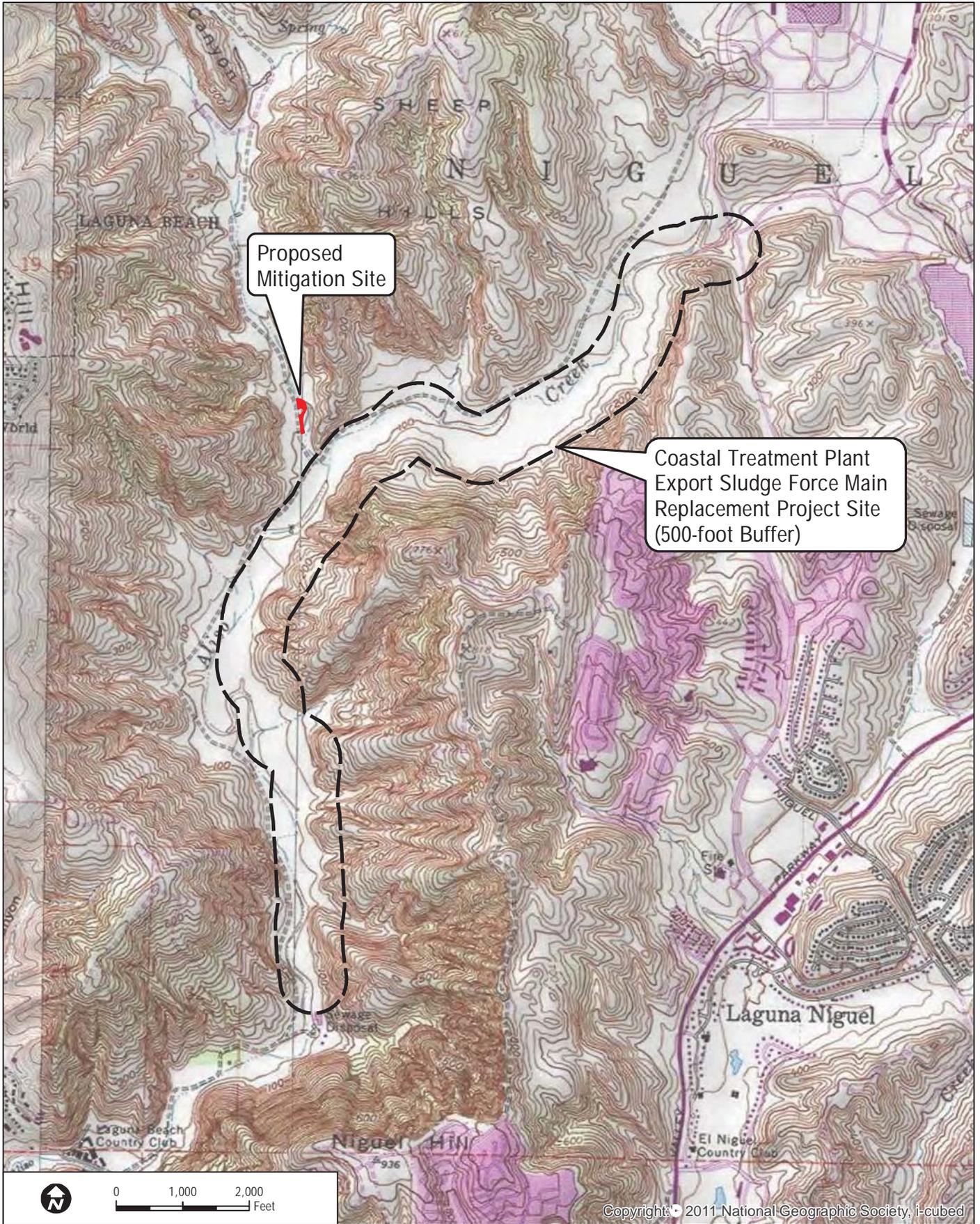
Water quality objectives and other appropriate requirements of state law – means the water quality objectives and beneficial uses as specified in the appropriate water quality control plan(s); the applicable provisions of sections 301, 302, 303, 306, and 307 of the Clean Water Act; and any other appropriate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

South Orange County Wastewater Authority
Coastal Treatment Plant Export Sludge Force Main Replacement Project
Certification No. R9-2015-0033

ATTACHMENT 2
PROJECT LOCATION MAPS

Figure 1 – Dudek, Project Region Map

Figure 2 – Dudek, Project Vicinity Map



DUDEK

SOURCE: USGS 7.5-Minute Series San Juan Capistrano Quadrangle.

FIGURE 2
Project Vicinity

South Orange County Wastewater Authority
Coastal Treatment Plant Export Sludge Force Main Replacement Project
Certification No. R9-2015-0033

**ATTACHMENT 3
PROJECT SITE PLANS**

Sheet(s) 1-33 – Dudek, Project Plans

GENERAL NOTES

- ALL WORK SHALL BE DONE IN CONFORMANCE WITH (IN ORDER OF PRIMACY) THESE PLANS, THE CONTRACT SPECIFICATIONS, THE STANDARD SPECIFICATIONS AND STANDARD DRAWINGS OF THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY, AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK-LATEST EDITION).
- THE CONTRACTOR SHALL KEEP A SIGNED SET OF APPROVED PROJECT PLANS AND SPECIFICATIONS AND A COPY OF ALL CONSTRUCTION PERMITS ON THE JOB SITE AT ALL TIMES DURING WORKING OPERATIONS. THE CONTRACTOR SHALL OBTAIN AND HAVE AVAILABLE ON THE JOB SITE COPIES OF APPLICABLE STANDARDS SHOWN ON THESE PLANS AT ALL TIMES AND SPECIFICATIONS AND BE FAMILIAR WITH THEIR REQUIREMENTS.
- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE GOVERNMENTAL AND LOCAL LAWS, REGULATIONS, AND ORDINANCES WITH REGARD TO TRAFFIC SAFETY, WORK HOURS, OPERATING HOURS, NOISE AND AIR POLLUTION, AND SANITARY CONDITIONS. SEE ALSO PROJECT SPECIFIC WORK RESTRICTIONS IN THE SPECIFICATIONS.
- CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR COMPLETION OF THE WORK, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR AFTER THE DATE OF ACCEPTANCE OF THE WORK BY SOCWA. CONTRACTOR SHALL REPAIR OR REPLACE ANY OR ALL SUCH WORK, TOGETHER WITH ANY OTHER WORK WHICH MAY BE DISPLACED IN SO DOING, THAT MAY PROVE DEFECTIVE IN WORKMANSHIP AND/OR MATERIALS WITHIN THE ONE YEAR PERIOD WITHOUT EXPENSE WHATSOEVER TO SOCWA.
- AS-BUILT DRAWINGS: THE CONTRACTOR SHALL MAINTAIN CURRENT BLACKLINE OR BLUELINE DRAWINGS DURING CONSTRUCTION NEATLY MARKED IN RED INK TO REFLECT THE AS-BUILT CONDITIONS. CONTRACTOR SHALL MAKE UPDATES TO THE AS-BUILT DRAWINGS ON A DAILY BASIS.
- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
- UPON COMPLETION OF EACH DAY'S WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE WORK AREA FREE OF HAZARDS, AND SHALL PROVIDE ALL NECESSARY TEMPORARY SIGNS, WARNING DEVICES, AND BARRICADES. TEMPORARY ACCESS IS TO BE PROVIDED TO ALL ADJACENT PROCESSES DURING NON-CONSTRUCTION HOURS.
- LOCATION, DIMENSIONS AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK OF THIS CONTRACT SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK, INCLUDING PROCUREMENT, ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER WITHIN 8 HRS.
- THE CONTRACTOR SHALL PROTECT ALL EXPOSED AREAS OF THE SITE DURING THE CONSTRUCTION PERIOD AGAINST DAMAGE. ANY AND ALL SITE DAMAGE FROM THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AS DIRECTED BY SOCWA AT NO ADDITIONAL COST TO SOCWA.
- SURFACE IMPROVEMENTS AND EXISTING FACILITIES DAMAGED AS A DIRECT OR INDIRECT RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE RECONSTRUCTED BY THE CONTRACTOR TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION. SAID IMPROVEMENTS SHALL INCLUDE BUT NOT BE LIMITED TO BERMS, DITCHES, FENCES, LANDSCAPING, AND PLANTS. ANY REMOVAL OR DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPLACED OR REPAIRED EXPEDITIOUSLY BY THE CONTRACTOR AT HIS EXPENSE AND SHALL BE APPROVED BY SOCWA.
- THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION IN THE FIELD OF ALL EXISTING UNDERGROUND FACILITIES IN AND AROUND THE AREAS OF CONSTRUCTION AND ALL POINTS OF CONNECTION PRIOR TO BEGINNING THE CONSTRUCTION OF THE FACILITIES.

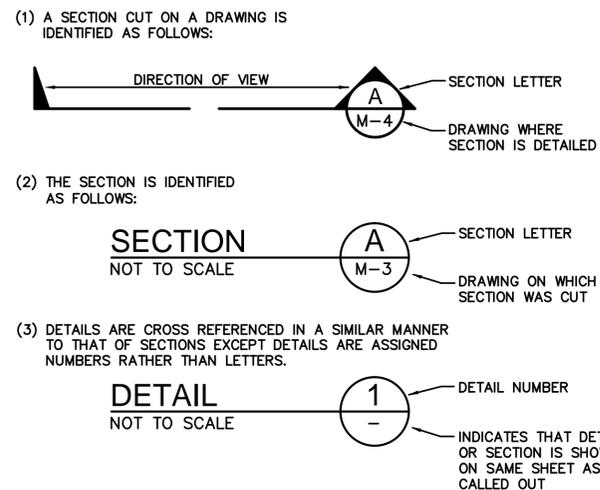
GENERAL NOTES (CONTINUED)

- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO SUPPORT AND PROTECT IN PLACE ALL EXISTING UTILITIES PARALLEL TO, CROSSING, AND NEARBY THE PROPOSED PIPELINE. EXISTING UTILITIES SHALL REMAIN IN OPERATION AT ALL TIMES UNLESS APPROVED IN WRITING BY APPROPRIATE UTILITY COMPANY. ELEVATIONS SHOWN ON THE PROFILE FOR EXISTING/PROPOSED UTILITIES AT CROSSING ARE THE OUTSIDE OF CONDUIT (TOP/BOTTOM) UNLESS OTHERWISE INDICATED.
- CONTRACTOR SHALL PROVIDE TRENCH PROTECTION AND CONDUCT ALL CONSTRUCTION IN ACCORDANCE WITH CAL-OSHA REQUIREMENTS AND SHALL DETERMINE DEPTH AND LOCATION OF UNDERGROUND FACILITIES PRIOR TO TRENCHING. OPEN TRENCH AT ANY ONE TIME SHALL BE LIMITED TO 500 FEET. AN EXCAVATION PERMIT WILL BE REQUIRED FOR TRENCHES IN EXCESS OF 5 FEET IN DEPTH FROM CAL-OSHA.
- THE CONTRACTOR SHALL DISPOSE OF ALL SURPLUS EXCAVATION MATERIALS IN CONFORMANCE WITH LOCAL CODES & REGULATIONS.
- THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR RESEARCHING, IDENTIFYING, PRESERVING, OR RESETTING IF NECESSARY, ALL SURVEY MARKERS, MONUMENTS, AND BENCHMARKS WITHIN THE VICINITY OF THE PROPOSED WORK.

ABBREVIATIONS

AB	AERATION BASIN	L	LENGTH
ABAN	ABANDONED UTILITY	LF	LINEAR FEET
ABC	AGGREGATE BASE COURSE	LT	LEFT
ABBREV	ABBREVIATION	MATL	MATERIAL
AC	ASPHALT CONCRETE	MAX	MAXIMUM
ALT	ALTERNATIVE	MFR	MANUFACTURER
ARV	AIR RELEASE VALVE	MGD	MILLION GALLONS PER DAY
ASPH	ASPHALT	MH	MANHOLE
AVR	AIR VACUUM VALVE	MIN	MINIMUM
AVRV	COMBINATION AIR VACUUM RELEASE VALVE	MNWD	MOULTON NIGUEL WATER DISTRICT
AWWA	AMERICAN WATER WORKS ASSOCIATION	MOD	MODIFY
BC	BEGINNING OF CURVE	N	NORTH
BF	BLIND FLANGE	N'LY	NORTHERLY
BFV	BUTTERFLY VALVE	NE	NORTHEASTERLY
BLDG	BUILDING	NW	NORTHWESTERLY
BM	BENCHMARK	No.	NUMBER
BOP	BOTTOM OF PIPE	NP	NON POTABLE
BTM	BOTTOM	NTS	NOT TO SCALE
BV	BALL VALVE	OC	ON CENTER
CAL-OSHA	CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS DIVISION OF OCCUPATIONAL SAFETY AND HEALTH	OD	OUTER DIAMETER
CB	CATCH BASIN	ORT	ODOR REDUCTION TOWER
CI	CAST IRON	PCC	POINT OF COMPOUND CURVATURE, PORTLAND CONCRETE CEMENT
CFM	CUBIC FEET PER MINUTE	PE	PLAIN END
C&G	CURB AND GUTTER	POT	POTABLE
CL	CLASS	PRV	PRESSURE REDUCING VALVE, PRESSURE RELIEF VALVE
CLR	CLEARANCE	PS	PUMP STATION
CML	CEMENT MORTAR LINED	PST	PRIMARY SEDIMENTATION TANK
CML&C	CEMENT MORTAR LINED & COATED	PT	POINT
CO	CLEANOUT	PVC	POLYVINYL CHLORIDE PIPE
CONC	CONCRETE	R	RADIUS LENGTH
CONT	CONTINUOUS	RCP	REINFORCED CONCRETE PIPE
CPLG	COUPLING	RD	ROAD
CSL	COMBINED SLUDGE CHECK VALVE	REQD	REQUIRED
CV	CHECK VALVE	REV	REVISION
D	DEGREES, DRAIN	ROW, R/W	RIGHT OF WAY
DI	DUCTILE IRON	RT	RIGHT
DIA OR Ø	DIAMETER	RW	RECLAIMED WATER, RAW WATER
DIP	DUCTILE IRON PIPE	S	SOUTH, SEWER
DTL	DETAIL	SCE	SOUTHERN CALIFORNIA EDISON
DWG	DRAWING	SCH	SCHEDULE
E	EAST	SD	STORM DRAIN
EC	END OF CURVE	SDR	STANDARD DIMENSION RATIO
EF	EFFLUENT	SE	SOUTHEASTERLY
EL	ELEVATION	SF	SQUARE FEET
ELEC	ELECTRIC	SHT	SHEET
ETM	EFFLUENT TRANSMISSION MAIN	SIM	SIMILAR
EQ	EQUAL	SOCWA	SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
EXIST, (E)	EXISTING	SPECS	SPECIFICATIONS
EXSL	EXPORT SLUDGE	SS, SST	STAINLESS STEEL
FA	FOUL AIR	ST	STREET
FG	FINISHED GRADE	STD	STANDARD
FH	FIRE HYDRANT	STL	STEEL
FLG	FLANGED	SW	SOUTHWESTERLY
FM	FORCE MAIN	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
FRP	FIBERGLASS REINFORCED PLASTIC	SWR	SEWER
FS	FINISHED SURFACE	T	TANGENT LENGTH
FT	FEET	T OR TEL	TELEPHONE
G	GAS (LINE)	TEMP	TEMPORARY
GE	GROOVED END	TOP	TOP OF PIPE
GPM	GALLONS PER MINUTE	TOW	TOP OF WALL
GPD	GALLONS PER DAY	TYP	TYPICAL
GV	GATE VALVE	UNO	UNLESS NOTED OTHERWISE
H	HEIGHT	UON	UNLESS OTHERWISE NOTED
HDPE	HIGH DENSITY POLYETHYLENE	VAR	VARIES
HORIZ	HORIZONTAL	VCP	VITRIFIED CLAY PIPE
HWL	HIGH WATER LEVEL	VERT	VERTICAL
IE	INVERT ELEVATION	W	WEST OR WIDE
IN	INCHES	W/	WITH
INV	INVERT	WSE	WATER SURFACE ELEVATION

CROSS REFERENCING SYSTEM



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LINE IS 2 INCHES AT FULL SIZE
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FILE NO.: 6731_SH02_G-2

REVISIONS			
NO.	BY	DATE	REMARKS



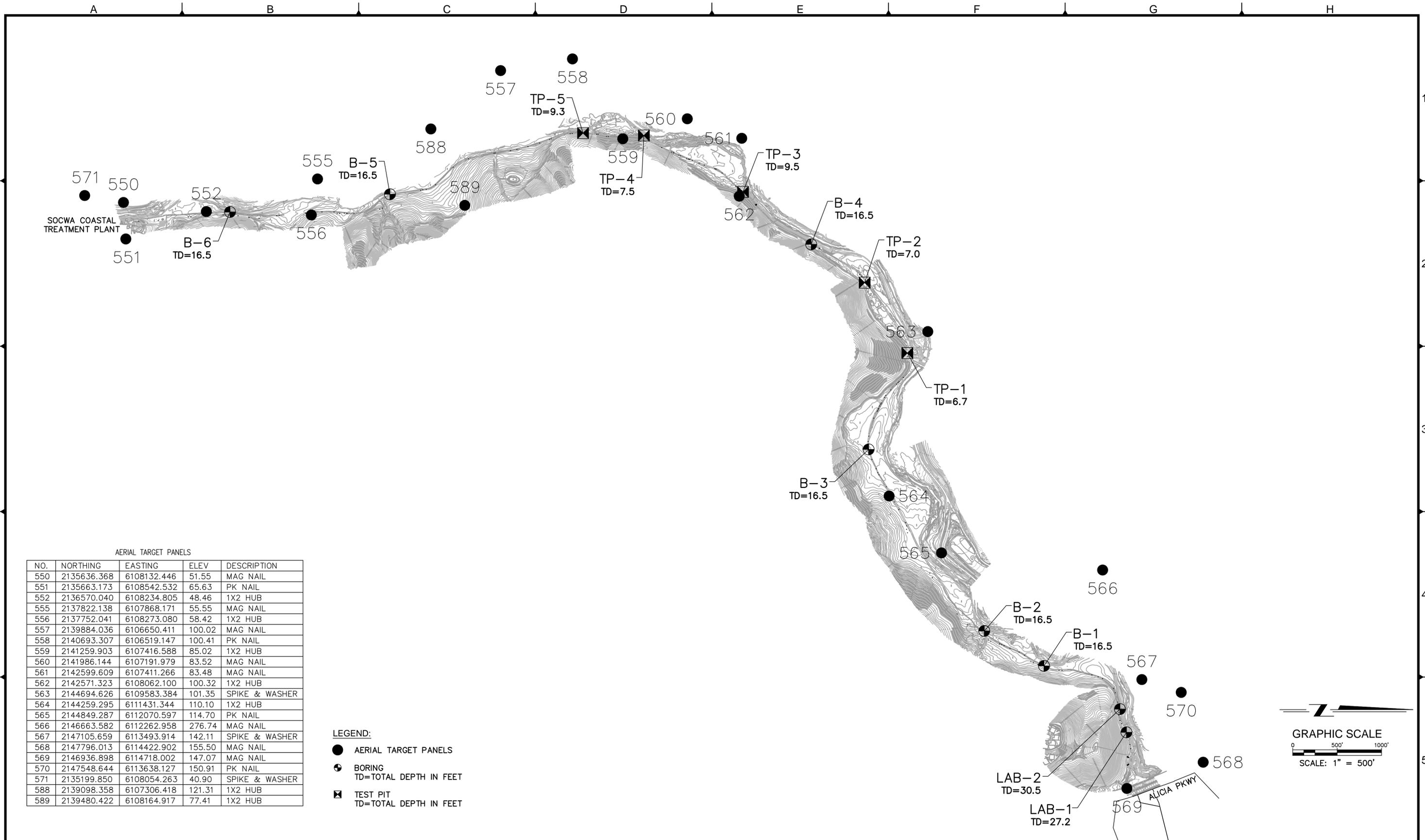
EXPORT SLUDGE FM FINAL DESIGN

GENERAL NOTES AND ABBREVIATIONS

PROJECT NO. 7301.0001
 DRAWING NO. G-2
 SHEET NO. 2 OF 33

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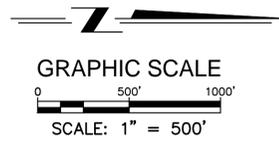


AERIAL TARGET PANELS

NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
550	2135636.368	6108132.446	51.55	MAG NAIL
551	2135663.173	6108542.532	65.63	PK NAIL
552	2136570.040	6108234.805	48.46	1X2 HUB
555	2137822.138	6107868.171	55.55	MAG NAIL
556	2137752.041	6108273.080	58.42	1X2 HUB
557	2139884.036	6106650.411	100.02	MAG NAIL
558	2140693.307	6106519.147	100.41	PK NAIL
559	2141259.903	6107416.588	85.02	1X2 HUB
560	2141986.144	6107191.979	83.52	MAG NAIL
561	2142599.609	6107411.266	83.48	MAG NAIL
562	2142571.323	6108062.100	100.32	1X2 HUB
563	2144694.626	6109583.384	101.35	SPIKE & WASHER
564	2144259.295	6111431.344	110.10	1X2 HUB
565	2144849.287	6112070.597	114.70	PK NAIL
566	2146663.582	6112262.958	276.74	MAG NAIL
567	2147105.659	6113493.914	142.11	SPIKE & WASHER
568	2147796.013	6114422.902	155.50	MAG NAIL
569	2146936.898	6114718.002	147.07	MAG NAIL
570	2147548.644	6113638.127	150.91	PK NAIL
571	2135199.850	6108054.263	40.90	SPIKE & WASHER
588	2139098.358	6107306.418	121.31	1X2 HUB
589	2139480.422	6108164.917	77.41	1X2 HUB

LEGEND:

- AERIAL TARGET PANELS
- ⊙ BORING
TD=TOTAL DEPTH IN FEET
- ⊠ TEST PIT
TD=TOTAL DEPTH IN FEET



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 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM
 FILE NO.: 6731_SH03_G-3

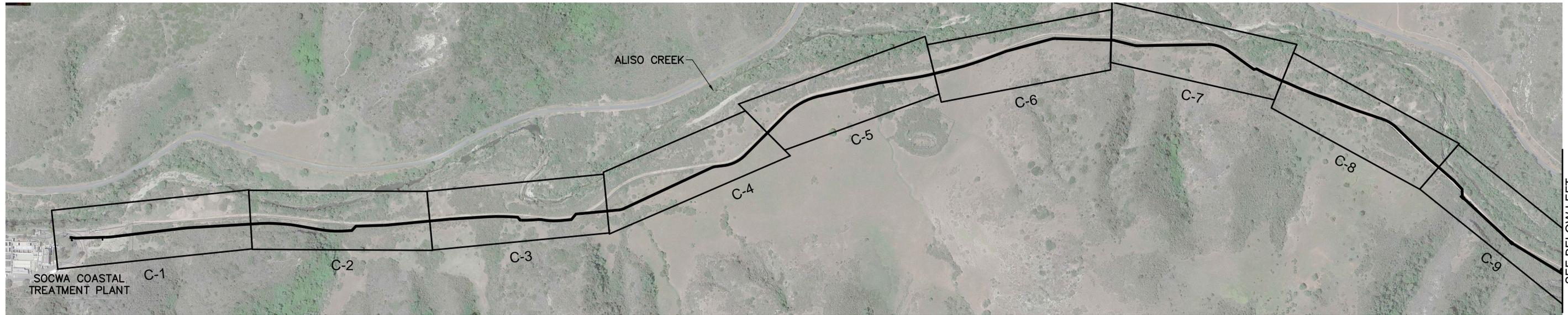
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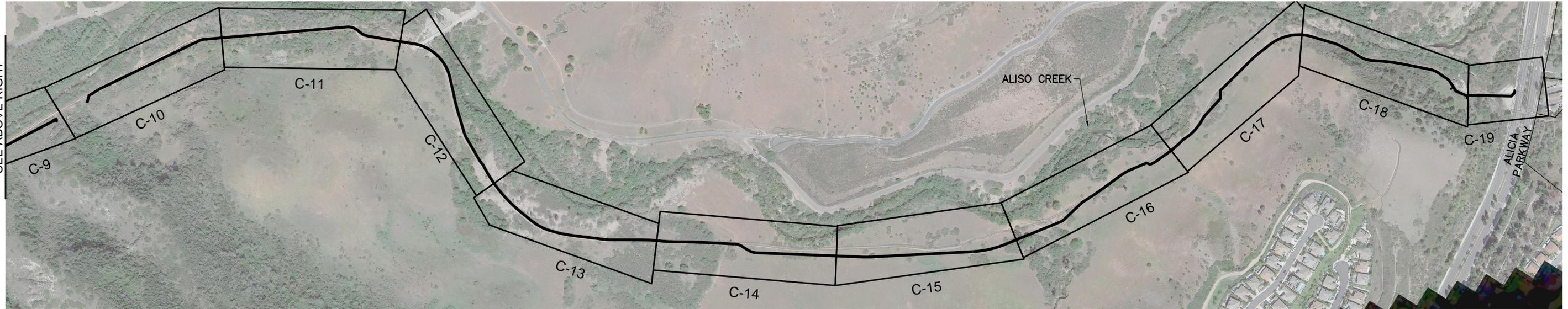
EXPORT SLUDGE FM FINAL DESIGN
**SURVEY CONTROL DATA &
 GEOTECHNICAL BORING LOCATIONS**

PROJECT NO.
7301.0001
 DRAWING NO.
G-3
 SHEET NO.
3 OF 33

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KEY MAP
SCALE: 1" = 250'



KEY MAP
SCALE: 1" = 150'

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 APPROVED: _____ DATE: _____
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KEY MAP

PROJECT NO.
7301.0001
DRAWING NO.
G-4
SHEET NO.
4 OF 33

SEE ABOVE RIGHT

SEE BELOW LEFT

1

1

2

2

3

3

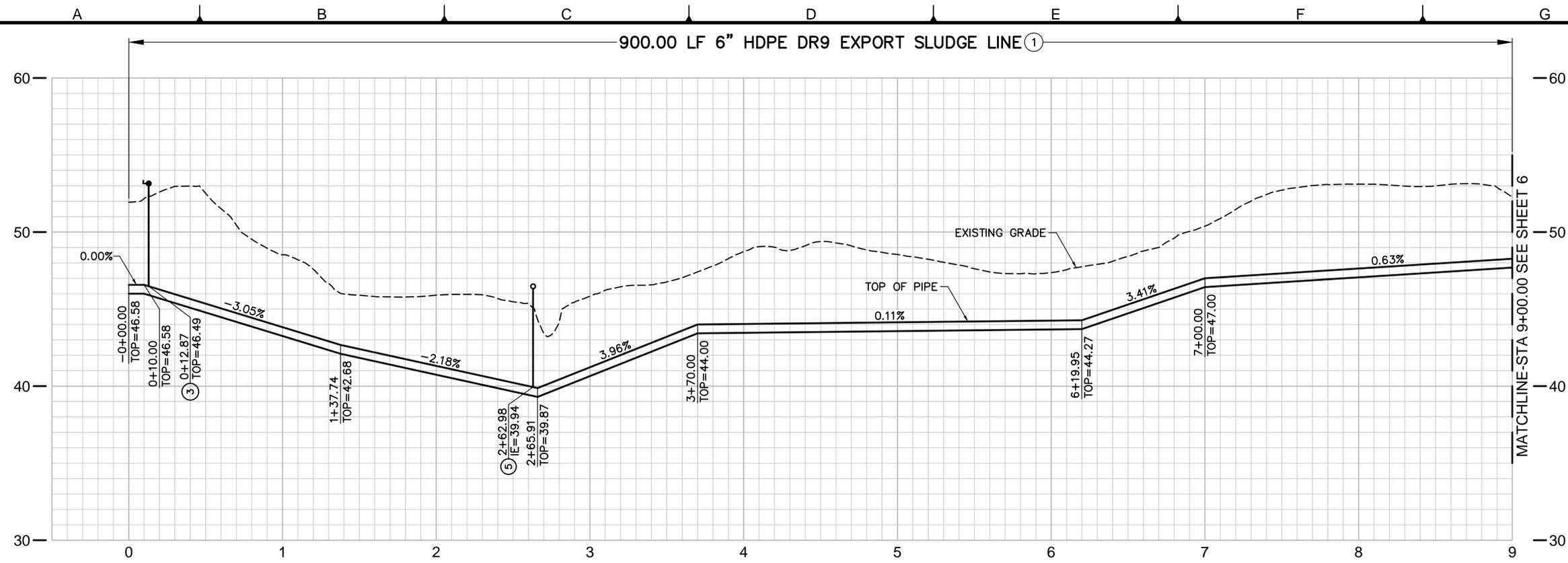
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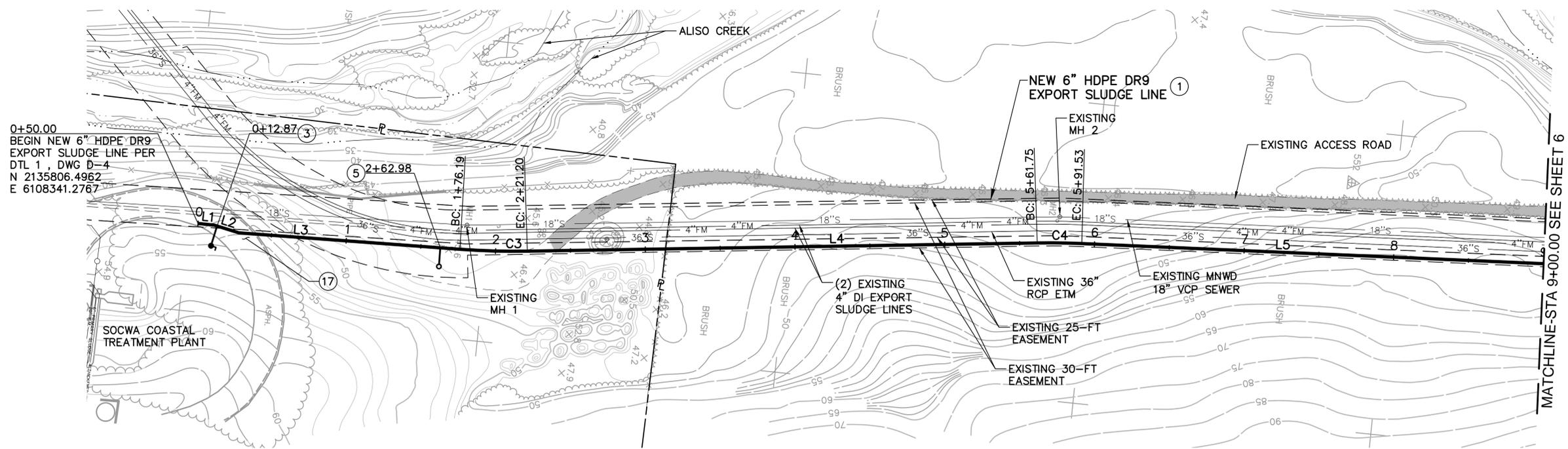
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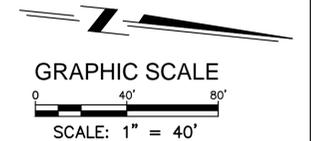
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ③ CONSTRUCT 2" AIR RELEASE VALVE PER DTL 2, DWG D-2.
 - ⑤ CONSTRUCT 2" BLOWOFF PER DTL 1, DWG D-2.
 - ⑰ TRENCH BACKFILL IN ACCORDANCE WITH DTL 3, DWG D-1.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N0°00'00"E	-	10.95'
L2	N11°15'00"E	-	17.30'
L3	N1°41'20"W	-	147.94'
C3	Δ=5°09'30"	500.00'	45.02'
L4	N6°50'50"W	-	340.55'
C4	Δ=3°24'50"	500.00'	29.78'
L5	N3°26'00"W	-	308.47'



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 APPROVED: _____ DATE: _____

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 FILE NO.: 6731 SH05 C-1 to SH23 C-19
 DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY

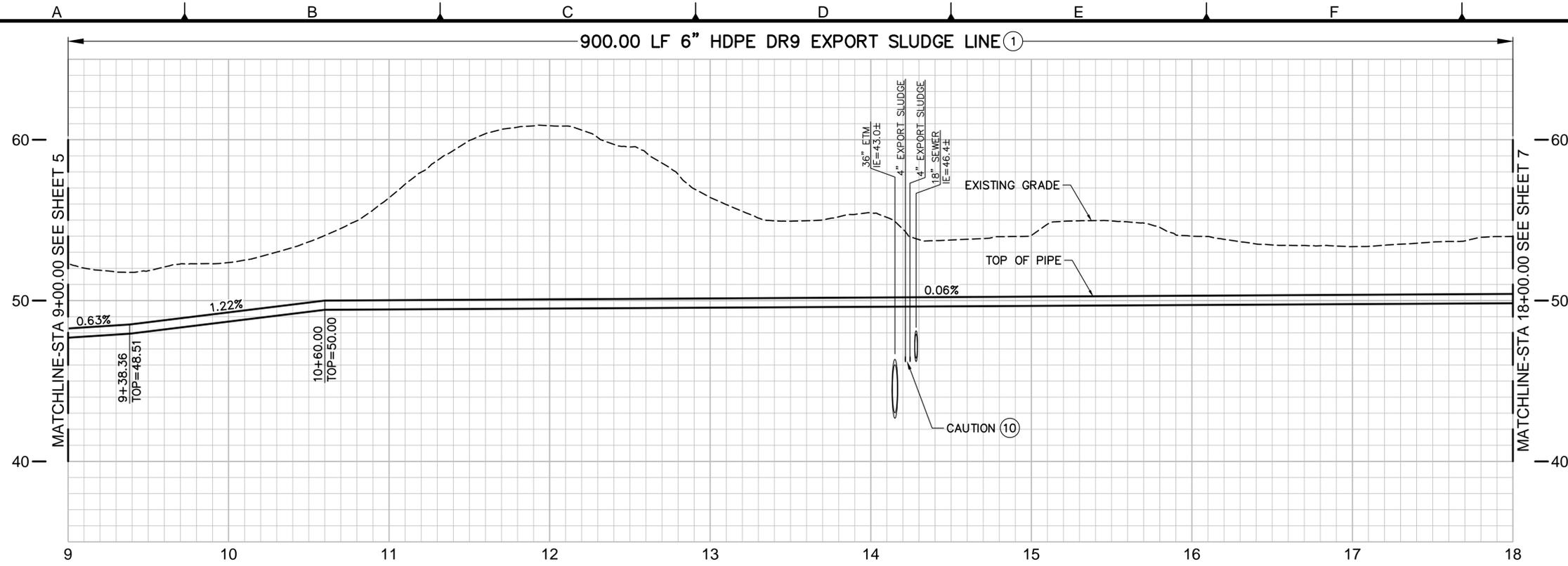
REVISIONS			
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FM PLAN AND PROFILE
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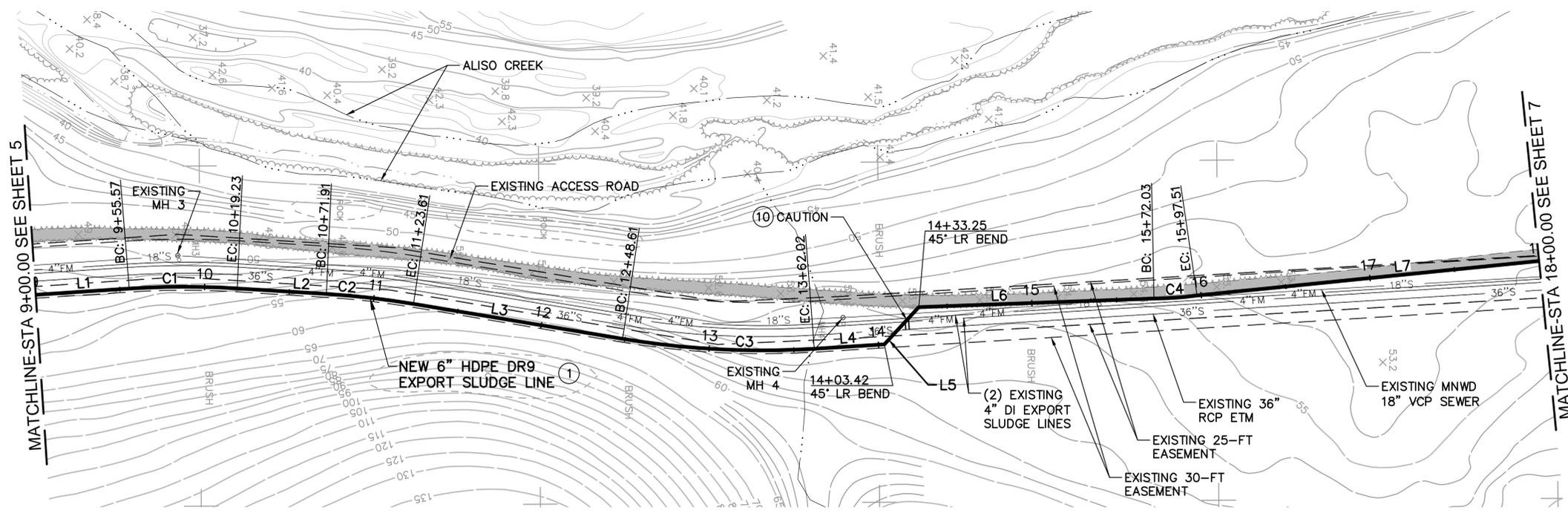
PROJECT NO. 7301.0001
 DRAWING NO. C-1
 SHEET NO. 5 OF 33

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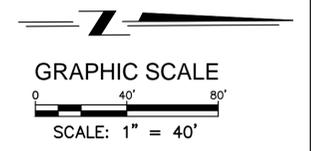
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑩ CONTRACTOR SHALL NOTE THE PRESENCE OF EXISTING UTILITIES THAT SHALL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT IN PLACE EXISTING UTILITIES THROUGHOUT CONSTRUCTION.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N3°26'00"W	-	55.57'
C1	Δ=7°17'50"	500.00'	63.67'
L2	N3°51'40"E	-	52.68'
C2	Δ=5°55'30"	500.00'	51.71'
L3	N9°47'10"E	-	125.00'
C3	Δ=12°59'40"	500.00'	113.41'
L4	N3°12'30"W	-	41.40'
L5	N46°47'00"W	-	29.83'
L6	N1°47'00"W	-	138.77'
C4	Δ=7°18'00"	200.00'	25.48'
L7	N5°26'00"W	-	202.49'



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 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 6731 SH05 C-1
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

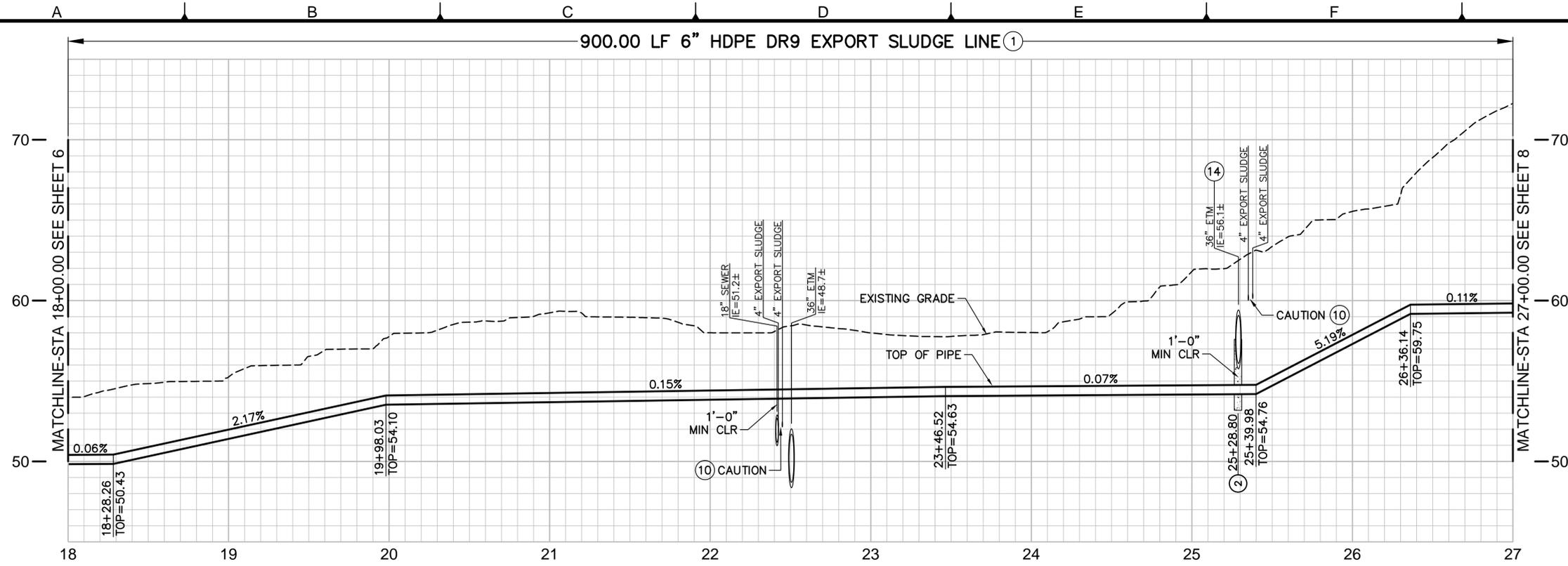
LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY

REVISIONS			
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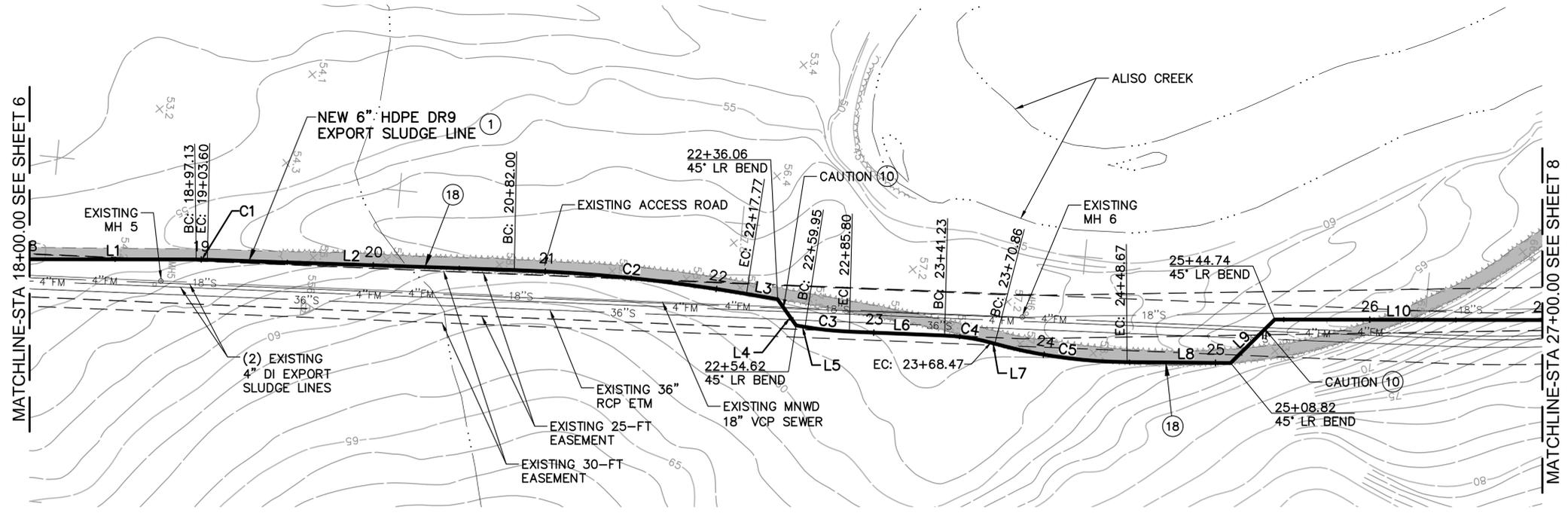
PROJECT NO. 7301.0001
 EXPORT SLUDGE FM FINAL DESIGN
 DRAWING NO. C-2
 SHEET NO. 6 OF 33
FM PLAN AND PROFILE
STA 9+00 TO 18+00

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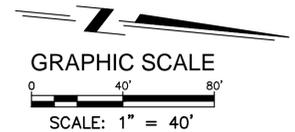
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ② CONCRETE ENCASEMENT PER DTL 2, DWG D-1.
 - ⑦ CONTRACTOR SHALL PROTECT IN PLACE EXISTING DRAINAGE CONCRETE AND RIP-RAP.
 - ⑩ CONTRACTOR SHALL NOTE THE PRESENCE OF EXISTING UTILITIES THAT SHALL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT IN PLACE EXISTING UTILITIES THROUGHOUT CONSTRUCTION.
 - ⑭ CONTRACTOR SHALL INSTALL NEW 6" PIPELINE ABOVE 36" ETM SUCH THAT 6" PIPELINE CROSSES 10' AWAY FROM 36" ETM JOINT ON EITHER SIDE.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N5°26'00"W	-	97.13'
C1	Δ=1°51'10"	200.00'	6.47'
L2	N3°34'50"W	-	178.40'
C2	Δ=7°46'40"	1000.00'	135.77'
L3	N4°12'00"E	-	18.29'
L4	N49°12'00"E	-	18.55'
L5	N4°12'00"E	-	5.33'
C3	Δ=7°24'30"	200.00'	25.86'
L6	N3°12'30"W	-	55.42'
C4	Δ=13°00'30"	120.00'	27.24'
L7	N9°48'00"E	-	2.39'
C5	Δ=14°51'40"	300.00'	77.81'
L8	N5°03'40"W	-	60.15'
L9	N50°03'40"W	-	35.92'
L10	N5°24'30"W	-	155.26'



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 FILE NO.: to SH23 C-19

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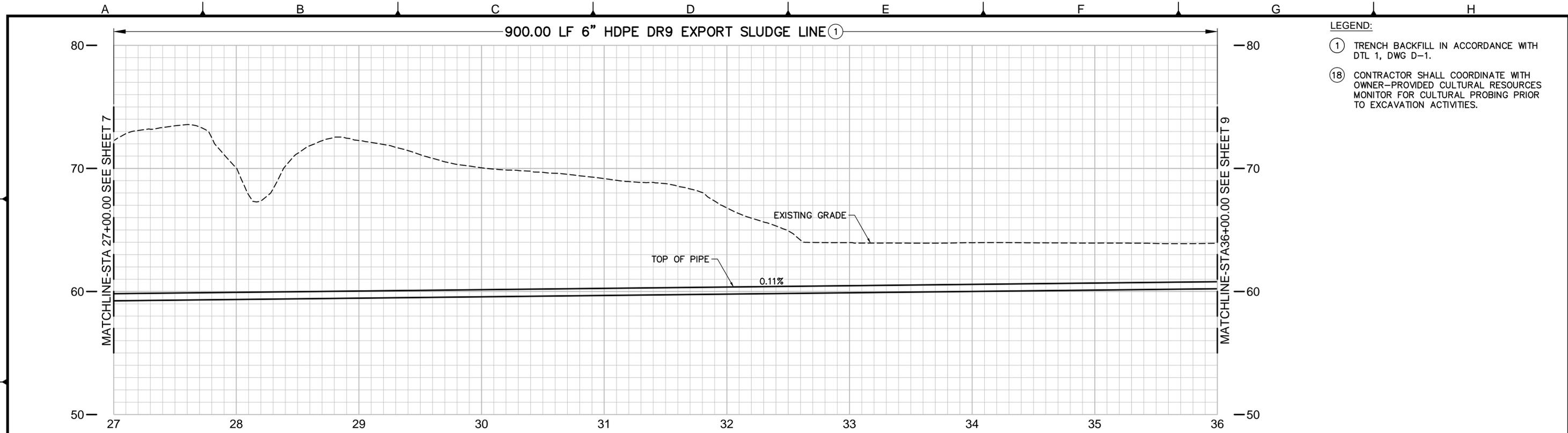
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PROJECT NO. 7301.0001
 EXPORT SLUDGE FM FINAL DESIGN
 DRAWING NO. C-3
 SHEET NO. 7 OF 33
FM PLAN AND PROFILE
STA 18+00 TO 27+00

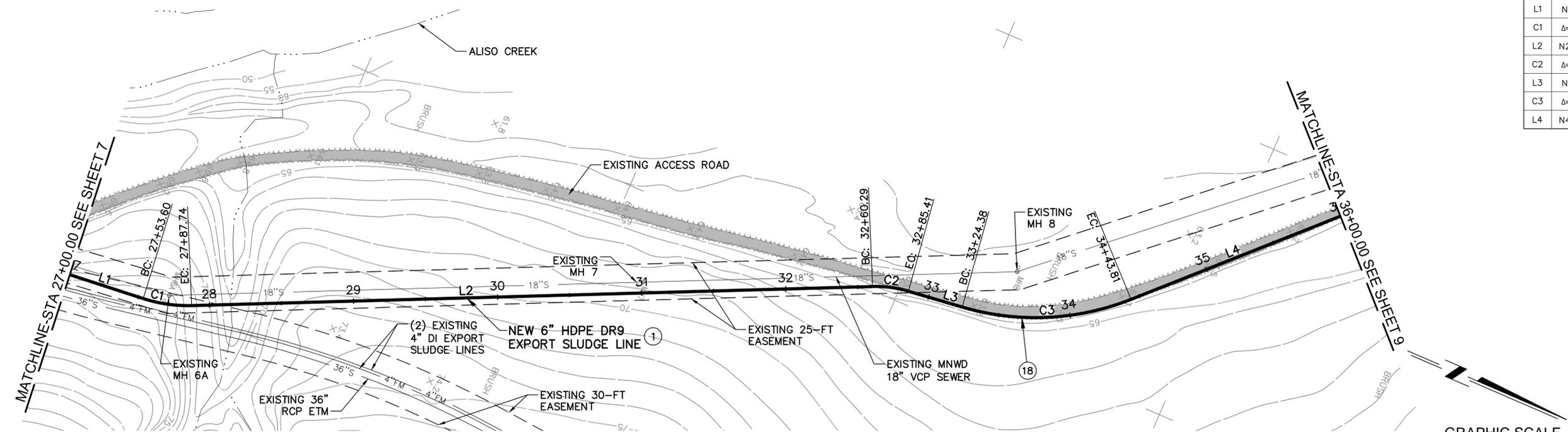
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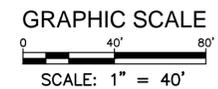
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N5°24'30"W	-	53.60'
C1	Δ=19°33'20"	100.00'	34.13'
L2	N24°57'50"W	-	472.56'
C2	Δ=17°59'20"	80.00'	25.12'
L3	N6°58'30"W	-	38.97'
C3	Δ=38°01'00"	180.00'	119.43'
L4	N44°59'30"W	-	156.19'



PLAN
SCALE: 1"=40'



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 APPROVED: _____ DATE: _____

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 6731 SH05 C-1
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE
 IF NOT 2" - SCALE ACCORDINGLY

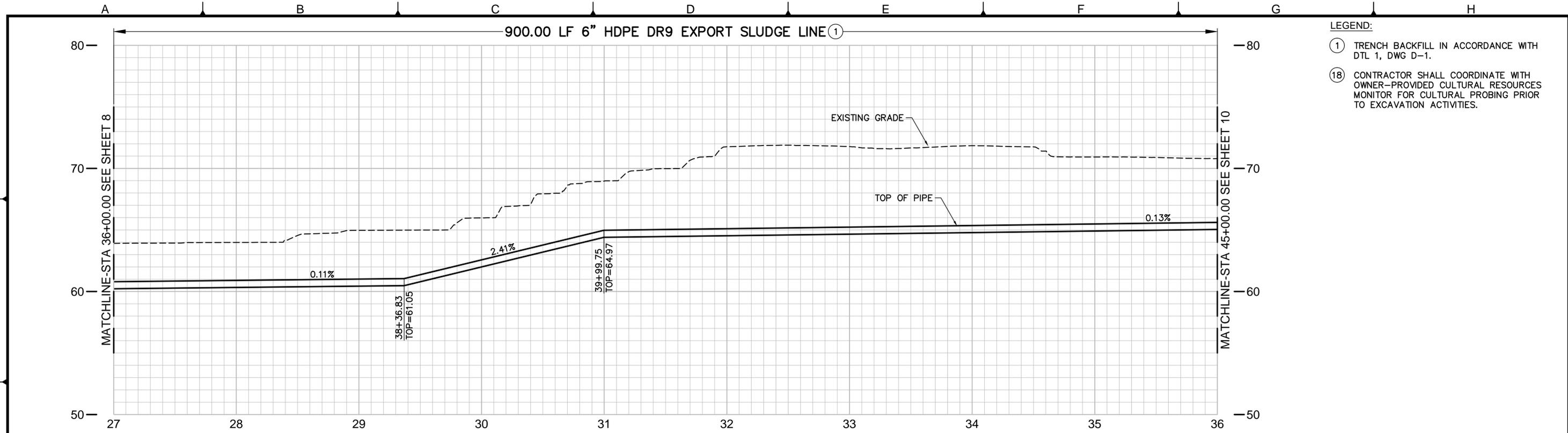
REVISIONS			
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FM PLAN AND PROFILE
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 DRAWING NO. C-4
 SHEET NO. 8 OF 33

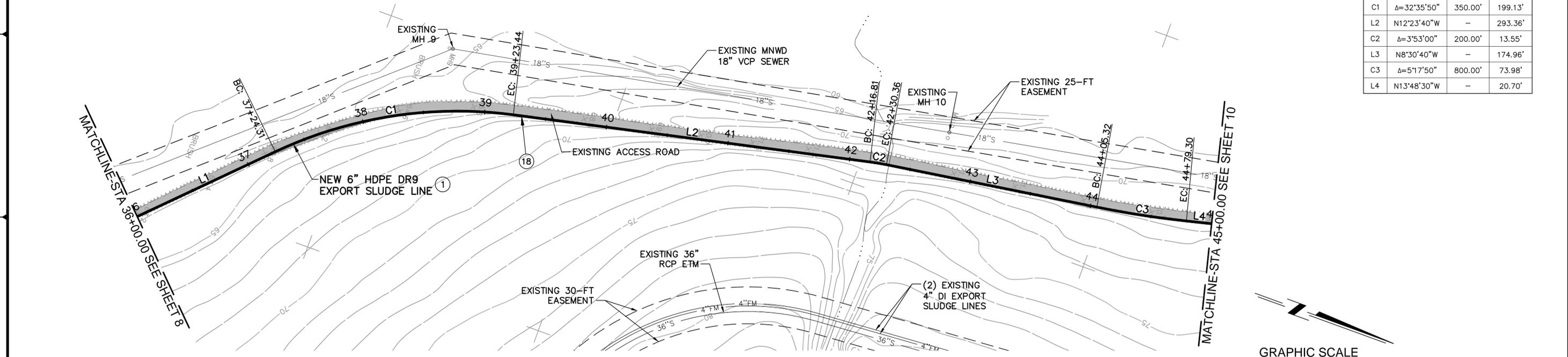
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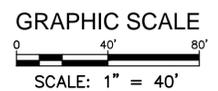
- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.

PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N44°59'30"W	-	124.31'
C1	Δ=32°35'50"	350.00'	199.13'
L2	N12°23'40"W	-	293.36'
C2	Δ=3°53'00"	200.00'	13.55'
L3	N8°30'40"W	-	174.96'
C3	Δ=5°17'50"	800.00'	73.98'
L4	N13°48'30"W	-	20.70'



PLAN
SCALE: 1"=40'



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 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 6731 SH05 C-1
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY

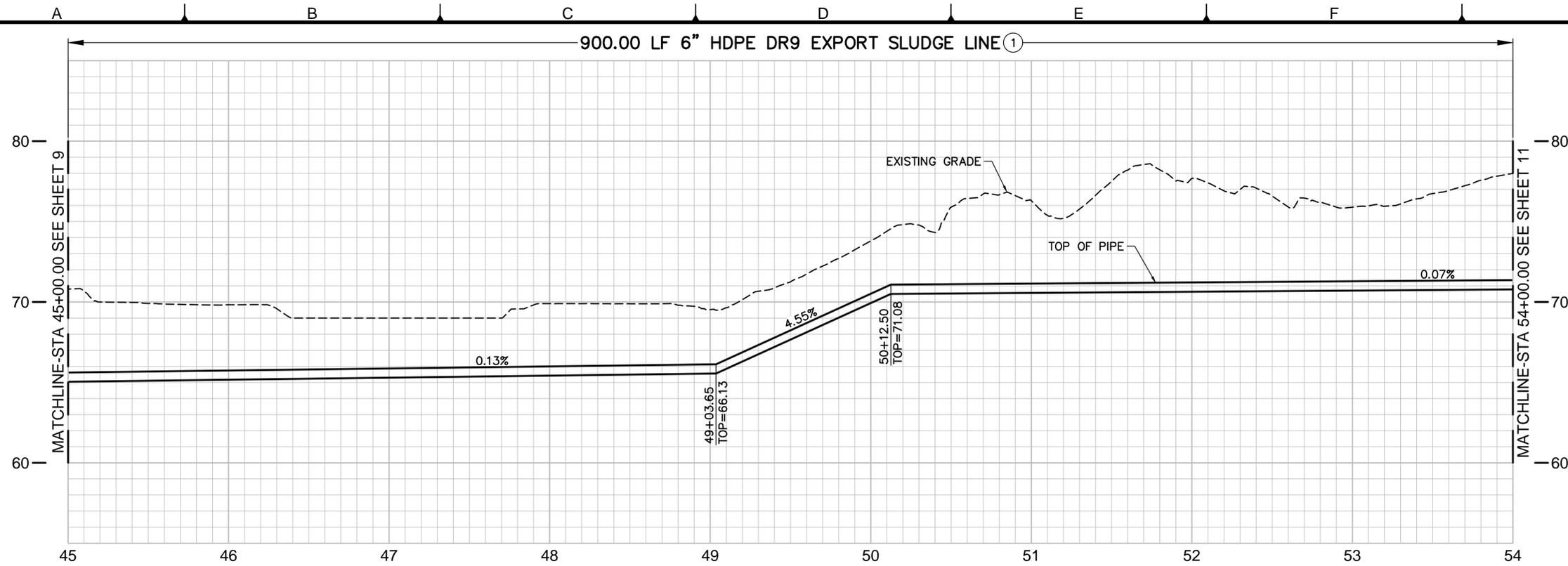
REVISIONS			
NO.	BY	DATE	REMARKS

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

EXPORT SLUDGE FM FINAL DESIGN
FM PLAN AND PROFILE
 STA 36+00 TO 45+00

PROJECT NO. 7301.0001
 DRAWING NO. C-5
 SHEET NO. 9 OF 33

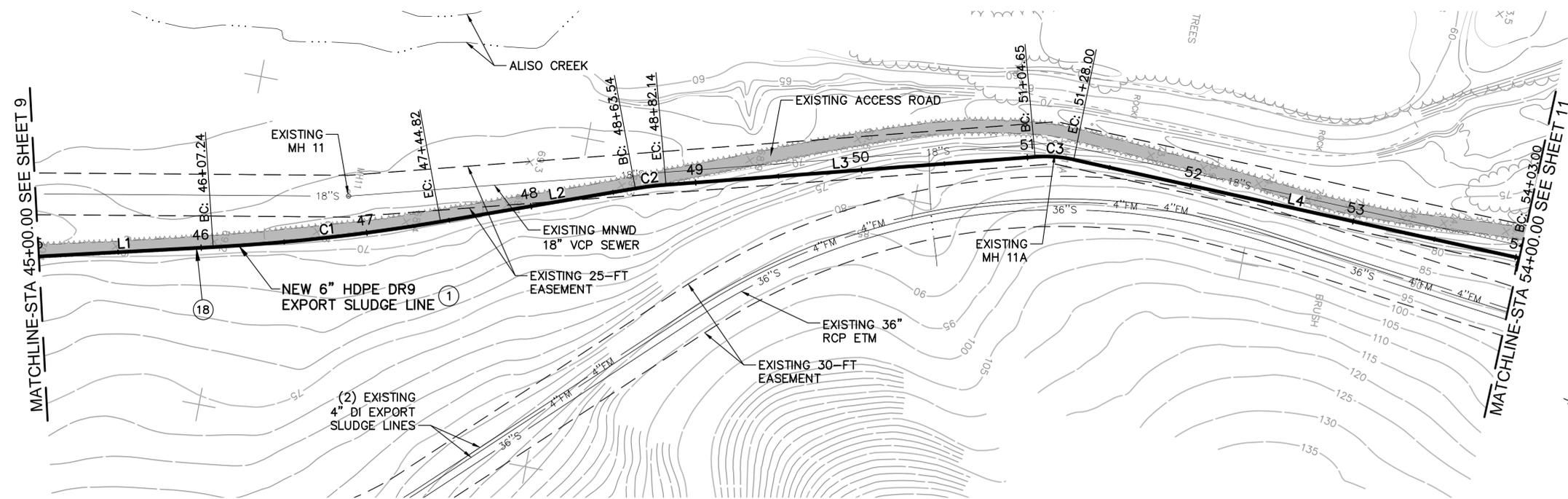
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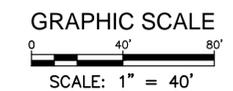
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N13°48'30"W	-	107.24'
C1	Δ=6°34'10"	1200.00'	137.58'
L2	N20°22'40"W	-	118.73'
C2	Δ=5°19'40"	200.00'	18.59'
L3	N15°03'10"W	-	222.51'
C3	Δ=16°43'10"	80.00'	23.35'
L4	N1°40'10"E	-	272.00'



PLAN
SCALE: 1"=40'



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 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 6731 SH05 C-1
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY

REVISIONS			
NO.	BY	DATE	REMARKS

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South Orange County Wastewater Authority
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EXPORT SLUDGE FM FINAL DESIGN
FM PLAN AND PROFILE
 STA 45+00 TO 54+00

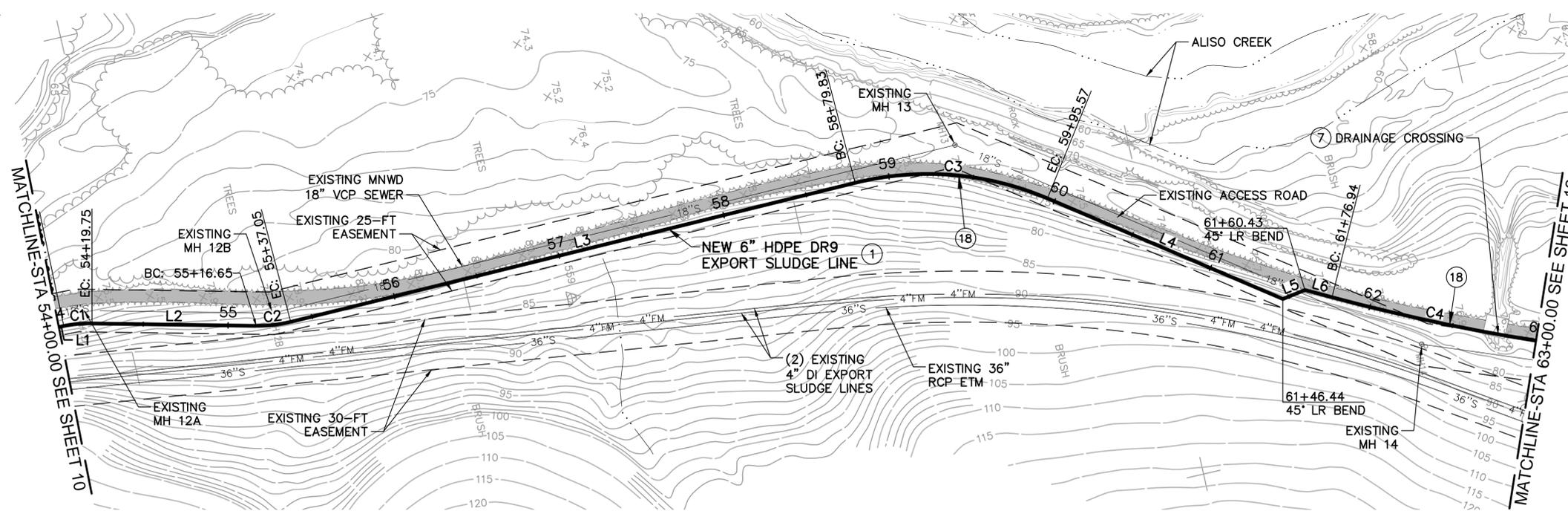
PROJECT NO. 7301.0001
 DRAWING NO. C-6
 SHEET NO. 10 OF 33

P: \101.Engineering\SOCWA\6731.0001 Export Sludge FM Final Design\06.Design Data\CAD\dwg\6731 SH05 C-1 to SH23 C-19.dwg Oct 27, 2014 - 4:47pm



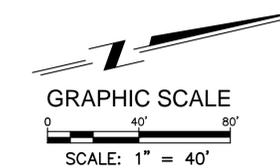
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑦ CONTRACTOR SHALL PROTECT IN PLACE EXISTING DRAINAGE CONCRETE AND RIP-RAP.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N1°40'10"E	-	3.00'
C1	Δ=11°59'30"	80.00'	16.74'
L2	N13°39'40"E	-	96.90'
C2	Δ=14°36'30"	80.00'	20.40'
L3	N0°56'50"W	-	342.78'
C3	Δ=36°50'30"	180.00'	115.74'
L4	N35°53'40"E	-	150.87'
L5	N9°06'20"W	-	13.97'
L6	N27°46'00"E	-	16.53'
C4	Δ=5°52'30"	1200.00'	123.06'



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 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 Exp. 3/31/14
 CIVIL
 FILE NO.: 6731 SH05 C-1 to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY

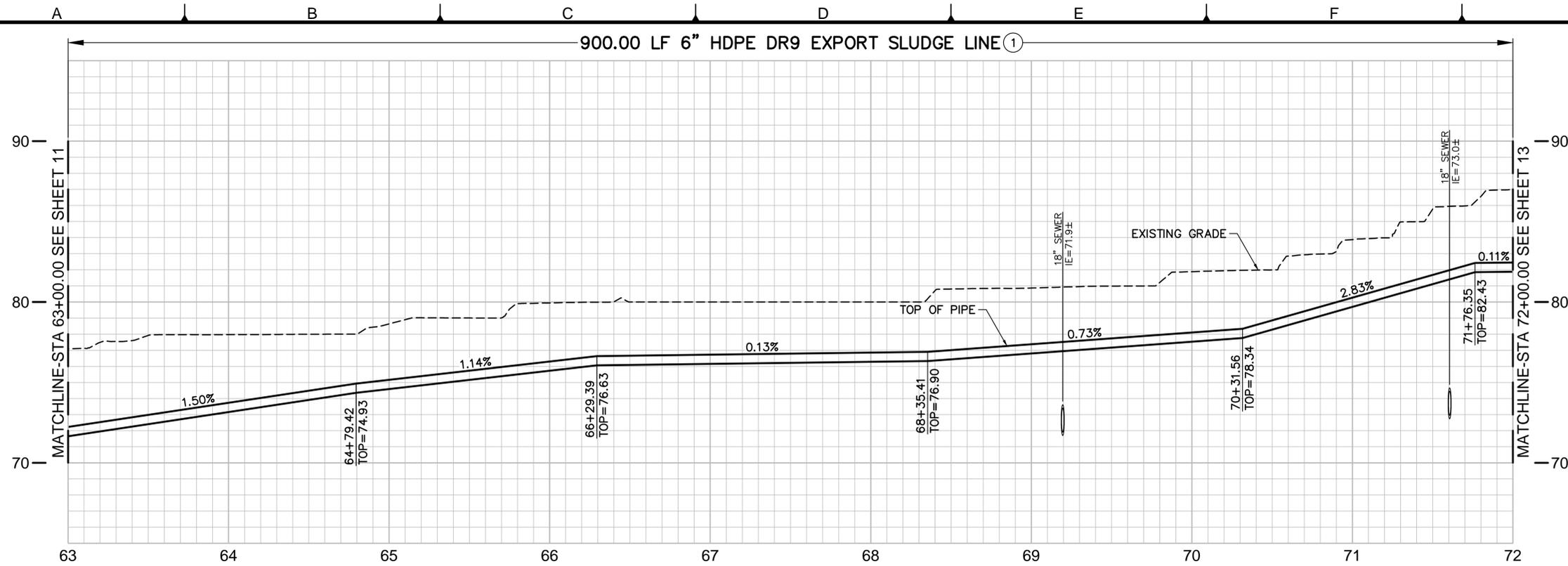
REVISIONS			
NO.	BY	DATE	REMARKS

SOCWA
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EXPORT SLUDGE FM FINAL DESIGN
FM PLAN AND PROFILE
 STA 54+00 TO 63+00

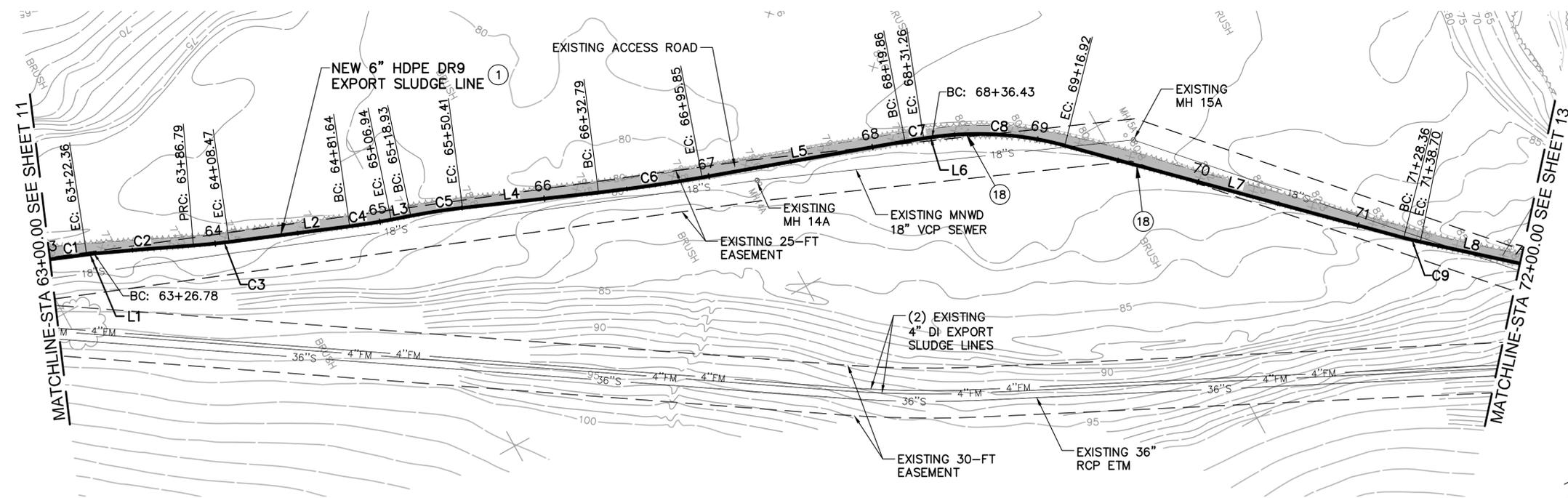
PROJECT NO.
7301.0001
 DRAWING NO.
C-7
 SHEET NO.
11 OF 33

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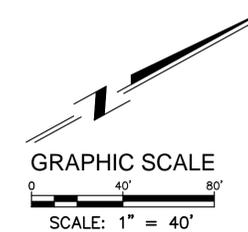
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
C1	Δ=1'04'00"	1200.00'	22.36'
L1	N20°49'30"E	-	4.42'
C2	Δ=1'17'00"	2681.76'	60.01'
C3	Δ=3'06'20"	400.00'	21.68'
L2	N21°22'30"E	-	73.17'
C4	Δ=3'37'30"	400.00'	25.30'
L3	N17°45'00"E	-	11.99'
C5	Δ=4'30'30"	400.00'	31.48'
L4	N22°15'40"E	-	82.38'
C6	Δ=3'36'50"	1000.00'	63.06'
L5	N18°38'50"E	-	76.21'
C7	Δ=2'10'40"	300.00'	11.40'
L6	N20°49'30"E	-	5.17'
C8	Δ=2'3'03'30"	200.00'	80.49'
L7	N43°53'00"E	-	211.44'
C9	Δ=2'57'40"	200.00'	10.34'
L8	N40°55'20"E	-	61.30'



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 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 6731 SH05 C-1
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE
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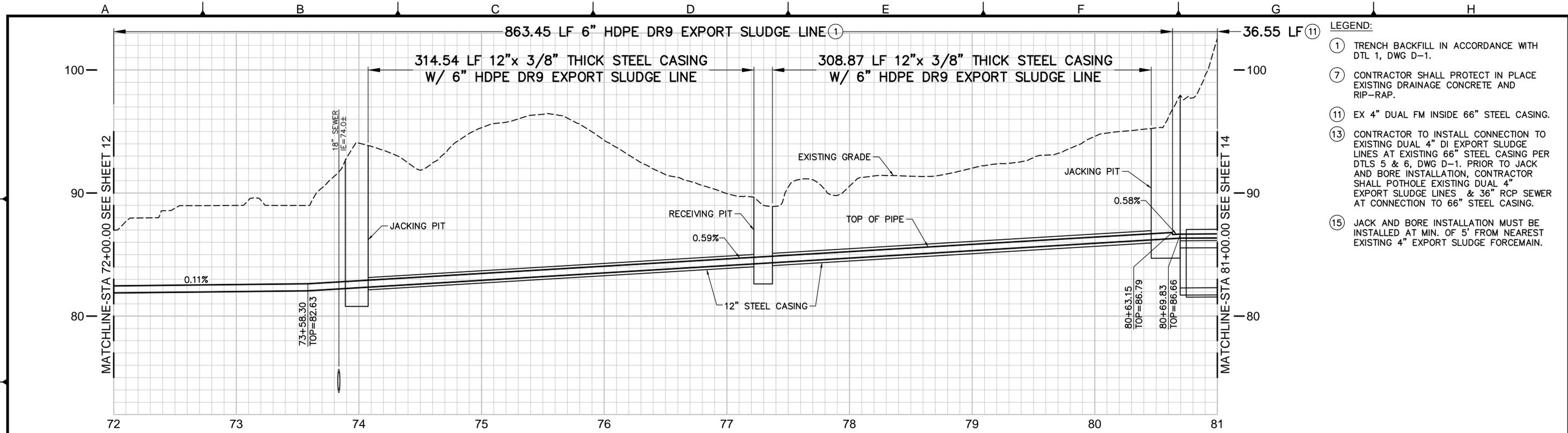
REVISIONS			
NO.	BY	DATE	REMARKS

SOCWA
South Orange County Wastewater Authority
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EXPORT SLUDGE FM FINAL DESIGN
FM PLAN AND PROFILE
 STA 63+00 TO 72+00

PROJECT NO.
7301.0001
 DRAWING NO.
C-8
 SHEET NO.
12 OF 33

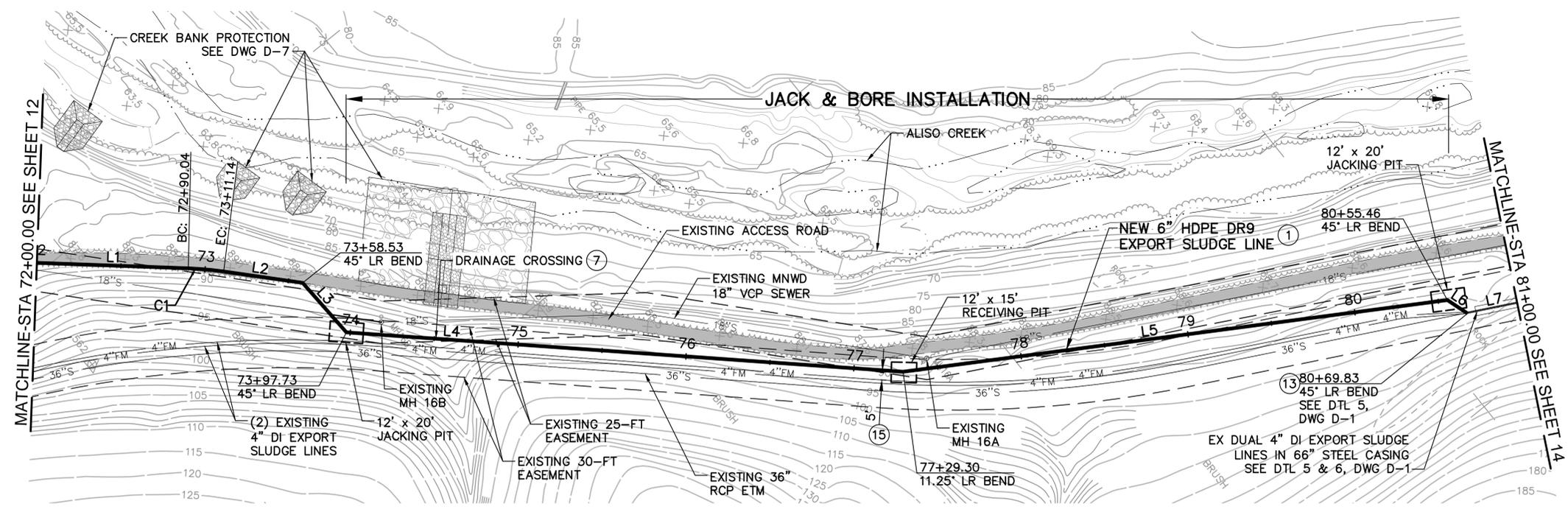
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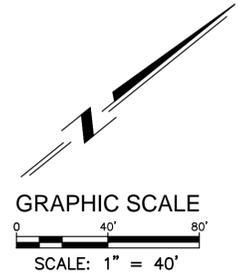
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑦ CONTRACTOR SHALL PROTECT IN PLACE EXISTING DRAINAGE CONCRETE AND RIP-RAP.
 - ⑪ EX 4" DUAL FM INSIDE 66" STEEL CASING.
 - ⑬ CONTRACTOR TO INSTALL CONNECTION TO EXISTING DUAL 4" DI EXPORT SLUDGE LINES AT EXISTING 66" STEEL CASING PER DTL 5 & 6, DWG D-1. PRIOR TO JACK AND BORE INSTALLATION, CONTRACTOR SHALL POTHOLE EXISTING DUAL 4" EXPORT SLUDGE LINES & 36" RCP SEWER AT CONNECTION TO 66" STEEL CASING.
 - ⑮ JACK AND BORE INSTALLATION MUST BE INSTALLED AT MIN. OF 5' FROM NEAREST EXISTING 4" EXPORT SLUDGE FORCEMAIN.

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N40°55'20"E	-	90.04'
C1	Δ=6°02'50"	200.00'	21.10'
L2	N46°58'10"E	-	47.39'
L3	N87°11'10"E	-	39.21'
L4	N42°51'30"E	-	331.56'
L5	N31°20'00"E	-	326.16'
L6	N72°21'50"E	-	14.37'
L7	N27°21'50"E	-	30.17'



PLAN
SCALE: 1"=40'



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 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 Exp. 3/31/14
 CIVIL
 FILE NO.: 6731 SH05 C-1 to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

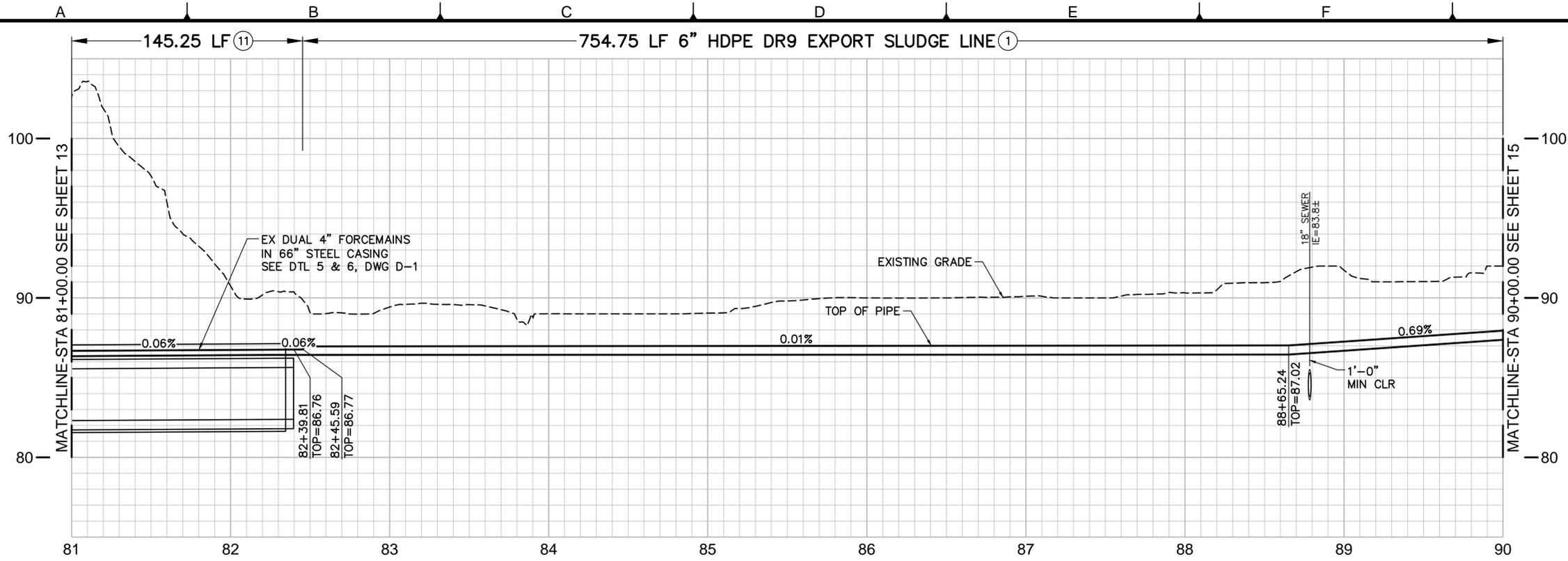
LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY

REVISIONS			
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South Orange County Wastewater Authority
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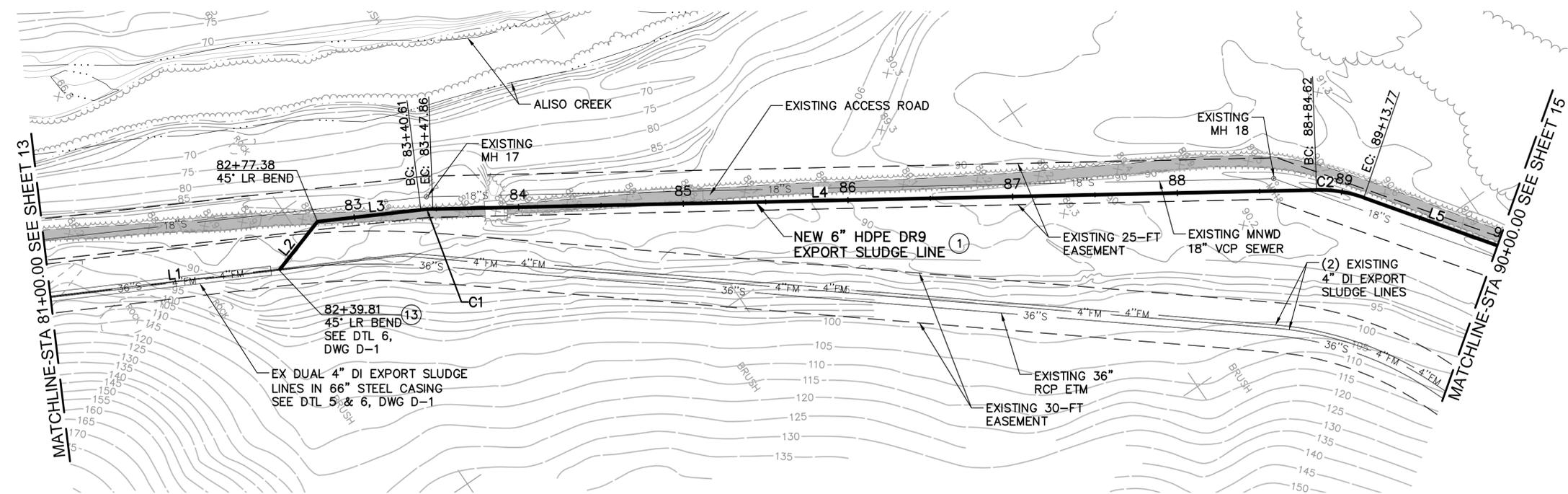
PROJECT NO. 7301.0001
 EXPORT SLUDGE FM FINAL DESIGN
 DRAWING NO. C-9
 SHEET NO. 13 OF 33
FM PLAN AND PROFILE
STA 72+00 TO 81+00

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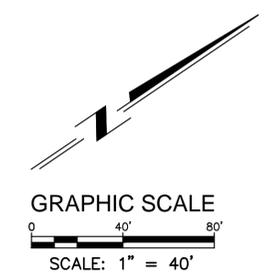
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑪ EX 4" DUAL FM INSIDE 66" STEEL CASING.
 - ⑬ CONTRACTOR TO INSTALL CONNECTION TO EXISTING DUAL 4" DI EXPORT SLUDGE LINES AT EXISTING 66" STEEL CASING PER DTL 5 & 6, DWG D-1. PRIOR TO JACK AND BORE INSTALLATION, CONTRACTOR SHALL POTHOLE EXISTING DUAL 4" EXPORT SLUDGE LINES & 36" RCP SEWER AT CONNECTION TO 66" STEEL CASING.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N27°21'50"E	-	139.81'
L2	N17°38'10"W	-	37.57'
L3	N27°42'20"E	-	63.22'
C1	Δ=5°11'40"	80.00'	7.25'
L4	N32°54'00"E	-	536.76'
C2	Δ=20°52'30"	80.00'	29.15'
L5	N53°46'50"E	-	86.23'



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 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 Exp. 3/31/14
 CIVIL
 FILE NO.: 6731 SH05 C-1 to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY

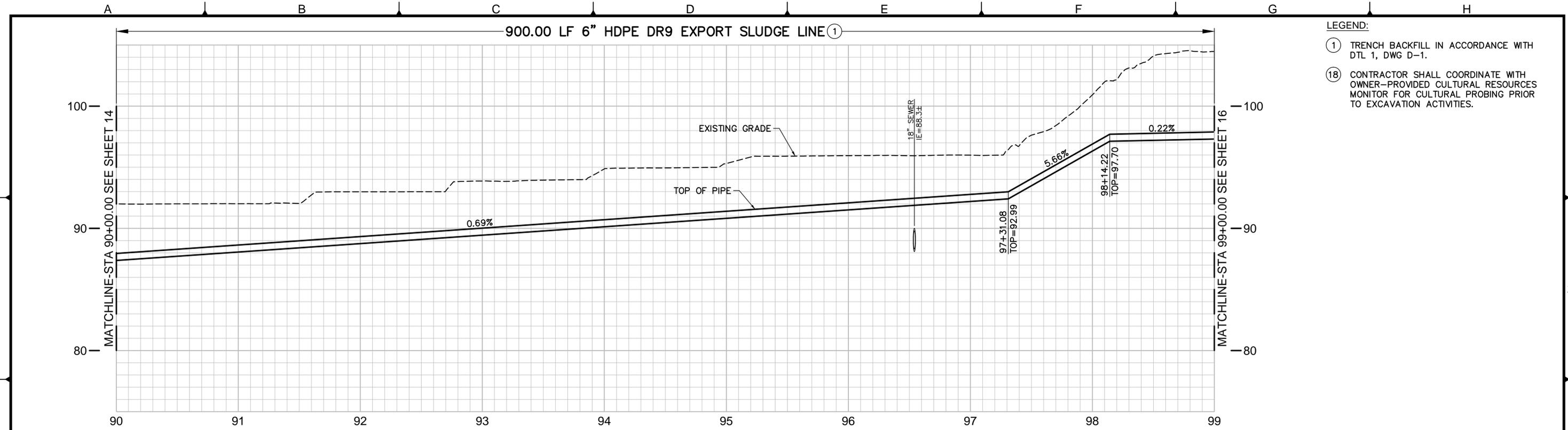
REVISIONS			
NO.	BY	DATE	REMARKS

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EXPORT SLUDGE FM FINAL DESIGN
FM PLAN AND PROFILE
 STA 81+00 TO 90+00

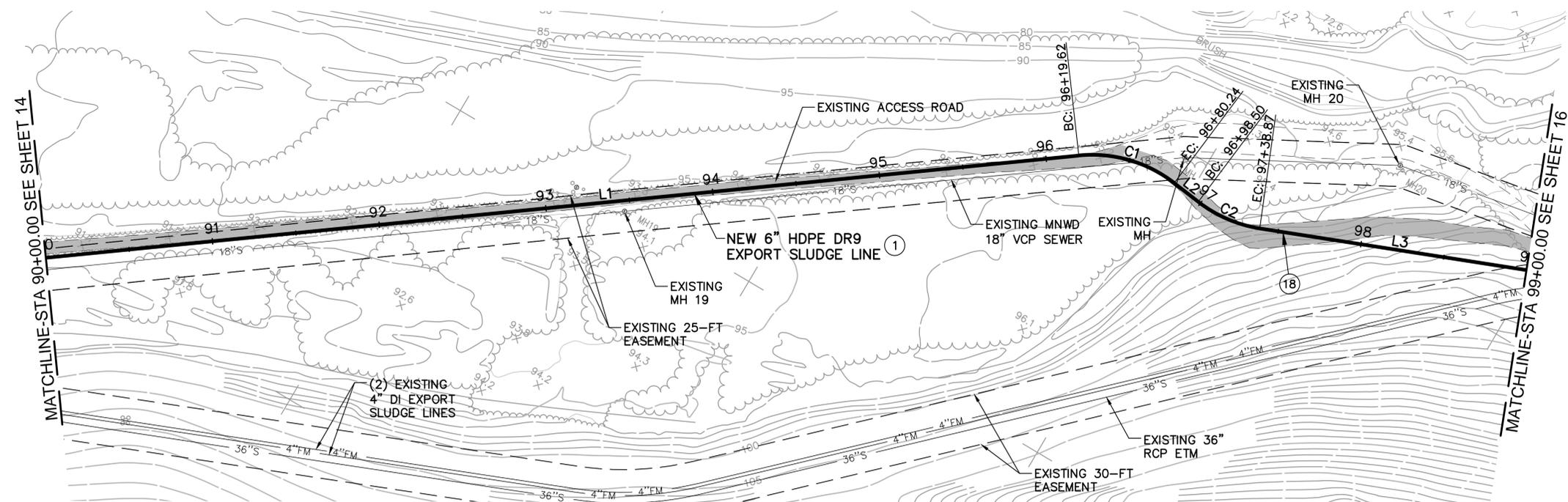
PROJECT NO. 7301.0001
 DRAWING NO. C-10
 SHEET NO. 14 OF 33

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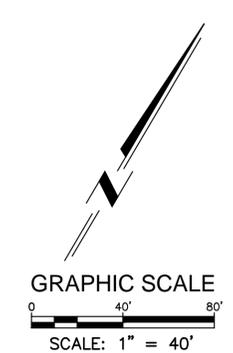
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N53°46'50"E	-	619.62'
C1	Δ=43°24'50"	80.00'	60.62'
L2	S82°48'50"E	-	18.26'
C2	Δ=28°54'40"	80.00'	40.37'
L3	N68°16'30"E	-	161.13'



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 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 Exp. 3/31/14
 CIVIL
 FILE NO.: 6731 SH05 C-1 to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE
 IF NOT 2" - SCALE ACCORDINGLY

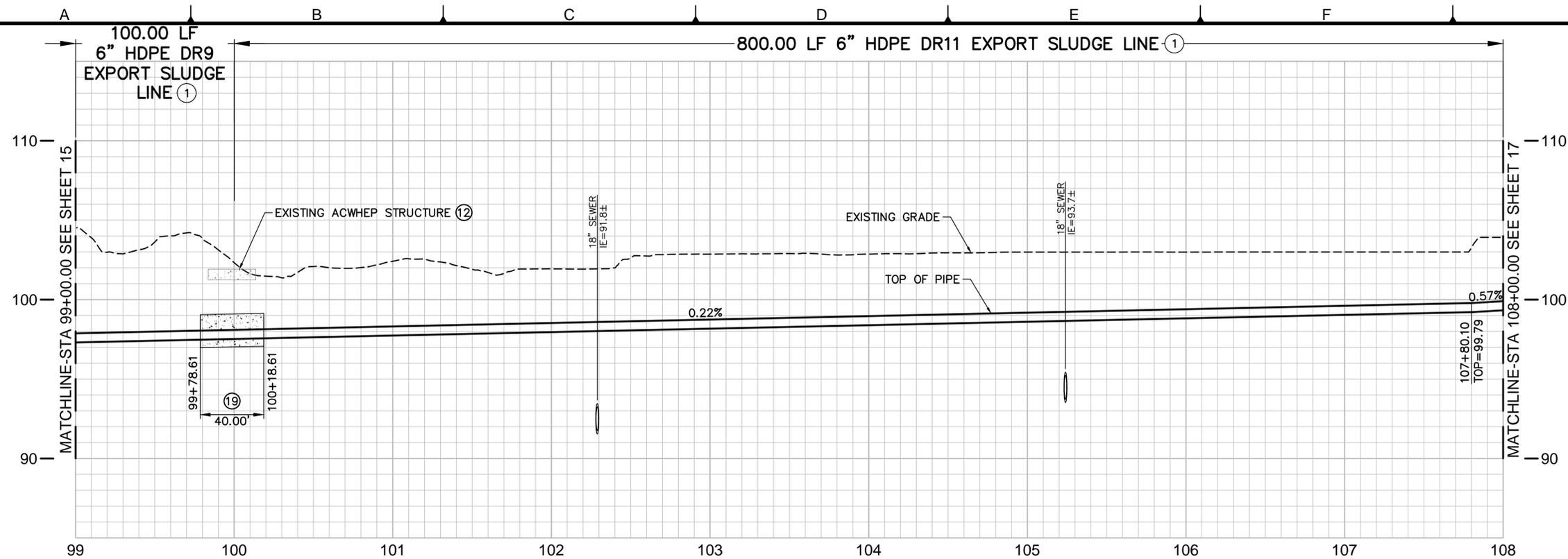
REVISIONS			
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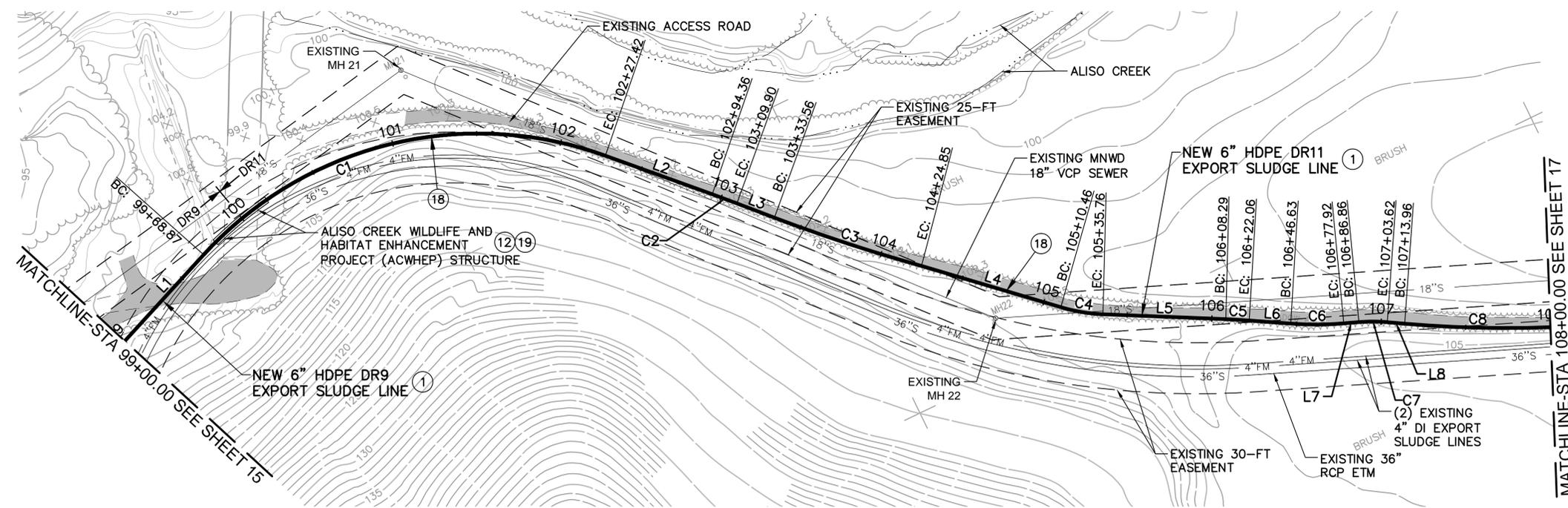
FM PLAN AND PROFILE
 STA 90+00 TO 99+00
 DRAWING NO. C-11
 SHEET NO. 15 OF 33

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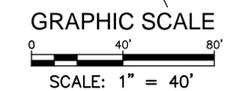
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ② CONCRETE ENCASEMENT PER DTL 2, DWG D-1.
 - ⑫ CONTRACTOR SHALL REPLACE ALL CONCRETE REMOVED OR DAMAGED DURING CONSTRUCTION PER DTL 1, DWG D-3.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.
 - ⑲ CONCRETE ENCASE NEW 6" HDPE EXPORT SLUDGE LINE UNDER ACWHEP STRUCTURE PER DTL 4, DWG D-3. ENCASEMENT TO EXTEND MINIMUM 5- FEET BEYOND ACWHEP STRUCTURE



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N68°16'30"E	-	68.87'
C1	Δ=67°20'10"	220.00'	258.56'
L2	S44°23'20"E	-	66.94'
C2	Δ=0°53'30"	1000.00'	15.54'
L3	S43°29'50"E	-	23.65'
C3	Δ=5°13'50"	1000.00'	91.29'
L4	S47°44'40"E	-	85.61'
C4	Δ=14°29'40"	100.00'	25.30'
L5	S61°57'00"E	-	72.53'
C5	Δ=1°58'20"	400.00'	13.77'
L6	S59°58'40"E	-	24.57'
C6	Δ=8°57'50"	200.00'	31.29'
L7	S68°56'30"E	-	8.93'
C7	Δ=9°36'10"	100.00'	16.76'
L8	S59°20'20"E	-	10.34'
C8	Δ=7°02'30"	700.00'	86.04'



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 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 AT FULL SIZE 6731 SH05 C-1
 IF NOT 2" - SCALE ACCORDINGLY FILE NO.: to SH23 C-19

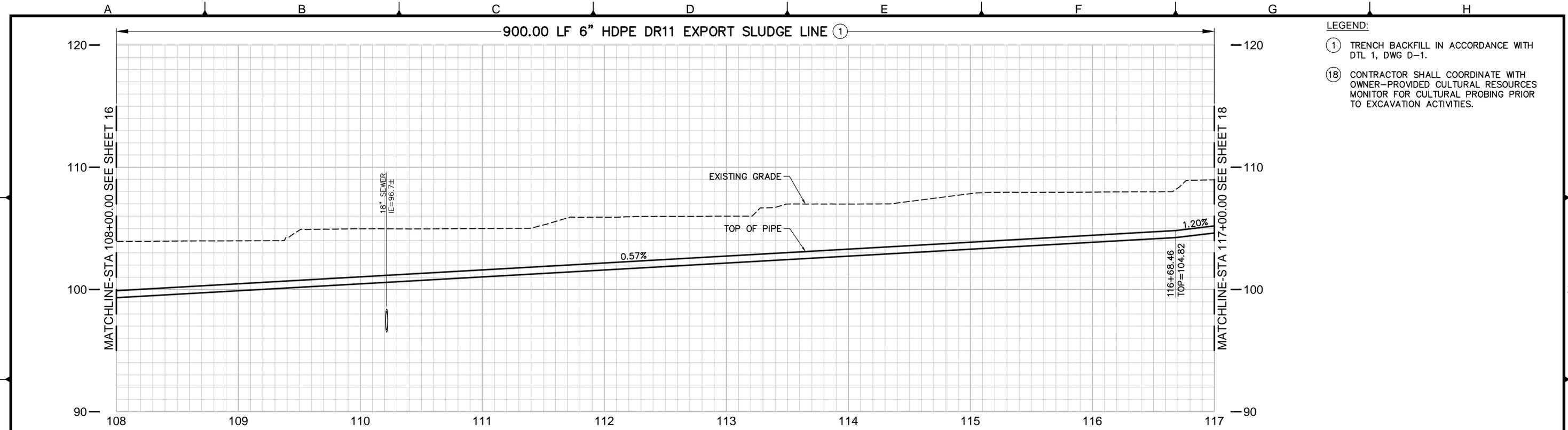
DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

REVISIONS			
NO.	BY	DATE	REMARKS

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34156 Del Obispo Street, Dana Point, CA 92629

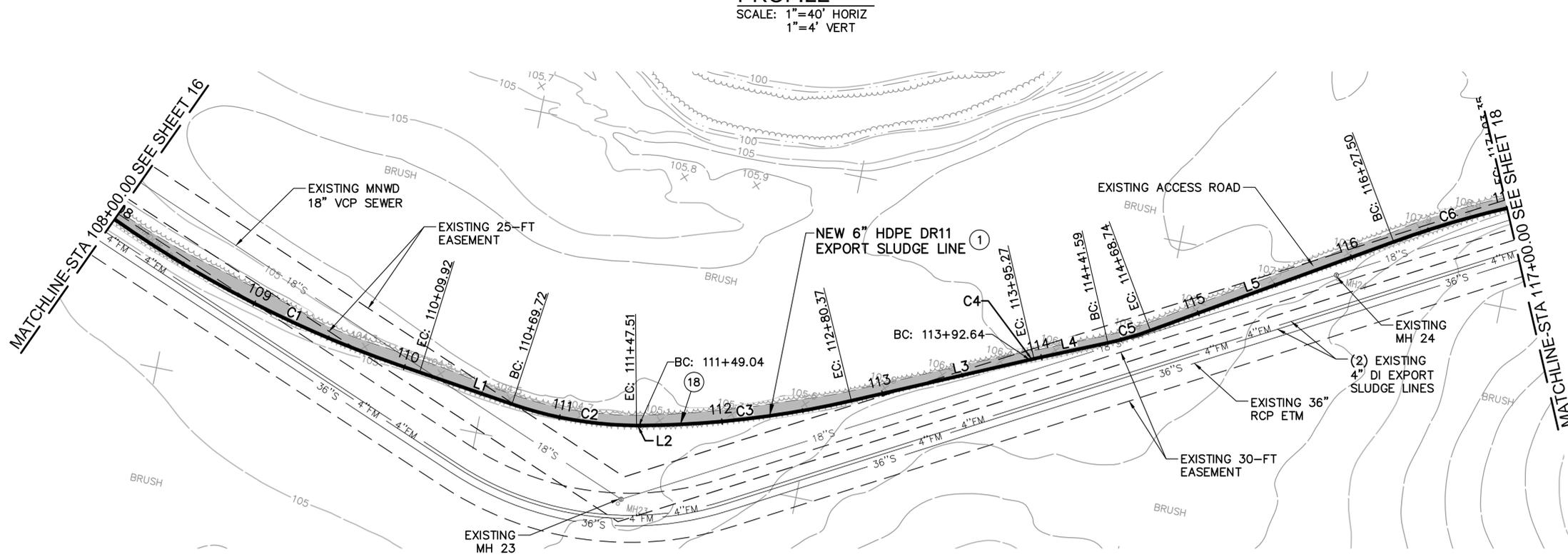
PROJECT NO. 7301.0001
 EXPORT SLUDGE FM FINAL DESIGN
 DRAWING NO. C-12
 SHEET NO. 16 OF 33
 FM PLAN AND PROFILE
 STA 99+00 TO 108+00

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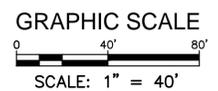
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑱ CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
C1	Δ=16°54'00"	711.68'	209.92'
L1	S82°26'00"E	-	59.80'
C2	Δ=18°34'20"	240.00'	77.79'
L2	N78°59'40"E	-	1.53'
C3	Δ=12°32'30"	600.00'	131.34'
L3	N65°39'10"E	-	112.27'
C4	Δ=0°45'10"	200.00'	2.63'
L4	N66°24'20"E	-	46.32'
C5	Δ=7°46'40"	200.00'	27.15'
L5	N58°34'40"E	-	158.76'
C6	Δ=6°55'20"	600.00'	72.50'



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SUBMITTED: _____ PROJECT MANAGER DATE: _____
 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 6731 SH05 C-1
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE
 IF NOT 2" - SCALE ACCORDINGLY

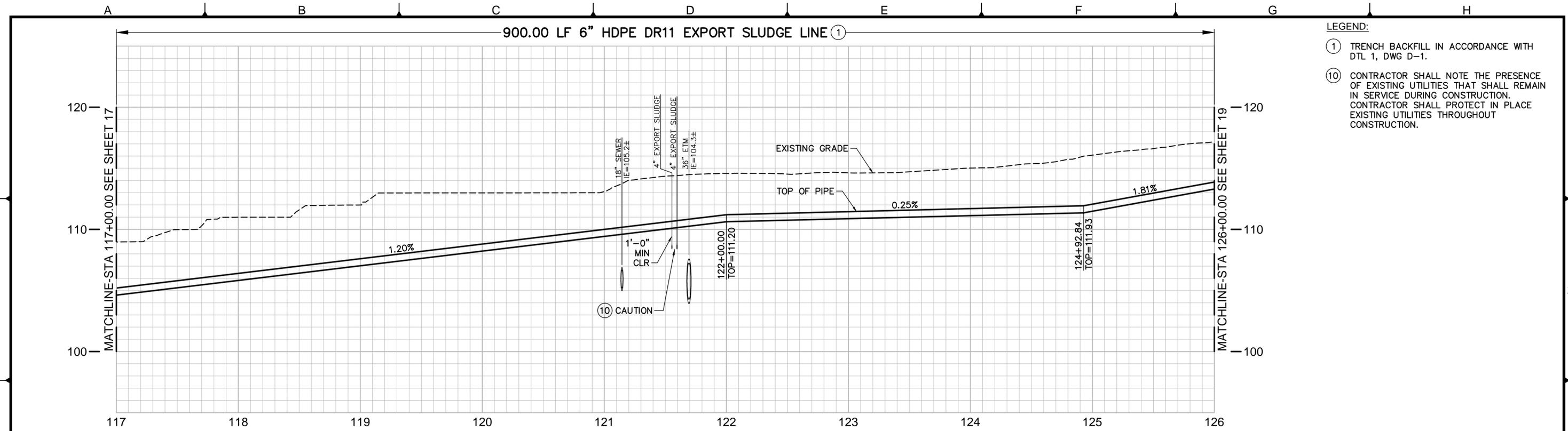
REVISIONS			
NO.	BY	DATE	REMARKS

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 STA 108+00 TO 117+00

PROJECT NO. 7301.0001
 DRAWING NO. C-13
 SHEET NO. 17 OF 33

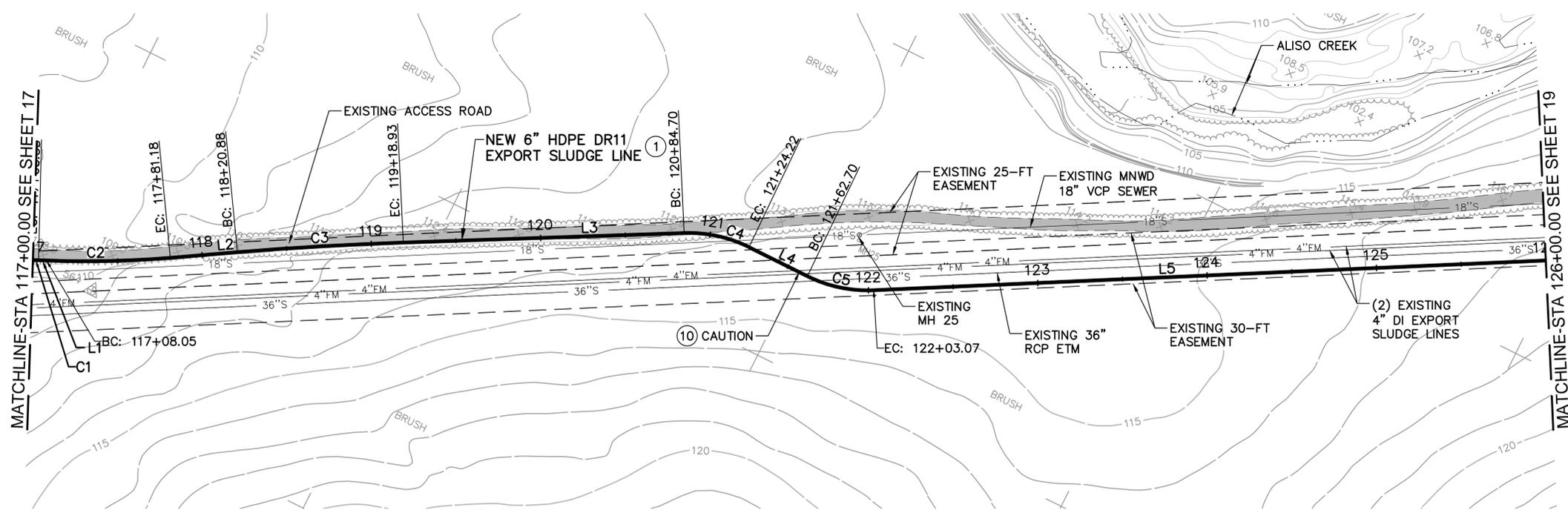
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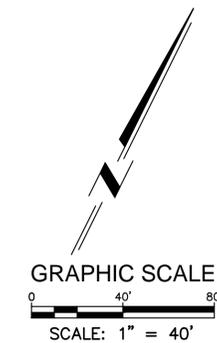
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑩ CONTRACTOR SHALL NOTE THE PRESENCE OF EXISTING UTILITIES THAT SHALL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT IN PLACE EXISTING UTILITIES THROUGHOUT CONSTRUCTION.

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
C1	Δ=0°19'10"	600.00'	3.35'
L1	N65°49'20"E	-	4.70'
C2	Δ=6°59'00"	600.00'	73.13'
L2	N58°50'10"E	-	39.70'
C3	Δ=2°48'30"	2000.00'	98.04'
L3	N61°38'50"E	-	165.78'
C4	Δ=28°18'20"	80.00'	39.52'
L4	N89°57'10"E	-	38.48'
C5	Δ=28°54'50"	80.00'	40.37'
L5	N61°02'20"E	-	396.93'



PLAN
SCALE: 1"=40'



DUDEK
Dudek & Associates, Inc.
605 Third Street Encinitas, CA 92024
760.942.5147 Fax 760.632.0164



SUBMITTED: _____ PROJECT MANAGER DATE: _____
 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 6731 SH05 C-1
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

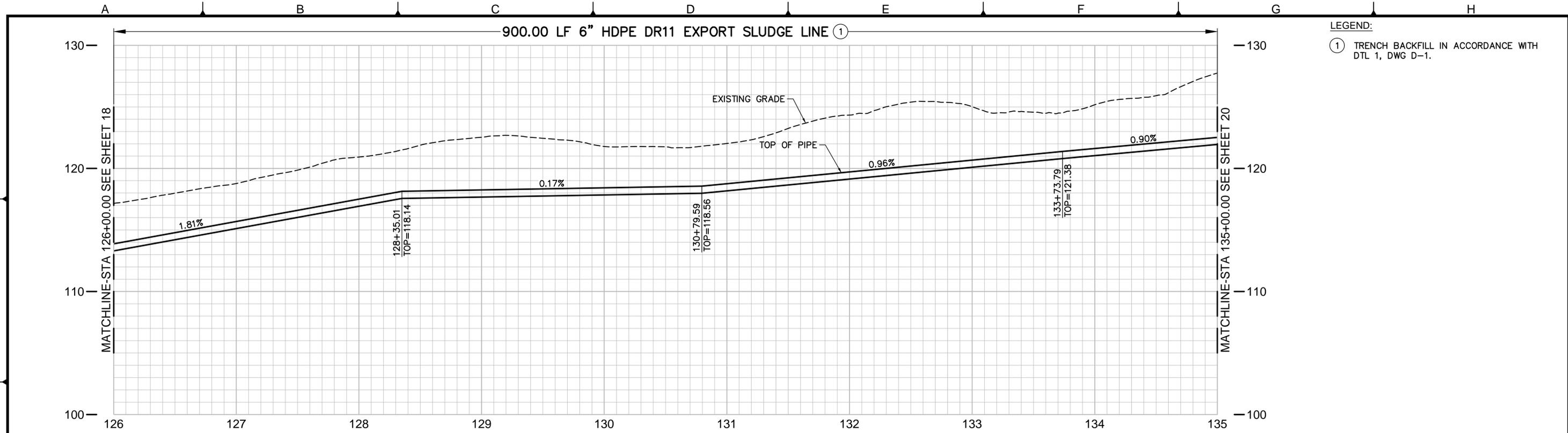
LINE IS 2 INCHES AT FULL SIZE
 IF NOT 2" - SCALE ACCORDINGLY

REVISIONS			
NO.	BY	DATE	REMARKS

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

EXPORT SLUDGE FM FINAL DESIGN
 PROJECT NO. 7301.0001
 DRAWING NO. C-14
 SHEET NO. 18 OF 33

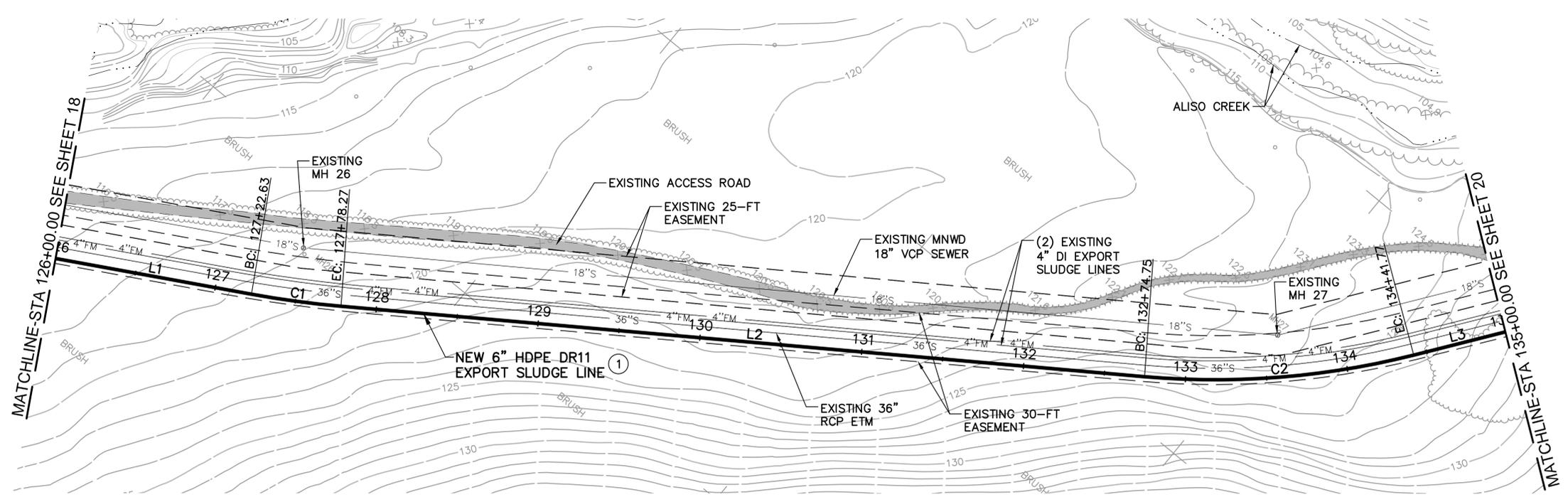
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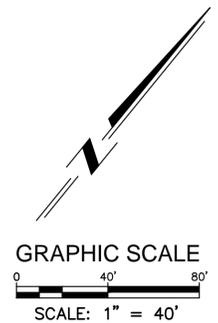
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

LEGEND:
① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N61°02'20"E	-	122.63'
C1	Δ=5°18'50"	600.00'	55.65'
L2	N55°43'30"E	-	496.48'
C2	Δ=19°08'20"	500.00'	167.02'
L3	N36°35'10"E	-	58.23'



PLAN
SCALE: 1"=40'



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Dudek & Associates, Inc.
605 Third Street Encinitas, CA 92024
760.942.5147 Fax 760.632.0164



SUBMITTED: _____ PROJECT MANAGER DATE: _____
APPROVED: _____ DUDEK ENGINEERS DATE: _____
APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
6731 SH05 C-1
FILE NO.: to SH23 C-19

DESIGNED: KP
DRAWN: KK, PC
CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY

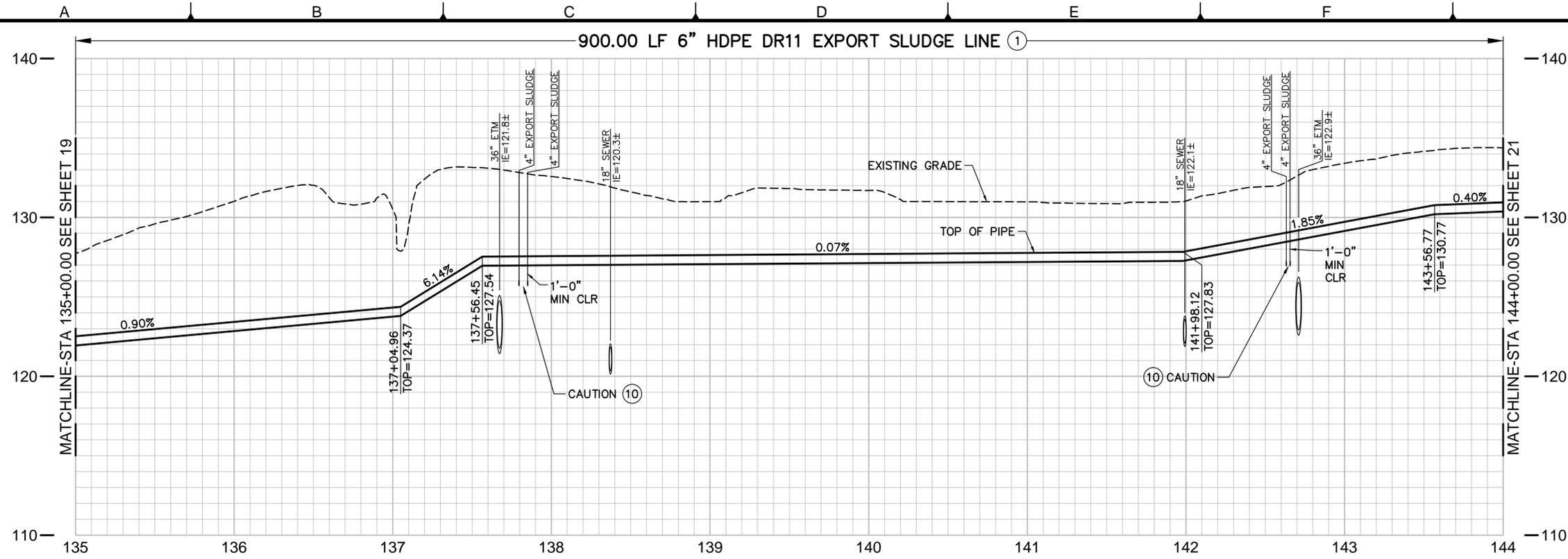
REVISIONS			
NO.	BY	DATE	REMARKS

SOCCWA
South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

EXPORT SLUDGE FM FINAL DESIGN
PROJECT NO. 7301.0001

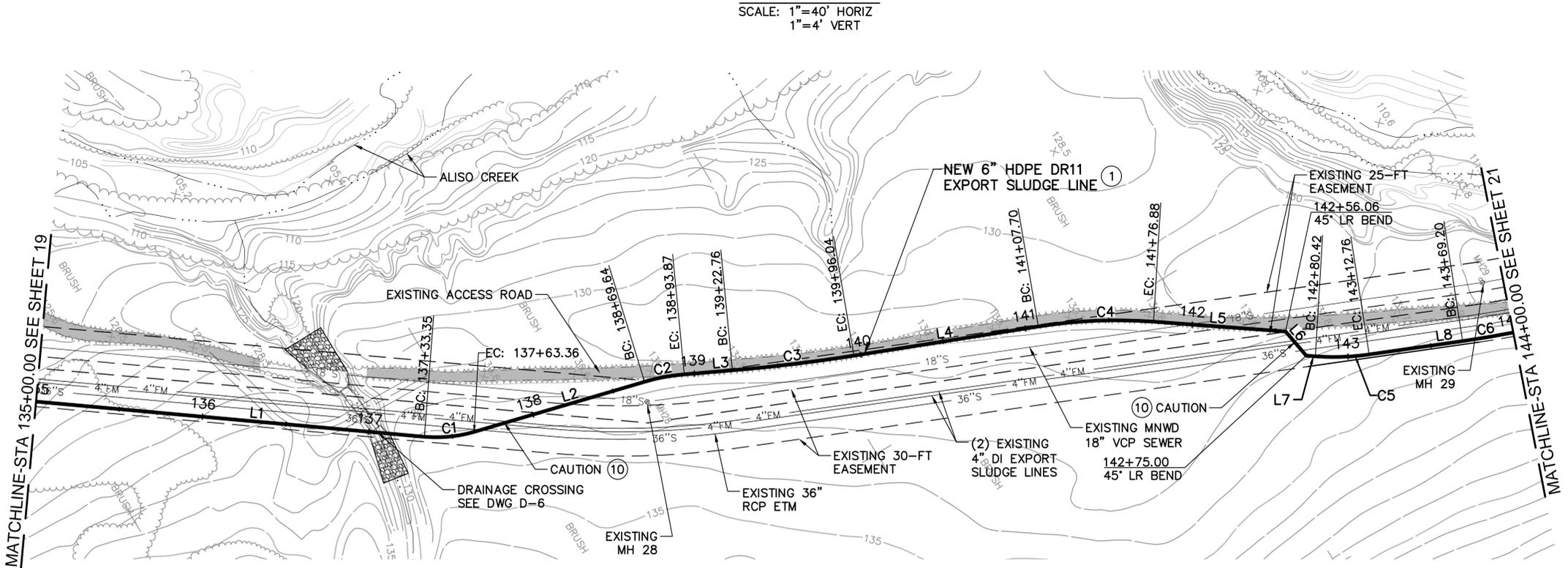
FM PLAN AND PROFILE
STA 126+00 TO 135+00
DRAWING NO. C-15
SHEET NO. 19 OF 33

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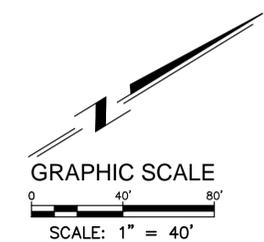
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑩ CONTRACTOR SHALL NOTE THE PRESENCE OF EXISTING UTILITIES THAT SHALL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT IN PLACE EXISTING UTILITIES THROUGHOUT CONSTRUCTION.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N36°35'10"E	-	233.35'
C1	Δ=21°29'30"	80.00'	30.01'
L2	N15°05'40"E	-	106.28'
C2	Δ=11°34'10"	120.00'	24.23'
L3	N26°39'50"E	-	28.89'
C3	Δ=4°11'50"	1000.00'	73.28'
L4	N22°28'00"E	-	111.66'
C4	Δ=13°12'40"	300.00'	69.17'
L5	N35°40'40"E	-	79.19'
L6	N80°40'40"E	-	18.94'
L7	N35°40'40"E	-	5.42'
C5	Δ=12°21'10"	150.00'	32.34'
L8	N23°19'30"E	-	56.44'
C6	Δ=2°56'30"	600.00'	30.80'



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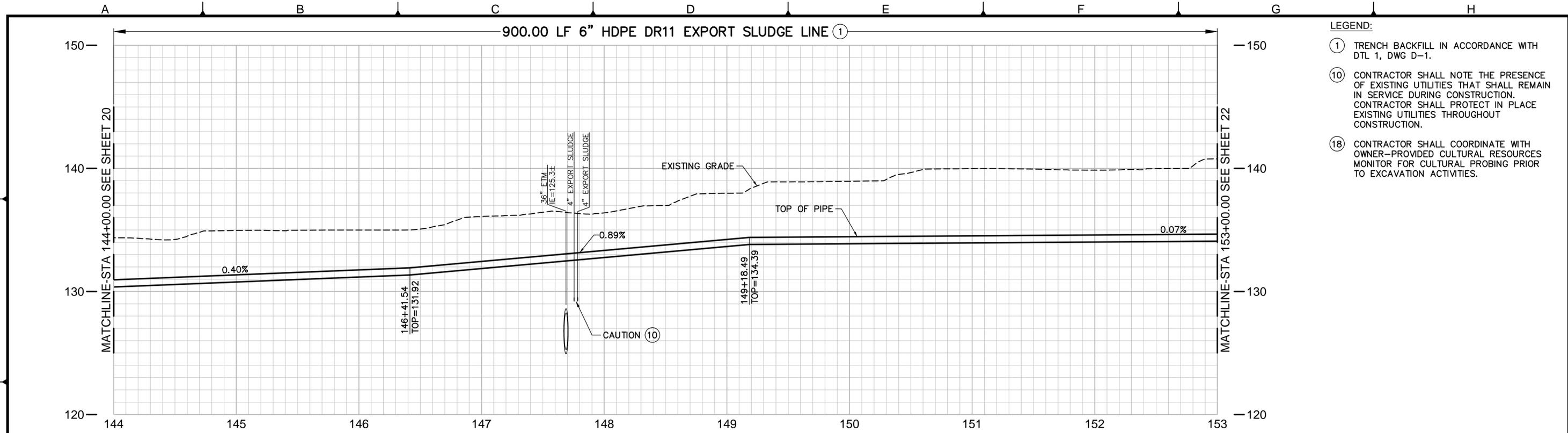
SUBMITTED: _____ PROJECT MANAGER DATE: _____
 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____
 DATE: OCTOBER 27, 2014
 Exp. 3/31/14
 6731 SH05 C-1
 FILE NO.: to SH23 C-19
 DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

REVISIONS			
NO.	BY	DATE	REMARKS

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

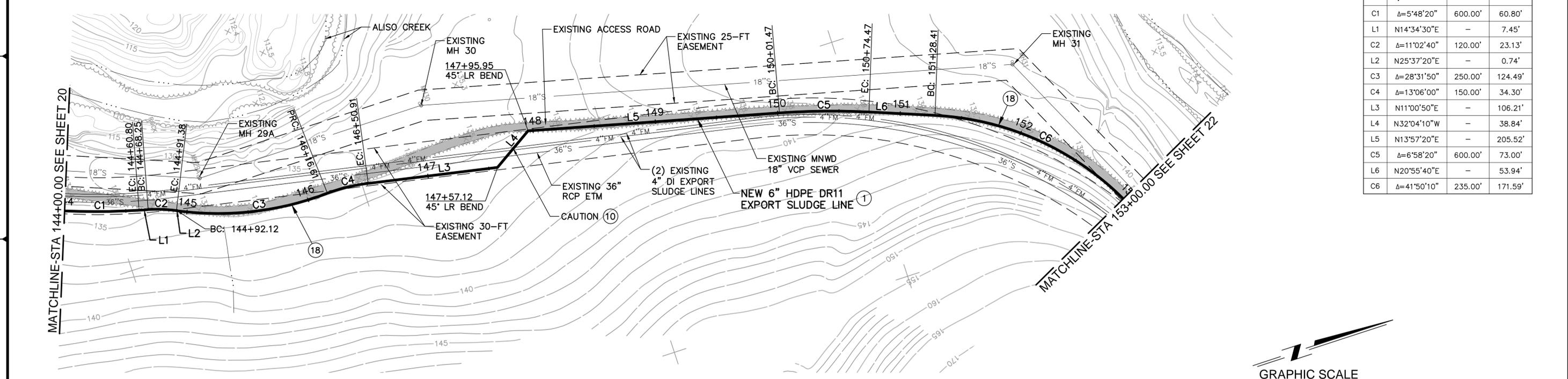
PROJECT NO. 7301.0001
 EXPORT SLUDGE FM FINAL DESIGN
 DRAWING NO. C-16
 SHEET NO. 20 OF 33
 FM PLAN AND PROFILE
 STA 135+00 TO 144+00

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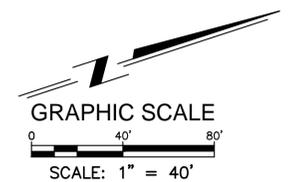
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- (1) TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - (10) CONTRACTOR SHALL NOTE THE PRESENCE OF EXISTING UTILITIES THAT SHALL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT IN PLACE EXISTING UTILITIES THROUGHOUT CONSTRUCTION.
 - (18) CONTRACTOR SHALL COORDINATE WITH OWNER-PROVIDED CULTURAL RESOURCES MONITOR FOR CULTURAL PROBING PRIOR TO EXCAVATION ACTIVITIES.



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
C1	Δ=5'48"20"	600.00'	60.80'
L1	N14'34"30"E	-	7.45'
C2	Δ=11'02"40"	120.00'	23.13'
L2	N25'37"20"E	-	0.74'
C3	Δ=28'31"50"	250.00'	124.49'
C4	Δ=13'06"00"	150.00'	34.30'
L3	N11'00"50"E	-	106.21'
L4	N32'04"10"W	-	38.84'
L5	N13'57"20"E	-	205.52'
C5	Δ=6'58"20"	600.00'	73.00'
L6	N20'55"40"E	-	53.94'
C6	Δ=41'50"10"	235.00'	171.59'



DUDEK
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605 Third Street Encinitas, CA 92024
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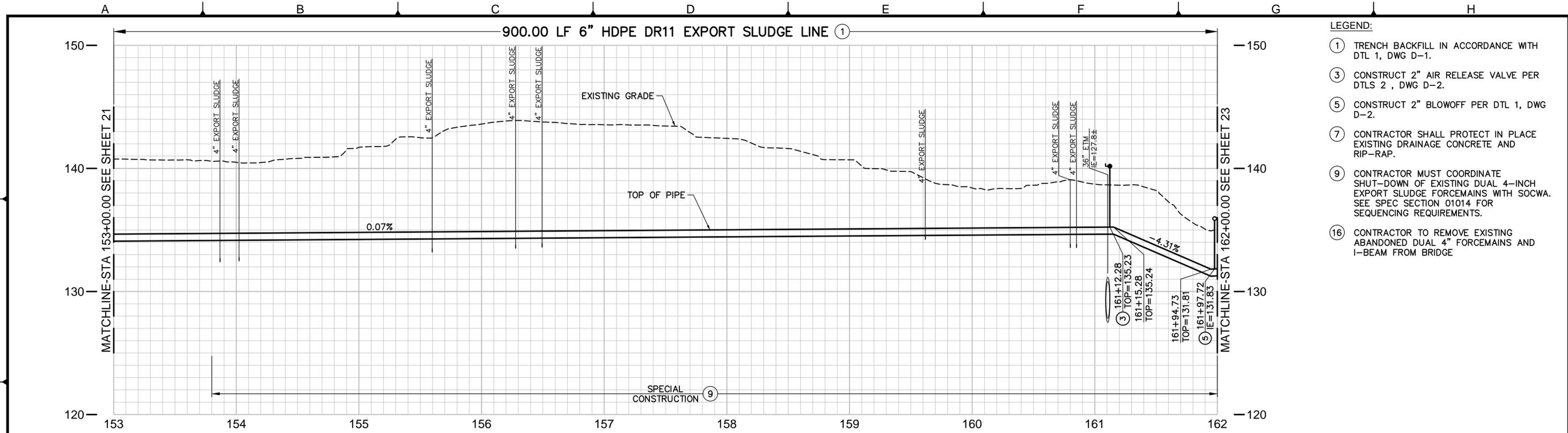
SUBMITTED: _____ PROJECT MANAGER DATE: _____
 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____
 DATE: OCTOBER 27, 2014
 6731 SH05 C-1
 FILE NO.: to SH23 C-19
 DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

REVISIONS			
NO.	BY	DATE	REMARKS

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

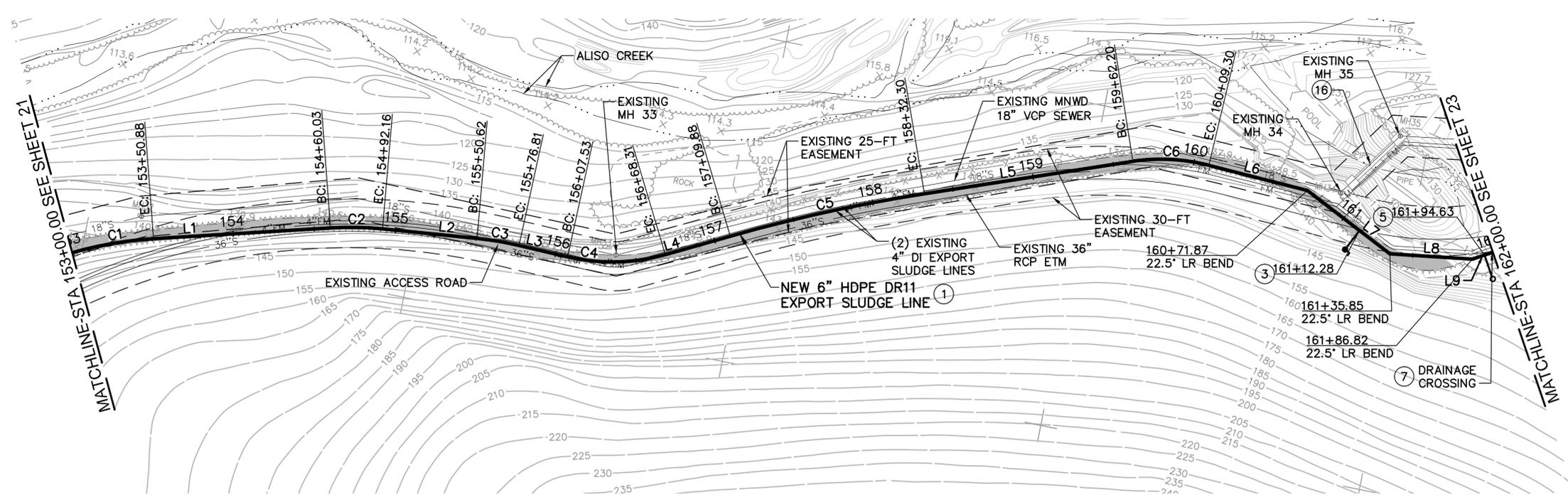
PROJECT NO. 7301.0001
 EXPORT SLUDGE FM FINAL DESIGN
 DRAWING NO. C-17
 SHEET NO. 21 OF 33
FM PLAN AND PROFILE
STA 144+00 TO 153+00

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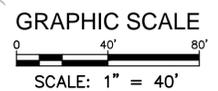
PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ③ CONSTRUCT 2" AIR RELEASE VALVE PER DTL 2, DWG D-2.
 - ⑤ CONSTRUCT 2" BLOWOFF PER DTL 1, DWG D-2.
 - ⑦ CONTRACTOR SHALL PROTECT IN PLACE EXISTING DRAINAGE CONCRETE AND RIP-RAP.
 - ⑨ CONTRACTOR MUST COORDINATE SHUT-DOWN OF EXISTING DUAL 4-INCH EXPORT SLUDGE FORCEMAINS WITH SOCWA. SEE SPEC SECTION 01014 FOR SEQUENCING REQUIREMENTS.
 - ⑩ CONTRACTOR TO REMOVE EXISTING ABANDONED DUAL 4" FORCEMAINS AND I-BEAM FROM BRIDGE



PLAN
SCALE: 1"=40'

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
C1	Δ=12°24'20"	235.00'	50.88'
L1	N75°10'10"E	-	109.15'
C2	Δ=9°12'10"	200.00'	32.12'
L2	N84°22'20"E	-	58.47'
C3	Δ=7°30'10"	200.00'	26.19'
L3	S88°07'30"E	-	30.72'
C4	Δ=29°01'10"	120.00'	60.78'
L4	N62°51'10"E	-	41.57'
C5	Δ=7°00'50"	1000.00'	122.42'
L5	N69°52'00"E	-	129.90'
C6	Δ=22°29'20"	120.00'	47.10'
L6	S87°03'50"E	-	62.57'
L7	S63°56'10"E	-	63.97'
L8	N82°18'50"E	-	50.97'
L9	N59°48'50"E	-	13.18'



DUDEK
Dudek & Associates, Inc.
605 Third Street Encinitas, CA 92024
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SUBMITTED: _____ PROJECT MANAGER DATE: _____
 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 Exp. 3/31/14
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

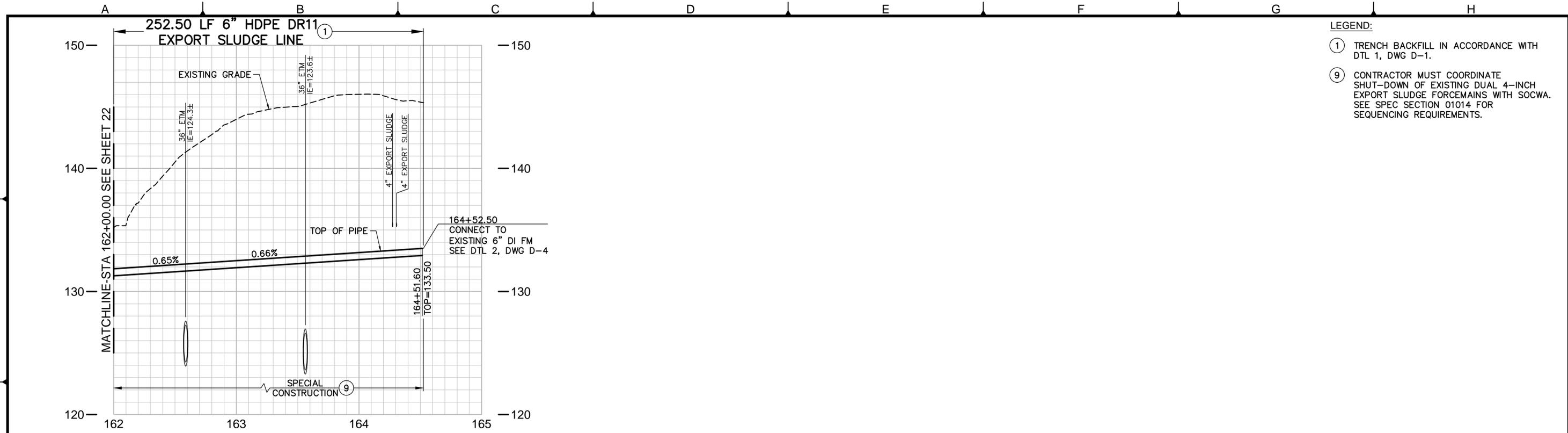
REVISIONS			
NO.	BY	DATE	REMARKS

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

EXPORT SLUDGE FM FINAL DESIGN
FM PLAN AND PROFILE
 STA 153+00 TO 162+00

PROJECT NO.	7301.0001
DRAWING NO.	C-18
SHEET NO.	22 OF 33

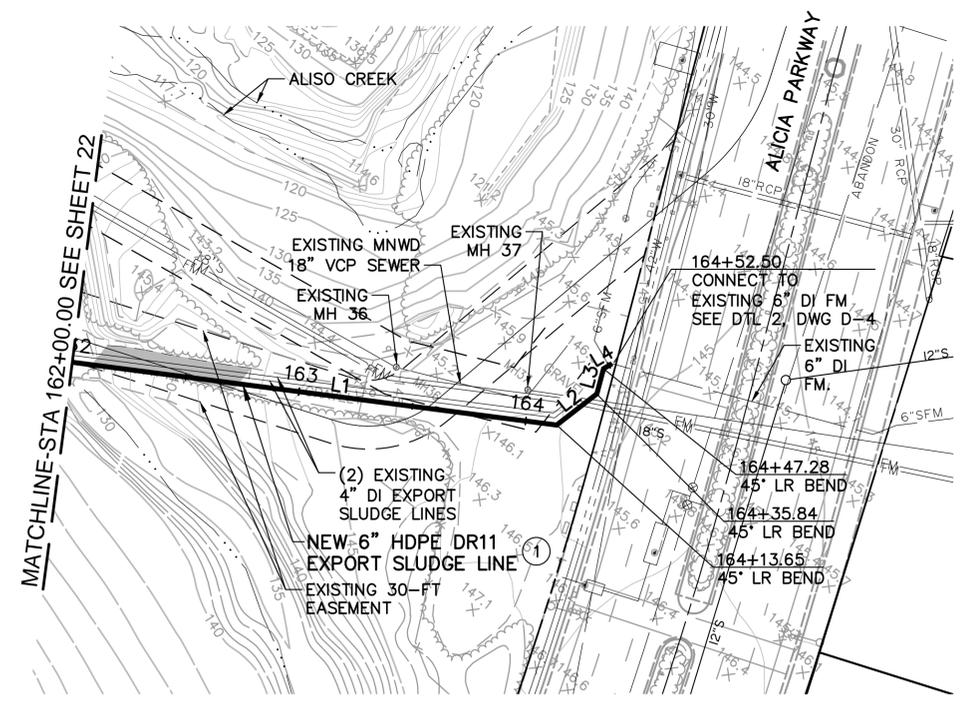
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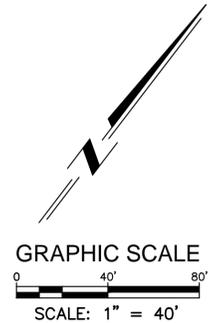
- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ⑨ CONTRACTOR MUST COORDINATE SHUT-DOWN OF EXISTING DUAL 4-INCH EXPORT SLUDGE FORCEMAINS WITH SOCWA. SEE SPEC SECTION 01014 FOR SEQUENCING REQUIREMENTS.

PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

6" FM LINE DATA TABLE			
NO.	Δ/BEARING	RADIUS	LENGTH
L1	N59°48'50"E	-	213.65'
L2	N14°48'50"E	-	22.19'
L3	N22°42'50"W	-	11.44'
L4	N22°17'10"E	-	4.32'



PLAN
SCALE: 1"=40'



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605 Third Street Encinitas, CA 92024
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SUBMITTED: _____ PROJECT MANAGER DATE: _____
 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
 Exp. 3/31/14
 CIVIL
 FILE NO.: to SH23 C-19

DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM

LINE IS 2 INCHES AT FULL SIZE
 IF NOT 2" - SCALE ACCORDINGLY

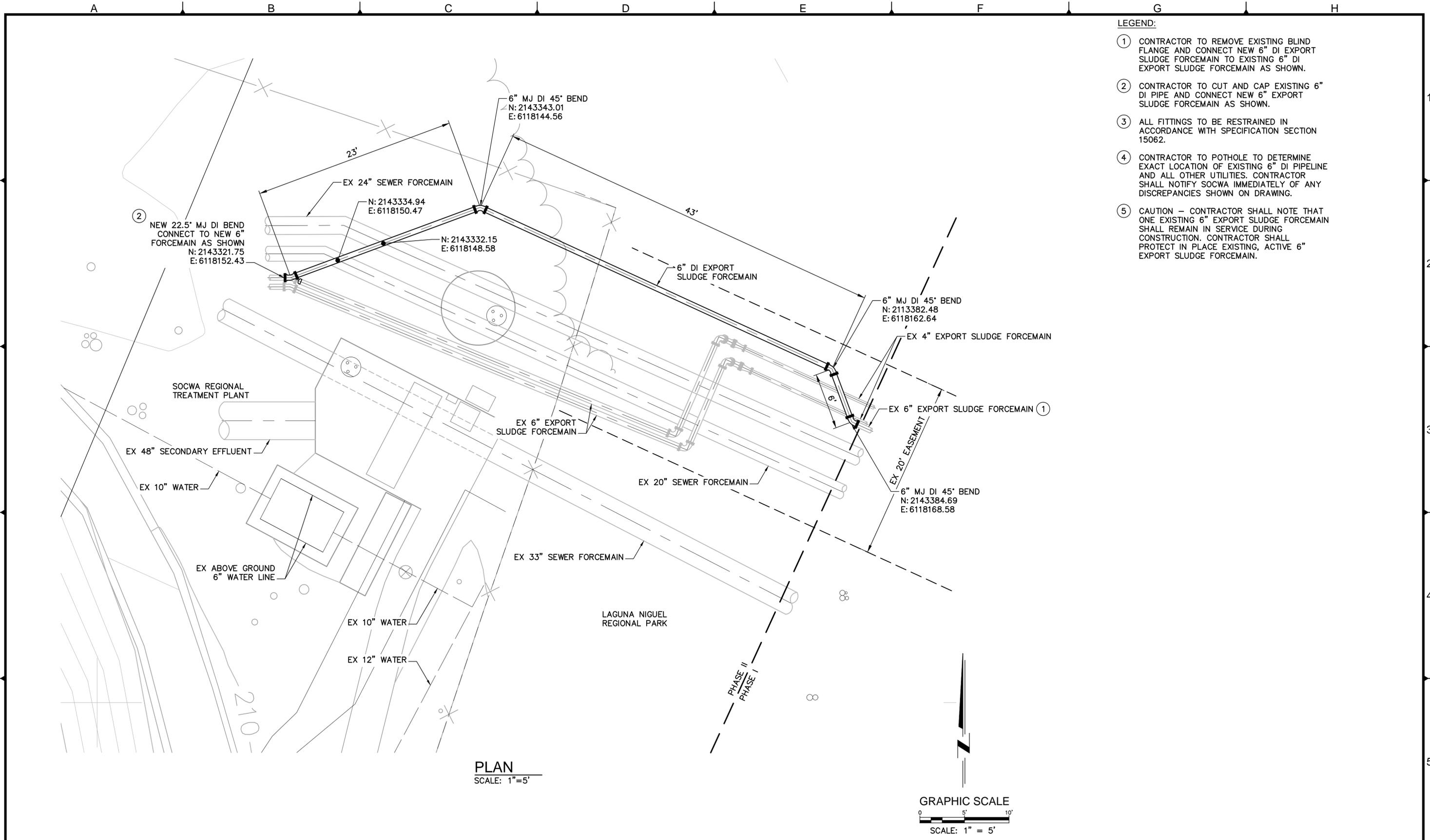
REVISIONS			
NO.	BY	DATE	REMARKS

SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

EXPORT SLUDGE FM FINAL DESIGN
FM PLAN AND PROFILE
 STA 162+00 TO 164+05.02

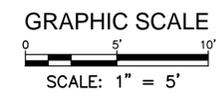
PROJECT NO.
7301.0001
 DRAWING NO.
C-19
 SHEET NO.
23 OF 33

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- LEGEND:**
- ① CONTRACTOR TO REMOVE EXISTING BLIND FLANGE AND CONNECT NEW 6" DI EXPORT SLUDGE FORCEMAIN TO EXISTING 6" DI EXPORT SLUDGE FORCEMAIN AS SHOWN.
 - ② CONTRACTOR TO CUT AND CAP EXISTING 6" DI PIPE AND CONNECT NEW 6" EXPORT SLUDGE FORCEMAIN AS SHOWN.
 - ③ ALL FITTINGS TO BE RESTRAINED IN ACCORDANCE WITH SPECIFICATION SECTION 15062.
 - ④ CONTRACTOR TO POTHOLE TO DETERMINE EXACT LOCATION OF EXISTING 6" DI PIPELINE AND ALL OTHER UTILITIES. CONTRACTOR SHALL NOTIFY SOCWA IMMEDIATELY OF ANY DISCREPANCIES SHOWN ON DRAWING.
 - ⑤ CAUTION - CONTRACTOR SHALL NOTE THAT ONE EXISTING 6" EXPORT SLUDGE FORCEMAIN SHALL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT IN PLACE EXISTING, ACTIVE 6" EXPORT SLUDGE FORCEMAIN.

PLAN
SCALE: 1"=5'



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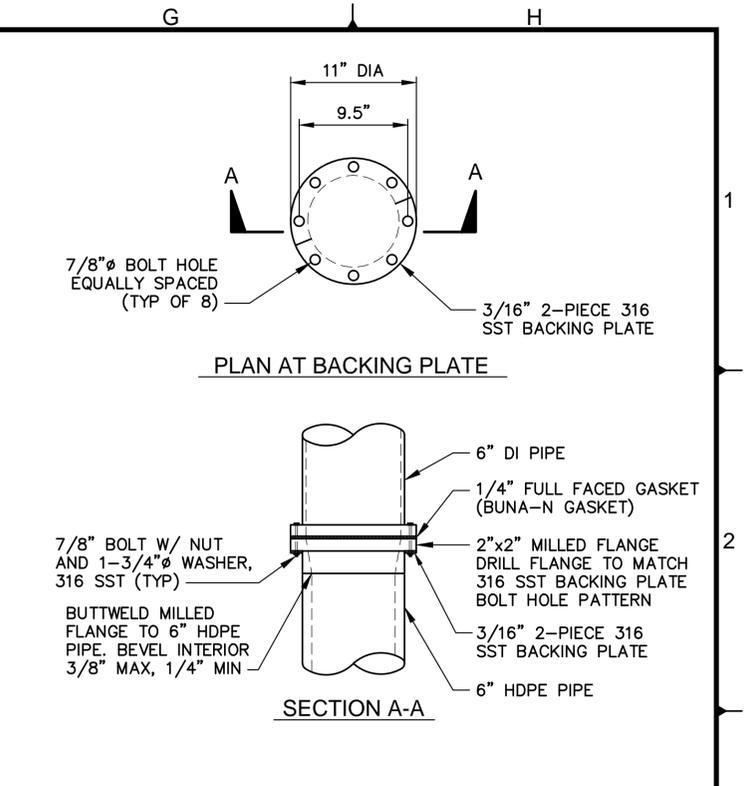
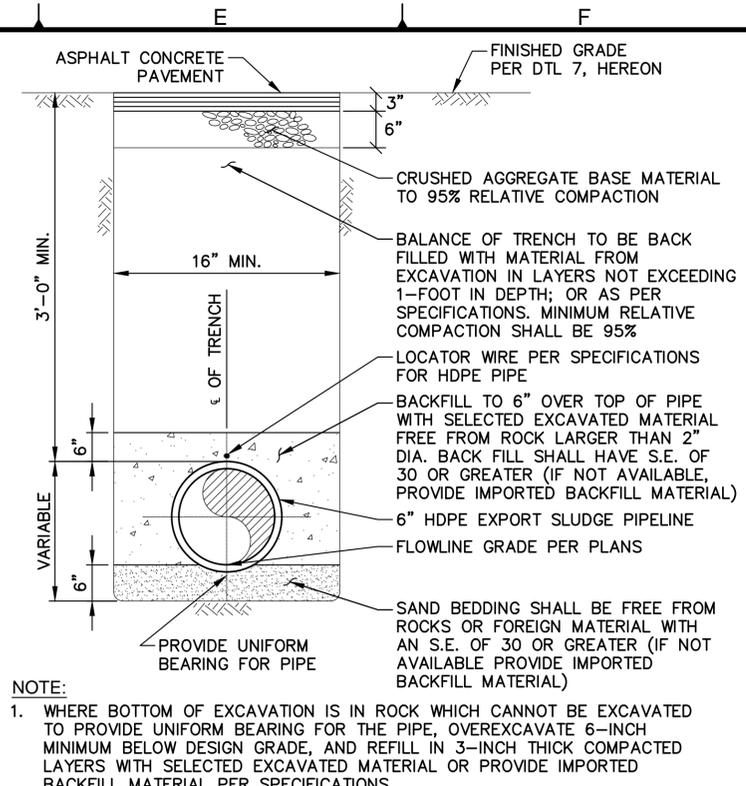
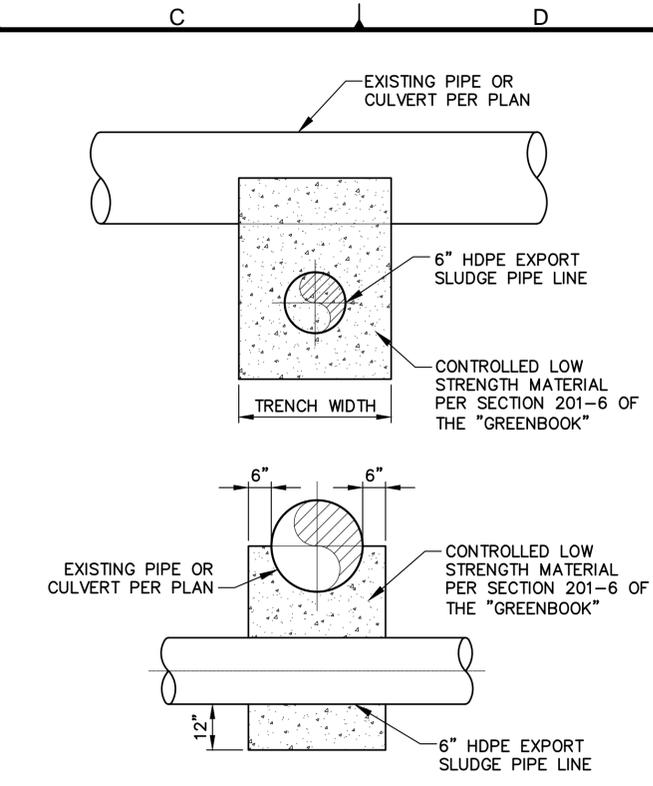
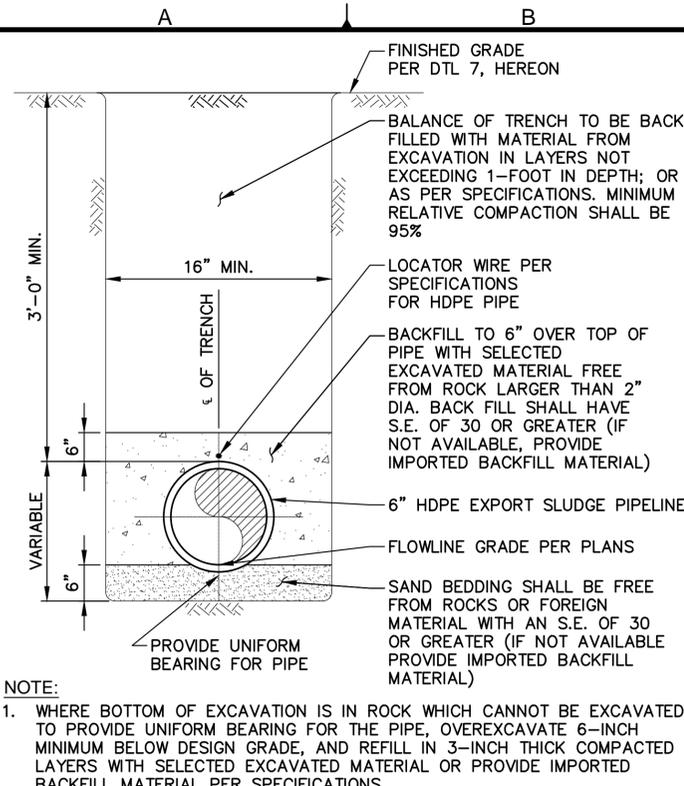
SUBMITTED: _____	PROJECT MANAGER	DATE: _____
APPROVED: _____	DUDEK ENGINEERS	DATE: _____
APPROVED: _____		DATE: _____
DATE: <u>OCTOBER 27, 2014</u>	DESIGNED: <u>KP</u>	
FILE NO.: <u>6731 SH24 C-20</u>	DRAWN: <u>KK, PC</u>	
	CHECKED: <u>MM</u>	

REVISIONS			
NO.	BY	DATE	REMARKS

South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

EXPORT SLUDGE FM FINAL DESIGN
CONNECTION AT SOCWA REGIONAL TREATMENT PLANT

PROJECT NO. 7301.0001
DRAWING NO. C-20
SHEET NO. 24 OF 33

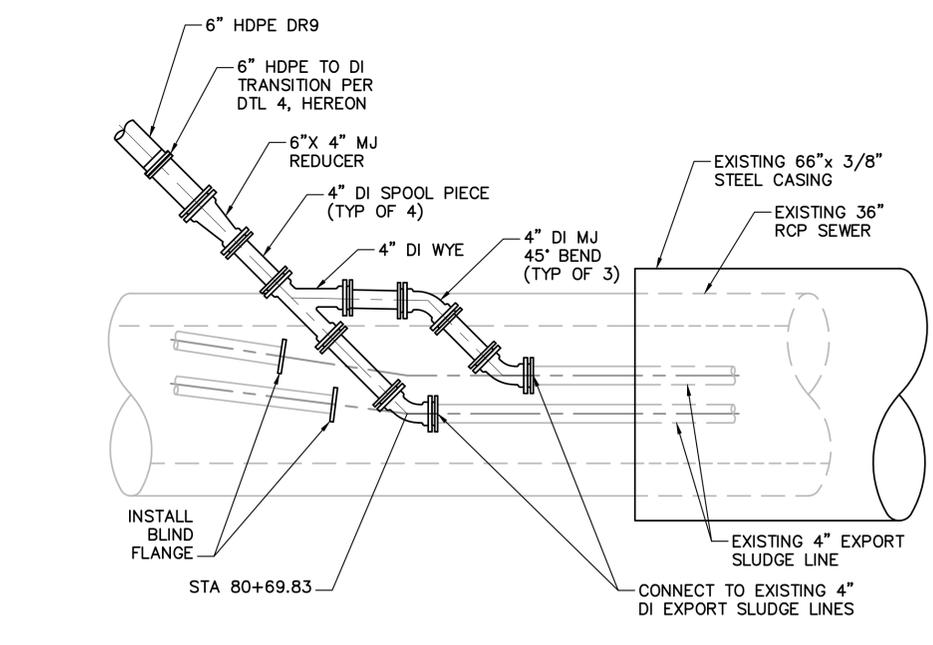


TRENCH DETAIL
NOT TO SCALE

PIPE CRADLE/ENCASEMENT DETAIL
NOT TO SCALE

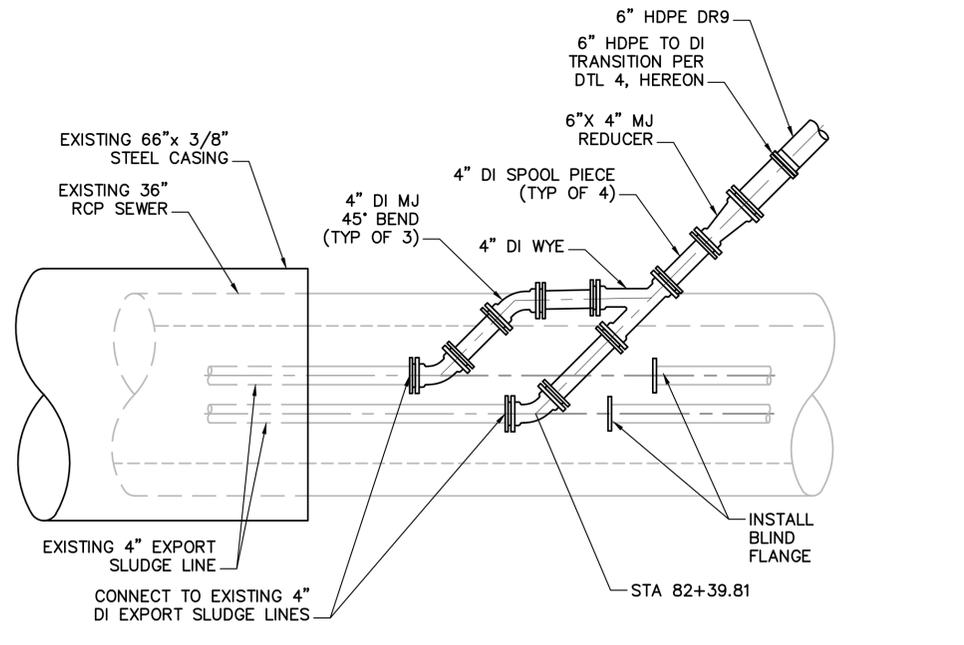
TRENCH DETAIL AT ASPHALT
NOT TO SCALE

HDPE TO DI TRANSITION DETAIL
NOT TO SCALE



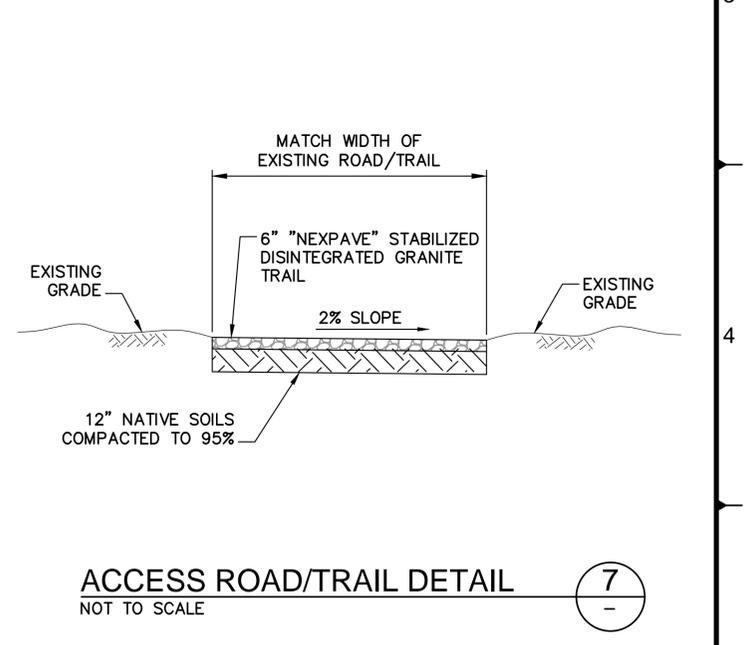
NOTE:
1. CONTRACTOR TO POT HOLE EXISTING DUAL 4" DI FORCEMAIN PRIOR TO WORK IN THIS LOCATION. CONTRACTOR SHALL NOTIFY SOCWA OF ANY CONFLICT.

STA 80+69.83 CONNECTION DETAIL
SCALE: 1/2" = 1'-0"



NOTE:
1. CONTRACTOR TO POT HOLE EXISTING DUAL 4" DI FORCEMAIN PRIOR TO WORK IN THIS LOCATION. CONTRACTOR SHALL NOTIFY SOCWA OF ANY CONFLICT.

STA 82+39.81 CONNECTION DETAIL
SCALE: 1/2" = 1'-0"



ACCESS ROAD/TRAIL DETAIL
NOT TO SCALE

DUDEK
Dudek & Associates, Inc.
605 Third Street Encinitas, CA 92024
760.942.5147 Fax 760.632.0164

REGISTERED PROFESSIONAL ENGINEER
DANIEL S. MICHAEL, M.E. P.E.
No. 42586
Exp. 3/31/14
CIVIL
STATE OF CALIFORNIA

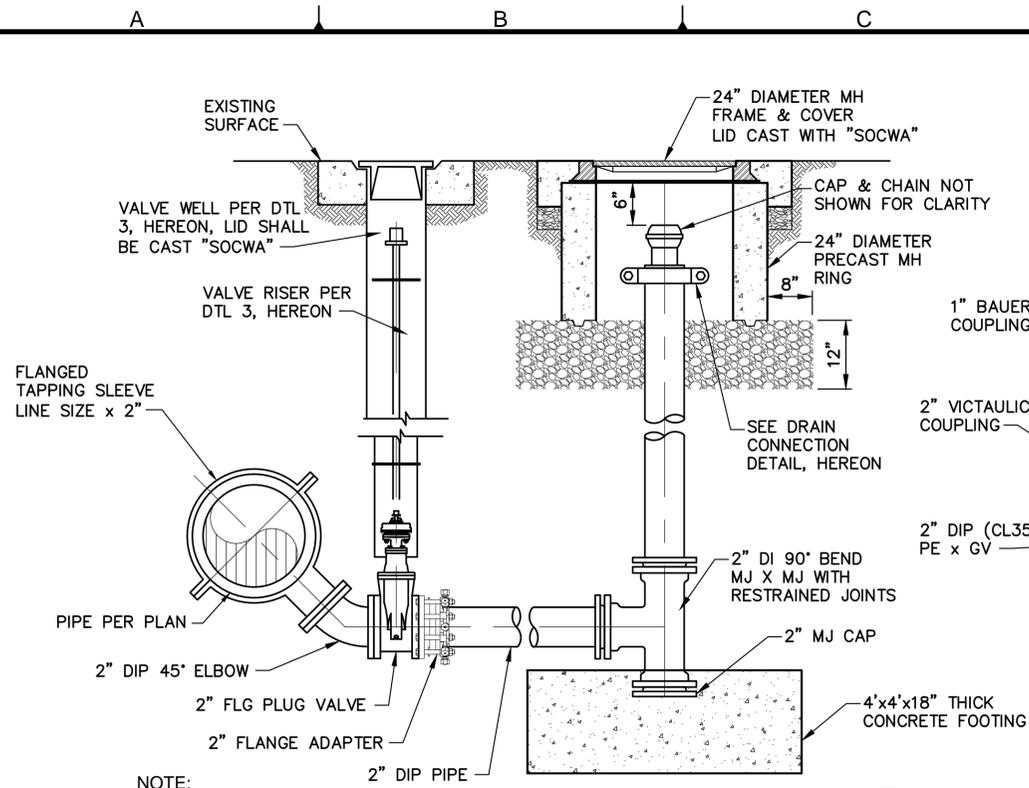
SUBMITTED: _____	PROJECT MANAGER	DATE: _____
APPROVED: _____	DUDEK ENGINEERS	DATE: _____
APPROVED: _____	DATE: _____	DATE: _____
DATE: OCTOBER 27, 2014	DESIGNED: KP	
FILE NO.: 6731 SH25 D-1	DRAWN: KK, PC	
	CHECKED: MM	

REVISIONS			
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South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

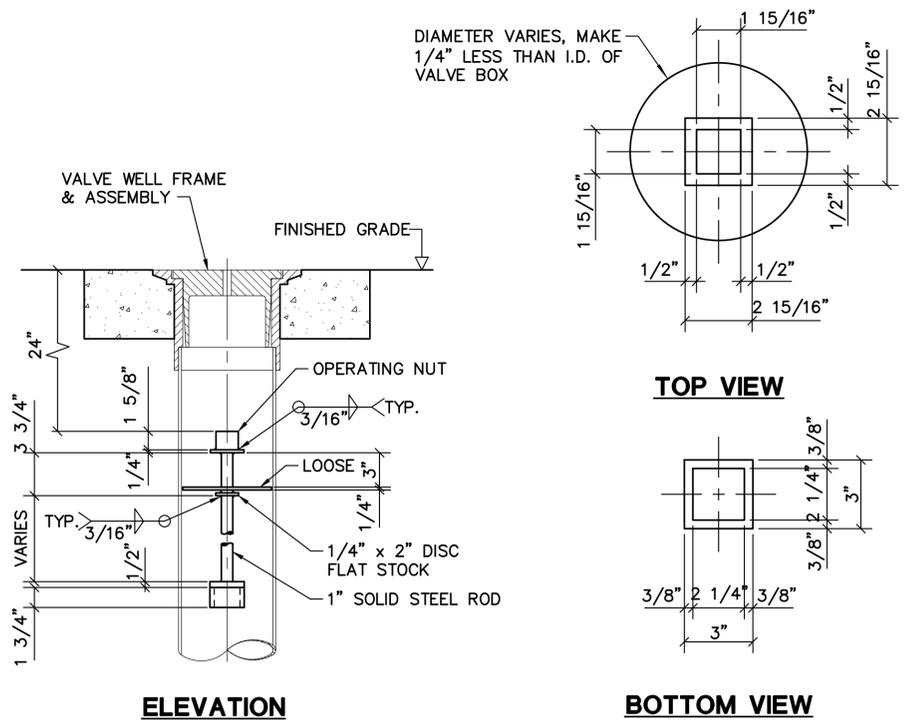
PROJECT NO. 7301.0001
DRAWING NO. D-1
SHEET NO. 25 OF 33

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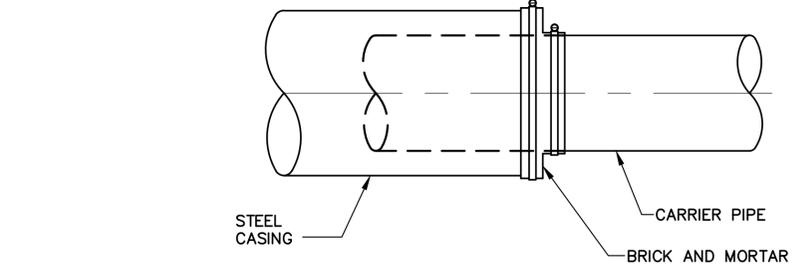


- NOTE:**
1. ALL PIPING SHALL BE 2" DUCTILE IRON WITH RESTRAINED JOINTS.
 2. FIELD LOCATE PER OWNER'S DIRECTION.

BLOWOFF DETAIL 1
NOT TO SCALE



ELEVATION
VALVE BOX AND STEM EXTENSION 3
NOT TO SCALE

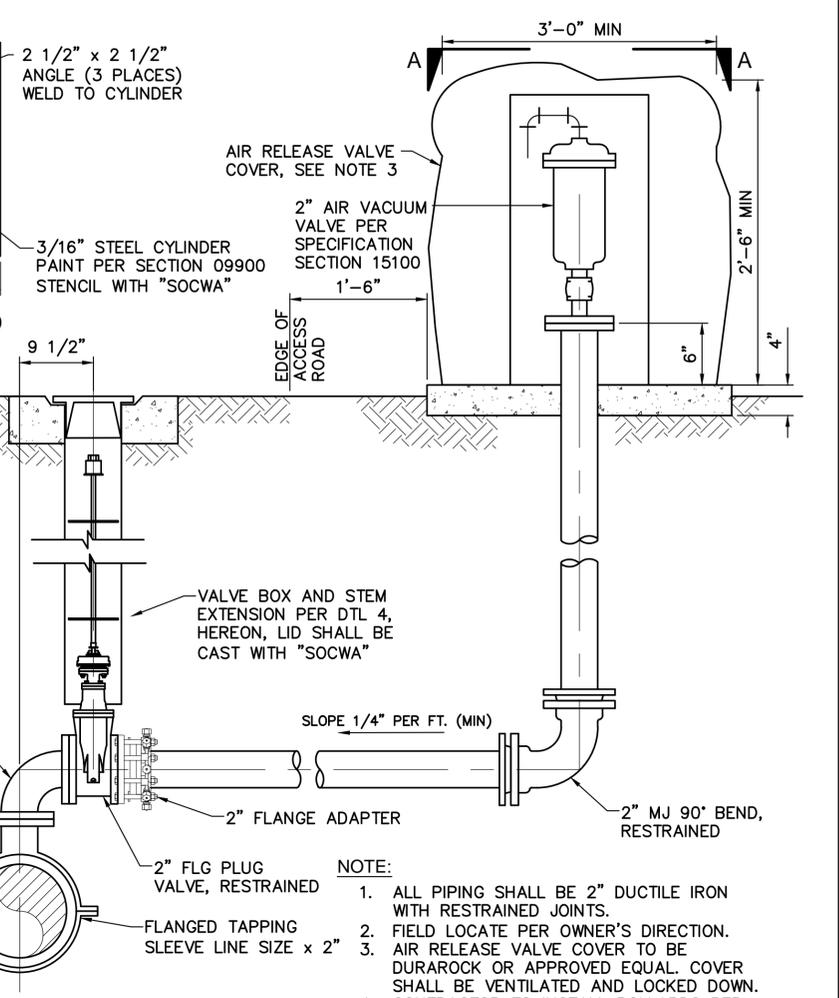


MOLDED END SEAL DETAIL 4
NOT TO SCALE

AUGER BORING NOTES

1. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE PROJECT SPECIFICATIONS INCLUDING, BUT NOT LIMITED TO:
A. SECTION 13320 - AUGER BORING
2. CASING SIZE INDICATED ON THE PLANS SHALL BE CONSIDERED MINIMUM SIZE. CONTRACTOR SHALL FURNISH AND INSTALL STEEL CASING OF SUFFICIENT DIAMETER AND WALL THICKNESS, BUT NOT SMALLER THAN INDICATED MINIMUM, TO ACCOMPLISH THE INTENDED LINE AND GRADE AS SHOWN ON THE PLANS.
3. CASING JOINTS SHALL BE SEAL PASS BUTT WELD AT MINIMUM. JOINT WELD SHALL BE CONTINUOUS.
4. CONTRACTOR IS ADVISED THAT AUGER BORING OPERATION WILL INSTALL STEEL CASING IN CLOSE PROXIMITY OF CRITICAL AND DANGEROUS BURIED FACILITIES. THE FOLLOWING REQUIREMENTS APPLY TO THIS WORK:

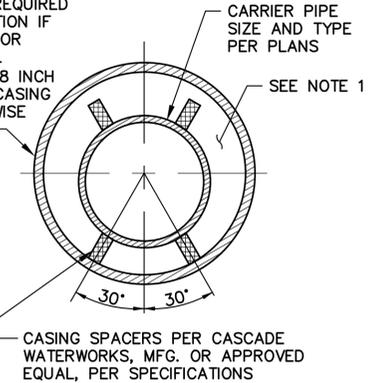
- A. CONTRACTOR SHALL FIELD LOCATE (POTHOLE) ALL UTILITIES WITHIN THE AUGER BORING ALIGNMENT AND FURNISH RESULTS PROJECT SUBMITTALS AS REQUIRED BY SECTION 13320, PARAGRAPH 1.07.
- B. MAINTAIN LINE AND GRADE AS SHOWN ON THE DRAWINGS. AT NO POINT ALONG THE ALIGNMENT SHALL INSTALLED CASING VARY FROM LINE AND GRADE BY MORE THAN FOUR INCHES IN HORIZONTAL ALIGNMENT AND TWO INCHES IN VERTICAL ALIGNMENT.
- C. CONTRACTOR SHALL EMPLOY APPROPRIATE MEANS TO CHECK LINE AND GRADE ALONG THE AUGER BORING INSTALLATION. FINAL CASING ALIGNMENT (HORIZONTAL AND VERTICAL) SHALL BE SUBMITTED TO ENGINEER WITHIN FIVE DAYS OF COMPLETION OF INSTALLATION.
5. REFER TO SPECIFICATIONS FOR TUNNEL CLASSIFICATION FOR THIS LOCATION.



AIR VACUUM VALVE ASSEMBLY 2
NOT TO SCALE

STEEL CASING NOTES

1. CASING TO BE FILLED W/ AIR BLOWN SAND UNLESS OTHERWISE NOTED.
2. MAXIMUM DISTANCE BETWEEN CASING SPACERS SHALL BE 5'-FT. (PROVIDE ADDITIONAL SPACERS PER MANUFACTURER'S RECOMMENDATION AT ON ADDITIONAL COST TO OWNER).
3. SEE SPECIFICATIONS FOR FORCE MAIN PIPING REQUIREMENTS.



STEEL CASING DETAIL 5
NOT TO SCALE

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605 Third Street Encinitas, CA 92024
760.942.5147 Fax 760.632.0164

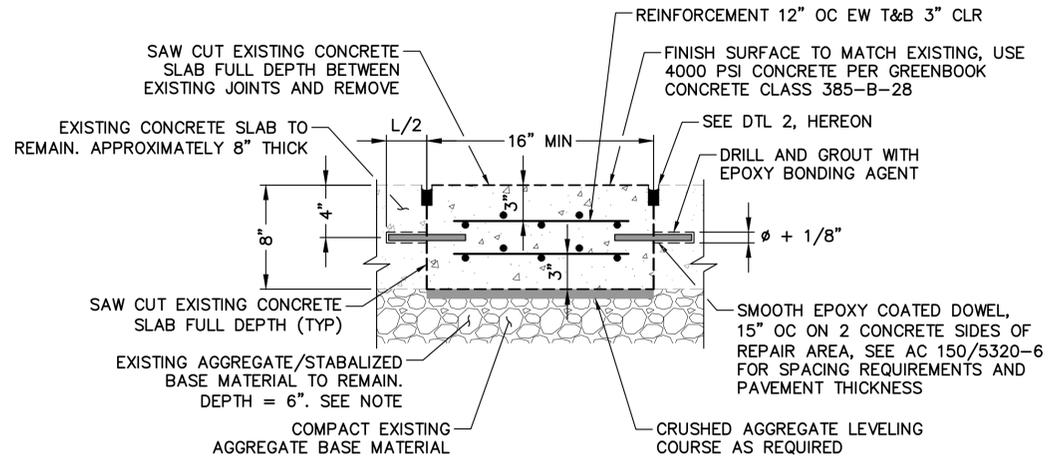


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APPROVED: _____	DUDEK ENGINEERS	DATE: _____
APPROVED: _____	DATE: _____	DESIGNED: KP
DATE: OCTOBER 27, 2014	Exp. 3/31/14	DRAWN: KK, PC
FILE NO.: 6731_SH26_D-2	CIVIL	CHECKED: MM

REVISIONS			
NO.	BY	DATE	REMARKS

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DETAILS - 2	DRAWING NO. D-2
	SHEET NO. 26 OF 33

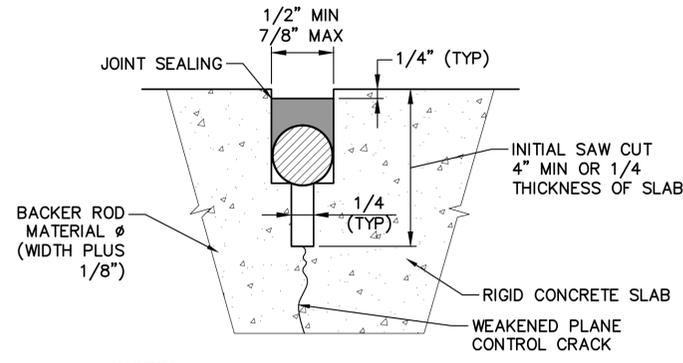


NOTE:
WHERE EXISTING BASE MATERIAL IS A STABILIZED MATERIAL (EXAMPLE: 9-401 STABILIZED BASE) REPAIR DAMAGED BASE SURFACE WITH SIMILAR MATERIAL.

ALISO CREEK WILDLIFE AND HABITAT ENHANCEMENT PROJECT (ACWHEP) CONCRETE SLAB REPAIR DETAIL

NOT TO SCALE

1
C-12

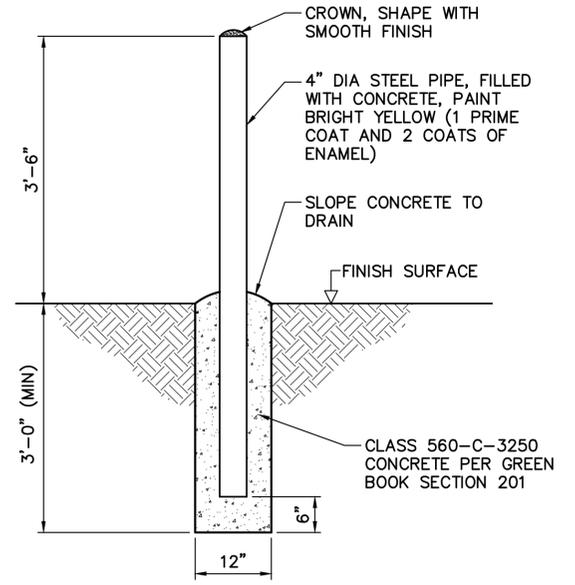


- NOTES:
- INITIAL SAW CUT OF NEW CONCRETE SLAB CONTRACTION JOINT SHOULD BE MADE AS SOON AS PRACTICAL BASED ON MATERIAL SET TIME.
 - SAW CUT WIDTH AND DEPTH TO BE DETERMINED BY SEALANT TYPE AND MANUFACTURER'S RECOMMENDED RESERVOIR DIMENSIONS.

SAW CUT CONTRACTION JOINT DETAIL

NOT TO SCALE

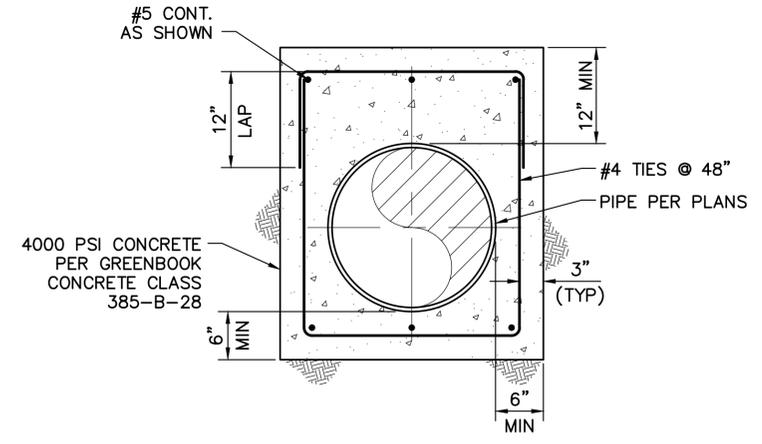
2
-



BOLLARD DETAIL

NOT TO SCALE

3
D-2



CONCRETE PIPE ENCASEMENT DETAIL

NOT TO SCALE

4
C-12

DUDEK
Dudek & Associates, Inc.
605 Third Street Encinitas, CA 92024
760.942.5147 Fax 760.632.0164



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APPROVED: _____	DUDEK ENGINEERS	DATE: _____
APPROVED: _____	DATE: _____	DATE: _____
LINE IS 2 INCHES AT FULL SIZE IF NOT 2" - SCALE ACCORDINGLY	DATE: OCTOBER 27, 2014	DESIGNED: KP
FILE NO.: 6731_SH27_D-3	DRAWN: KK, PC	CHECKED: MM

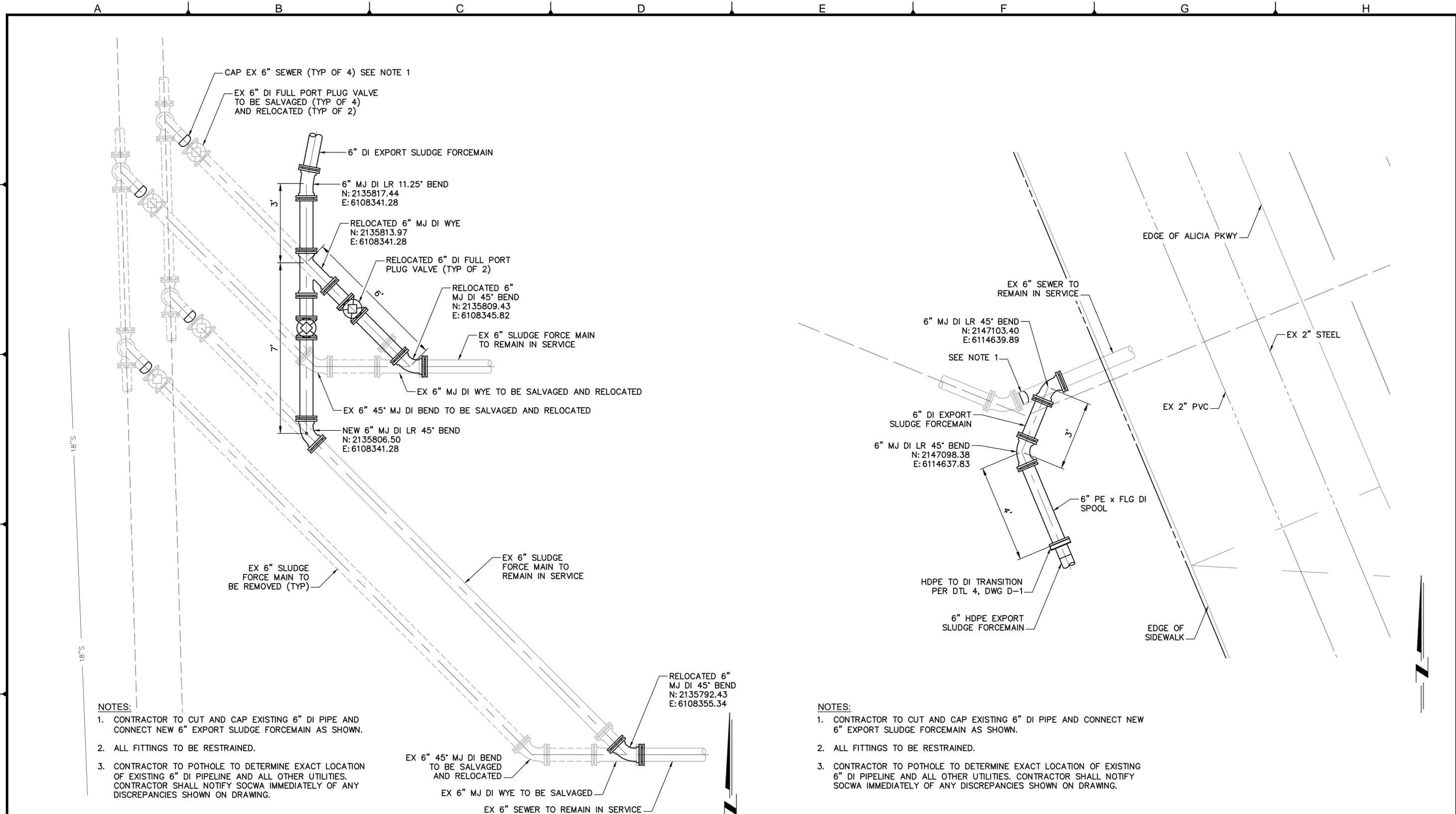
REVISIONS			
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EXPORT SLUDGE FM FINAL DESIGN	PROJECT NO. 7301.0001
DETAILS -3	DRAWING NO. D-3
	SHEET NO. 27 OF 33

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NOTES:

1. CONTRACTOR TO CUT AND CAP EXISTING 6" DI PIPE AND CONNECT NEW 6" EXPORT SLUDGE FORCEMAIN AS SHOWN.
2. ALL FITTINGS TO BE RESTRAINED.
3. CONTRACTOR TO POTHOLE TO DETERMINE EXACT LOCATION OF EXISTING 6" DI PIPELINE AND ALL OTHER UTILITIES. CONTRACTOR SHALL NOTIFY SOCWA IMMEDIATELY OF ANY DISCREPANCIES SHOWN ON DRAWING.

NOTES:

1. CONTRACTOR TO CUT AND CAP EXISTING 6" DI PIPE AND CONNECT NEW 6" EXPORT SLUDGE FORCEMAIN AS SHOWN.
2. ALL FITTINGS TO BE RESTRAINED.
3. CONTRACTOR TO POTHOLE TO DETERMINE EXACT LOCATION OF EXISTING 6" DI PIPELINE AND ALL OTHER UTILITIES. CONTRACTOR SHALL NOTIFY SOCWA IMMEDIATELY OF ANY DISCREPANCIES SHOWN ON DRAWING.

STA 0+00.00 CONNECTION DETAIL
NOT TO SCALE

1
C-1

STA 164+05.02 CONNECTION DETAIL
NOT TO SCALE

2
C-19

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DATE: OCTOBER 27, 2014	DESIGNED: KP	
FILE NO.: 6731_SH28_D-4	DRAWN: KK, PC	
	CHECKED: MM	

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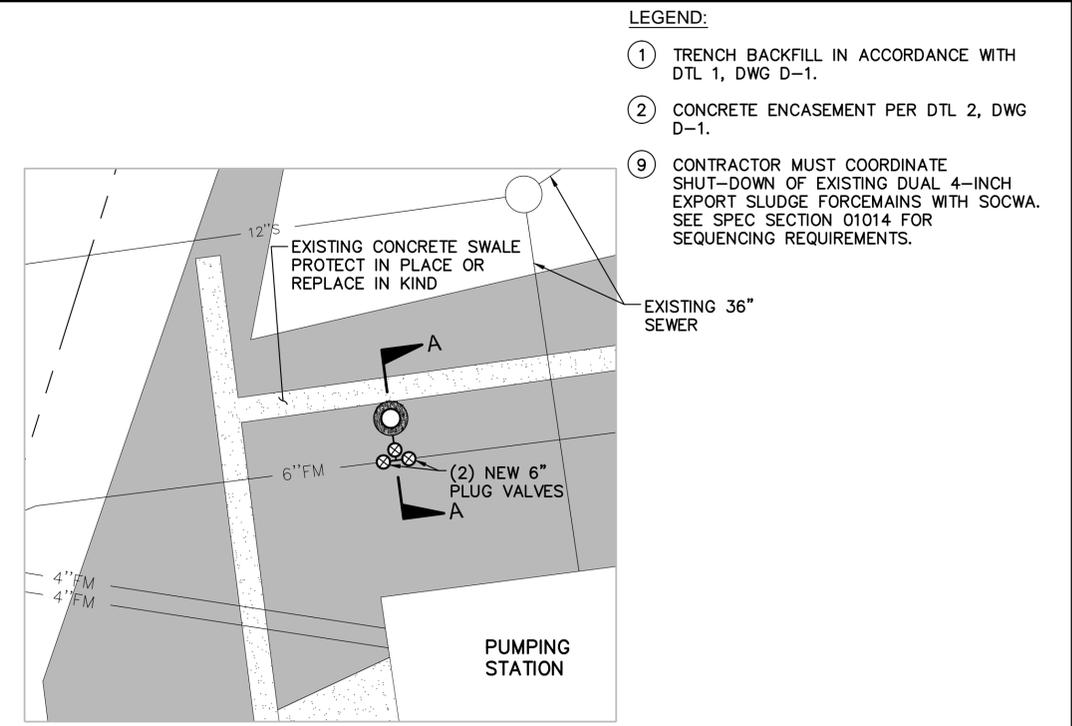
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DETAILS - 4

PROJECT NO.	7301.0001
DRAWING NO.	D-4
SHEET NO.	28 OF 33

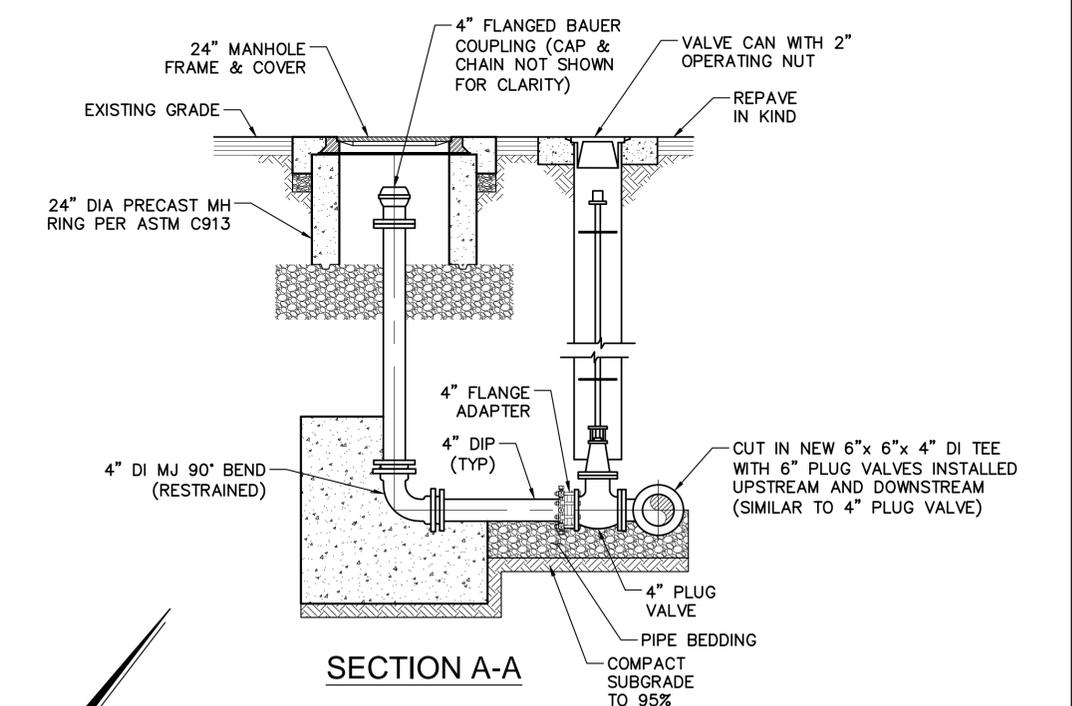
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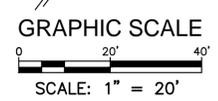
PLAN
SCALE: 1" = 20'



ENLARGED PLAN



SECTION A-A
FORCE MAIN FLUSHING STATION DETAIL
NOT TO SCALE



- LEGEND:**
- ① TRENCH BACKFILL IN ACCORDANCE WITH DTL 1, DWG D-1.
 - ② CONCRETE ENCASEMENT PER DTL 2, DWG D-1.
 - ⑨ CONTRACTOR MUST COORDINATE SHUT-DOWN OF EXISTING DUAL 4-INCH EXPORT SLUDGE FORCEMAINS WITH SOCWA. SEE SPEC SECTION 01014 FOR SEQUENCING REQUIREMENTS.

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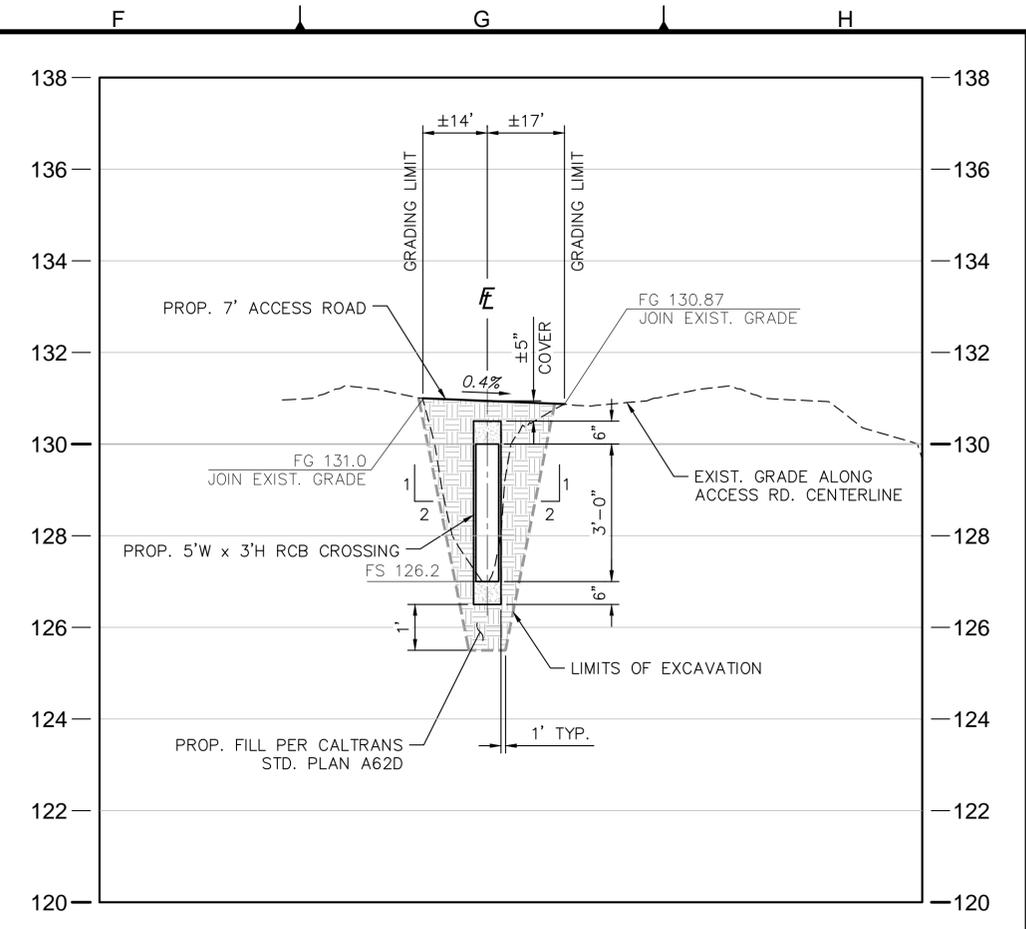
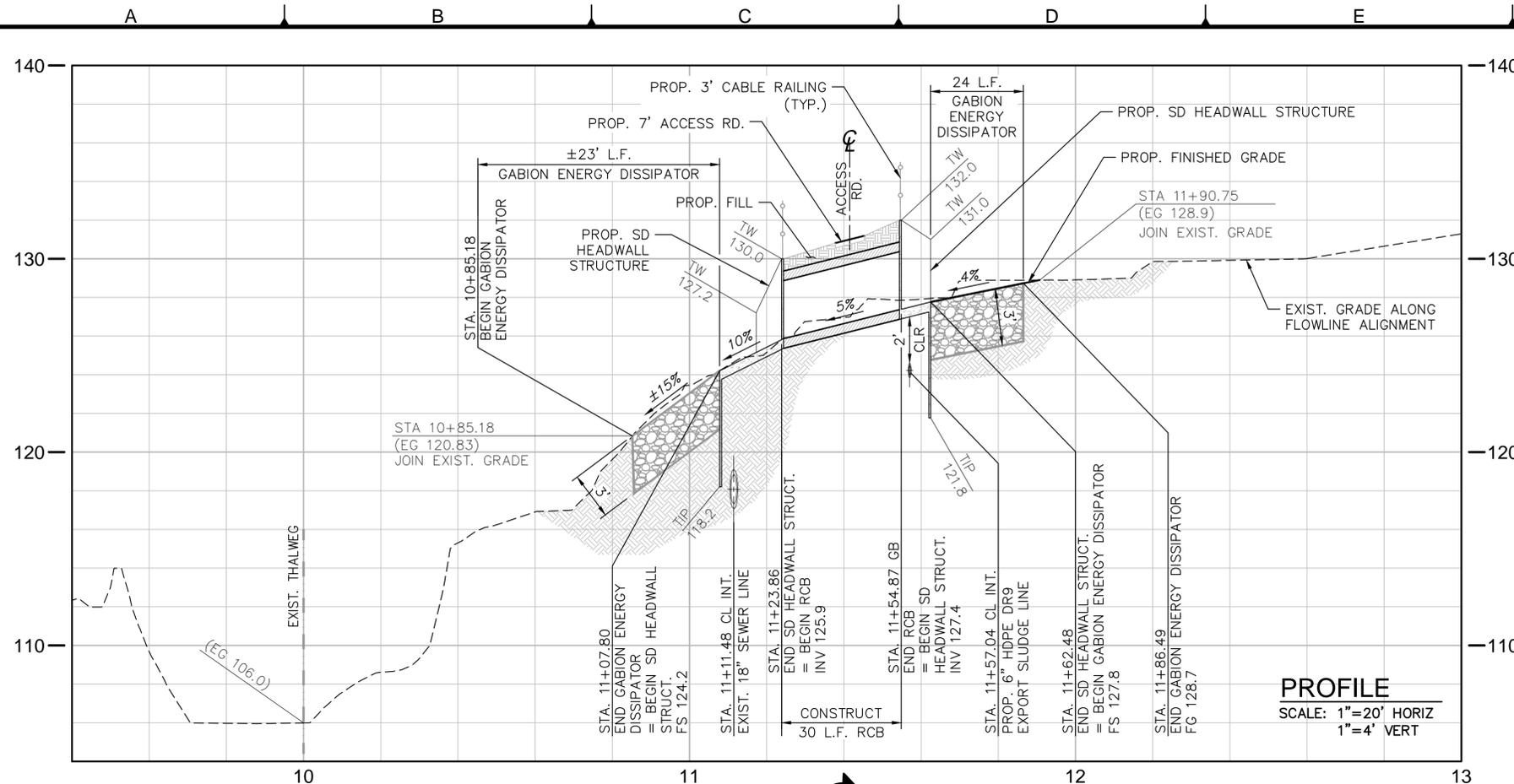
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 APPROVED: _____ DUDEK ENGINEERS DATE: _____
 APPROVED: _____ DATE: _____
 DATE: OCTOBER 27, 2014 DESIGNED: KP
 DRAWN: KK, PC
 CHECKED: MM
 LINE IS 2 INCHES AT FULL SIZE
 IF NOT 2" - SCALE ACCORDINGLY
 FILE NO.: 6731_SH29_D-5

REVISIONS			
NO.	BY	DATE	REMARKS

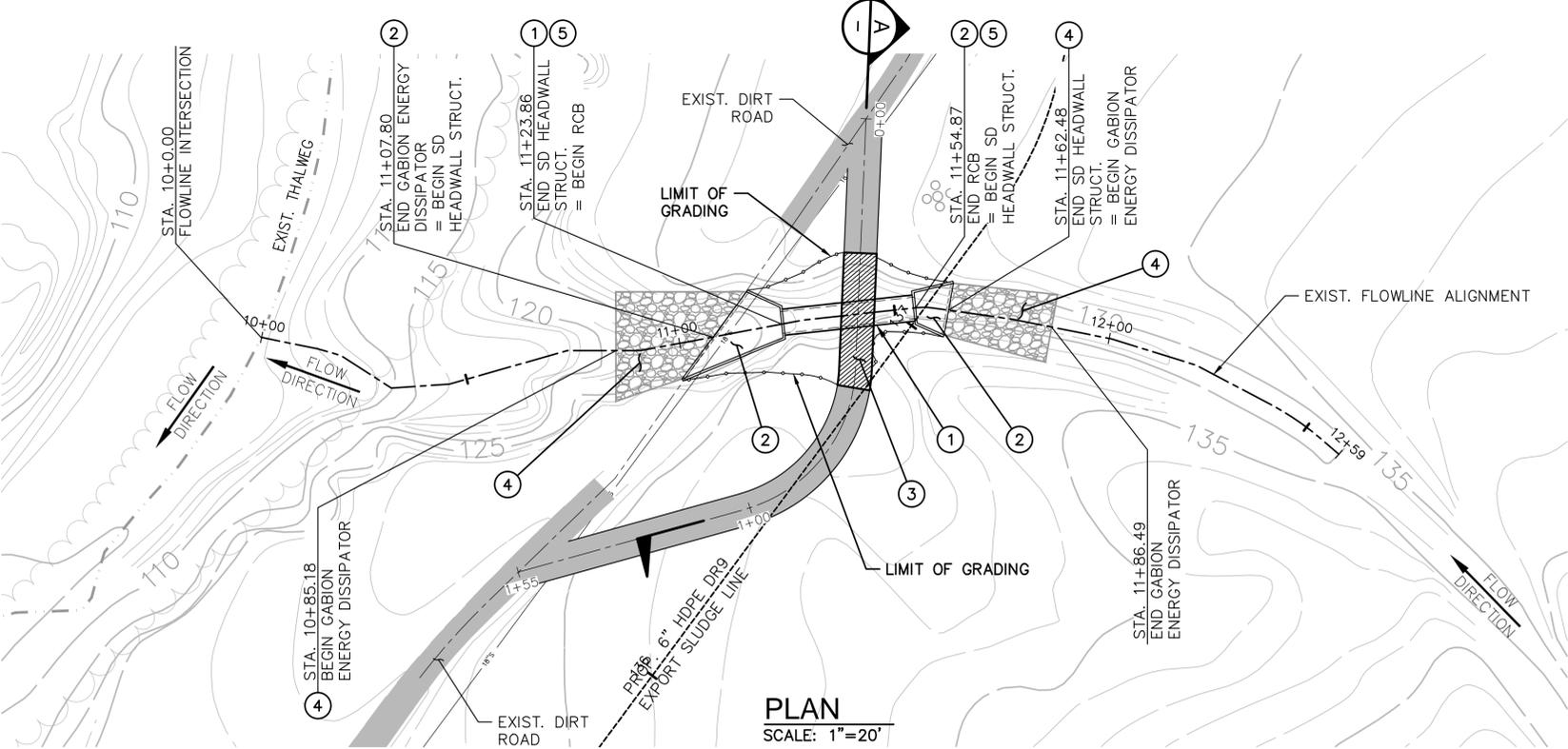
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EXPORT SLUDGE FM FINAL DESIGN
6" FORCE MAIN FLUSHING STATION PLAN & SECTION

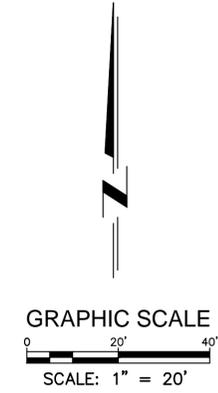
PROJECT NO. **7301.0001**
DRAWING NO. **D-5**
SHEET NO. **29 OF 33**



SECTION A
SCALE: 1"=20' HORIZ
1"=2' VERT



- CONSTRUCTION NOTES:**
- ① CONSTRUCT 5'W x 3'H RCB PER PLAN, PROFILE, AND CALTRANS STD. PLAN D80.
 - ② CONSTRUCT SD HEADWALL STRUCTURE PER PLAN, PROFILE, AND CALTRANS STD. PLAN D86B.
 - ③ CONSTRUCT 7-FT ACCESS ROAD PER PLAN, PROFILE, AND SECTION-A HEREON.
 - ④ CONSTRUCT GABION ENERGY DISSIPATOR PER PLAN, PROFILE, AND CALTRANS STD. PLAN D100A.
 - ⑤ INSTALL 3-FT CABLE RAILING PER PLAN, PROFILE, AND CALTRANS STD. PLAN NSP A85B.



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760.942.5147 Fax 760.632.0164



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APPROVED: _____ DUDEK ENGINEERS DATE: _____
APPROVED: _____ DATE: _____

DATE: OCTOBER 27, 2014
DESIGNED: KP
DRAWN: KK, PC
CHECKED: MM

FILE NO.: 6731_SH30_D-6

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NO.	BY	DATE	REMARKS

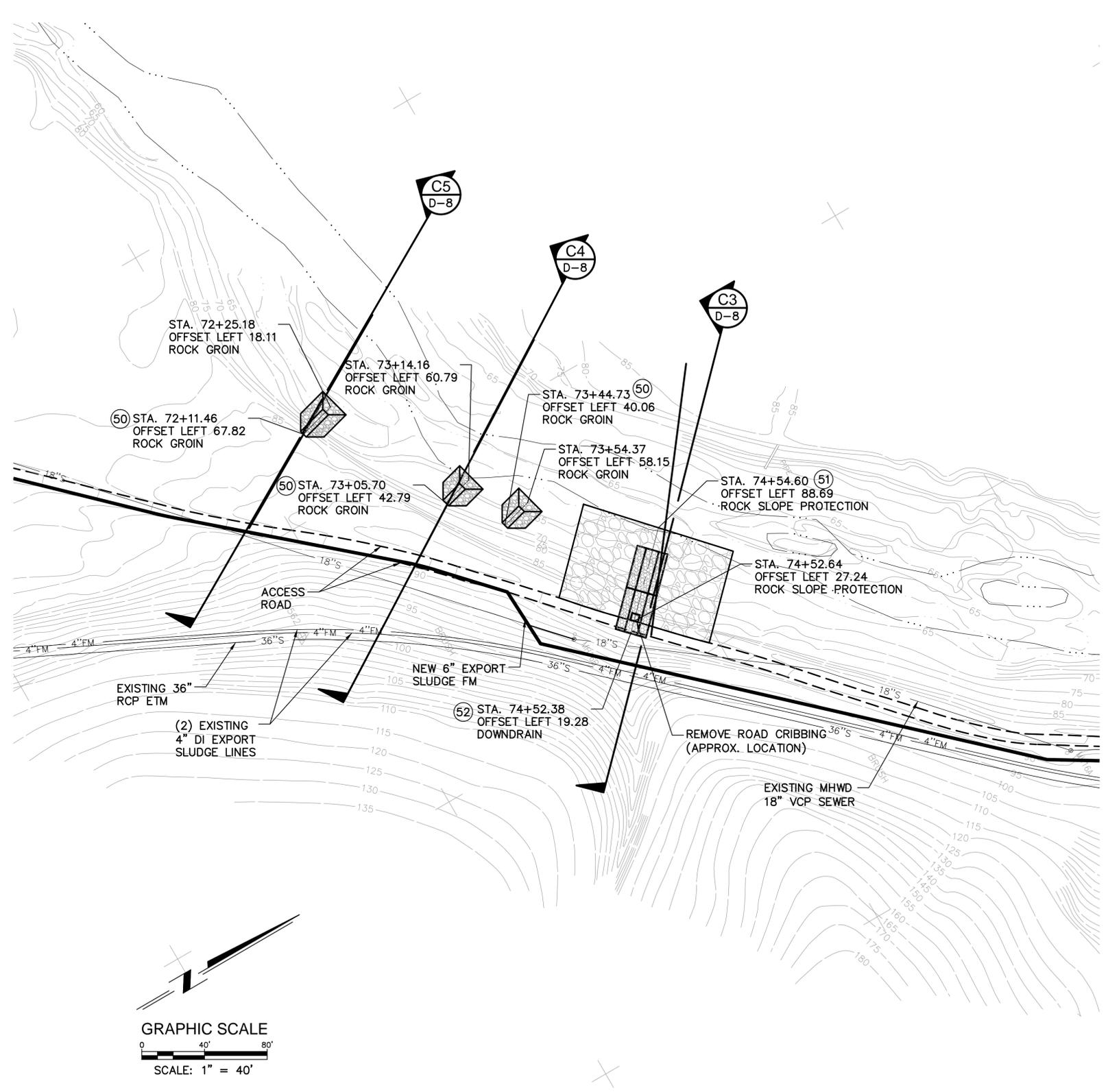
SOCWA
South Orange County Wastewater Authority
34156 Del Obispo Street, Dana Point, CA 92629

EXPORT SLUDGE FM FINAL DESIGN
BOX CULVERT CROSSING
PLAN, PROFILE AND SECTION

PROJECT NO. 7301.0001
DRAWING NO. D-6
SHEET NO. 30 OF 33

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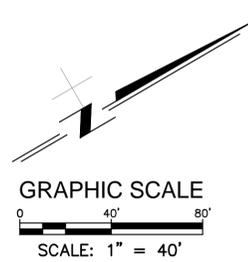


LEGEND:

- (50) ROCK GROIN PER DETAIL A, DWG D-8
- (51) ROCK SLOPE PROTECTION TO BE PLACED ON THE SLOPES, DWG D-8 AND D-9
- (52) DOWNDRAIN DTL 1, DWG D-9

SW GENERAL NOTES:

- 1 CONTRACTOR TO FIELD VERIFY ALL UTILITIES AND OBSTRUCTIONS PRIOR TO MOBILIZING WORK.
- 2 STATIONS AND OFFSETS AS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR. IF THERE ARE ANY DISCREPANCIES CONTRACTOR IS TO NOTIFY SOCWA IMMEDIATELY.
- 3 TOPOGRAPHY ACCURACY MAY BE LIMITED DUE TO HEAVY VEGETATION. CONTRACTOR TO FIELD FIT THE IMPROVEMENTS AS SHOWN ON THE PLANS. IF FIELD CONDITIONS ARE SIGNIFICANTLY DIFFERENT, CONTRACTOR TO NOTIFY SOCWA IMMEDIATELY.
- 4 CONTRACTOR TO PROTECT ALL UTILITIES.
- 5 CONTRACTOR MAY NOT STORE MATERIAL OR EQUIPMENT IN THE CREEK BED.



TETRA TECH 17885 VON KARMAN AVE., SUITE 500 IRVINE, CA 92614 (949) 809-5000

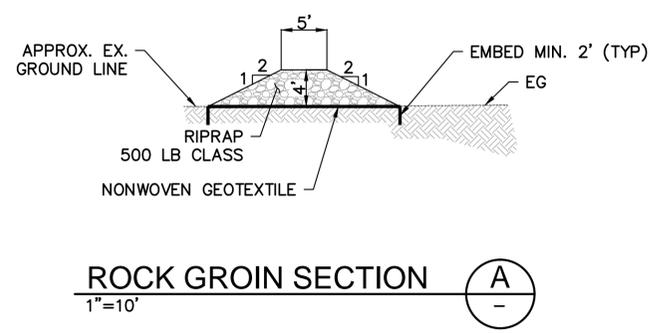
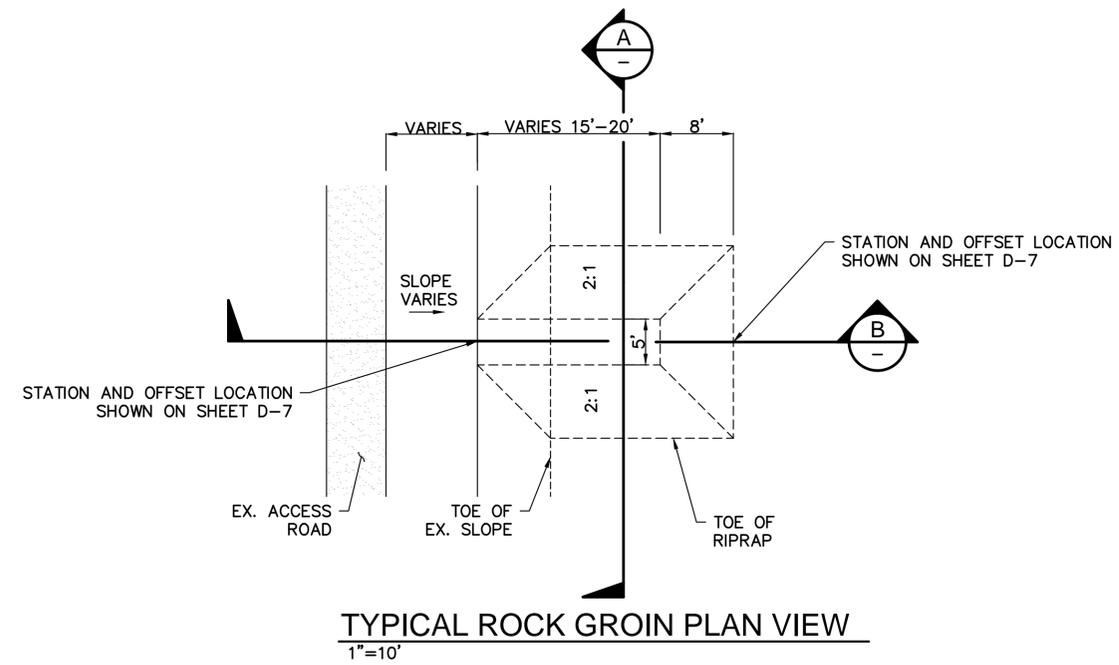
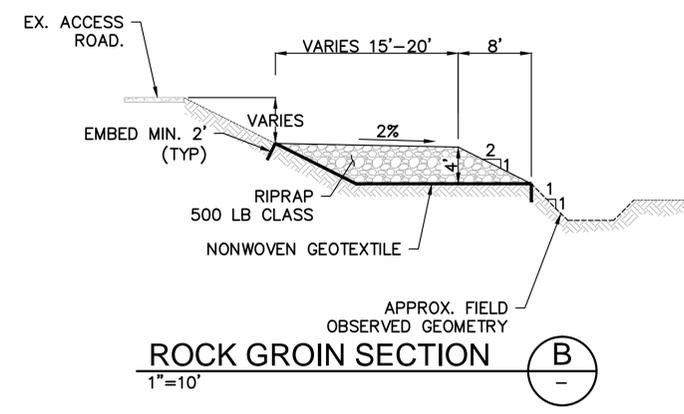
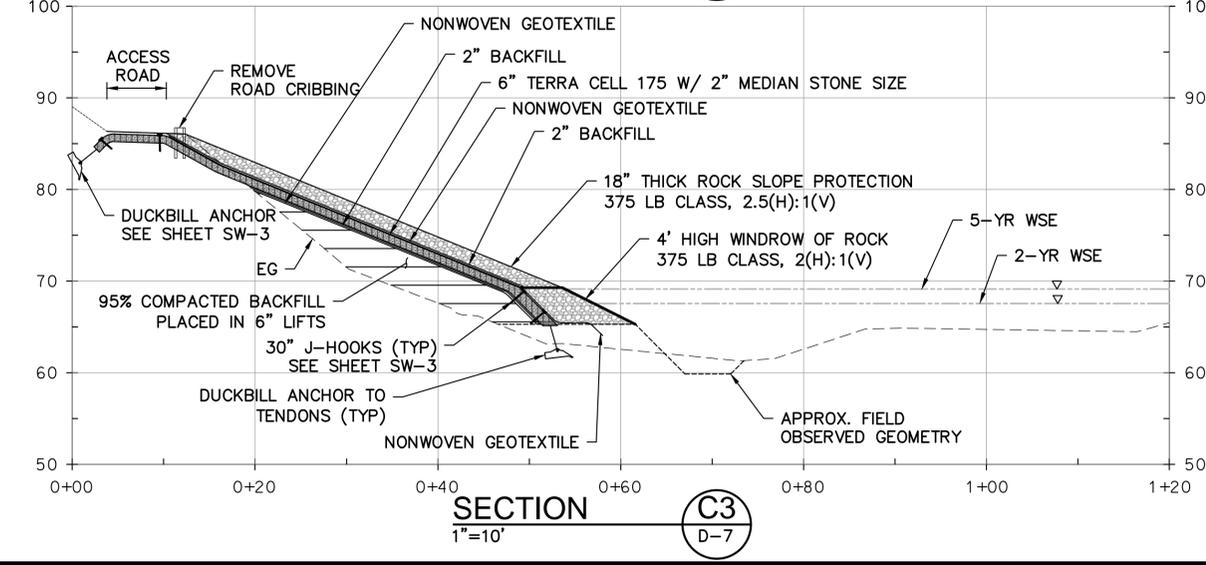
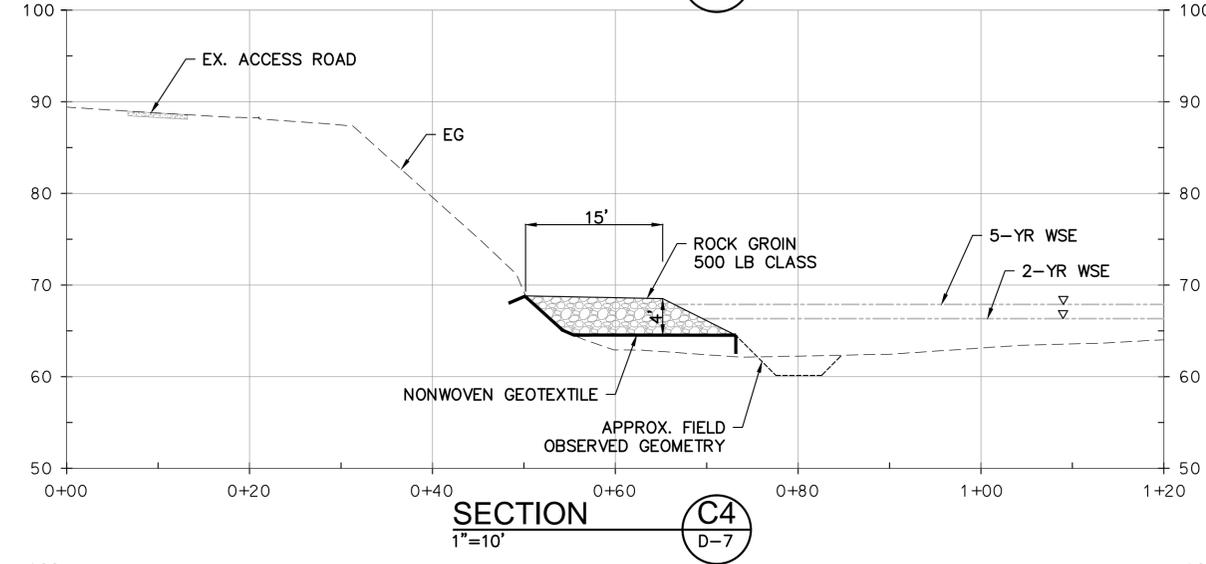
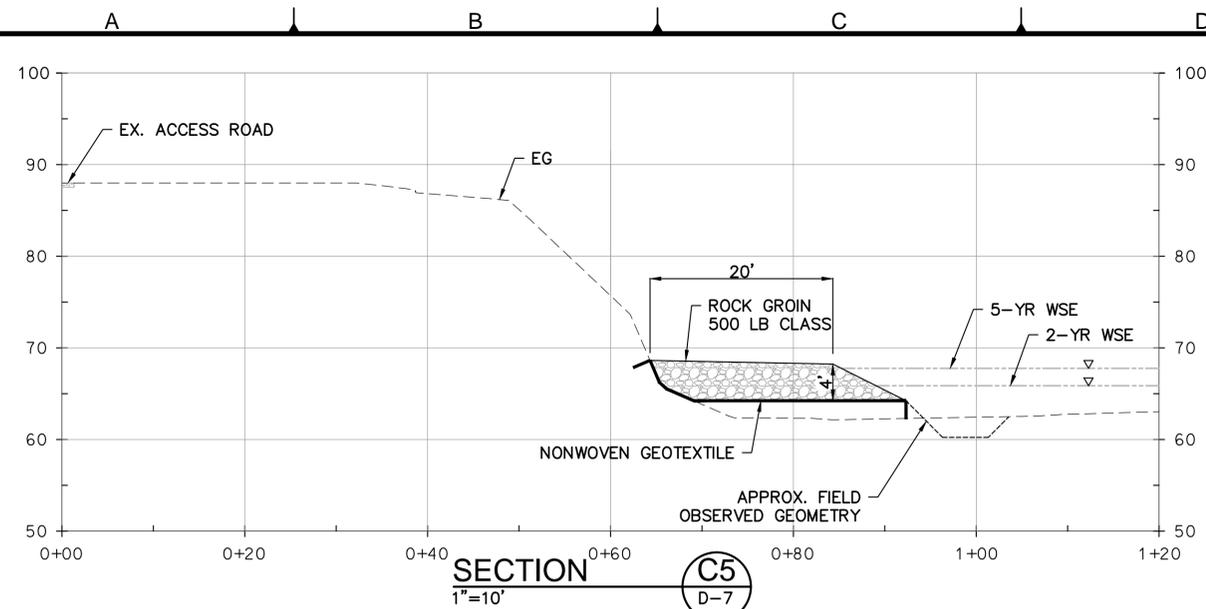


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APPROVED: _____		DATE: _____
DATE: OCTOBER 27, 2014	DESIGNED: AG	
FILE NO.: 6731 SH31 D-7	DRAWN: KJ	
	CHECKED: IP	

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34156 Del Obispo Street, Dana Point, CA 92629

EXPORT SLUDGE FM FINAL DESIGN	PROJECT NO. 7301.0001
CREEK BANK PROTECTION PLAN VIEW	DRAWING NO. D-7
	SHEET NO. 31 OF 33



- MATERIAL REQUIREMENTS:**
- 1 MATERIAL FOR ROCK SLOPE PROTECTION AND WINDROW ROCK SHALL MEET GREENBOOK STANDARD 200-1 FOR 375 LB CLASS.
 - 2 MATERIAL FOR ROCK GROIN SHALL MEET GREENBOOK STANDARD 200-1 FOR 500 LB CLASS.
 - 3 MATERIAL FOR NONWOVEN GEOTEXTILE SHALL MEET TENCATE MIRAFI N-SERIES REQUIREMENTS.
 - 4 AREA TO BE CLEARED AND GRUBBED PRIOR TO COMPACTED BACKFILL PLACEMENT PER GREENBOOK STANDARD 300-1. MATERIAL FOR COMPACTED BACKFILL AND BACKFILL PROCEDURES SHALL MEET GREENBOOK STANDARD 300-4 FOR UNCLASSIFIED FILL.
 - 5 MATERIAL AND INSTALLATION FOR DOWNDRAIN SHALL MEET TERRA CELL (ENVIROGRID) MANUFACTURES REQUIREMENTS.

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APPROVED: _____	DUDEK ENGINEERS	DATE: _____
APPROVED: _____		DATE: _____
DATE: OCTOBER 27, 2014	DESIGNED: AG	
FILE NO.: 6731_SH32_D-8	DRAWN: KJ	
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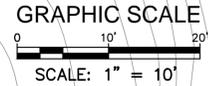
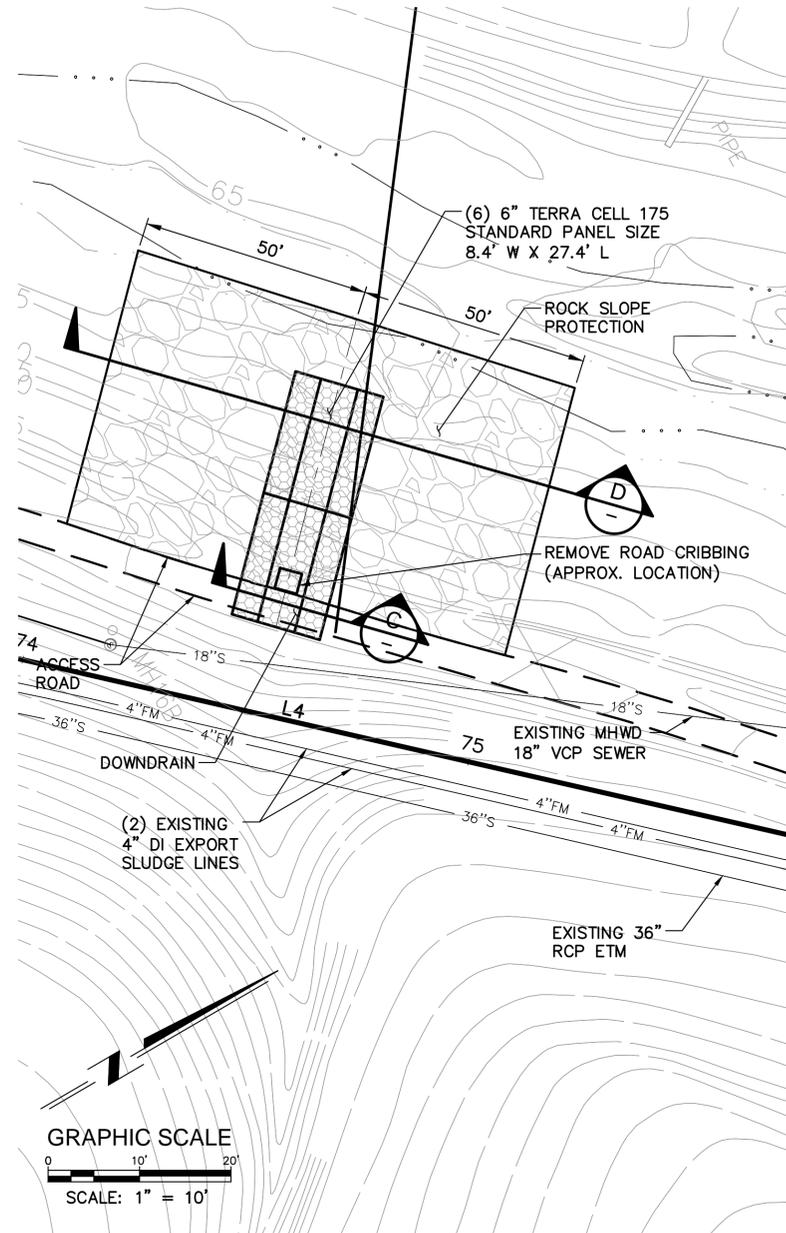
REVISIONS			
NO.	BY	DATE	REMARKS



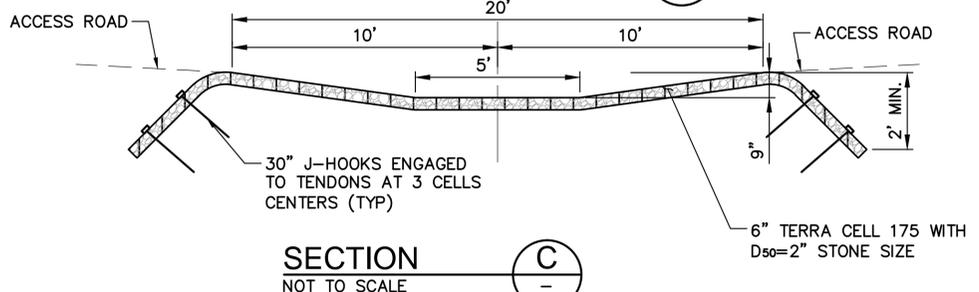
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CREEK BANK PROTECTION CROSS SECTIONS AND DETAILS

PROJECT NO. 7301.0001
DRAWING NO. D-8
SHEET NO. 32 OF 33

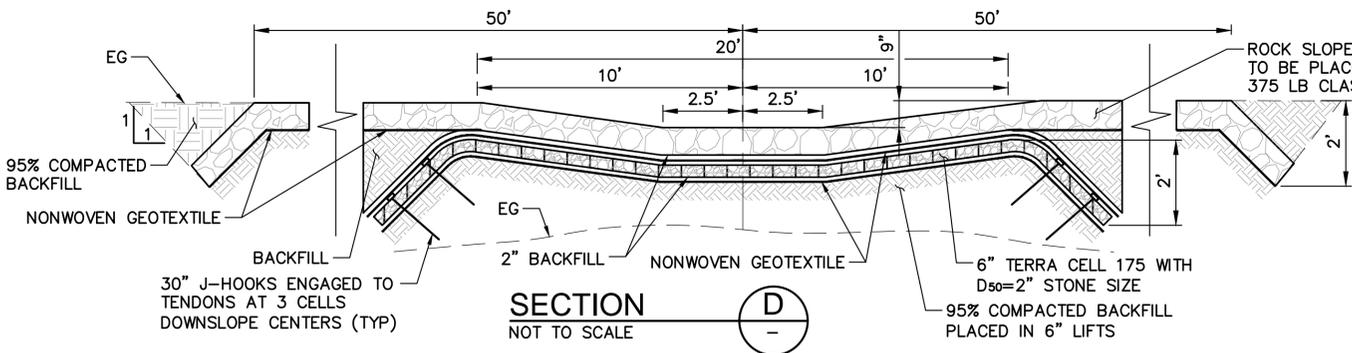
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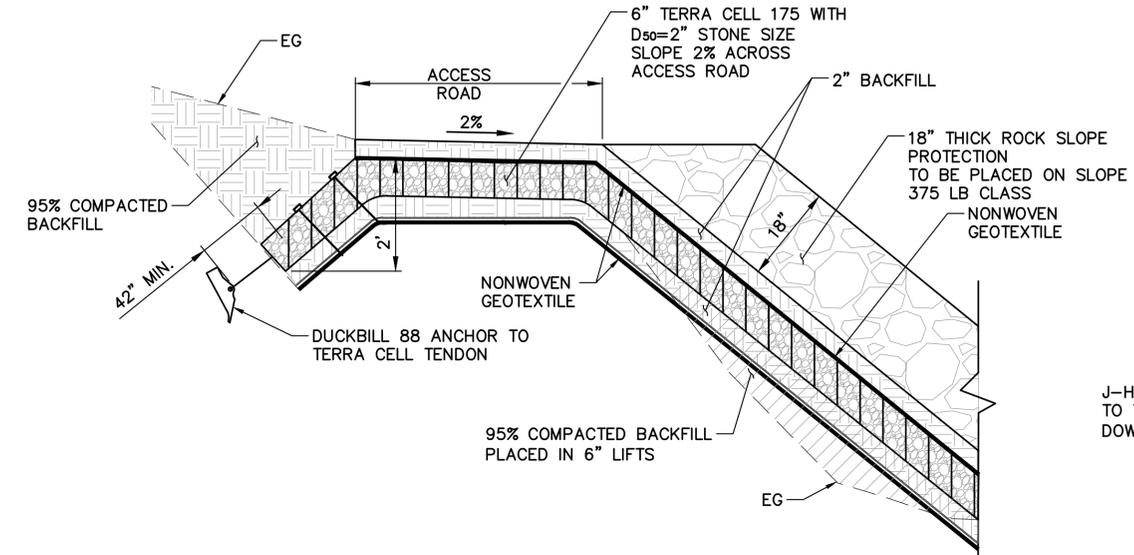
DOWNDRAIN DETAIL
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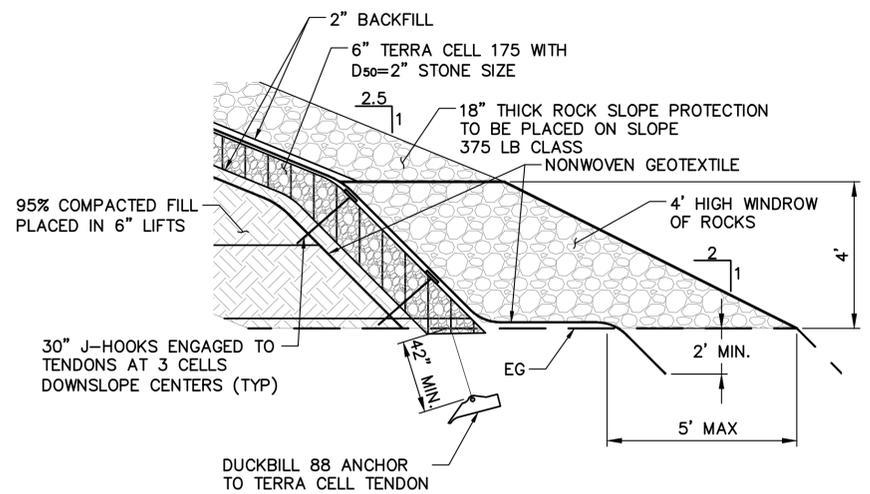
SECTION C
NOT TO SCALE



SECTION D
NOT TO SCALE



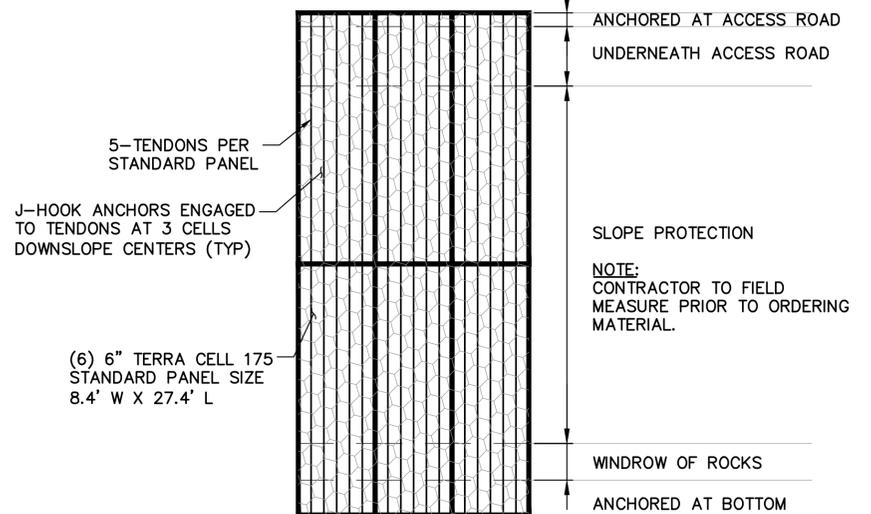
ACCESS ROAD ANCHORING DETAIL
NOT TO SCALE



WINDROW OF ROCKS ANCHORING DETAIL
NOT TO SCALE

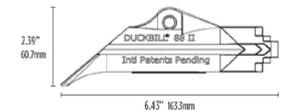
- MATERIAL REQUIREMENTS:**
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 - 5 MATERIAL AND INSTALLATION FOR DOWNDRAIN SHALL MEET TERRA CELL (ENVIROGRID) MANUFACTURES REQUIREMENTS.

TERRA CELL 175 MAY BE ORDERED FROM MR. GREG OSENDORF AT (760) 431-2452.



TERRA CELL 175 LAYOUT PLAN VIEW
NOT TO SCALE

- TENDON
- FORM TWO LOOPS
- FOLD LOOPS TOGETHER
- INSERT HDPE CLIP
- POSITION AND TIGHTEN



DUCKBILL 88 ANCHOR
NOT TO SCALE

CLOVE HITCH KNOT
NOT TO SCALE



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		CHECKED: IP

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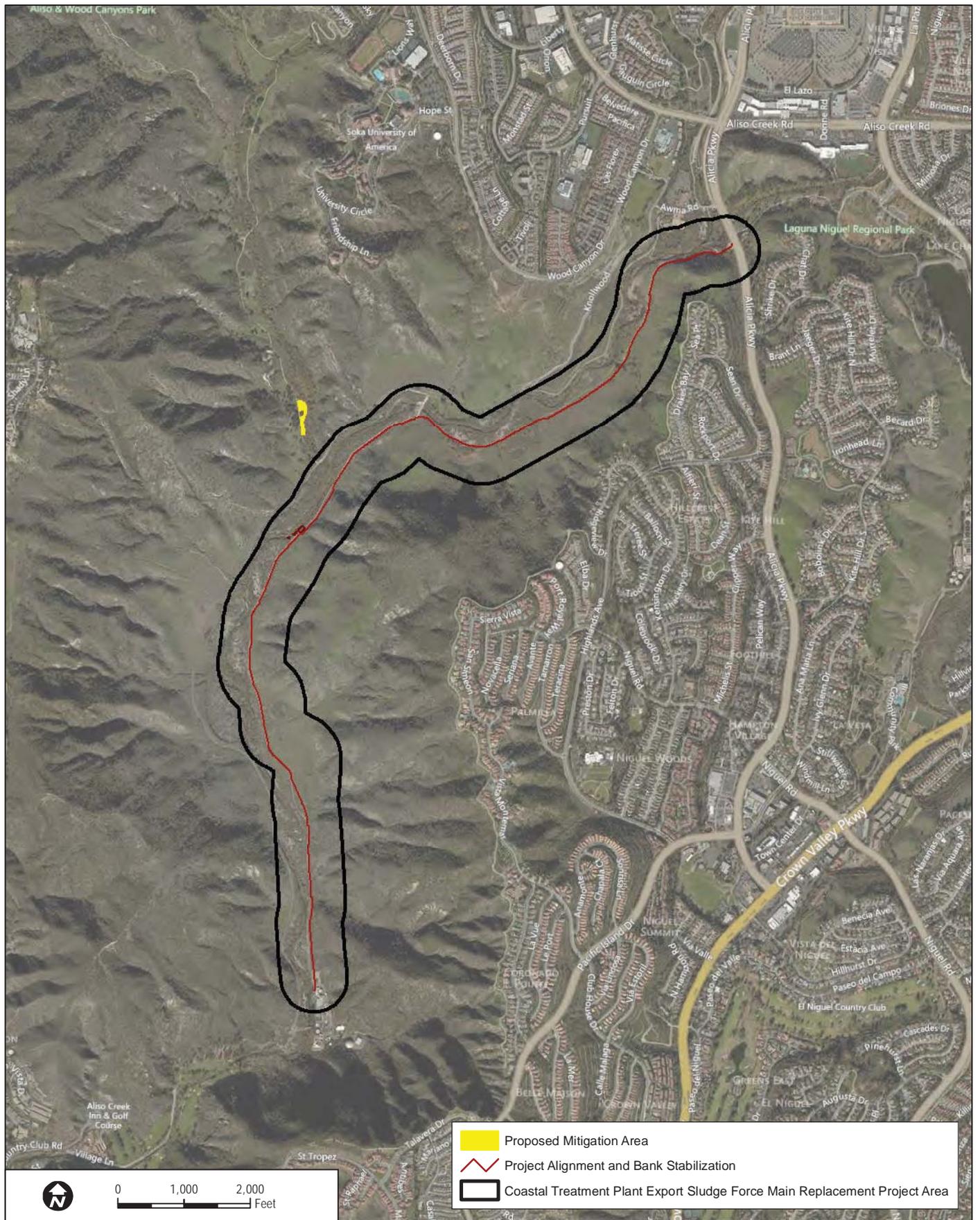
EXPORT SLUDGE FM FINAL DESIGN	PROJECT NO. 7301.0001
DOWNDRAIN AND DETAILS	DRAWING NO. D-9
	SHEET NO. 33 OF 33

South Orange County Wastewater Authority
Coastal Treatment Plant Export Sludge Force Main Replacement Project
Certification No. R9-2015-0033

**ATTACHMENT 4
MITIGATION FIGURES**

Figure 4 – Dudek, Project and Mitigation Area Vicinity Map

Figure 3 – Dudek, Mitigation Area



DUDEK

SOURCE: Bing Maps 2014

FIGURE 4

Coastal Treatment Plant Export Sludge Force Main Replacement Project

6731

Habitat Mitigation And Monitoring Plan for the Coastal Treatment Plant Export Sludge Force Main Replacement Project



 Proposed Mitigation Area

Mitigation Type

-  Southern Cottonwood-willow Riparian Forest (0.50 Ac)
-  Upland Transition (0.12 Ac)

Imagery ©2015, DigitalGlobe, U.S. Geological Survey



SOURCE: GOOGLE 2015

FIGURE 3

Proposed Mitigation Area

South Orange County Wastewater Authority
Coastal Treatment Plant Export Sludge Force Main Replacement Project
Certification No. R9-2015-0033

ATTACHMENT 5
CEQA MITIGATION MONITORING AND REPORTING PROGRAM

12 – MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure/ PDF No.	Mitigation Measures/ Design Features	Timing of Mitigation			Monitoring Reporting Agency	Completed		Comments
		Pre Const.	During Const.	Post Const.		Initials	Date	
	<p>paved road within an urban area.</p> <ul style="list-style-type: none"> • Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line. • Water exposed soil with adequate frequency for continued moist soil. • Replace ground cover in disturbed areas as quickly as possible. • Vehicle speed for all construction vehicles shall not exceed 15 miles per hour (mph) on any unpaved surface at the construction site. 							
Mitigation Measures								
none								
Biology								
Project Design Features								
Biological Resources	Prior to ground disturbance, a qualified biologist shall conduct focused surveys for thread-leaved brodiaea.	X			SOCWA			
Mitigation Measures								
MM BIO-1	<p>The following avoidance measures shall be implemented prior to construction to prevent direct and indirect impacts to special-status birds:</p> <ul style="list-style-type: none"> • Pre-construction breeding bird surveys shall be conducted by an appropriately qualified biologist beginning 30 days prior to initiation of project activities, and recurring weekly, if construction occurs during the nesting season (February 1 through September 15) of species known or with potential to nest in the study area. Surveys shall be conducted to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and any other such habitat within 300 feet of the disturbance area (within 500 feet for raptors). The last survey shall be conducted no more than 10 days 	X			SOCWA			

12 – MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure/ PDF No.	Mitigation Measures/ Design Features	Timing of Mitigation			Monitoring Reporting Agency	Completed		Comments
		Pre Const.	During Const.	Post Const.		Initials	Date	
	<p>prior to the initiation of project activities.</p> <ul style="list-style-type: none"> If a protected native bird is found, appropriate no-work buffers shall be established, including 300-foot buffers for listed species such as California gnatcatcher and least Bell's vireo, 500 feet for special-status raptors, and 50-foot buffers for non-listed passerine species until August 31. Alternatively, the qualified biologist could continue the surveys in order to locate any nests. If an active nest is located, project activities within 300 feet of the nest (within 500 feet for raptor nests), or as determined by the qualified biologist, must be postponed until the nest is vacated and juveniles have fledged and there is no evidence of a second attempt at nesting. Flagging, stakes, and/or construction fencing may be appropriate to demarcate the inside boundary of the buffer of 300 feet (or 500 feet) between the project activities and the nest. The qualified biologist shall provide SOCWA the results of the protective measures to document compliance with applicable State and Federal laws pertaining to the protection of native birds. SOCWA and its biologist shall coordinate the procedures for minimizing harm to or harassment of wildlife encountered during construction with the SOCWA contractor and other key construction personnel prior to clearing, grubbing, or grading. SOCWA's biologist and contractor shall flush special-status species (i.e., avian or other mobile species) from occupied habitat areas during the non-breeding season immediately prior to brush-clearing and earth-moving activities. 							
MM BIO-2	To prevent inadvertent impacts to western pond turtle, pre-construction surveys and exclusionary fencing shall be implemented. Starting in mid-March prior to scheduled construction, a qualified turtle biologist, specializing in pond	X			SOCWA			

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	<p>turtle "nesting" behavior, shall survey the project footprint and adjacent areas within the study area in order to assess the areas for possible nesting sites and to map the limits of those potential habitats. Potential nesting areas shall be excluded with fencing material that is regularly monitored for integrity (i.e., no damage, breeches or gaps). This shall be accomplished through one of two alternative methods:</p> <ul style="list-style-type: none"> • Exclude the entire Aliso Creek riparian zone from the pipeline modification study area. This shall consist of a single line of exclusion fencing (i.e., several segments of silt fence attached to one another), uninterrupted from the upstream portion of the study area to the downstream portion and deflected back from the creek a sufficient distance to prevent end-runs. This shall prevent turtles from moving into the project zone. The fence shall be maintained with no breaks and/or openings throughout the project duration. The fence shall be placed before the nesting season begins (i.e., before March 1), even if the pipeline construction does not begin until summer and/or fall. The fencing material shall be at least 24 inches tall, with 6 inches keyed into the soil (buried) and 18 inches above ground. <p>-OR-</p> <ul style="list-style-type: none"> • Exclude only those areas deemed by the turtle biologist as possible nesting areas. This shall include completely surrounding those areas with an exclusion fence. The size of the exclusion areas shall depend on available nesting habitat (could be small and/or large, and could be many). The exclusion fence(s) shall be maintained at all times with no breaks and installed as directed above. 							
MM BIO-3	A biological monitor with turtle experience shall be onsite during all construction activities. The monitor shall periodically survey the modification zone and exclusion fence to make sure that there are no openings and that no		X		SOCWA			

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	turtles have entered the study area. If a turtle is observed, it shall be captured, processed, its reproductive status determined (palpating for eggs), and either relocated back to Aliso Creek out of harm's way or redirected to an area that is unencumbered by silt fencing. The monitor palpating ensure that female turtles attempting to return to same area to nest later that day or over the next few days are relocated out of the construction area.							
MM BIO-4	Temporary, direct impacts to 11.3 acres of special-status vegetation communities shall be mitigated through on-site restoration at a 2:1 ratio (for California sagebrush scrub, coyote brush scrub, and Menzies' goldenbrush scrub) and a 1:1 ratio (for other vegetation communities) to restore impacted special-status vegetation communities to pre-construction conditions. A revegetation plan shall be developed, and all revegetation efforts shall be consistent with the management plan developed for the Central-Coastal Subregion NCCP/HCP for this particular reserve area. The revegetation plan shall include a monitoring program, clearly defined success criteria, and contingency measures, and shall be submitted to OC Parks prior to commencement of grading or trenching activities.			X	SOCWA			
MM BIO-5	To prevent inadvertent disturbance to special-status vegetation communities, including riparian communities, outside the limits of the construction easement, vegetation removal shall be monitored by a biologist and standard best management practices (BMPs) (see measures listed in <i>Table 3-1</i> related to the minimization of fugitive dust, the containment of accidental spills of hazardous materials, and water quality protection) shall be implemented. A biologist shall be contracted to perform biological monitoring during all clearing activities. The following duties shall be carried out by the biological	X	X		SOCWA			

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	<p>monitor:</p> <ul style="list-style-type: none"> Review and/or designate the vegetation removal area in the field with the contractor in accordance with the final plan; Be present during initial vegetation clearing, grubbing, and grading; and Record any advertent impacts to vegetation communities outside the designated construction easement in daily monitoring reports. 								
MM BIO-6	<p>To reduce temporary impacts to 2.94 acres of jurisdictional waters / wetlands, the following shall be required of SOCWA:</p> <ul style="list-style-type: none"> Prior to construction, the following agency permits shall be obtained, or verification that they are not required shall be obtained: SOCWA shall obtain a CWA, Section 401/404 permit issued by the California RWQCB and the ACOE for all project-related disturbances of water of the United States and/or associated wetlands. A Section 1602 Streambed Alteration Agreement shall be obtained from CDFG for all project-related disturbances of any streambed. These permits will specify the mitigation requirements for impacts to jurisdictional waters / wetlands. For temporary impacts resulting from the proposed project, restoration in place is typically required at a 1:1 ratio, but may be as high as 2:1. The permits will also likely stipulate standard construction best management practices that will be required by SOCWA to ensure that adjacent preserved wetlands will not be impacted by the project. As part of the permit conditions, SOCWA will be required to enter into a minimum 5-year maintenance and monitoring agreement in which the restoration areas are 	X		X				SOCWA	

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	monitored by a qualified biologist to ensure they are meeting success criteria and performance standards. These criteria and standards will be established and defined during the permit process period. The plan shall be prepared and submitted to the regulatory agencies for approval.							
<i>Cultural</i>								
<i>Project Design Features</i>								
none								
<i>Mitigation Measures</i>								
MM CUL-1	A pre-construction workshop shall be conducted by a qualified archaeologist and a local Native American representative. Attendees will include SOCWA representative(s), an archaeologist, local Native American operators to ensure that all parties understand the cultural resources monitoring program and their respective roles and responsibilities. All construction personnel who will work within the CA-ORA-582 site boundary, and 100-foot buffer around the boundary, shall be required to attend the workshop. The names of all personnel who attended shall be recorded. The workshop will review the following: types of archaeological materials that may be uncovered; examples of common archaeological artifacts and other cultural materials to examine; describe why monitoring is required; describe what makes an archaeological resource significant; identify monitoring procedures; identify what would temporarily halt construction and for how long; describe a reasonable worst-case resource discovery scenario (i.e., discovery of intact human remains or an unknown, intact, substantial midden deposit); and describe reporting requirements and the responsibilities of the construction							
					SOCWA			

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<i>Hazardous Materials</i>								
<i>Project Design Features</i>								
Hazardous Materials	SOCWA shall ensure that all equipment required for construction and short-term trucking activities shall be refueled or maintained within designated staging areas (adjacent parking lots). Best Management Practices (BMPs) to contain accidental spills of hazardous materials shall be utilized when performing vehicle maintenance or refueling. Such BMPs may include the following: <ul style="list-style-type: none"> • When equipment is being utilized along the access road, drip pans shall be placed under all potential discharge conduits or leaks. • "Spot clean" leaks and drips routinely to prevent runoff of spillage. • Post signs to remind employees not to top off the fuel tank when filling and signs that ban employees from changing engine oil or other fluids at the project location. • Report leaking vehicles to fleet maintenance. 	X			SOCWA			
<i>Mitigation Measures</i>								
MM HAZ-1	Prior to construction, SOCWA shall develop a Traffic Management Plan to identify alternative routes which will enable emergency access in the case of an emergency situation. Traffic congestion and road blockages shall be minimized to the maximum extent possible. The Plan shall be submitted to the Orange County Fire Authority for review and approval prior to commencement of construction.	X			SOCWA			

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<i>Hydrology and Water Quality</i>								
<i>Project Design Features</i>								
Water Quality Protection and Erosion and Sedimentation Control	<p>In compliance with the National Pollution Discharge Elimination System (NPDES), the applicant will prepare a storm water pollution prevention plan (SWPPP) that specifies best management practices (BMPs) to be implemented during project construction to prevent pollutants from contacting stormwater and control erosion and sedimentation. The SWPPP will be prepared and submitted to the Regional Water Quality Control Board (RWQCB) for review and approval prior to the start of construction. Project construction will implement the following BMPs to protect water quality and reduce erosion and sedimentation:</p> <ul style="list-style-type: none"> • Physical and/or vegetation stabilization BMPs such as hydroseeding, soil binders, straw mulch, and/or geotextiles, plastic covers and erosion control blankets/mats are required to prevent erosion from exposed slopes. • Sediment control BMPs such as silt fences, fiber rolls, gravel bag berms, sand bag barriers, or straw bale barriers shall be used along the perimeter of the construction site or adjacent to sensitive areas and water bodies to trap soil particles and prevent sedimentation. • Waste and materials management BMPs such as spill prevention and control plans, contaminated soil management, liquid waste management, vehicle equipment cleaning, fueling and maintenance plans, material use, and stockpile management shall be implemented to prevent contaminated runoff to adjacent areas. 	X			SOCWA			

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<i>Mitigation Measures</i>								
MM HYD-1a	If groundwater is encountered during grading/trenching and is proposed to be discharged to surface waters, SOCWA shall obtain a General Waste Discharge Requirements for Discharges of Extracted Groundwater to Surface Waters within the San Diego Region Except for San Diego Bay (RWQCB Order No. R9-2008-0002) and shall comply with all requirements of the waste discharge requirements.		X		SOCWA			
MM HYD-1b	As an alternative to obtaining a waste discharge requirements permit, groundwater could be discharged to the sanitary sewer or to an upland area where it does not enter back into the stream or other surface waters, or can be used for dust control.		X		SOCWA			
<i>Noise</i>								
<i>Project Design Features</i>								
Noise	Construction activities would generally occur Monday through Saturday from 7:00 a.m. to 3:30 p.m. and would not occur after 8 p.m. (in compliance with the County Municipal Code, Section 4.6.7, which requires that construction equipment shall not be operated from 8:00 p.m. to 7:00 a.m. on weekdays or Saturday, or at any time on Sunday or a federal holiday).		X		SOCWA			
<i>Mitigation Measures</i>								
none								
<i>Paleontological Resources</i>								
<i>Project Design Features</i>								
none								