

July 1, 2021

ADDENDUM NO. 1

RE: ALTAMIRA WATER MAIN RELOCATION; PROJECT NO.: 3904-F

Please include the attached addendum in the Notice to Bidder/Request for Bids you have for the above project.

This addendum--receipt acknowledged--must be included to your bid when your bid is submitted.



GRAHAM JORDAN
Contract Administrator

I ACKNOWLEDGE RECEIPT OF ADDENDUM NO. 1

Bidder's Signature

CITY OF CARLSBAD

Altamira Water Main Relocation

**Contract No. 3904-F
Bid No. PWS21-1525UTIL**

Addendum No. 1

From: Graham Jordan, Contract Administrator
Phone: 760-602-2462
graham.jordan@carlsbadca.gov

No. of Pages: 83 pages (including this page)

Date: July 1, 2021

Bid Opening Date: July 7, 2021 - 11:00 a.m. (unchanged)

NOTICE:

This Addendum forms a part of the Contract Documents for the above identified project and modifies portions of the original Contract Specifications. Documents not specifically mentioned in this Addendum remain in full force.

Acknowledge receipt of this Addendum on the Bid Form. Failure to do so may subject bidder to disqualification.

MODIFICATIONS, DELETIONS, AND ADDITIONS TO THE GENERAL PROVISIONS

1) Contractor's Proposal

Replace this section in its entirety with the revised Contractor's Proposal attached hereto (Attachment A).

2) General Provisions, Section 6-2.2 Construction Phasing

Revise the following phases:

Phase 1. Submit construction schedule, schedule of values, working drawings and shop drawings.

Fusible PVC pipe will be procured by CMWD (see Appendix A). Contractor shall be granted a no-cost time extension for any delays associated with Agency's procurement of fusible PVC pipe.

Phase 6. Contractor mobilizes fusion services to fuse the slipline pipe on the west side of Interstate 5. De-bead the pipe fusion joints from the outside diameter of the slipline pipe.

Upon completion of fusion welding, the fusible PVC pipe string shall be tested by the Contractor with low air pressure (10 psi max.) in accordance with the pipe suppliers recommended practices and prior to insertion into the host pipe.

Phase 8. On the east side of Interstate 5, Contractor installs winch and cable equipment or provides other means and methods to install the slipline pipe into 12-inch host pipe.

Contractor installs the 16-inch HDPE casing and connects the HDPE casing to the existing 24-inch RCP casing. The sequence of casing installation shall be determined by the Contractor.

During this phase, City forces will provide, at Contractor's option and with Contractor's 5-day advance request, hydro-jetting equipment to pull the Contractor's steel cable through the 12-inch host pipe for subsequent pull-back during the sliplining operation.

Phase 10. Contractor conducts hydrostatic pressure test and disinfects the new fusible PVC slipline.

Temporary water meter and water source to be provided by Agency at no cost to the Contractor.

3) General Provisions, Section 7-5 Permits

Add the following:

7-5.2 Encina Wastewater Authority. The Contractor shall complete and submit the entry permit application (included in Appendix F) for the issuance of a no-fee permit for access to the work site and shall conduct all operations within the public right-of-way as shown on the Plans and in accordance with the terms of the entry permit. Staging or storage of materials or equipment outside of the limits of the public right-of-way for longer than three working days will require the approval of the Encina Wastewater Authority and will be subject to a lease fee of \$7,500 per acre per month.

4) General Provisions, Section 9-4 Bid Items

Replace this section in its entirety with the attached Section 9-4 (Attachment B).

5) Appendix A – Proposal for Fusible PVC Pipe and Fusion Services

Replace Appendix A with the revised Appendix A attached hereto (Attachment C).

6) Appendix B – Caltrans Encroachment Permit

Insert the Caltrans Encroachment Permit No. 11-21-NUR-0613, pages 1 through 29 (Attachment D).

7) Appendix C – Utility Shutdown/Connection Request, E-28

Item 2: Revise to read:

“Submission of this request shall be a minimum of five working days prior to requested shutdown/connection date.”

8) Add the following:

Appendix F – Encina Wastewater Authority Entry Permit Template (Attachment E).

MODIFICATIONS, DELETIONS, AND ADDITIONS TO THE TECHNICAL SPECIFICATION

1) Section 02060 – ACP Removal and Disposal:

Replace this specification section with the revised section attached hereto (Attachment F).

2) Section 02262 – ACP Testing:

Replace this specification section with the revised section attached hereto (Attachment G).

MODIFICATIONS, DELETIONS, AND ADDITIONS TO THE PLANS

1) Drawing 532-2, Sheet 4:

Replace this drawing sheet with the revised sheet attached hereto (Attachment H).

QUESTIONS AND ANSWERS

1. Can the bin used for asbestos removal be placed in the work area where the AC pipe is being removed?

Response: Yes, bin(s) shall be placed where accessible for off-site transport but not on the Altamira HOA property.

2. Is the City of Carlsbad the owner of the asbestos cement pipe?

Response: The Carlsbad Municipal Water District is the owner of the asbestos cement pipe to be removed.

3. Is it legal to transport the asbestos pipe/hazardous materials outside of the United States?

Response: Transport of these materials outside of the U.S. will not be required. See revised Section 02262.

4. Will the existing trees along the pipe alignment be removed prior to the work of this contract?

Response: Yes, Caltrans will remove two trees and their trunks from within the Caltrans temporary construction easement, which extends 20 feet east of the east right-of-way boundary. CMWD will remove the remaining two trees from within the limits of the pipeline replacement shown on the Plans and will grind the stumps to existing grade for these two trees. The Contractor will be required to remove the stumps and/or roots encountered in the excavation for the pipeline replacement and use the mulch generated from tree removal for restoration of the HOA property disturbed by construction activity.

5. Will access be allowed through Caltrans' right-of-way?

Response: Yes, access to the eastern work site shall occur through Caltrans right-of-way and not through the Altamira HOA property unless specifically approved in writing by the Engineer.

6. Will CMWD provide fusion services as part of pipe procurement?

Response: No, fusion of pipe joints shall be included in the Contractor's bid. CMWD will procure fusible PVC pipe and have it delivered to the site. See revised bid item descriptions in Section 9-4 and revised Appendix A attached hereto.

ATTACHMENT A

REVISED CONTRACTOR'S PROPOSAL

CARLSBAD MUNICIPAL WATER DISTRICT

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

CONTRACTOR'S PROPOSAL

Board of Directors
Carlsbad Municipal Water District
1200 Carlsbad Village Drive
Carlsbad, California 92008

The undersigned declares he/she has carefully examined the location of the work, read the Notice Inviting Bids, examined the Plans, Specifications, General Provisions, Contract Documents, and addenda thereto, and hereby proposes to furnish all labor, materials, equipment, transportation, and services required to do all the work to complete Contract No. 3904-F in accordance with the Plans, Specifications, General Provisions, Contract Documents, and addenda thereto and that he/she will take in full payment therefore the following unit prices for each item complete, to wit:

SCHEDULE "A"

<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity And Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
A-1	Mobilization (not to exceed 5% of Total Bid)	LS		\$ _____
A-2	Storm Water Pollution Prevention Plan	LS		\$ _____
A-3	Excavation Support System	LS		\$ _____
A-4	Remove Asbestos Cement Pipe	LS		\$ _____
A-5	Demolish RCP Casing	LS		\$ _____
A-6	Abandon Water Main	LS		\$ _____
A-7	Proof Test 12-Inch AC Pipe	LS		\$ _____
A-8	Furnish & Install 16-Inch HDPE Casing	LS		\$ _____
A-9	Install 10-Inch Fusible PVC Slipline	LS		\$ _____

<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity And Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
A-10	Connect to Existing Water Main, Station 0+85	LS		\$ _____
A-11	Connect to Existing Water Main, Station 6+10	LS		\$ _____

Total bid amount (in figures) for Schedule "A": \$ _____

Total bid amount (in words) for Schedule "A": _____

SCHEDULE "B" – ADDITIVE ALTERNATE

<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity And Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
B-1	Disposal of Asbestos Cement Pipe	LS		\$ _____

Total bid amount (in figures) for Schedule "B": \$ _____

Total bid amount (in words) for Schedule "B": _____

SCHEDULE "C" – ADDITIVE ALTERNATE

<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity And Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
C-1	Asbestos Cement Pipe Testing	2 EA	\$ _____	\$ _____

Total bid amount (in figures) for Schedule "C": \$ _____

Total bid amount (in words) for Schedule "C": _____

Total bid amount (in figures) for Schedule "A" plus Schedule "B" plus Schedule "C": \$ _____

Total bid amount (in words) for Schedule "A" plus Schedule "B" plus Schedule "C": _____

Carlsbad Municipal Water District shall determine the lowest responsive bid based on the total of Schedule "A", Schedule "B" and Schedule "C" combined. After the low Bid has been determined, Carlsbad Municipal Water District may, at its sole discretion, award the Contract based on either the total of Schedule "A" alone or the total of Schedule "A", Schedule "B" and Schedule "C" combined or any combination thereof.

Price(s) given above are firm for 90 days after date of bid opening.

Addendum(a) No(s). _____ has/have been received and is/are included in this proposal.

The Undersigned has carefully checked all of the above figures and understands that the District will not be responsible for any error or omission on the part of the Undersigned in preparing this bid.

The Undersigned agrees that in case of default in executing the required Contract with necessary bonds and insurance policies within twenty (20) days from the date of award of Contract by the Board of Directors of the Carlsbad Municipal Water District, the District may administratively authorize award of the contract to the second or third lowest bidder and the bid security of the lowest bidder may be forfeited.

The Undersigned bidder declares, under penalty of perjury, that the undersigned is licensed to do business or act in the capacity of a contractor within the State of California, validly licensed under license number _____, classification _____ which expires on _____, and Department of Industrial Relations PWC registration number _____ which expires on _____, and that this statement is true and correct and has the legal effect of an affidavit.

A bid submitted to the District by a Contractor who is not licensed as a contractor pursuant to the Business and Professions Code shall be considered nonresponsive and shall be rejected by the District § 7028.15(e). In all contracts where federal funds are involved, no bid submitted shall be invalidated by the failure of the bidder to be licensed in accordance with California law. However, at the time the contract is awarded, the contractor shall be properly licensed.

The Undersigned bidder hereby represents as follows:

1. That no Board member, officer agent, or employee of the City of Carlsbad is personally interested, directly or indirectly, in this Contract, or the compensation to be paid hereunder; that no representation, oral or in writing, of the Board of Directors, its officers, agents, or employees has inducted him/her to enter into this Contract, excepting only those contained in this form of Contract and the papers made a part hereof by its terms; and

2. That this bid is made without connection with any person, firm, or corporation making a bid for the same work, and is in all respects fair and without collusion or fraud.

Accompanying this proposal is _____ (Cash, Certified Check, Bond or Cashier's Check) for ten percent (10%) of the amount bid.

The Undersigned is aware of the provisions of section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and agrees to comply with such provisions before commencing the performance of the work of this Contract and continue to comply until the contract is complete.

The Undersigned is aware of the provisions of the Labor Code, Part 7, Chapter 1, Article 2, relative to the general prevailing rate of wages for each craft or type of worker needed to execute the Contract and agrees to comply with its provisions.

IF A SOLE OWNER OR SOLE CONTRACTOR SIGN HERE:

(1) Name under which business is conducted _____

(2) Signature (given and surname) of proprietor _____

(3) Place of Business _____
(Street and Number)
City and State _____

(4) Zip Code _____ Telephone No. _____

(5) E-Mail _____

IF A PARTNERSHIP, SIGN HERE:

(1) Name under which business is conducted _____

(2) Signature (given and surname and character of partner) (Note: Signature must be made by a general partner)

(3) Place of Business _____
(Street and Number)
City and State _____

(4) Zip Code _____ Telephone No. _____

(5) E-Mail _____

IF A CORPORATION, SIGN HERE:

(1) Name under which business is conducted _____

(2) _____
(Signature)

(Title)

Impress Corporate Seal here

(3) Incorporated under the laws of the State of _____

(4) Place of Business _____
(Street and Number)

City and State _____

(5) Zip Code _____ Telephone No. _____

(6) E-Mail _____

**NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE
ATTACHED**

ATTACHMENT B

REVISED SECTION 9-4 - BID ITEMS

9-4 BID ITEMS. Payment for each Bid Item shall be made at the quantity and type as listed in the Contractor's Proposal. All work shown or mentioned in the Contract Documents or incidental to the Work shall be considered as included in the Bid Items. Contractor must protect existing utilities, improvements, landscaping, irrigation systems, and vegetation in place unless noted otherwise in the Contract Documents. If damaged during the Work, the Contractor is responsible to repair or replace any utilities, improvements, landscaping, irrigation systems, and vegetation at Contractor's expense.

Bid Schedule A

Bid Item No. A-1 - Mobilization

Payment for this bid item shall be made in accordance with Section 9-3.4.1.

A field office will not be required for this project.

Bid Item No. A-2 – Storm Water Pollution Prevention Plan

Payment for this bid item shall constitute full compensation for the preparation of a storm water pollution prevention plan and implementation of the approved plan during construction in accordance with applicable storm water regulations. This item shall include Contractor's compliance with applicable requirements of the Caltrans Storm Water Permit for work within Caltrans right-of-way and the City of Carlsbad Tier 1 SWPPP in all other areas.

Bid Item No. A-3 – Excavation Support System

The contract price paid for this bid item shall constitute full compensation to furnish and install sheeting, shoring, bracing, sloping or equivalent method of support for excavations for the protection of life or limb and conforming to applicable safety orders. This includes, but is not limited to, the preparation, signing and stamping and submittal of plans by a civil or structural engineer, approval of said plan by the Engineer, and obtaining any required permit from the State Division of Industrial Safety.

Bid Item No. A-4 – Remove Asbestos Cement Pipe

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to remove existing 12-inch diameter asbestos cement pipe in accordance with the Contract Documents. This item shall include the preparation and submittal of any required health and safety plans, excavation, dewatering, removal of ACP, wrapping and sealing in polyethylene encasement, and placement of ACP in designated waste containers at the site for later disposal by Agency forces or it's separate contractor, all in accordance with applicable regulations and all incidental work or services.

Agency forces will isolate the existing AC pipe water main. Contractor shall provide dewatering BMPs and shall dechlorinate and dispose of water drained from the pipeline.

Bid Item No. A-5 – Demolish RCP Casing

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to demolish and dispose of 24-inch diameter reinforced concrete pipe casing in accordance with the Contract Documents. This item shall include all excavation, saw-cutting, removal and disposal of RCP casing and all incidental work or services.

Bid Item No. A-6 – Abandon Water Main

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to slurry fill and abandon in-place the existing 12-inch diameter asbestos

cement pipe in accordance with the Contract Documents. This item shall include all excavation, dewatering, concrete slurry filling of pipe to be abandoned in-place and all incidental work or services.

Bid Item No. A-7 – Proof Test 12-Inch AC Pipe

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to proof test the existing 12-inch asbestos cement host pipe prior to sliplining in accordance with the Contract Documents. This item shall include all coordination during cleaning and CCTV inspection of the host pipe by Agency forces; review of the CCTV inspection results by the Contractor; excavations; and furnishing and installing cable, winch, cable tension measurement devices, and any required thrust blocks and supports for proof testing and all incidental work or services.

Bid Item No. A-8 – Furnish & Install 16-Inch HDPE Casing

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment and install HDPE casing in accordance with the Contract Documents. Work shall include excavation of slipline termination trench and furnishing and installing all pipe; fittings; tracer wire; utility warning tape; connection of new HDPE casing to existing 24-inch RCP casing; import, placement and compaction of pipe zone bedding and backfill and trench zone backfill; and all incidental work or services.

Bid Item No. A-9 – Install 10-Inch Fusible PVC Slipline

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to install fusible PVC carrier pipe via the sliplining method in accordance with the Contract Documents. Work shall include excavation of sliplining tail ditch, insertion pit, and termination trench not covered in Bid Item No. 6; fusion services; any required thrust blocks and supports; pulling the carrier pipe through existing host pipe; installation of tracer wire and utility warning tape; import, placement and compaction of pipe zone bedding and backfill and trench zone backfill; hydrostatic pressure testing; disinfection; and all incidental work or services.

Agency forces will procure fusible PVC pipe in accordance with the quote for materials contained in Appendix A.

Bid Item Nos. A-10 and A-11 – Connect to Existing Water Main

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to connect the new water main to the existing water main after successful bacteriological testing and approval by the Agency. This item shall include PVC pipe up to 20 feet in length at each connection location, fittings, thrust blocks, corrosion protection, hydrostatic testing, disinfection, and incidental work or services.

Agency forces will make a temporary connection to an existing water source and flush the new pipeline prior to connection to the existing water main. Contractor shall provide water control and disposal of flushed water at the west side of the project limits.

Bid Schedule B

Bid Item No. B-1 – Dispose of Asbestos Cement Pipe

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to dispose of asbestos cement pipe removed under Bid Schedule A, Bid Item 4, in accordance with the Contract Documents. This item shall include furnishing of waste containers for ACP disposal, coordination with and obtaining approvals from the landfill, and

transport from the site to the approved landfill for legal disposal in accordance with applicable regulations and all incidental work or services.

Bid Schedule C

Bid Item No. C-1 – Asbestos Cement Pipe Testing

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to provide asbestos cement pipe testing in accordance with the Contract Documents.

END OF PART 1

ATTACHMENT C
REVISED APPENDIX "A"

APPENDIX “A”

Quote for Fusible PVC Pipe

Date Prepared: 6/29/2021 **Project Reference:** Carlsbad I-5 Crossing
Prepared For: City of Carlsbad Public Works **Proposal No.:** P21-0708
Prepared By: Brett Fornelli **Project Site:** Carlsbad, CA

PRODUCTS AND SERVICES:

No.	Pipe Description	Pipe Size	DR	Type	Color	Qty., ft	Unit Cost	Total Cost, \$
1	10" DR 18 FPVC®	10"	18	DIPS	Any	495	\$30.50	\$15,097.50
Freight to Project Site								\$9,600
Purchase Price								\$24,697.50
Tax (7.75%)								\$1,914.06
Total Pipe Purchase Price with Tax (7.75%)								\$26,611.56

UGS California Contractor License No. 930859

SCOPE OF WORK:

Equipment/Services Provided by Underground Solutions, Inc., d/b/a UGS, Inc. in California ("UGS" or "Seller"):

- Our scope is limited to pipe supply and freight to project site.

PAYMENT TERMS: 100% of purchase price on pipe delivery, net 30 days.
PIPE SHIPPING TERMS: F.O.B. Shipping Point with full freight allowed to the job site.
PROPOSAL VALIDITY: Price quoted is valid for 10 business days from the date of this Proposal.
DELIVERY SCHEDULE: To be negotiated. UGS will take reasonable action to meet Buyer's installation schedule.
TAXES: Sales tax is included for pipe and freight.

This Proposal is subject to the Terms and Conditions at <http://www.aegion.com/-/media/Aegion2017/Files/Terms/Underground%20Solutions%20Pipe%20Terms.pdf>, which form an integral part of this Proposal. Such Terms and Conditions will govern any transaction resulting from this Proposal. Any contract resulting from this Proposal is made subject to prior acceptance by UGS at its offices in Poway, California. All orders are subject to prior credit approval.

Buyer's signature indicates acceptance of the UGS Order Summary and Terms and Conditions.

Buyer's Authorized Signature

Date

Print Name & Title

Print Company Name

- Tax Exempt (must provide Tax Exempt Certificate with order) Taxable State Registered Wholesaler

TERMS AND CONDITIONS OF SALE

1. Applicable Terms. These terms and conditions govern the purchase and sale of the products (collectively, "Products") referred to in the Order Summary included in Seller's proposal (the "Order Summary"). All terms and conditions contained in any other oral or written communication, including Buyer's request for proposal(s) or purchase order, which are different from or in addition to the terms and conditions herein are hereby rejected and will not be binding on Seller, whether or not they would materially alter this document, and Seller hereby objects thereto. All prior proposals, negotiations and representations, if any, are merged herein. These terms and conditions, together with the Order Summary, comprise the complete and exclusive statement of the agreement between the parties (the "Agreement") with respect to the sale of the Products and supersede any terms contained in Buyer's documents (including any technical specifications) unless any such Buyer document is separately signed by an authorized officer of Seller. If Seller is providing fusion services to Buyer, such services will be provided pursuant to Seller's Supplemental Terms and Conditions Fusion Services referred to in Section 12 below, which will constitute a part of this Agreement. This Agreement does not supersede or modify the terms of any license agreement between Seller and Buyer.

2. Payment. Buyer agrees to pay for the Products according to the payment terms set forth in the Order Summary. The portion of the purchase price not invoiced upon pipe delivery will be invoiced ratably to Buyer monthly in arrears as fusion services are performed. Invoices are due and payable 30 days from the date of the invoice. In the event Buyer fails to make any payment to Seller when due, Buyer's entire account(s) with Seller will become immediately due and payable without notice or demand. ~~Buyer will be charged 1 1/2% interest per month, compounded monthly, on all amounts not received by the due date.~~ Buyer hereby grants Seller a purchase money security interest in the Products until such time as Seller is fully paid. Buyer will assist Seller in taking action to perfect and protect Seller's security interest.

3. Taxes. The amount of any sales, excise or other taxes, duties or governmental charges (collectively, "Taxes"), if any, applicable to the sale of the Products will be added to the purchase price and will be paid by Buyer unless Buyer provides Seller with an exemption certificate acceptable to the Taxing authorities. Any Taxes which Seller may be required to pay or collect under any existing or future law upon or with respect to the sale, purchase, delivery, storage, processing, use or consumption of any of the Products will be for the account of the Buyer, who will promptly pay the amount thereof to Seller upon demand.

4. Delivery. All delivery dates are estimated and are dependent in part upon prompt receipt of all necessary information from Buyer. Seller will make a good faith effort to complete delivery of the Products on the date and to the location specified in the Order Summary, but Seller assumes no responsibility or liability and will accept no backcharge for loss or damage due to delay or inability to deliver, whether or not such loss or damage was made known to Seller. Seller reserves the right to ship Products in advance of the scheduled delivery date unless Buyer specifically requests in writing that shipments not be made prior to the scheduled date. Unless the Order Summary provides otherwise, delivery terms are F.O.B. shipping point. The cost of any special packing or special handling caused by Buyer's requirements or requests will be added to the purchase price. If Buyer causes or requests a shipment delay, or if Seller ships or delivers the Products erroneously as a result of inaccurate, incomplete or misleading information supplied by Buyer or its agents or representatives, storage and all other additional costs and risks will be borne solely by Buyer. Any claims for Products damaged or lost in transit ("Transit Losses") must be made by Buyer to the carrier and reported to Seller within one business day following delivery to Buyer.

5. Returns. Upon Seller's prior written approval, which may be withheld in Seller's sole discretion, Buyer may return Products purchased under this Agreement. Any authorized return will be subject to payment of a restocking charge and will be allowed only if the subject Product: (i) is in new condition, suitable for resale, and (ii) has not been used, installed, modified, altered or damaged. The restocking charge for authorized returns will be no less than (x) 25% of the purchase price, net of any freight charges included in the purchase price, plus (y) 100% of freight costs incurred by Seller. Buyer is responsible for the payment or reimbursement of return freight charges. Returns will be shipped F.O.B. Seller's location. Seller may, but will not be obligated to, treat any cancellation of an accepted order as an authorized return.

6. Warranty. Seller warrants for a period of one year from the date of shipment that the Products are free from defects in material and workmanship. This warranty applies only when the Products are handled, stored, fused, and installed in accordance with Seller's written guidelines. This warranty does not cover, and Seller will not be liable for, any defect or failure caused by faulty installation, unusual pressure surges or pulsation, water hammer, temperature shocking, misapplication, misalignment, abrasion, vibration, incompatible lubricants, solvents, or sealants, U.V. degradation, accident or tampering. This warranty is conditioned upon Seller's verification of the claimed defect. If the claimed defect is verified, then, as Buyer's sole remedy for the defect, Seller will replace the defective Product free of charge F.O.B jobsite. Seller is not responsible for any costs incurred in connection with the removal or reinstallation of Products. This warranty is conditioned on Buyer giving Seller written notice of any claimed warranty defect within a reasonable time after the discovery of such defect and, in any event, within 14 months after the date of shipment.

THE WARRANTY SET FORTH IN THIS SECTION IS SELLER'S SOLE AND EXCLUSIVE WARRANTY AND IS SUBJECT TO SECTION 8 BELOW. SELLER MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE.

7. Force Majeure. Seller will have no liability for any breach caused by extreme weather or other act of God, strike or other labor shortage or disturbance, fire, accident, war or civil disturbance, delay of carriers, failure of normal sources of supply, act of government, or any other cause beyond Seller's reasonable control.

8. LIMITATION OF LIABILITY. NOTWITHSTANDING ANYTHING ELSE TO THE CONTRARY, SELLER WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, PUNITIVE OR OTHER INDIRECT DAMAGES, ~~AND SELLER'S TOTAL LIABILITY ARISING AT ANY TIME FROM THE SALE OR USE OF THE PRODUCTS WILL NOT EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS AND RELATED FUSION SERVICES, IF ANY.~~ THESE LIMITATIONS APPLY WHETHER THE LIABILITY IS BASED ON CONTRACT, TORT, STRICT LIABILITY OR ANY OTHER THEORY. THE REMEDIES SET FORTH IN THIS AGREEMENT ARE INTENDED TO CONSTITUTE A COMPLETE ALLOCATION OF THE RISKS BETWEEN THE PARTIES, AND BUYER ACKNOWLEDGES THAT IT IS KNOWINGLY LIMITING THE REMEDIES THAT MIGHT OTHERWISE BE AVAILABLE TO BUYER, BECAUSE THIS AGREEMENT AND THE PRICE PAID REFLECT SUCH ALLOCATION, THE REMEDIES PROVIDED TO BUYER HEREUNDER WILL NOT HAVE FAILED OF THEIR ESSENTIAL PURPOSE EVEN IF THEY OPERATE TO BAR RECOVERY FOR CERTAIN DAMAGES THAT BUYER MAY INCUR.

9. Inspection and Acceptance. Buyer will have **seven days from the date Buyer receives any Products to inspect such Products for defects** and nonconformance which are not due to Transit Losses, and to notify Seller, in writing, of any defects, nonconformance or rejection of such Products. After such seven-day period, Buyer will be deemed to have irrevocably accepted the Products, if not previously accepted. After such acceptance, Buyer will have no right to reject the Products for any reason or to revoke acceptance.

10. Set-off and Backcharges. Buyer will not be entitled to set-off any amounts due to Buyer against any amount due to Seller from Buyer. Seller will not be responsible for any backcharges unless approved in writing in advance by an authorized representative of Seller.

11. Remedies of Seller. Any of the following will constitute an event of default which will enable Seller, at its option and without liability to Buyer, to cancel any unexecuted portion of this order and to exercise any other right or remedy expressed herein or otherwise available at law or in equity: (i) the failure of Buyer to make any payment required hereunder when due ("Payment Default") or to perform any other term or condition contained herein; (ii) the insolvency of Buyer or its failure to pay its debts as they mature, an assignment by Buyer for the benefit of its creditors, the appointment of a receiver for Buyer or for the materials covered by this order, or the filing of any petition to adjudicate Buyer bankrupt; (iii) a failure by Buyer to provide adequate assurance of performance within ten days after a justified demand by Seller; or (iv) if Seller, in good faith, believes that Buyer's prospect of performance under this Agreement is impaired. Seller's obligations under Section 6 hereof and under Section 7 of the Supplemental Terms and Conditions Fusion Services, if applicable, will be suspended during the pendency of any Payment Default. No such suspension will extend Seller's obligations under such sections beyond the period provided therein. All rights and remedies of Seller herein are in addition to, and will not exclude, any rights or remedies that Seller may have at law or in equity. Seller's election of any remedy or remedies in the event of a default by Buyer will not preclude Seller from exercising any other remedy or remedies available to Seller for the same or any other default. In the event it becomes necessary to incur any expense for collection of any overdue account, Seller's collection charges, including attorneys' fees and expenses, will be added to the balance due and Buyer will pay all such charges together with interest thereon from the date incurred in accordance with Section 2.

below

12. Fusion Services. If Seller is providing fusion services to Buyer, such services will be provided pursuant to Seller's Supplemental Terms and Conditions Fusion Services available at ~~<http://aegion.com/media/Aegion2017/Files/Terms/Underground%20Solutions%20Fusion%20Service%20Terms.pdf>~~. Seller is not responsible for any defect or failure in fused joints that are fused by any person other than Seller's employees.

13. Patented Technology. Buyer acknowledges that any fusible polyvinyl chloride pipe included in the Products can be fused only by Seller or by a licensee in good standing of Seller's fusion technology covered by patents issued and pending (U.S. Pat. No. 6,982,051 and U.S. Pat. App. No. 11/244,123). Buyer warrants that: (i) if it is the end-user of the Products, it will not fuse the Products nor have the Products fused except by Seller or by a licensee in good standing of Seller's patented fusion technology; and (ii) if it resells the Products, it will (x) inform the purchaser of such Products of the licensing requirements described above; and (y) provide Seller upon request with the name, address, and telephone number of any purchaser purchasing the Products from Buyer, the Products purchased, and the quantity purchased. Upon request, Seller will confirm to Buyer or Buyer's purchaser whether the fusion provider to be utilized by Buyer or Buyer's purchaser is a licensee in good standing of Seller's patented fusion technology.

14. Equal Employment Opportunity. To the extent applicable to Seller's activities under this Agreement, Seller shall comply with the following laws and regulations: Executive Order 11246 (and its implementing regulations at 41 C.F.R. part 60); the Vietnam Era Veterans Readjustment Assistance Act of 1974, as amended (and its implementing regulations at 41 C.F.R. 60-250); and Section 503 of the Rehabilitation Act of 1973, as amended (and its implementing regulations at 41 C.F.R. 60-741); and the equal employment opportunity clauses within each of the above regulations, as applicable, are included by reference in this Agreement.

15. Miscellaneous. No part of this Agreement may be changed or cancelled except by a written document signed by Seller and Buyer. As used in this Agreement, "including" and its variants mean "including without limitation" and its variants. No course of dealing or performance, usage of trade or failure to enforce any term will be used to modify the Agreement. If any of these terms is unenforceable, such term will be limited only to the extent necessary to make it enforceable, and all other terms will remain in full force and effect. Buyer may not assign this Agreement without Seller's prior written consent. This Agreement will be governed by the laws of the State of ~~Delaware~~

↑
California

ATTACHMENT D

APPENDIX "B" Caltrans Encroachment Permit

In compliance with (Check one):

- Your application of JUNE 22, 2021
- Utility Notice No. 33799 of June 16, 2021
- Agreement No. _____ of _____
- R/W Contract No. _____ of _____

Permit No. 11-21-NUR-0613	
Dist/Co/Rte/PM 11-SD-5/R46.11	
Date JUNE 22, 2021	
Fee Paid \$ EXEMPT	Deposit \$ EXEMPT
Performance Bond Amount (1) \$ 0.00	Payment Bond Amount (2) \$ 0.00
Bond Company N/A	
Bond Number (1) N/A	Bond Number (2) N/A

CARLSBAD MUNICIPAL WATER DISTRICT
 5950 EL CAMINO REAL

TO: CARLSBAD, CA 92008

ATTN: VICKI QUIRAM
 PHONE: (760) 438-2722

, PERMITTEE

And subject to the following, PERMISSION IS HEREBY GRANTED to:

enter upon State Highway right of way in San Diego County, City of Carlsbad, on Route 5, post mile R46.11, to facilitate water main relocation within State right of way, as shown on the attached plans, in accordance with the requirements and conditions contained herein and as further directed or approved by the State's Inspector, Alex Terzic, telephone number (858) 688-1385, or e-mail at alexandar.terzic@dot.ca.gov.

The State's Inspector shall be notified seven working days prior to starting work and prior to requesting a lane closure or an activity that may cause a traffic impact.

Working hours shall be as directed or approved by the State's Inspector.

No vehicles or equipment shall be parked within the highway right of way at any time, except for those vehicles or that equipment actually engaged in the work, during the working hours specified herein.

(CONTINUED)

THIS PERMIT IS NOT A PROPERTY RIGHT AND DOES NOT TRANSFER WITH THE PROPERTY TO A NEW OWNER

The following attachments are also included as part of this permit (Check applicable):

- Yes No General Provisions
- Yes No Utility Maintenance Provisions
- Yes No Special Provisions
- Yes No A Cal-OSHA permit, if required: Permit No. _____
- Yes No As-Built Plans Submittal Route Slip for Locally Advertised Projects
- Yes No Water Pollution Control Plan

In addition to fee, the permittee will be billed actual costs for:

- Yes No Review
- Yes No Inspection
- Yes No Field Work

(If any Caltrans effort expended)

Yes No The information in the environmental documentation has been reviewed and considered prior to approval of this permit.

This permit is void unless the work is complete before **DECEMBER 31, 2021.**

This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized. No project work shall be commenced until all other necessary permits and environmental clearances have been obtained.

DT:tv
 cc: Permits A.Hunter, Reloc. ROW
 KBailey, Acting Reg. Mgr.
 Y.Pak, Senior RE
 A.Terzic, Inspector
 Permittee

APPROVED:

Gustavo Dallarda, District Director

Dung Tran

for Joy J. Lee, District Permit Engineer

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The following District Standard Special Provisions are generalizations of the Department Standard Specifications and are included only as a Permittee convenience. Permittee's attention is directed to the current Department Standard Specifications and Encroachment Permit General Provisions (TR-0045) for complete, unabridged, specification requirements.

Once begun, that portion of the work within the State Highway right of way shall be prosecuted to completion as rapidly as possible.

All personnel on foot within the State Highway right of way shall wear personal protective equipment, including safety glasses, hard hats, and American National Standards Institute (ANSI) compliant Class II vests. In addition, all personnel working at night, on foot within the State Highway right of way shall wear ANSI Class III warning garments.

The Permittee is responsible for locating and protecting all utilities both underground and aerial. Any costs incurred for locating and protecting and/or relocating any utilities shall be borne by the Permittee.

Permittee's Contractor is responsible for the actual cost of inspection, which may be than the deposit. A bill or refund shall be sent upon satisfactory completion of the work. Payment of any bill is a condition of the permit.

The State of California, Department of Transportation, makes no assurance or expressed warranty that the plans are complete or that the planned construction fits field conditions. Should additional work or modifications of the work be required in order to meet established Department Standards or in order to fit field conditions, the work shall be performed by Permittee as directed by the State's Inspector at no cost to the State.

All work shall be coordinated with the State highway contractor's operations and under no circumstances shall the work granted herein interfere. All standards of construction shall be identical to similar work performed under adjacent highway contract.

All work shall be performed in accordance with the current Department of Transportation Standard Specifications and the Department of Transportation Encroachment Permit Underground Utility Provisions dated April 2018.

Traffic control when permitted or required shall be as directed and approved by the State's Inspector.

If any component in the traffic control system is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Permittee shall immediately repair said component to its original condition or replace said component and shall restore the component to its original location.

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Traffic control when permitted or directed by the State's Inspector, shall consist of closing traffic lanes and shoulders in accordance with attached Caltrans 2018 Standard Plan T9, T10 (Shoulder Closure), and the attached TRAFFIC CONTROL PLANS, Part 6 "Temporary Traffic Control" of the California Manual on Uniform Traffic Control Devices (California MUTCD) 2014 Revision 4 edition, Section 12 "Temporary Traffic Control" of Caltrans 2018 Standard Specifications, and these Special Provisions.

The Permittee must provide a minimum of one (1) Portable Changeable Message Sign (PCMS) for each direction of traffic. Additional PCMS(s) must be provided if required by the State's Inspector. PCMS(s) must be placed at the locations directed by the State's Inspector and be moved or relocated as needed. Each PCMS must comply with the provisions in Section 12-3.32 of the Standard Specifications.

Message to be displayed on the PCMS(s) must be coordinated with the State's Inspector.

If any component in the traffic control system is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Permittee shall immediately repair said component to its original condition or replace said component and shall restore the component to its original location.

All work shall be performed in accordance with the current Department of Transportation Standard Specifications and the Department of Transportation Storm Water Special Provisions for Minimal or No Impact dated May 2018.

All open trenches within the improved area shall be backfilled, compacted and temporary repairs made to the surfacing before leaving the job site at the end of the working day. In lieu of temporary repairs, steel plate bridging may be allowed if approved by the State's Inspector prior to the start of work. Permanent paving shall be placed within five working days after completion of the above work. Permanent backfill and paving shall conform to the attached ENCROACHMENT PERMIT TRENCH DETAIL dated November 2019 and the attached BACKFILL REQUIREMENTS.

When steel plate bridging is used, the attached Steel Plate Bridging Utility Special Provisions dated April 2018 will apply in addition to the attached General Provisions.

Soil within the state right of way may contain elevated levels of lead from the leaded fuels used in the past. No soil shall leave the state right of way without an ADL Study being completed. Handling of material containing ADL must result in no visible dust migration. Use dust control measures. A means of controlling dust must always be available when handling material in work areas containing ADL.

Permittee must reuse the soil within the work limits in the immediate area from which it was excavated. If any excess soil is generated, it becomes the property of the permittee. Permittee

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must transport all excess soil outside of Caltrans's right-of-way, and dispose of it in accordance with all the applicable environmental laws and regulations and the attached "Hazardous Materials and Hazardous Waste Management Special Provisions".

Upon completion of the work provided herein, the Permittee shall submit one vellum or paper set of As-Built plans to the District 11 Caltrans Permit Office showing the actual location of the facility to the nearest 0.1 foot horizontally and vertically. Mylar or paper sepia plans are not acceptable.

As-Built plans shall be signed by a Land Surveyor or Civil Engineer licensed to practice in the State of California.

The provisions in this section will not relieve the Permittee from his responsibility to provide additional devices or take such measures as may be necessary for the safety of traffic and the public to comply with the provisions in Section 7-1.04, "Public Safety" of the Standard Specifications.

Upon completion of the work, the attached card shall be completed and returned.

ENCROACHMENT PERMIT GENERAL PROVISIONS

TR – 0045 (REV. 04/2021)

1. **AUTHORITY:** The California Department of Transportation ("Department") has authority to issue encroachment permits under Division 1, Chapter 3, Article 1, Sections 660 through 734 of the Streets and Highways Code.
2. **REVOCATION:** Encroachment permits are revocable on five (5) business days' notice unless otherwise stated on the permit and except as provided by law for public corporations, franchise holders, and utilities. Notwithstanding the foregoing, in an emergency situation as determined by the Department, an encroachment permit may be revoked immediately. These General Provisions and any applicable Special Provisions are subject to modification or abrogation by the Department at any time. Permittees' joint use agreements, franchise rights, reserved rights or any other agreements for operating purposes in State of California ("State") highway right-of-way may be exceptions to this revocation.
3. **DENIAL FOR NONPAYMENT OF FEES:** Failure to pay encroachment permit fees when due may result in rejection of future applications and denial of encroachment permits.
4. **ASSIGNMENT:** This encroachment permit allows only the Permittee or Permittee's authorized agent to work within or encroach upon the State highway right-of-way, and the Permittee may not assign or transfer this encroachment permit. Any attempt to assign or transfer this encroachment permit shall be null and void.
5. **ACCEPTANCE OF PROVISIONS:** Permittee understands and agrees to accept and comply with these General Provisions, the Special Provisions, any and all terms and/or conditions contained in or incorporated into the encroachment permit, and all attachments to the encroachment permit (collectively "the Permit Conditions"), for any encroachment, work, and/or activity to be performed under this encroachment permit and/or under color of authority of this encroachment permit. Permittee understands and agrees the Permit Conditions are applicable to and enforceable against Permittee as long as the encroachment remains in, under, or over any part of the State highway right-of-way.
6. **BEGINNING OF WORK:** When traffic is not impacted (see General Provision Number 35), the Permittee must notify the Department's representative two (2) business days before starting permitted work. Permittee must notify the Department's representative if the work is to be interrupted for a period of five (5) business days or more, unless otherwise agreed upon. All work must be performed on weekdays during regular work hours, excluding holidays, unless otherwise specified in this encroachment permit.
7. **STANDARDS OF CONSTRUCTION:** All work performed within State highway right-of-way must conform to all applicable Departmental construction standards including but not limited to: Standard Specifications, Standard Plans, Project Development Procedures Manual, Highway Design Manual and Special Provisions.
Other than as expressly provided by these General Provisions, the Special Provisions, the Standard Specifications, Standard Plans, and other applicable Departmental standards, nothing in these General Provisions is intended to give any third party any legal or equitable right, remedy, or claim with respect to the encroachment permit and/or to these General Provisions or any provision herein. These General Provisions are for the sole and exclusive benefit of the Permittee and the Department.
Where reference is made in such standards to "Contractor" and "Engineer," these are amended to be read as "Permittee" and "Department's representative," respectively, for purposes of this encroachment permit.
8. **PLAN CHANGES:** Deviations from plans, specifications, and/or the Permit Conditions as defined in General Provision Number 5 are not allowed without prior approval from the Department's representative and the Federal Highway Administration ("FHWA") representative if applicable.
9. **RIGHT OF ENTRY, INSPECTION AND APPROVAL:** All work is subject to monitoring and inspection. The United States, the State, the Department, and the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, and other state, and federal agencies, and the FHWA, through their agents or representatives, must have full access to highway facilities/encroachment area, at any and all times for the purpose of inspection, maintenance, activities needed for construction/reconstruction, and operation of the State highway right-of-way.
Upon completion of work, Permittee must request a final inspection for acceptance and approval by the Department. The local public agency Permittee must not give final construction approval to its contractor until final acceptance and approval by the Department is obtained.
10. **PERMIT AT WORKSITE:** Permittee must keep the permit package or a copy thereof at the work site at all times and must show it upon request to any Department representative or law enforcement officer. If the permit package, or a copy thereof, is not kept and made available at the work site at all times, the work must be suspended.
11. **CONFLICTING ENCROACHMENTS:** Permittee must yield start of work to ongoing, prior authorized work adjacent to or within the limits of the Permittee's project site. When existing encroachments conflict with Permittee's work, the Permittee must bear all cost for rearrangements (e.g., relocation, alteration, removal, etc.).

12. **PERMITS AND APPROVALS FROM OTHER PUBLIC AGENCIES AND/OR ENTITIES:** This encroachment permit is invalidated if the Permittee has not obtained all permits and approvals necessary and required by law, including but not limited to permits from the California Public Utilities Commission ("CPUC"), California Occupational Safety and Health Administration ("Cal-OSHA"), and any other public agency and/or entity having jurisdiction. Permittee warrants all such permits and approvals have been obtained before beginning work under this encroachment permit. The Department may, at the Department's discretion, require the Permittee to demonstrate that Permittee has obtained all such permits/approvals, and Permittee shall demonstrate this at the time and in the manner specified by the Department.
13. **PEDESTRIAN AND BICYCLIST SAFETY:** A safe continuous passageway must be maintained through the work area at existing pedestrian or bicycle facilities. At no time must pedestrians be diverted onto a portion of the street used for vehicular traffic. At locations where safe alternate passageways cannot be provided, appropriate signs and barricades must be installed at the limits of construction and in advance of the limits of construction at the nearest crosswalk or intersection to detour pedestrians to facilities across the street. Attention is directed to Section 7-1.04 "Public Safety," and to Section 12-4.04 "Temporary Pedestrian Access Routes," and to Section 16-2.02 "Temporary Pedestrian Facility," of the Department's Standard Specifications, and to California Vehicle Code section 21760, subdivision (c).
14. **PUBLIC TRAFFIC CONTROL:** The Permittee must provide traffic control protection, warning signs, lights, safety devices, etc., and take all other measures necessary for the traveling public's safety as required by law and/or the Department. While providing traffic control, the needs of all road users, including but not limited to motorists, bicyclists and pedestrians, including persons with disabilities in accordance with the Americans with Disabilities Act, must be an essential part of the work activity.
Lane, Bike Lane, Sidewalk, Crosswalk, and/or shoulder closures must comply with the Department's Standard Specifications and Standard Plans for Temporary Traffic Control Systems & Temporary Pedestrian Access Routes, and with the applicable Special Provisions. Where issues are not addressed in the Standard Specifications, Standard Plans, and/or Special Provisions, the California Manual on Uniform Traffic Control Devices (Part 6, Temporary Traffic Control) must be followed.
15. **MINIMUM INTERFERENCE WITH TRAFFIC:** Permittee must plan and conduct work so as to create the least possible inconvenience to the traveling public (motorized vehicles, unmotorized vehicles such as bicycles, pedestrians, person(s) with disabilities, etc.), such that traffic is not unreasonably delayed.
16. **STORAGE OF EQUIPMENT AND MATERIALS:** The storage of equipment or materials is not allowed within State highway right-of-way, unless specified within the Special Provisions of this encroachment permit. If encroachment permit Special Provisions allow for the storage of equipment or materials within the State highway right-of-way, the equipment and material storage must also comply with Section 7-1.04, Public Safety, of the Department's Standard Specifications.
17. **CARE OF DRAINAGE:** Permittee must provide alternate drainage for any work interfering with an existing drainage facility in compliance with the Department's Standard Specifications, Standard Plans, and/or as directed by the Department's representative.
18. **RESTORATION AND REPAIRS IN STATE HIGHWAY RIGHT-OF-WAY:** Permittee is responsible for restoration and repair of State highway right-of-way resulting from permitted work (Streets and Highways Code, section 670 et seq.).
19. **STATE HIGHWAY RIGHT-OF-WAY CLEAN UP:** Upon completion of work, Permittee must remove and dispose of all scraps, refuse, brush, timber, materials, etc. off the State highway right-of-way. The aesthetics of the highway must be as it was before work started or better.
20. **COST OF WORK:** Unless stated otherwise in the encroachment permit or a separate written agreement with the Department, the Permittee must bear all costs incurred for work within the State highway right-of-way and waives all claims for indemnification or contribution from the United States, the State, the Department, and from the Directors, officers, and employees of the State and/or the Department. Removal of Permittee's personal property and improvements shall be at no cost to the United States, the State, and the Department.
21. **ACTUAL COST BILLING:** When specified in the permit, the Department will bill the Permittee actual costs at the currently set Standard Hourly Rate for encroachment permits.
22. **AS-BUILT PLANS:** When required, Permittee must submit one (1) set of folded as-built plans within thirty (30) calendar days after completion and acceptance of work in compliance with requirements listed as follows:
- a) Upon completion of the work provided herein, the Permittee must submit a paper set of As-Built plans to the Department's representative.
 - b) All changes in the work will be shown on the plans, as issued with the permit, including changes approved by Encroachment Permit Rider.
 - c) The plans are to be prominently stamped or otherwise noted "AS-BUILT" by the Permittee's representative who was responsible for overseeing the work. Any original plan that was approved with a Department stamp, or by signature of the Department's representative, must be used for producing the As-Built plans.
 - d) If construction plans include signing or striping, the dates of signing or striping removal, relocation, or installation must be shown on the As-Built plans when required as a condition of the encroachment permit. When the construction plans show signing and striping for staged construction on separate sheets,

ENCROACHMENT PERMIT GENERAL PROVISIONS

- the sheet for each stage must show the removal, relocation, and installation dates of the appropriate staged striping and signing.
- e) As-Built plans must contain the Encroachment Permit Number, County, Route, and Post Mile on each sheet.
 - f) The As-Built Plans must not include a disclaimer statement of any kind that differs from the obligations and protections provided by sections 6735 through 6735.6 of the California Business and Professions Code. Such statements constitute non-compliance with Encroachment Permit requirements and may result in the Department retaining Performance Bonds or deposits until proper plans are submitted. Failure to comply may also result in denial of future encroachment permits or a provision requiring a public agency to supply additional bonding.
23. **PERMITS FOR RECORD PURPOSES ONLY:** When work in the State highway right-of-way is within an area under a Joint Use Agreement (JUA) or a Consent to Common Use Agreement (CCUA), a fee exempt encroachment permit is issued to the Permittee for the purpose of providing a notice and record of work. The Permittee's prior rights must be preserved without the intention of creating new or different rights or obligations. "Notice and Record Purposes Only" must be stamped across the face of the encroachment permit.
24. **BONDING:** The Permittee must file bond(s), in advance, in the amount(s) set by the Department and using forms acceptable to the Department. The bonds must name the Department as obligee. Failure to maintain bond(s) in full force and effect will result in the Department stopping all work under this encroachment permit and possibly revoking other encroachment permit(s). Bonds are not required of public corporations or privately-owned utilities unless Permittee failed to comply with the provisions and/or conditions of a prior encroachment permit. The surety company is responsible for any latent defects as provided in California Code of Civil Procedure section 337.15. A local public agency Permittee also must comply with the following requirements:
- a) In recognition that project construction work done on State property will not be directly funded and paid by State, for the purpose of protecting stop notice claimants and the interests of State relative to successful project completion, the local public agency Permittee agrees to require the construction contractor to furnish both a payment and performance bond in the local public agency's name with both bonds complying with the requirements set forth in Section 3-1.05 Contract Bonds of the Department's Standard Specifications before performing any project construction work.
 - b) The local public agency Permittee must defend, indemnify, and hold harmless the United States, the State and the Department, and the Directors, officers, and employees of the State and/or Department, from all project construction related claims by contractors, subcontractors, and suppliers, and from all stop notice and/or mechanic's lien claimants. The local public agency also agrees to remedy, in a timely manner and to the Department's satisfaction, any latent defects occurring as a result of the project construction work.
25. **FUTURE MOVING OF INSTALLATIONS:** Permittee understands and agrees to relocate a permitted installation upon notice by the Department. Unless under prior property right or agreement, the Permittee must comply with said notice at the Permittee's sole expense.
26. **ENVIRONMENTAL:**
- a) **ARCHAEOLOGICAL/HISTORICAL:** If any archaeological or historical resources are identified or encountered in the work vicinity, the Permittee must immediately stop work, notify the Department's representative, retain a qualified archaeologist who must evaluate the site at Permittee's sole expense, and make recommendations to the Department's representative regarding the continuance of work.
 - b) **HAZARDOUS MATERIALS:** If any hazardous waste or materials (such as underground storage tanks, asbestos pipes, contaminated soil, etc.) are identified or encountered in the work vicinity, the Permittee must immediately stop work, notify the Department's representative, retain a qualified hazardous waste/material specialist who must evaluate the site at the Permittee's sole expense, and make recommendations to the Department's representative regarding the continuance of work. Attention is directed to potential aerially deposited lead (ADL) presence in unpaved areas along highways. It is the Permittee's responsibility to take all appropriate measures to protect workers in conformance with California Code of Regulations Title 8, Section 1532.1, "Lead," and with Cal-OSHA Construction Safety Orders, and to ensure roadway soil management is in compliance with Department of Toxic Substances Control (DTSC) requirements.
 - c) **Biological:** If any regional, state, or federally listed biological resource is identified or encountered in the work vicinity, the Permittee must immediately stop work, notify the Department's representative, retain a qualified biologist who must evaluate the site at Permittee's sole expense, and make recommendations to the Department's representative regarding the continuance of work.
27. **PREVAILING WAGES:** Work performed by or under an encroachment permit may require Permittee's contractors and subcontractors to pay appropriate prevailing wages as set by the California Department of Industrial Relations. Inquiries or requests for interpretations relative to enforcement of prevailing wage requirements must be directed to the California Department of Industrial Relations.
28. **LIABILITY, DEFENSE, AND INDEMNITY:** The Permittee agrees to indemnify and save harmless the United States, the State, the Department, and the Directors, officers, employees, agents and/or contractors of the State and/or of the Department, including but not limited to the Director

ENCROACHMENT PERMIT GENERAL PROVISIONS

of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind, and description, including but not limited to those brought for or on account of property damage, invasion of privacy, violation or deprivation of a right under a state or federal law, environmental damage or penalty, or injury to or death of any person including but not limited to members of the public, the Permittee, persons employed by the Permittee, and/or persons acting on behalf of the Permittee, arising out of or in connection with: (a) the issuance and/or use of this encroachment permit; and/or (b) the encroachment, work, and/or activity conducted pursuant to this encroachment permit, but not in full compliance with the Permit Conditions as defined in General Provision Number 5 ("Unauthorized Work or Activity"); and/or (c) the installation, placement, design, existence, operation, and/or maintenance of the encroachment, work, and/or activity; and/or (d) the failure by the Permittee or anyone acting on behalf of the Permittee to perform the Permittee's obligations under any part of the Permit Conditions as defined in General Provision Number 5, in respect to maintenance or any other obligation; and/or (e) any change to the Department's property or adjacent property, including but not limited to the features or conditions of either of them, made by the Permittee or anyone acting on behalf of the Permittee; and/or (f) a defect or obstruction related to or caused by the encroachment, work, and/or activity whether conducted in compliance with the Permit Conditions as defined in General Provision Number 5 or constituting Unauthorized Work or Activity, or from any cause whatsoever. The duty of the Permittee to indemnify and save harmless includes the duties to defend as set forth in Section 2778 of the Civil Code.

It is the intent of the parties that except as prohibited by law, the Permittee will defend, indemnify, and hold harmless as set forth in this General Provision Number 28 regardless of the existence or degree of fault or negligence, whether active or passive, primary or secondary, on the part of: the United States, the State; the Department; the Directors, officers, employees, agents and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors; the Permittee; persons employed by the Permittee; and/or persons acting on behalf of the Permittee.

The Permittee waives any and all rights to any type of expressed or implied indemnity from or against the United States, the State, the Department, and the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors.

The Permittee understands and agrees to comply with the obligations of Titles II and III of the Americans with Disabilities Act in the conduct of the encroachment, work, and/or activity whether conducted pursuant to this encroachment permit or constituting Unauthorized Work

or Activity, and further agrees to defend, indemnify, and save harmless the United States, the State, the Department, and the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, penalties, liability, suits, or actions of every name, kind, and description arising out of or by virtue of the Americans with Disabilities Act.

The Permittee understands and agrees the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, are not personally responsible for any liability arising from or by virtue of this encroachment permit.

For the purpose of this General Provision Number 28 and all paragraphs herein, "contractors of the State and/or of the Department" includes contractors, and their subcontractors, under contract to the State and/or the Department.

This General Provision Number 28 and all paragraphs herein take effect immediately upon issuance of this encroachment permit, and apply before, during, and after the encroachment, work, and/or activity contemplated under this encroachment permit, whether such work is in compliance with the Permit Conditions as defined in General Provision Number 5 or constitutes Unauthorized Work or Activity, except as otherwise provided by California law. The Permittee's obligations to defend, indemnify, and save harmless under this General Provision Number 28 take effect immediately upon issuance of this encroachment permit and have no expiration date, including but not limited to situations in which this encroachment permit expires or is revoked, the work or activity performed under this encroachment permit is accepted or not accepted by the Department, the encroachment, work, and/or activity is conducted in compliance with the Permit Conditions as defined in General Provision Number 5 or constitutes Unauthorized Work or Activity, and/or no work or activity is undertaken by the Permittee or by others on the Permittee's behalf.

If the United States or an agency, department, or board of the United States is the Permittee, the first two paragraphs of this General Provision Number 28 (beginning "The Permittee agrees to indemnify..." and "It is the intent of the parties...") are replaced by the following paragraph:

Claims for personal injury, death, or property damage allegedly caused by the negligent or wrongful act or omission of any employee of the United States acting within the scope of their official duties are subject to the Federal Tort Claims Act, as amended, 28 U.S.C. § 1346 and § 2671 et seq. (Chapter 171).

29. **NO PRECEDENT ESTABLISHED:** This encroachment permit is issued with the understanding that it does not establish a precedent.
30. **FEDERAL CIVIL RIGHTS REQUIREMENTS FOR PUBLIC ACCOMMODATION:**

ENCROACHMENT PERMIT GENERAL PROVISIONS

- a) As part of the consideration for being issued this encroachment permit, the Permittee, on behalf of Permittee and on behalf of Permittee's personal representatives, successors in interest, and assigns, does hereby covenant and agree that:
- i) No person on the grounds of race, color, or national origin may be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
 - ii) That in connection with the construction of any improvements on said lands and the furnishings of services thereon, no discrimination must be practiced in the selection and retention of first-tier subcontractors in the selection of second-tier subcontractors.
 - iii) That such discrimination must not be practiced against the public in their access to and use of the facilities and services provided for public accommodations (such as eating, sleeping, rest, recreation), and operation on, over, or under the space of the State highway right-of-way.
 - iv) That the Permittee must use the premises in compliance with all other requirements imposed pursuant to Title 15, Code of Federal Regulations, Commerce and Foreign Trade, Subtitle A, Office of the Secretary of Commerce, Part 8 (15 C.F.R. Part 8) and as said Regulations may be amended.
- b) That in the event of breach of any of the above nondiscrimination covenants, the State and the Department have the right to terminate this encroachment permit and to re-enter and repossess said land and the facilities thereon and hold the same as if said permit had never been made or issued.
31. **MAINTENANCE:** The Permittee is responsible at Permittee's sole expense for the encroachment, and the inspection, maintenance, repair, and condition thereof, so that it does not negatively impact State highway safety, maintenance, operations, construction, activities needed for construction/reconstruction, State facilities, or other encroachments. Additional permits or approval documents may be required authorizing additional work related to inspection, repair, and/or maintenance activities.
32. **SPECIAL EVENTS:** In accordance with subdivision (a) of Streets and Highways Code section 682.5 and 682.7, the Department is not responsible for the conduct or operation of the permitted activity, and the applicant agrees to defend, indemnify, and hold harmless the United States, the State, the Department, and the Directors, officers, employees, agents, and contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of any activity for which this encroachment permit is issued.
- The Permittee is required, as a condition of this encroachment permit, for any event that awards prize compensation to competitors in gendered categories, for any participant level that receives prize compensation, to ensure the prize compensation for each gendered category is identical at each participant level. (Streets and Highways Code, section 682.7.)
- The Permittee understands and agrees to comply with the obligations of Titles II and III of the Americans with Disabilities Act in the conduct of the event, and further agrees to defend, indemnify, and save harmless the United State, the State and the Department, and the Directors, officers, and employees of the State and/or Department, including but not limited to the Director of the Department and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of or by virtue of the Americans with Disabilities Act.
33. **PRIVATE USE OF STATE HIGHWAY RIGHT-OF-WAY:** State highway right-of-way must not be used for private purposes without compensation to the State. The gifting of public property uses and therefore public funds is prohibited under the California Constitution, Article XVI, Section 6.
34. **FIELD WORK REIMBURSEMENT:** Permittee must reimburse the Department for field work performed on Permittee's behalf to correct or remedy hazards or damaged facilities, or to clear refuse, debris, etc. not attended to by the Permittee.
35. **LANE CLOSURE REQUEST SUBMITTALS AND NOTIFICATION OF CLOSURES TO THE DEPARTMENT:** Lane closure request submittals and notifications must be in accordance with Section 12-4.02, and Section 12.4-04, of the Department's Standard Specifications or as directed by the Department's representative. The Permittee must notify the Department's representative and the Traffic Management Center ("TMC") before initiating a lane closure or conducting an activity that may cause a traffic impact. In emergency situations when the corrective work or the emergency itself may affect traffic, the Department's representative and the TMC must be notified as soon as possible.
36. **SUSPENSION OF TRAFFIC CONTROL OPERATION:** The Permittee, upon notification by the Department's representative, must immediately suspend all traffic lane, bike lane, sidewalk, crosswalk, and/or shoulder closure operations and any operation that impedes the flow of traffic. All costs associated with this suspension must be borne by the Permittee.
37. **UNDERGROUND SERVICE ALERT (USA) NOTIFICATION:** Any excavation requires compliance with the provisions of Government Code section 4216 et seq., including but not limited to notice to a regional notification center, such as Underground Service Alert (USA). The Permittee must provide notification to the Department representative at least five (5) business days before, and the regional notification center at least forty-

eight (48) hours before, performing any excavation work within the State highway right-of-way.

38. **COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA):** All work within the State highway right-of-way to construct and/or maintain any public facility must be designed, maintained, and constructed strictly in accordance with all applicable Federal Access laws and regulations (including but not limited to Section 504 of the Rehabilitation Act of 1973, codified at 29 U.S.C. § 794), California Access laws and regulations relating to ADA, along with its implementing regulations, Title 28 of the Code of Federal Regulations Parts 35 and 36 (28 C.F.R., Ch. I, Part 35, § 35.101 et seq., and Part 36, § 36.101 et seq.), Title 36 of the Code of Federal Regulations Part 1191 (36 C.F.R., Ch. XI, Part 1191, § 1119.1 et seq.), Title 49 of the Code of Federal Regulations Part 37 (49 C.F.R., Ch. A, Part 37, § 37.1 et seq.), the United States Department of Justice Title II and Title III for the ADA, and California Government Code section 4450 et seq., which require public facilities be made accessible to persons with disabilities.

Notwithstanding the requirements of the previous paragraph, all construction, design, and maintenance of public facilities must also comply with the Department's

Design Information Bulletin 82, "Pedestrian Accessibility Guidelines for Highway Projects" and Standard Plans & Specifications on "Temporary Pedestrian Access Routes."

39. **STORMWATER:** The Permittee is responsible for full compliance with the following:
- a) For all projects, the Department's Storm Water Program and the Department's National Pollutant Discharge Elimination System (NPDES) Permit requirements under Order No. 2012-0011-DWQ, NPDES No CAS000003; and
 - b) In addition, for projects disturbing one acre or more of soil, with the California Construction General Permit Order No. 2009-0009-DWQ, NPDES No CAS000002; and
 - c) In addition, for projects disturbing one acre or more of soil in the Lahontan Region with Order No. R6T-2016-0010, NPDES No CAG616002.
 - d) For all projects, it is the Permittee's responsibility to install, inspect, repair, and maintain all facilities and devices used for water pollution control practices (Best Management Practices/BMPs) before performing daily work activities.

STEEL PLATE BRIDGING UTILITY

TR -0157 (Rev. 04/2018)

To accommodate excavation work, steel plate bridging may be necessary. All conditions for use of steel plate bridging should be set forth in the special provisions.

Consideration of steel plate bridging should take into account the following factors:

1. Traffic speed.
2. Traffic Volume and Composition.
3. Duration and dimensions (width & daily estimated lengths) of the proposed excavation.
4. Weather conditions.

When backfilling operations of an excavation in the traveled way, whether transverse or longitudinal, cannot be properly completed within a work day, steel plate bridging with a non-skid surface and shoring (see Trenching & Shoring) may be required to preserve unobstructed traffic flow. In such cases, the following conditions shall apply:

1. Steel plate bridging on freeways is not allowed.
2. Steel plates used for bridging must extend a minimum of 12" beyond the edges of the trench.
3. Steel plate bridging shall be installed to operate with minimum noise.
4. The trench shall be adequately shored, (as mentioned in Section 603.6B-2 of the Encroachment Permits Manual) to support the bridging and traffic loads.
5. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plates, if plate installation by Method (2) described below, is used.
6. Bridging shall be secured against displacement by using adjustable cleats, shims, or other devices.

As required by the district, steel plate bridging and shoring shall be installed using either Method (1) or (2):

Method 1 For speeds of 45 MPH or greater:

The pavement shall be cold planed to a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate.

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other.

Method 2 For Speeds less than 45 mph:

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 % with a minimum 12" taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of

asphalt concrete mix, concrete slurry, epoxy or an equivalent that is satisfactory to the Caltrans' representative.

The permittee is responsible for maintenance of the steel plates, shoring, asphalt concrete ramps, and ensuring that they meet minimum specifications. Unless specifically noted or granted in the special provisions, or approved by the State representative, steel plate bridging shall not exceed 4 consecutive working days in any given week. Backfilling of excavations shall be covered with a minimum 3" temporary layer of cold asphalt concrete.

The following table shows the advisory minimal thickness of steel plate bridging required for a given trench width (A-36 grade steel, designed for HS20-44 truck loading per Caltrans Bridge Design Specifications Manual).

Trench Width	Minimum Plate Thickness
10"	½"
1'-11"	¾"
2'-7"	7/8"
3'-5"	1"
5'-3"	1 ¼"

NOTE: For spans greater than 5'-3", a structural design shall be prepared by a California registered civil engineer.

All steel plates within the right of way whether used in or out of the traveled way shall be without deformation. Inspectors can determine the trueness of steel plates by using a straight edge and should reject any plate that is permanently deformed.

Steel plates used in the traveled portion of the highway shall have a surface that was manufactured with a nominal Coefficient Of Friction (COF) of 0.35 as determined by California Test Method 342 (See Appendix H, Encroachment Permits Manual). If a different test method is used, the permittee may utilize standard test plates with known coefficients of friction available from each Caltrans District Materials Engineer to correlate skid resistance results to California Test Method 342. Based on the test data, the permittee shall determine what amount of surface wear is acceptable, and independently ascertain when to remove, test, or resurface an individual plate.

Caltrans Inspectors should not enforce plate removal unless it is permanently deformed or delivered without the required surfacing. However, an inspector should document in a diary all contacts with the contractor.

A "Rough Road" (W8-8) sign and a "Steel Plate Ahead" (W8-24) sign with black lettering on an orange background must be used in advance of steel plate bridging along with the required construction area signs. These signs must be used along with any other construction area signs.

Surfacing requirements are not necessary for steel plates used in parking strips, on shoulders not used for turning movements, or on connecting driveways, etc., not open to the public.

STORMWATER SPECIAL PROVISIONS FOR MINIMAL OR NO IMPACT (SWSP)

TR-0400 (Rev 05/2018)

1. **GENERAL:** The purpose of these Special Provisions is to provide the Permittee with specifications for water pollution control to minimize, prevent, or control the discharge of material into the air, surface waters, groundwater, and storm sewers owned by the State or local agencies. These provisions are not intended to take the place of the Caltrans Water Pollution Control Program (WPCP) for projects where soil disturbance from work activities less than one acre, or work activities of one acre or more subject to the preparation of the Caltrans Storm Water Pollution Prevention Plan (SWPPP). The Permittee must comply with the following Special Provisions and the direction of the State Representative. All Stormwater Best Management Practices (BMPs) must conform to Section 13 Water Pollution Control of Caltrans' Standard Specifications.
2. **NPDES REQUIREMENTS:** The Permittee must be responsible for full compliance with the Caltrans Storm Water Program and the Caltrans National Pollutant Discharge Elimination System (NPDES) Permit requirements (*Order No. 2012-0011-DWQ, NPDES No CAS000003*) and for and projects disturbing one acre or more of soil, full compliance with the California Construction General Permit (*Order No. 2009-0009-DWQ, NPDES No CAS000002*) or for projects that have one acre or more of soil disturbance in the Lahontan Region (*Order No. R6T-2016-0010, NPDES No CAG616002*). It is the Permittee's responsibility to install, inspect, and repair or maintain facilities and devices used for water pollution control practices (BMPs) before performing daily work activities. Installation, inspection and maintenance responsibilities on the job site include: 1) soil stabilization materials in work areas that are inactive or prior to storm events, 2) water pollution control devices to control sediment and erosion, 3) implementation of spill and leak prevention procedures for chemical and hazardous substances stored on the job site, 4) material storage, 5) stockpile management, 6) waste management, 7) non-stormwater management, 8) water conservation, 9) tracking controls and 10) illicit connection, illegal discharge detection and reporting. The Permittee must report to the State representative when discharges enter into receiving waters, adjacent property, drainage systems or when discharges could be a cause or a threat for water pollution. The Permittee must also control illicit discharges or illegal dumping prior to start of daily work schedule. Copies of written notices or orders from the Regional Water Quality Control Board or other regulatory agency must be provided to the State representative within 48 hours of reported activity. For additional information on stormwater compliance, visit the State Water Resources Control Boards storm water Website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater
3. **RESPONSIBILITY FOR DEBRIS REMOVAL:** The Permittee must be responsible for preventing sediment, trash, debris, and other construction waste from entering the street, the storm drains, local creeks, or any other bodies of water.
4. **SPOILS AND RESIDUE:** The Permittee must vacuum any saw-cut concrete waste material, debris, residue, etc. No spoils, debris, residue, etc. must be washed into a drainage system.
5. **SWEEPING:** Sweep paved roads at construction entrance and exit locations and surrounding paved areas daily within the job site during: 1) clearing and grubbing, 2) earthwork, 3) trenching, 4) soil disturbance, 5) pavement grinding and/or cutting, and 6) after observing tracking of material onto or off the State property. Keep dust to a minimum during sweeping activities. Use vacuum whenever dust generation is excessive or sediment pickup is ineffective. Roadways or work areas must not be washed down with water. Street sweeping operations must conform to Section 13 Water Pollution Control of Caltrans' Standard Specifications.
6. **VEHICLES AND EQUIPMENT:** Permittee must prevent all vehicles, equipment, etc. from leakage or mud tracking onto roadways. If leaks cannot be repaired immediately, remove the vehicle or equipment from the job site.
7. **MAINTENANCE AND FUELING OF VEHICLES AND EQUIPMENT:** Maintenance and fueling of equipment must not result in any pollution at the job site. The Permittee must immediately clean up spills/leaks, and properly dispose of contaminated soil and materials.
8. **CLEANING VEHICLES AND EQUIPMENT:** Limit vehicle and equipment cleaning or washing at the job site except what is necessary to control vehicle tracking or hazardous waste. The Permittee must clean all equipment within a bermed area or over a drip pan large enough to prevent run-off. No soaps, solvents, degreasers, etc. must be used in State right-of-way. Any water from this operation must be collected and disposed of at an appropriate site. Containment berms or dikes must be used for fueling, washing, maintaining and washing vehicles or equipment in outside areas. Containment must be performed at least 100 feet from concentrated flows of storm water, drainage courses, and storm drain inlets if within a flood plain, otherwise at least 50 feet if outside the floodplain. Keep adequate quantities of absorbent spill- cleanup material and spill kits in the fueling or maintenance area and on fueling trucks.
9. **DIESEL FUELS:** The use of diesel fuel from petroleum or other fossil fuel as a form-oil or solvent is not allowed.
10. **WEATHER CONDITIONS AT WORKSITE:** Any activity that would generate fine particles or dust that could be transported off site by stormwater must be performed during dry weather.
11. **WIND EROSION PROTECTION:** The use of Wind Erosion BMPs must be deployed year-round in instances where dust or fine particles could be transported off site.
12. **HOT MIX ASPHALT:** Runoff from washing hot mix asphalt must not enter into any drainage conveyances.
13. **PROTECTION OF DRAINAGE FACILITIES:** The Permittee must protect/cover gutters, ditches, drainage courses, and inlets with gravel bags, fiber rolls, State approved fabric filters, etc., to the satisfaction of the State representative during grading, paving, saw-cutting, etc. and materials must conform to Section 13-6.02 Materials for Water Pollution Control of Caltrans' Standard Specifications. No such protection measures must cause an obstruction to the traveling public. The Permittee must implement spill and leak prevention procedures for chemicals and hazardous substances stored on the job site (including secondary containment requirements) in accordance to section 13-4.03B Spill Prevention and Control, and 14-11 Hazardous Waste and Contamination, Water Pollution Control of Caltrans' Standard Specifications.
14. **PAINT:** Rinsing of painting equipment and materials is not permitted in State right-of-way. When thoroughly dry, dispose of

- the following as solid waste: dry latex paint, paint cans, used brushes, rags, gloves, absorbent materials, and drop cloths. Oil based paint sludge and unusable thinner must be disposed of at an approved hazardous waste site.
15. **CONSTRUCTION MATERIALS:** Stockpile of all construction materials, including, but not limited to; pressure treated wood, asphalt concrete, cold mix asphalt concrete, concrete, grout, cement containing premixes, and mortar, must conform to section 13-4.03C (2) Material Storage & 13-4.03C (3) Stockpile Management of Caltrans' Standard Specifications.
 16. **CONCRETE EQUIPMENT:** Concrete equipment must be washed in a designated washing area in a way that does not contaminate soil, receiving waters, or storm drain systems.
 17. **EXISTING VEGETATION:** Established existing vegetation is the best form of erosion control. Minimize disturbance to existing vegetation. Damaged or removed vegetation must be replaced as directed by the State Representative.
 18. **SOIL DISTURBANCE:** Soil disturbing activities must be avoided during the wet weather season. If construction activities during wet weather are allowed in your permit, all necessary erosion control and soil stabilization measures must be implemented in advance of soil disturbing activity.
 19. **SLOPE STABILIZATION AND SEDIMENT CONTROL:** Consider a certified expert in Erosion and Sediment control in cases where slopes are disturbed during construction. The Permittee is directed to comply with Section 13.5 Temporary Soil Stabilization and Section 21 Erosion Control of Caltrans' Standard Specifications during application of temporary soil stabilization measures to the soil surface. Fiber rolls or silt fences may be required down slope until permanent soil stabilization is established. Remove the accumulated sediment whenever the sediment accumulates to 1/3 of the linear sediment barrier height. The Permittee must limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist or when environmental regulations prohibit their use within the project.
 20. **STOCKPILES:** Stockpiles containing aggregate and/or soil must be stored at least 100 feet from concentrated flows of storm water, drainage courses, and storm drain inlets if within a flood plain, otherwise at least 50 feet if outside the floodplain, and must be covered and protected with a temporary perimeter sediment barrier. Cold mix stockpiles must be stored on an impermeable surface and covered with 9 mil plastic to prevent contact with water. Minimize stockpiling of materials on the job site. Manage stockpiles by implementing the water pollution control practices in Section 13-4.03C (3) Stockpile Management of the State of California standard specifications for construction.
 21. **DISCOVERY OF CONTAMINATION:** The State Representative must be notified in case any unusual discoloration, odor, or texture of ground water, is found in excavated material or if abandoned, underground tanks, pipes, or buried debris are encountered.
 22. **SANITARY AND SEPTIC WASTE:** Do not bury or discharge wastewater from a sanitary or septic system within the highway. Properly connected sewer facilities are free from leaks. With State Representative approval place portable sanitary facility at least 50 feet away from storm drains, receiving waters, and flow lines. Permittee must comply with local health agency provisions when using an on-site disposal system.
 23. **LIQUID WASTE:** Prevent job site liquid waste from entering storm drain systems and receiving waters. Drilling slurries, grease or oil-free waste water or rinse water, dredging, wash water or rinse water running off a surface or other non-storm water liquids not covered under separate waste water permits must be held in structurally sound, leak-proof containers, such as portable bins or portable tanks. Store containers at least 50 feet away from moving vehicles and equipment. Liquid waste may require testing to determine hazardous material content prior to disposal. All measures must conform to section 13-4.03D (5) Liquid Waste, Water Pollution Control of Caltrans' Standard Specifications.
 24. **WATER CONTROL AND CONSERVATION:** Manage water use in a way that will prevent erosion and the discharge of pollutants into storm drain systems and receiving waters. Direct runoff, including water from water line repair from the job site to areas where it can infiltrate into the ground. Direct water from off-site sources around the job site or from contact with jobsite runoff.
 25. **PILE DRIVING:** Keep spill kits and cleanup materials at pile driving locations. Park pile driving equipment over drip pans, absorbent pads, or plastic sheeting with absorbent material, and away from stormwater run-on when not in use.
 26. **DEWATERING:** Dewatering consists of discharging accumulated storm water, groundwater, or surface water from excavations or temporary containment facilities. All dewatering operations must comply with the latest Caltrans guidelines including the Field Guide for Construction Site Dewatering. Contact State representative for approval of dewatering discharge by infiltration or evaporation, otherwise, any effluent discharged into a permitted storm water system requires approval from the Regional Water Quality Control Board. Prior to the start of dewatering, the Permittee must provide the State Representative with a dewatering and discharge work plan that complies with section 13-4.03G Dewatering, Water Pollution Control of Caltrans' Standard Specifications. A copy of the Waste Discharge Permit and a copy of a valid WDID number issued by the Regional Board must be provided to the State representative.

BACKFILL REQUIREMENTS

A. Backfill Within Existing or Proposed Paved Areas:

1. Material for use as structure backfill shall have a sand equivalent of not less than 20. The percentage composition by weight as determined by laboratory sieves shall conform to the following grading:

<u>Sieve Sizes</u>	<u>Percentage Passing Sieves</u>
3" -----	100
No. 4 -----	35-100
No. 30 -----	20-100

Backfill material shall be placed in horizontal, uniform layers not exceeding 8 in. in thickness, before compaction, and shall be brought up uniformly on all sides of the structure or facility. Each layer of backfill shall be compacted to a relative compaction of not less than 95 percent.

Controlled Low Strength Material (CLSM) shall be allowed for trench backfill if it meets Caltrans 2010 Standard Specifications 19-3.02F and 19-3.03I.

2. The upper 8 in. shall consist of 6 in. Class 1 high early strength portland cement concrete (7 sack Type III cement) or Class 1 portland cement concrete (7 sack Type II with 2 percent calcium chloride by weight of cement). Cold plane a depth of 0.15' (2 in.) of asphalt concrete extending outside the underlying trench a minimum distance of 12 in on each side. Pavement shall be saw-cut a minimum of 2.5 in. deep to a neat, straight line. Traffic shall not be allowed across the trench area until the PCC has been poured and has had reasonable time to set and permanent or temporary AC paving is in place.
3. In cases where the trench width does not exceed 6 feet, requirement A2 may be waived and the following requirements substituted: the backfill material shall conform to A1 above and shall be thoroughly mixed with 2 sacks of portland cement per cubic yard. Placement and compaction shall conform to A.1. The upper portion shall consist of a tack coat of liquid asphalt and 4 in. asphalt concrete placed and compacted in two even lifts and rolled to a smooth even finish. Traffic shall not be allowed across the trench area until the AC paving is in place.
4. For paved shoulders only, upon express permission of the State's Inspector, Provision A may be waived and Provision 3 backfill requirements shall apply.

B. Backfill in Paved Shoulder Areas:

The backfill to within 12 in. of the existing or proposed profile grade shall conform to A1 above. The upper 12 in. shall consist of 8 in. Class 2 aggregate base compacted to a relative compaction of not less than 95 percent, covered with a tack coat of liquid asphalt and 4 in. asphalt concrete placed and compacted in two lifts and rolled to a smooth, even finish.

C. Backfill in Unpaved Shoulder Areas:

The backfill to within 12 in. of the existing or proposed profile grade shall conform to A1 above. The upper 12 in. shall consist of Class 2 aggregate base compacted to not less than 95 percent.

D. Backfill Outside of Highway Shoulders:

The backfill material may consist of material from excavation, free from stones or lumps exceeding 3 in., vegetable matter, or other unsatisfactory material, and shall be compacted in lifts not exceeding 8 in. to a relative compaction of 90 percent. When the material from excavation is unsuitable for use as backfill, it shall be disposed of and replaced with material meeting the above requirements of A1.

Excess material shall be disposed of outside the State right of way or at a location designated by the Department of Transportation's representative.

UTILITY UNDERGROUND PROVISIONS (UG)

TR - 0163 (Rev. 04/2018)

In addition to the attached General Provisions (TR-0045), the following special provisions are also applicable:

High priority utilities, pressurized facilities, pipes or ducts 6" or larger in diameter, or placement of multiple pipes or ducts, regardless of diameters are required to be encased on both conventional and access-controlled highway rights-of-way.

A "High Priority Utility" is defined as: 1) a natural gas pipeline greater than 6" in diameter, or with normal operating pressures greater than 60 psig, 2) petroleum pipelines, 3) pressurized sanitary sewer pipelines, 4) high-voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to 60 kV, or 5) hazardous materials pipelines that are potentially harmful to workers or the public if damaged.

An exception to this policy may be allowed on a case by case basis for the installation of Uncased High-Pressure Natural Gas Pipelines when in compliance with the TR-0158 Special Provisions.

The pavement or roadway must not be open-cut unless specifically allowed under a separate "UT" permit. Utility installations must not be installed inside of culverts or drainage structures.

For additional details regarding longitudinal utility encroachments on both conventional and access-controlled highway rights-of-way, see Chapter 600.

UG 1. CASINGS: Casings must be steel conduit with a minimum inside diameter sufficiently larger than the outside diameter of the pipe or ducts to accommodate placement and removal. The casing can be either new or used steel pipe, or an approved connector system. Used pipe must be pre-approved by the Department's engineer or representative before installation.

When the method of Horizontal Directional Drilling (HDD) is used to place casing, the use of High Density Polyethylene Pipe (HDPE) as casing is acceptable.

Reinforced Concrete Pipe (RCP) in compliance of State Standard Specifications is an acceptable carrier for storm drain gravity flow or non-pressure flow. RCP when installed by Bore & Jack must have rubber gaskets at the joints, and holes for grouting of voids left by jacking operations, see "E" below.

- A. Minimum wall thickness for steel pipe casing for different lengths and diameters of pipes are as follows:

Minimum Wall Thickness

Casing Pipe (Diameter)	Up to 150 ft (Length)	Over 150 ft (Length)
6" to 28"	1/4"	1/4"
30" to 38"	3/8"	1/2"
40" to 60"	1/2"	3/4"
62" to 72"	3/4"	3/4"

- B. Spiral welded casing is authorized provided the casing is new and the weld is smooth.

- C. The ends of the casing must be plugged with ungrouted bricks or other suitable material approved by the Department's representative.
- D. When required by the Department's representative, the permittee must at his expense, pressure grout the area between the pavement and the casing from within the casing in order to fill any voids caused by the work covered under this permit. The increments for grout holes inside the pipe must be 8' staggered and located 22-1/2 degrees from vertical axis of the casing. Pressure must not exceed 5 psig for a duration sufficient to fill all voids.
- E. There is a spacing requirement when placement of multiple encasements is requested. The distance between multiple encasements must be the greater of either 24" or twice that of the diameter of the larger pipe being installed.
- F. Casings placed within access controlled highway rights-of-way must extend to the right-of-way lines.
- G. Wing cutters, if used, must be a maximum of 1" larger than the casing. Voids caused by the use of wing cutters must be grouted in accordance with "E" above.
- H. A band welded to the leading edge of the casing must be placed square to the alignment. The band must not be placed on the bottom edge. Flaring the lead section on bores over 100' must not be permitted.

ENCROACHMENT PERMIT SPECIAL PROVISIONS

- I. All casing lengths must equal to the auger length.
- J. The casings within conventional highways must extend 5' beyond the back of curb or edge of pavement, or to the right of way line if less. Where PCC cross-gutter exists, the casing must extend at least 5' beyond the back of the cross-gutter, or to the right of way line if less.

Bore and receiving pits must:

- A. be located at least 10' or more from the edge of pavement on conventional highways in rural areas.
- B. be located 5' behind the concrete curb or AC dike on conventional highways in urban areas.
- C. be located 5' outside the toe of slope of embankment areas.
- D. be located outside access controlled highway rights-of-way.
- E. be adequately fenced and/or have a Type-K barrier placed around them.
- F. be adequately shored in accordance with Cal-OSHA requirements. Shoring for jacking and receiving pits located within 15' of traffic lanes on a State highway must not extend more than 36" above the pavement grade unless otherwise authorized by Department's representative. Reflectors must be affixed to the shoring on the sides facing traffic. A 6' chain link fence must be installed around the perimeter of the pits during non-working hours.
- G. have crushed-rock and sump areas to clear groundwater and water used to clean the casing. Where ground water is found and pumping is required, the pits must be lined with filter fabric.

UG 2. HORIZONTAL DIRECTIONAL DRILLING: Bore and receiving pits

When HDD is the approved method for pipe installation, drilling plans must contain information listed as follows:

1. Location of: entry and exit point, access pit, equipment, and pipe staging area.
2. Proposed drill path alignment (horizontal and vertical).
3. Location and clearances of all other facilities.
4. Depth of cover.
5. Soil analysis.*
6. Carrier pipe length, diameter, thickness, and material (HDPE/steel) and ream pipe diameter.

7. Detailed carrier pipe calculations confirming ability to withstand installation loads and long-term operational loads including H2O.
8. Proposed drilling fluid composition, viscosity, and density (based on soils analysis).
9. Drilling fluid pumping capacity, pressures, and flow rates
10. State right-of-way lines, property, and utility right of way or easement lines.
11. Elevations.
12. Type of tracking method/system and accuracy used.
13. A detailed plan for monitoring ground surface movement (settlement or heave) resulting from the drilling operation.
- * May be waived by the District Permit Engineer for HDD jobs less than 6" in diameter and a traverse crossing less than 150'.

UG 3. LIMIT OF EXCAVATION: No excavation is allowed within 10' from the edge of pavement except in curbed urban areas or as specified in the permit. Where no curb exists and excavations within 10' of the traveled way are to remain open, a temporary Type-K railing must be placed at a 10:1 taper or as otherwise directed by the Department.

UG 4. TUNNELING: Review, requirements of Section 603.6A-6 of the Encroachment Permits Manual, if applicable. In addition to the requirements of "UG1" the following requirements apply:

- A. For the purpose of this provision, a tunnel is defined as any pipe, 30" or larger in diameter placed.
- B. When tunneling is authorized, the permittee must provide full-time inspection of tunneling operations. The Department's representative must monitor projects.
- C. A survey grid must be set and appropriately checked over the centerline of the pipe jacking or tunneling operation. Copies of the survey notes must be submitted to the Department's representative.
- D. Sand shields may be required as ground conditions change.
- E. The method used to check the grade and alignment must be approved by the Department's representative.
- F. Pressure grouting for liner plates, rib and spiling, or rib and lagging tunnels must be at every 8' section or at the end of work shift before the next section is excavated. All grouting must be completed at the end of each workday.
- G. A method for securing the headway at the end of each workday is required. Breastplates must be

ENCROACHMENT PERMIT SPECIAL PROVISIONS

installed during working hours for running sand or super-saturated soil.

UG 5. CLEARANCE AND OFFSET

REQUIREMENTS: All installations must comply with Chapter 17, Article 4 of the Project Delivery Procedures Manual (PDPM) for utility clearance and offset requirements.

UG 6. FACILITIES EXEMPT FROM THE HIGH PRIORITY UTILITY REQUIREMENTS:

The following utilities (not including State owned utilities) are exempt from these policies and do not need to be plotted on the plans unless the depiction of the utility is needed for interconnectivity with the proposed work:

- Natural gas service lines less than 2 inches in pipe diameter that have normal operating pressures of 60 psig or less
- Subsurface electrical service connections with a potential to ground of 50 volts or less
- Service connections (laterals) for water, sewer, telephone, telecommunication, and cable service

All State owned utilities must be plotted on the plans.

UG 7. DETECTOR STRIP: A continuous metallic detector strip must be provided with non-metallic main installations. Service connections must be installed at right angles to the centerline of the State highway where possible.

UG 8. BACKFILLING: All backfilling must conform to the applicable sections of the Department's Standard Specifications. Ponding or jetting methods of backfilling are prohibited.

Any required compaction tests must be performed by a certified laboratory at no cost to the Department and the laboratory report furnished to the Department's representative.

UG 9. ROADWAY SURFACING AND BASE MATERIALS: When the permit authorizes installation by the open cut method, surfacing and base materials and thickness thereof must be as specified in the permit.

Temporary repairs to pavements must be made and maintained upon completion of backfill until permanent repairs are made. Permanent repairs to pavements must be made within thirty (30) days of completion of backfill unless otherwise specified by the Department. Temporary pavement patches must be placed and maintained in a smooth riding plane free of humps and/or depressions.

UG 10. DAMAGE TO TREE ROOTS: Tree roots 3" or larger in diameter will not be cut within the tree drip

line when trenching or other underground work is necessary adjacent to roadside trees. If such roots are encountered, they must be tunneled under, wrapped in burlap and kept moist until the trench is backfilled. Trenching machines may not be used under trees if the trunk or limbs will be damaged by their use.

If the trees involved are close together and of such size that it is impractical to protect all roots over 3" in diameter, or when roots are less than 4" in diameter, outside tree drip line, special arrangements may be made whereby pruning of the tree tops to balance the root loss can be done by the permittee under the close supervision of the District Landscape Specialist or District Tree Maintenance Supervisor. Manholes must not be installed within 20' of any trunk.

UG 11. PIPES ALONG ROADWAY: Pipes and conduits paralleling the pavement must be located as shown on the plans or located outside of pavement as close as possible to the right-of-way line.

UG 12. BORROW AND WASTE: Borrow and waste will be allowed within the work limits only as specified in the permit.

UG 13. MARKERS: The permittee must not place any markers that create a safety hazard for the traveling public or departmental employees.

UG 14. CATHODIC PROTECTION: The permittee must perform stray current interference tests on underground utilities under cathodic protection. The permittee must notify the Department prior to the tests. The permittee must perform any necessary corrective measures and advise the Department.

UG 15. DELETED. Provision left blank intentionally

UG 16. INSTALLATION BY OPEN CUT METHOD: When the permit authorizes installation by the open cut method no more than one lane of the highway pavement must be open-cut at any one time. Any exceptions must be in writing by the Department's representative. After the pipe is placed in the open section, the trench is to be backfilled in accordance with specifications, temporary repairs made to the surfacing and that portion opened to traffic before the pavement is cut for the next section.

If, at the end of the working day, backfilling operations have not been properly completed, steel plate bridging must be required to make the entire highway facility available to the traveling public in accordance with the "Steel Plate Bridging Special Provisions" (TR-0157)

ENCROACHMENT PERMIT SPECIAL PROVISIONS

UG 17. PAVEMENT REMOVAL: PCC pavement to be removed must be saw cut at a minimum depth of 4" to provide a neat and straight pavement break along both sides of the trench. AC pavement must be saw cut to the full depth.

Where the edge of the trench is within 2' of existing curb and gutter or pavement edge, the asphalt concrete pavement between the trench and the curb or pavement edge must be removed.

UG 18. DELETED. Provision left blank intentionally.*

UG 19. SIDES OF OPEN-CUT TRENCHES: Sides of open cut trenches in paved areas must be kept as nearly vertical as possible. Trenches must not be more the 2' wider than the outside diameter of the pipe to be laid therein, plus the necessary width to accommodate shoring.

UG 20. EXCAVATION UNDER FACILITIES: Where it is necessary to excavate under existing curb and gutter, or underground facilities, the void must be backfilled with two (2) sack cement-sand slurry.

UG 21. PERMANENT REPAIRS TO PCC PAVEMENT: Repairs to PCC pavement must be made of Portland Cement Concrete containing a minimum of 658 lbs. or 7 sack of cement per cubic yard. Replaced PCC

pavement must equal existing pavement thickness. The concrete must be satisfactorily cured and protected from disturbance for not less than forty-eight (48) hours. Where necessary to open the area to traffic, no more than two (2%) percent by weight of calcium chloride may be added to the mix and the road opened to traffic after six (6) hours.

UG 22. REMOVAL OF PCC SIDEWALKS OR CURBS: Concrete sidewalks or curbs must be saw cut to the nearest score marks and replaced equal in dimension to that removed with score marks matching existing sidewalk or curb.

UG 23. SPOILS: No earth or construction materials are to be dragged or scraped across the highway pavement, and no excavated earth placed or allowed to remain at a location where it may be tracked onto the highway traveled way, or any public or private approach by the permittee's construction equipment, or by traffic entering or leaving the highway traveled way. Any excavated earth or mud so tracked onto the highway pavement or public or private approach must be immediately removed by the permittee.

*NOTE: Special Provision was deleted since it is already part of the EP General Provisions (TR-0045)

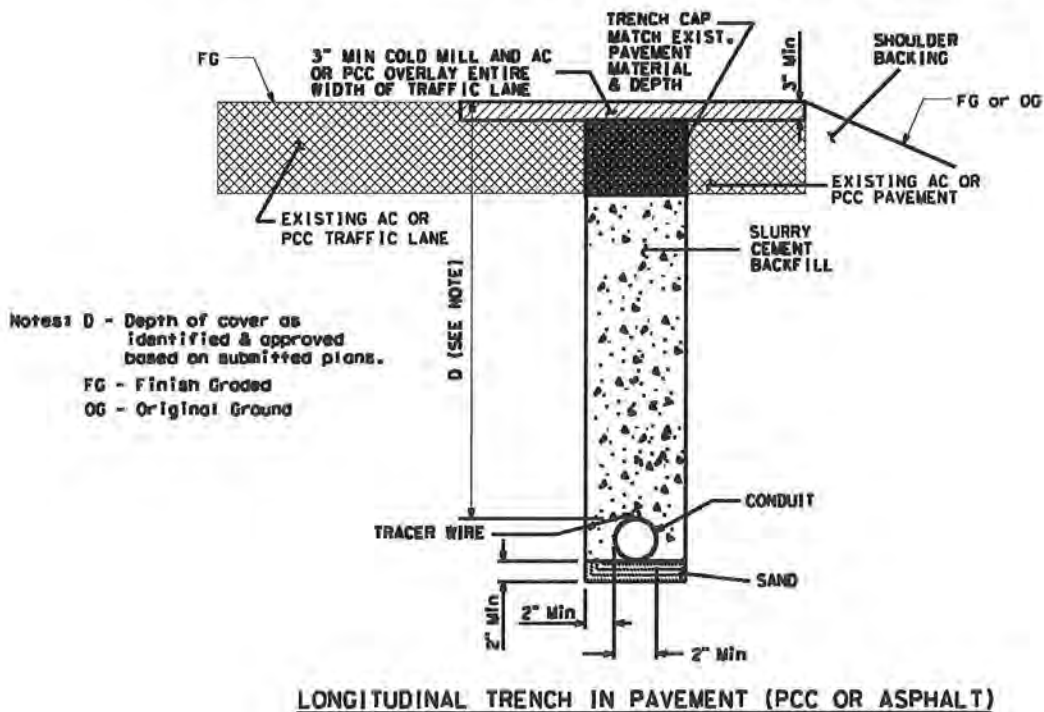
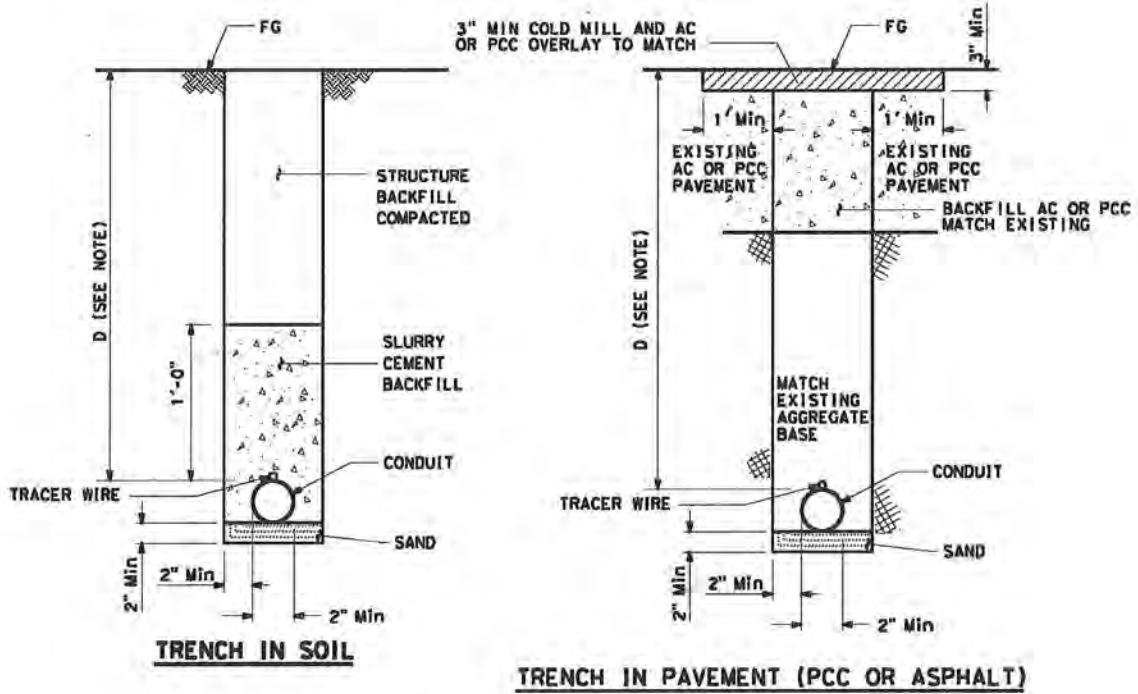
HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

TR-0408 (New 09/2017)

By acceptance of this encroachment permit, Permittee hereby agrees that:

1. All construction debris/materials/water/excess soil must become the property of the Permittee, and must be transported and disposed of, outside of Caltrans' right-of-way, in accordance with all applicable environmental laws and regulations. The Permittee must be identified as the generator for all construction debris/materials/water/excess soil and must be responsible for proper identification (including sampling and analysis) and management of all construction and contaminated debris/materials/water/excess soil that are removed, and/or excavated, from the work site. If hazardous waste is generated, the Permittee must obtain an Environmental Protection Agency (EPA) Identification Number issued in their name. State Permit Inspector does not sign any manifests or shipping papers. The Permittee must be named as the generator on all Uniform Hazardous Waste Manifests and shipping papers. Caltrans must not be identified or written anywhere on the manifests or shipping papers. Prior to waste disposal, the Permittee should submit the waste generator form(s) to State Permit Inspector for verification. The Permittee must submit to the State Permit Inspector, a copy of all manifests and/or shipping papers generated for materials removed, transported and/or excavated from the state right-of-way.
2. If contaminated material is encountered, Permittee is to stop work and contact the State Permit Inspector immediately. The Permittee must submit a Sampling and Analysis Plan (SAP), and a Health and Safety Plan (HaSP) prepared by a Certified Industrial Hygienist (CIH) and in conformance with California Code of Regulations title 8, section 5192, "Hazardous Waste Operations and Emergency Response" for sampling activity through a separate permit application. Upon the permit review, additional environmental documents may be required prior to resumption of construction activity.
3. Permittee is responsible for any violation, penalty, enforcement action, corrective action, remedial action, and any other type of consequences resulting from cross contamination of groundwater (including perched groundwater), improper handling/managing of hazardous materials and/or placement of contaminated materials inside Caltrans right-of-way.
4. It is the Permittee's responsibility to comply with the Department of Toxic Substances Control (DTSC) ADL requirements for roadway soil management. Reuse of soils containing greater than 80 mg/kg total lead is not allowed without written approval of the DTSC and Caltrans. The Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils between Caltrans and the DTSC does not constitute written approval for the Permittee to reuse soils containing greater than 80 mg/kg total lead.
5. The Permittee must implement the emergency notification requirements established in the California Office of Emergency Management Hazardous Materials, Spill / Release Notification Guidance (<http://www.caloes.ca.gov/>).
6. Any imported material used for backfill must be free of contamination, and a certificate of the material as "clean" with the source area of the material must be provided to Permit Inspector upon request. Importing soils containing greater than 80 mg/kg total lead for use in state right-of-way is not allowed. Stockpiles of material containing aerially deposited lead shall not be placed where affected by surface run-on or run-off. Stockpiles shall be covered with plastic sheeting 13 mils minimum thickness or with one foot of nonhazardous material. Stockpiles shall not be placed in environmentally sensitive areas. Stockpiled material shall not enter storm drains, inlets, or waters of the State.

TYPICAL TRENCH DETAIL (NOT TO SCALE)



Notes: D - Depth of cover as identified & approved based on submitted plans.
 FG - Finish Graded
 OG - Original Ground

See page 2 for additional notes.

- All work must be authorized by the encroachment permit, and/or as directed by the State's representative.
- A tracer wire must be placed on top of the conduit unless specified not to.
- Clearance between the trench wall and encroachment work less than 6 inches in width shall be a minimum of 2 inches. Clearance between the trench wall and encroachment work greater than 6 inches width shall be a minimum of 6 inches.
- When the trench width is less than 2' the backfill for subgrade must consist of either slurry cement or Controlled Low-Strength Material (CLSM).
- When trench width is greater than 2' compacted aggregate base may be used for backfill.
- Structure backfill must conform to Section 19-3.02C of the Standard Specifications.
- For trench located under unimproved surface, structure backfill can use the original soil. Soil must be compacted by mechanical means. Ponding, jetting or flooding are not allowed. Slurry cement backfill is optional at the discretion of the Caltrans District.
- Slurry cement backfill must conform to Section 19-3.02E of the Standard Specifications.
- Aggregate base shall conform to Section 26 of the Standard Specifications.
- CLSM must conform to Section 19-3.02G of the Standard Specifications. When CLSM is utilized the mix design and test results must be submitted to the State's representative. See Appendix H of the Encroachment Permits Manual for additional information.
- Cold planed surface and overlay shall be to the nearest lane line for the entire length of the trench/disturbed areas, and/or as directed by the State's representative.
- A paving notch ("T" Cut) shall be cold planed in exist asphalt concrete to a minimum width of 1.0' beyond each side of the trench and to a depth of 3" for the final layer of HMA.
- HMA or PCC to replace pavement section shall match existing pavement depth, unless directed otherwise by the State's representative.
- Hot mix asphalt must conform to Section 39 of the Standard Specifications.
- A tack coat of asphaltic emulsion conforming to Section 39-2.01C (3) (f) shall be applied.
- When the trench is within 4' of curb and gutter, additional cold planing may be required at the discretion of the State's representative.
- Pavement markings and/or striping removed or damaged during construction must be replaced as directed by the State's representative.
- Other trench related details are shown in Chapter 6 of the Encroachment Permits Manual as well as the Trenching and Shoring Manual. Both publications can be found on the State of California, Department of Transportation's website.

NOTICE TO OWNER

RW 13-04 (REV 04/2021)

NOTICE TO OWNER

District	County	Route	Post Mile	Project ID	EA
11	SD	5	R44.1/R47.3	1114000059	2T2111
FEDERAL AID NUMBER STPLN 6211(130)					
OWNER'S FILE NUMBER: 3904-F					
DATE June 16, 2021			FREEWAY <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

Number 33799**To:**

Carlsbad Municipal Water District
5950 El Camino Real
Carlsbad, CA 92008-8802
ATTN: Dave Padilla, District Engineer

Because of the State Highway construction project:

In San Diego County in the City of Carlsbad on Interstate 5 from La Costa Avenue overcrossing to 0.3 miles north of Palomar Airport Road overcrossing.

Which affects your facilities:

12 inch water line located to the south of Palomar Airport Road on Interstate 5.

You are hereby ordered to:

Relocate your facilities per project Project #3904-F approved on June 7, 2021 under the freeway and above the Caltrans 48 inch drainage pipe along the shoulders such that your facilities are no longer in conflict with the proposed Caltrans freeway widening on Interstate 5.

Your work schedule shall be as follows:

Work to be performed by Owner's forces and to be completed prior to September 30, 2021.

Liability for the cost of the work is:

100% Owner Expense

ADA Notice

For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 445-1233, TTY 711, or write to Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

NOTICE TO OWNER

RW 13-04 (REV 04/2021)

Notify Yong Pak, Resident Engineer at telephone number (858) 688-1481, 72 hours prior to initial state of work, and 48 hours prior to subsequent restart when your work schedule is interrupted.

GUSTAVO DALLARDA
DISTRICT DIRECTOR
District 11

CHRIS SCHMIDT
DEPUTY DISTRICT DIRECTOR
RIGHT OF WAY DIVISION

By Greg Gutierrez
GREG GUTIERREZ
DISTRICT UTILITY COORDINATOR

CC: Resident Engineer
Permits
R/W

THIS NOTICE DOES NOT CONSTITUTE A PERMIT. OBTAIN AN ENCROACHMENT PERMIT BEFORE STARTING WORK.

The Parties agree that this Notice to Owner will set forth the terms, covenants, and conditions that are mutually agreed upon by the parties, and that the Notice to Owner shall constitute the written agreement required by 23 CFR 645.113 ("Written Agreement"). Owner must submit all reimbursement and other payment claims arising from this Notice to Owner to Caltrans within 365 calendar days of the completion of the relocation (the "Claim Period"), and Owner waives, releases, and forfeits all right to reimbursement and any other payment for any claims that are submitted after the Claim Period.

ADA Notice

For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 445-1233, TTY 711, or write to Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

SHEET TOTAL SHEETS
 PROJECT TOTAL PROJECT NO.
 COUNTY ROUTE
 REGISTERED CIVIL ENGINEER
 Alpha Perera
 No. 2-31-19
 STATE OF CALIFORNIA
 REGISTERED CIVIL ENGINEER
 May 31, 2018
 PLEASE APPROVAL DATE
 FOR SEALS SHALL BE THE RESPONSIBILITY OF THE ENGINEER
 FOR SEALS OF THIS PLAN SHEET.

TABLE 3

ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING

SPEED *	Mfn D **	DOWNGRADE Mfn D ***		
		-3%	-6%	-9%
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891
75	820	866	927	1003

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph
 ** - Longitudinal buffer space or flagger station spacing and longer than 1 mile.
 *** - Use on sustained downgrade steeper than -3 percent

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING

SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)		MAXIMUM CHANNELIZING DEVICE SPACING					
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	TAPER		CONFLICT Z	
					X	Y		
20	160	80	40	27	20	40	10	11
25	250	125	63	42	25	50	12	12
30	360	180	90	60	30	60	15	15
35	490	245	123	82	35	70	17	17
40	640	320	160	107	40	80	20	20
45	1080	540	270	180	45	90	22	22
50	1200	600	300	200	50	100	25	25
55	1320	660	330	220	50	100	25	25
60	1440	720	360	240	50	100	25	25
65	1560	780	390	260	50	100	25	25
70	1680	840	420	280	50	100	25	25
75	1800	900	450	300	50	100	25	25

* - For other offsets, use the following merging taper length formula for L:
 For speed of 40 mph or less, $L = WS^2/60$
 For speed of 45 mph or more, $L = WS$

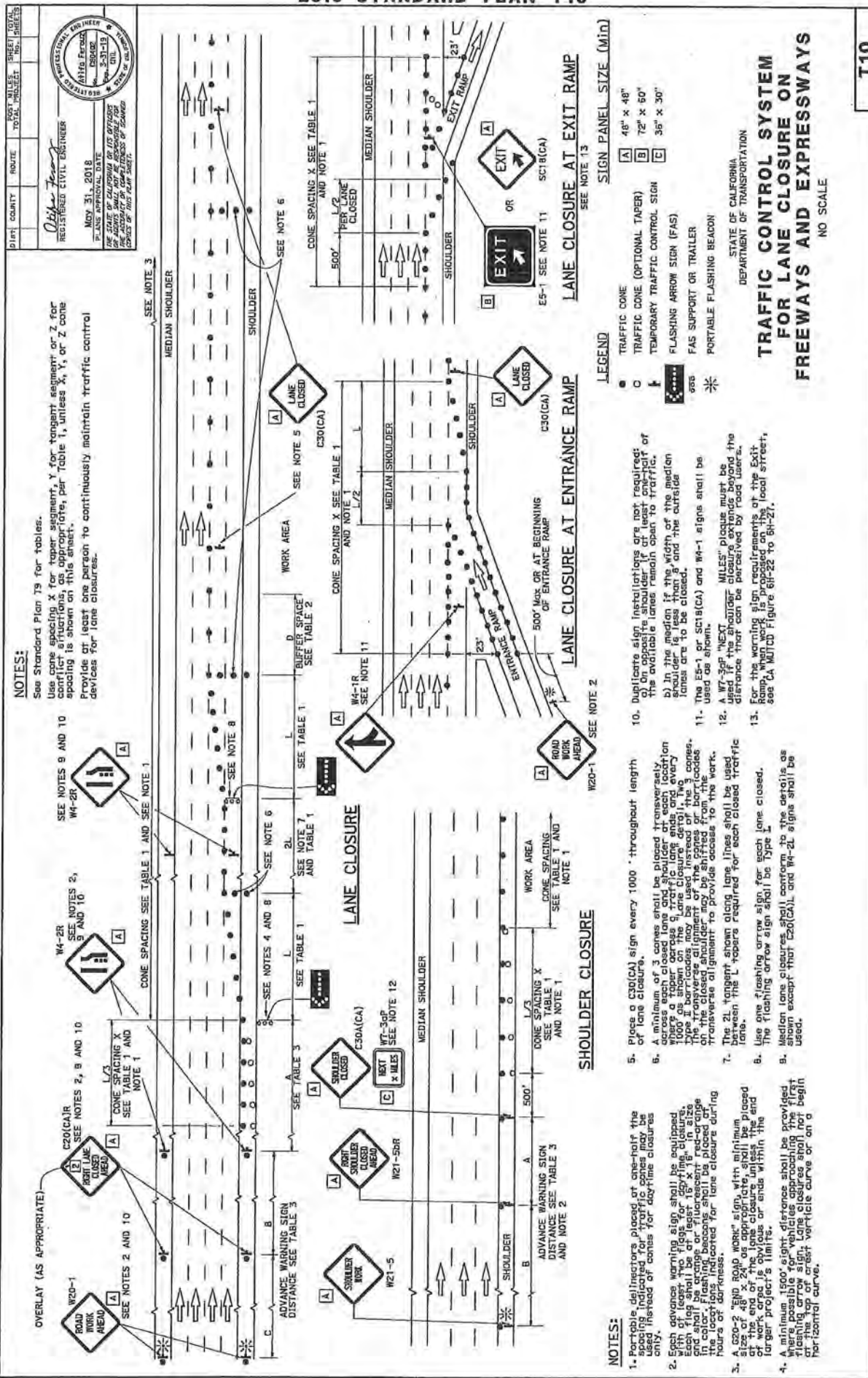
Where: L = Taper length in feet
 W = Width of offset in feet
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM TABLES
 FOR LANE AND RAMP CLOSURES**
 NO SCALE

T9

Return to Table of Contents



NOTES:
 See Standard Plan 79 for tables.
 Use cone spacing X for taper segment, Y for tangent segment or Z for cone spacing as shown on this sheet.
 Provide at least one person to continuously maintain traffic control devices for lane closures.

NOTES:
 1. Portable delineators placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.
 2. Each advance warning sign shall be equipped with a top section for sign lighting. Each sign shall be at least 4' x 8' in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the location indicated for lane closure during hours of darkness.
 3. A C20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of the project's limits.
 4. A minimum 1500' sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin on a vertical curve or on a horizontal curve.

5. Place a C30(CA) sign every 1000' throughout length of lane closure.
 6. A minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper occurs. Traffic lane ends and every 100' of taper shall be closed with cones. The transverse alignment of the cones or barricades shall be perpendicular to the work area.
 7. The 2L "tangent" signs along lane lines shall be used between the L tapers required for each closed traffic lane.
 8. Use one flashing arrow sign for each lane closed.
 9. The flashing arrow sign shall be Type L.
 10. Median lane closures shall conform to the details as shown except that C20(CA) and W4-2L signs shall be used.

11. Duplicate sign installations are not required; the available lanes remain open to traffic.
 12. In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 13. The ES-1 or SCS1(CA) and W4-1 signs shall be used as shown.
 14. A W7-30P "NEXT MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.
 15. For the warning sign requirements of the Exit sign, see CA MUTCD Figure 6B-22 to 6B-27.

16. Duplicate sign installations are not required; the available lanes remain open to traffic.
 17. In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 18. The ES-1 or SCS1(CA) and W4-1 signs shall be used as shown.
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 14. For the warning sign requirements of the Exit sign, see CA MUTCD Figure 6B-22 to 6B-27.

CONSTRUCTION PLANS
FOR

CAMINO DE LAS ONDAS WATER MAIN RELOCATION
PROJECT NO. 3904-F



CARLSBAD, CALIFORNIA
BOARD OF DIRECTORS
MATT HALL - MAYOR
PRIYA BHAT-PATEL - BOARD MEMBER
KEITH BLACKBURN - BOARD MEMBER
CORI SCHUMACHER - BOARD MEMBER
TERESA ACOSTA - BOARD MEMBER

SCOTT CHADWICK
CITY MANAGER

JUNE 2021

PRELIMINARY DRAFT PLANS



VICINITY MAP
NOT TO SCALE

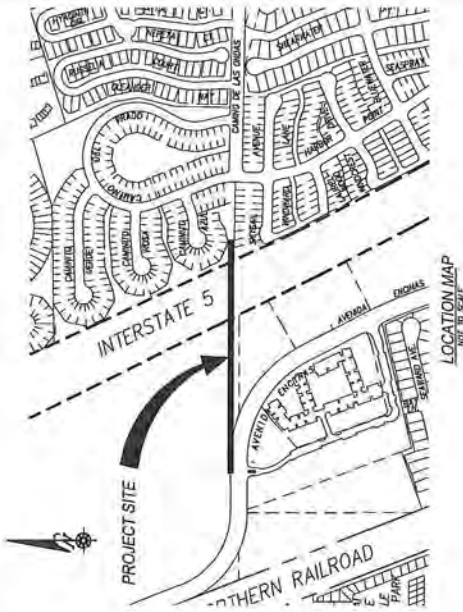
- SHEET INDEX**
- 1. TITLE SHEET, VICINITY MAP AND LOCATION MAP
 - 2. MAIN CONSTRUCTION NOTES, LEGEND AND ASSURANCES
 - 3. PLAN AND PROFILE

REFERENCE DRAWINGS

REFERENCE	DRAWING	DESCRIPTION	SOURCE
1	9-0	RELOCATION PLAN FOR WATER MAIN	CHW
2	9-1	REVISION #1 - 4 THROUGH 15 AND 2"	CHW
3	05-5	2" BLOCK-OFF / MANUAL AIR RELEASE ASSEMBLIES	COSSO
		CONCRETE PIPE TOLLAY	COSSO



UNINCORPORATED SERVICE AREA OF SOUTHERN CALIFORNIA



LOCATION MAP
NOT TO SCALE

THE RELOCATION PLANS WILL CLEAR THE PROJECT
Fordad Baboody

6-7-21

PROJECT ENGINEER

"AS BUILT"

DATE: _____ DATE: _____

REVIEWED BY: _____

INSPECTOR: _____

DATE: _____

SHEET	TITLE	DATE	BY	CHKD BY	DATE
1	CITY OF CARLSBAD UTILITIES DEPARTMENT				
2	TITLE SHEET, VICINITY MAP AND LOCATION MAP				
3	CAMINO DE LAS ONDAS WATER MAIN RELOCATION				
4	ACCEPTED PRIVATE PAVING				

DATUM REFERENCE
HORIZONTAL: NAD83 ZONE 14
VERTICAL: NAVD83
EPOCH: 1984.35

ORIGINAL DRAWING SCALE
1" = 10'

DATE: _____

DATE: _____

DATE: _____

DATE: _____

DATE: _____

DATE: _____

DATE: _____

DATE: _____

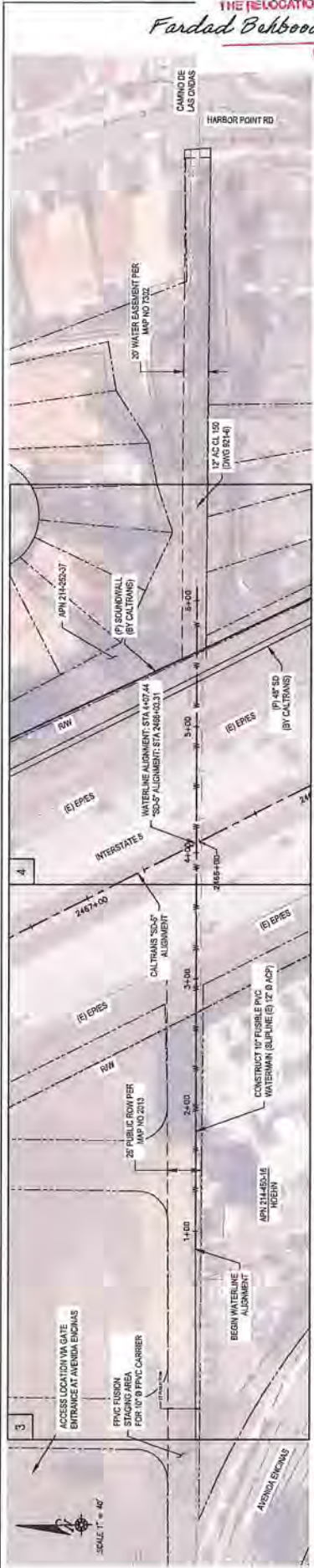
DATE: _____

DATE: _____

DATE: _____

DATE: _____

Fardad Behboody
PROJECT ENGINEER



SITE PLAN AND SHEET INDEX
SCALE: 1" = 40'

ABBREVIATIONS CONT.

DESCRIPTION	ABBREVIATION	SYMBOL
FUSIBLE PVC	FPVC	W
NON-DEBRIS FLEXIBLE	NPVC	W
INVERT ELEVATION	IE	—
URINAL FEET	UF	—
MANUAL AIR RELEASE ASSEMBLY	MARA	—
NOT TO SCALE	N.T.S.	—
PLAN END	PE	—
PROPOSED	(P)	—
PROJECT IN PLACE	PIP	—
PROPERTY LINE	PL	—
FISH ON	PO	—
POLYETHYLENE GLYCOL	PEGL	—
REINFORCED CONCRETE PIPE	RCP	—
RADIUS	R	—
RELOCATOR	RE	—
RESTRICATED FLOWING COUPLING	RF	—
REMOVE AND REPLACE	RR	—
RIGHT OF WAY	R/W	—
SM. DUCT RECESSED STANDARD BOLLARD	SD	—
STORM DRAIN	SD	—
TOP OF CARRIER PIPE	TOP	—
TRUCK BLOCK	TB	—
TRUCK	TR	—
ULTRAVIOLET	UV	—
WATER SERVICE	WS	—
WATER DATE VALVE	WDV	—

LEGEND

DESCRIPTION	SYMBOL
NEW PVC CARRIER/CHASIS	W
EXIST. MANHOLE	—
EXIST. SANITARY Riser	—
EXIST. STORM DRAIN	—
EXIST. TELECOMMUNICATIONS	—
EXIST. ELECTRIC	—
EXIST. GAS	—
EXIST. CABLE	—
EXIST. FORDING	—
EXIST. FLOODING	—
EXIST. FLOODING	—
EXIST. DITCHES	—
EXIST. EXCAVATION BOUNDARY	—
EXIST. 8" & 12"	—
WATER DATE VALVE	—
BLIND-UP ASSEMBLY	—
MANUAL AIR RELEASE ASSEMBLY	—
AIR INJECTION ASSEMBLY	—
WATER SERVICE	—
EXIST. TREE	—

GENERAL NOTES

1. THESE PLANS SUPERSEDE ALL OTHER PLANS PREVIOUSLY APPROVED BY THE CITY OF CARLSBAD REGARDING IMPROVEMENTS SHOWN ON THIS SET OF PLANS.
2. APPROVAL OF THIS PLAN DOES NOT LESSON OR WAIVE ANY PORTION OF THE STANDARD SPECIFICATIONS, SPECIFICATIONS, LISTED HEREIN AS THEY MAY BE CHANGED BY THE CITY OF CARLSBAD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITIONS OF ALL APPLICABLE SPECIFICATIONS AND STANDARDS.
3. CITY APPROVAL OF PLANS DOES NOT RELIEVE THE DEVELOPER OR CONTRACTOR OF ANY RESPONSIBILITIES FOR THE CORRECTION OF ERRORS AND OMISSIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
4. A NON-COMPLIANCE REPORT FROM THE CITY ENGINEER WILL BE REQUIRED FOR ANY WORK TO BE CONSTRUCTED THAT DOES NOT COMPLY WITH THE CITY ENGINEER'S REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
5. ALL WORK SHALL BE COMPLETED WITH ALL PERMITS HAVE BEEN OBTAINED FROM THE CITY ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
6. APPROVAL OF THESE PLANS MAY BE REQUIRED IF THE PROPOSED IMPROVEMENTS ARE CONSTRUCTED PRIOR TO THE EXPIRATION DATE OF THE REVISION APPROVAL.
7. NO REVISIONS WILL BE MADE TO THESE PLANS WITHOUT THE WRITTEN APPROVAL OF THE CITY ENGINEER. ANY REVISIONS TO THESE PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
8. APPROVAL OF THESE PLANS AND THESE SHEETS, REVISION BLOCK, ON THE ORIGINAL DRAWINGS SHALL BECOME THE PROPERTY OF THE CITY OF CARLSBAD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
9. THE ORIGINAL DRAWINGS SHALL BE RETURNED TO THE CITY ENGINEER WITH ALL REVISIONS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
10. ACCESS FOR FIRE AND OTHER EMERGENCY VEHICLES SHALL BE MAINTAINED TO THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
11. ALL WORK SHALL BE COMPLETED WITH ALL PERMITS HAVE BEEN OBTAINED FROM THE CITY ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
12. APPROVAL OF THESE PLANS MAY BE REQUIRED IF THE PROPOSED IMPROVEMENTS ARE CONSTRUCTED PRIOR TO THE EXPIRATION DATE OF THE REVISION APPROVAL.
13. NO REVISIONS WILL BE MADE TO THESE PLANS WITHOUT THE WRITTEN APPROVAL OF THE CITY ENGINEER. ANY REVISIONS TO THESE PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
14. APPROVAL OF THESE PLANS AND THESE SHEETS, REVISION BLOCK, ON THE ORIGINAL DRAWINGS SHALL BECOME THE PROPERTY OF THE CITY OF CARLSBAD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
15. THE ORIGINAL DRAWINGS SHALL BE RETURNED TO THE CITY ENGINEER WITH ALL REVISIONS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.

ABBREVIATIONS

DESCRIPTION	ABBREVIATION
AIR WELDMAN ASSEMBLY	AW
APPROXIMATELY	APPROX
ASSESSMENT COURT	AC
ASSESSOR'S PARCEL NUMBER	APN
BLOW OFF	BO
BENCH VERTICAL CURVE	BVC
CARLSBAD MUNICIPAL WATER DISTRICT	CMWD
CITY OF CARLSBAD STAMPAH	COCS
DATE	D
EDGE OF PARAPET/CHANGELIST	ED/PS
EDGE OF RAVINE/WAY	EW
END OF VERTICAL CURVE	EOVC
EXISTING	(E)

WATER NOTES

1. WATER & RECYCLED WATER MAIN AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF CARLSBAD ENGINEERING STANDARDS (LISTED IN THE CITY ENGINEER'S STANDARD SPECIFICATIONS, LISTED HEREIN AS THEY MAY BE CHANGED BY THE CITY OF CARLSBAD).
2. BEFORE ANY CONSTRUCTION OF WATER MAINS OR APPURTENANCES, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
3. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DEVELOPER OR CONTRACTOR OF ANY RESPONSIBILITIES FOR THE CORRECTION OF ERRORS AND OMISSIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.
4. A NON-COMPLIANCE REPORT FROM THE CITY ENGINEER WILL BE REQUIRED FOR ANY WORK TO BE CONSTRUCTED THAT DOES NOT COMPLY WITH THE CITY ENGINEER'S REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY ENGINEER FOR APPROVAL.

"AS BUILT"

REVIEWED BY: _____ DATE: _____

INSPECTOR: _____ DATE: _____

CITY OF CARLSBAD
UTILITIES DEPARTMENT

PROJECT NO. 3304-F
SHEET 2

DATE: 12/21/22

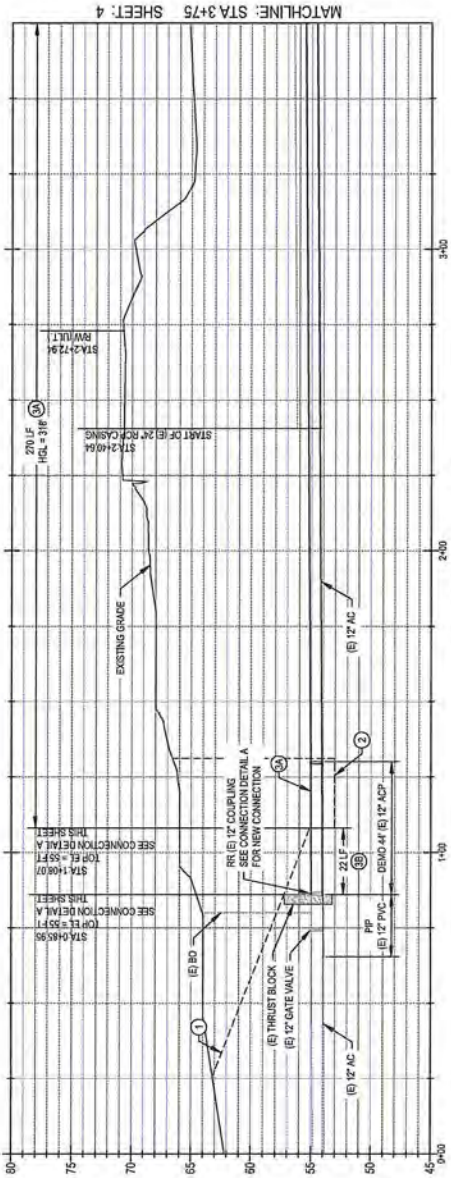
PROJECT NO. 3304-F
SHEET 4

SITE PLAN, CONSTRUCTION NOTES
LEGEND AND ABBREVIATIONS
CAMINO DE LAS ONDAS WATER MAIN RELOCATION
ACCEPTED BY: MARIE PAZOLA

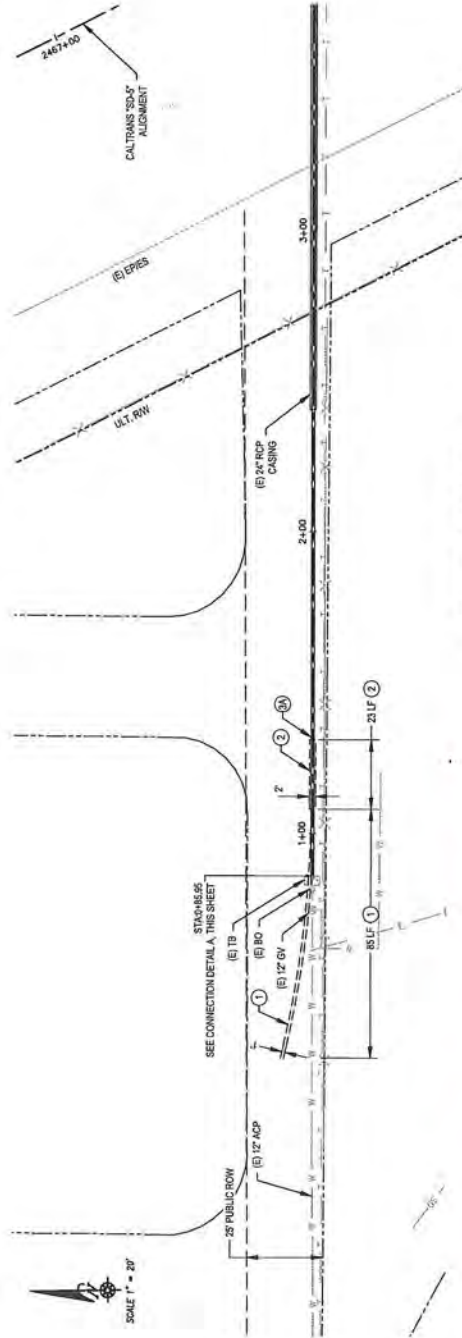
REVISION	DESCRIPTION	DATE	BY	DATE	BY

CORONAL DRAWING SCALE
0 1" = 1'

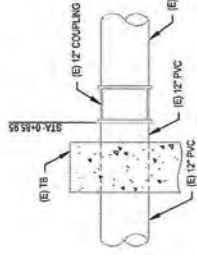
- CONSTRUCTION NOTES**
- 1 TAIL DITCH TEMPORARY EXCAVATION (CURVED, 30 FT RADIUS)
 - 2 INSERTION PPT TEMPORARY EXCAVATION
 - 3 CONSTRUCT 18" PFC, AWWA C900 OR 18" (SUPPLINE)
 - 4 CONSTRUCT 12" PFC, AWWA C900 DR 18



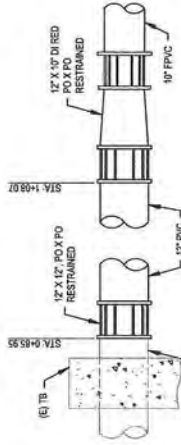
PROFILE STA: 0+00 TO 3+75
SCALE: HORIZ. 1" = 20' VERT. 1" = 5'



PLAN STA: 0+00 TO 3+75
SCALE: 1" = 20'



EXISTING



PROPOSED

A CONNECTION DETAIL
SCALE: 1/2\"/>

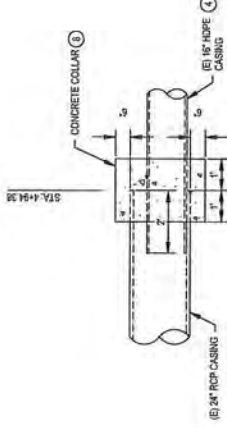
"AS BUILT"

INSPECTOR	DATE
REVIEWED BY:	DATE
DATE	DATE
CITY OF CARLSBAD UTILITIES DEPARTMENT	
SHEET 3	SHEETS 4
PROJECT NO. 3904-F	
DRAWING NO. XXXX	
PROJECT NAME: PLAN AND PROFILE	
PROJECT LOCATION: CAMINO DE LAS ONDAS WATER MAIN RELOCATION	
DESIGNED BY: R. B. BELL	
CHECKED BY: R. B. BELL	
DATE: 12/21/22	
DISTRICT ENGINEER: RCE 55574 EXP. 12/21/22	
ACCEPTED BY: R. B. BELL	
DATE: 12/21/22	
CITY APPROVAL:	

ORIGINAL DRAWING SCALE: 1" = 20'

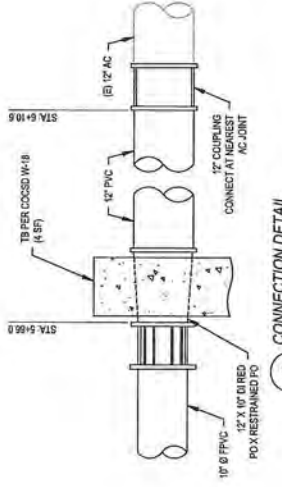
THE RELOCATION PLANS WILL CLEAR THE PROJECT
6-7-21
Ferdad Belbody
PROJECT ENGINEER

- CONSTRUCTION NOTES (CONT.)**
- (1) TAIL DITCH TEMPORARY EXCAVATION (CURVED, 300 FT RADIUS)
 - (2) INSERTION PIT TEMPORARY EXCAVATION
 - (3) CONSTRUCT 18" PPVC, AWWA C500 DR 16 (SLOPE)
 - (4) CONSTRUCT 12" PPVC, AWWA C500 DR 16
 - (5) CONSTRUCT 18" HDPE, AWWA C505 DR 11 (CASING)
 - (6) DEMOLISH (E) 12" ACP
 - (7) DEMOLISH (E) 24" RCP CASING
 - (8) 3" ELASTOMERIC BEARING PAD
 - (9) CONCRETE COLLAR MOORED COCSO DSS-450C-0300 CONCRETE
 - (10) 1" MECHANICAL COUPLING
 - (11) SLURRY FILL AND ABANDON (E) 12" ACP



NOTE: SEE COCSO SIZES FOR REINFORCEMENT, NOT SHOWN IN THIS DETAIL

B CONNECTION DETAIL
STA. 4+94.53 SCALE: N.T.S.

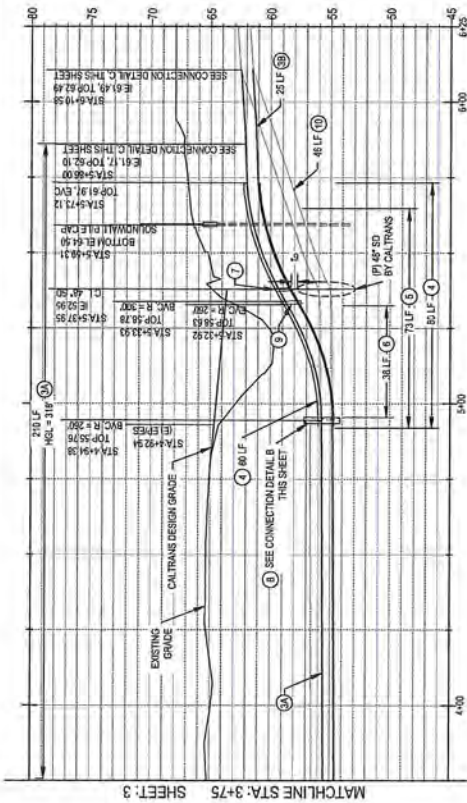


C CONNECTION DETAIL
STA. 5+66.0, 6+06 SCALE: N.T.S.

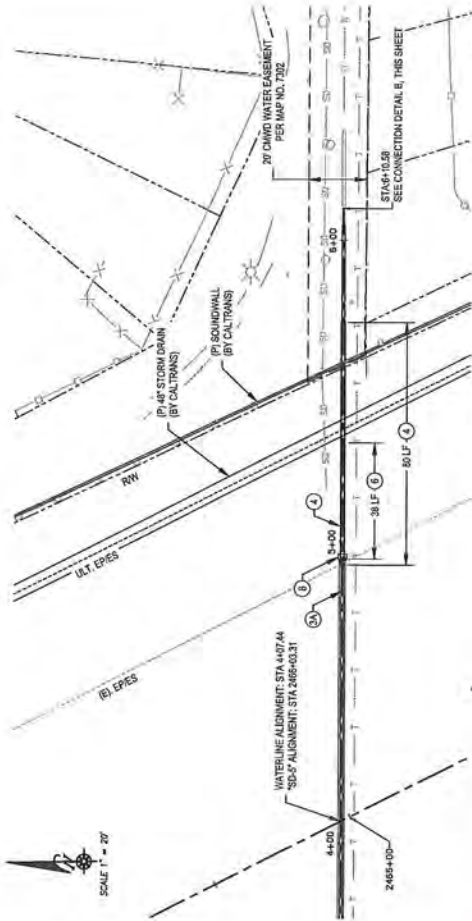
"AS BUILT"

PRJ NO.	DATE
REV. NO.	DATE
INSPECTOR	DATE
REVIEWED BY:	

CITY OF CARLSBAD		UTILITIES DEPARTMENT	PROJECT NO. 3604-F
SHEET 4		PLAN AND PROFILE	DRAWING NO. XXX
IMPROVEMENT TYPE		COMMO DE LAS ONDAS WATER MAIN RELOCATION	DATE 12/31/22
ACCEPTED BY		DATE 12/31/22	DATE
DISTRICT ENGINEER RSE 55874 EXP. 12/31/22		DATE	
ACCEPTED BY		DATE	
DISTRICT ENGINEER RSE 55874 EXP. 12/31/22		DATE	
DATE		DATE	
DATE		DATE	
DATE		DATE	
DATE		DATE	
DATE		DATE	
DATE		DATE	
DATE		DATE	
DATE		DATE	



PROFILE STA: 3+75 TO 6+25
SCALE: HORIZ. 1" = 20' VERT. 1" = 3'



PLAN STA: 3+75 TO 6+25
SCALE: 1" = 20'

THE RELOCATION PLANS WILL CLEAR THE PROJECT.
Fardad Babboody 6-7-21
PROJECT ENGINEER DATE

ORIGINAL DRAWING SCALE
 0 1/2"

REVISION DESCRIPTION

DATE REVISION NUMBER BY APPROVED BY

DATE CITY APPROVED

ATTACHMENT E

APPENDIX "F"

Encina Wastewater Authority Entry Permit Template

APPENDIX “F”

Encina Wastewater Authority Entry Permit Template

ENTRY PERMIT

Encina Wastewater Authority, (“Authority”) hereby grants permission to [name], a [type of entity], its agents, employees, contractors, and invitees (collectively, the “Permittee”) to enter upon the Authority’s Property as hereinafter defined for the purpose(s) and on the terms and conditions set forth below in this Entry Permit (“Permit”).

PURPOSE

Permittee desires to enter the properties more commonly described as Blocks 25 through 29, inclusive of Map 2013, La Costa Downs Unit 1, Carlsbad, California as filed in the office of the San Diego County Recorder on April 26, 1927 (the “Property”) for the purpose(s) of access and staging for construction of Carlsbad Municipal Water District CIP Project 3904-F (“Purpose”). The site is depicted on Exhibit A attached hereto.

TERMS AND CONDITIONS OF ENTRY

1. Permitted Use. Permittee may enter the Property only for the Purpose set forth above. Permittee shall keep a fully-executed copy of this Permit on hand at all times while on the Property and present it to any Authority staff member upon request.
2. Access Area. Permittee’s access to the Property is limited to the area identified as the “Access Area” on the attached Exhibit A. Permittee shall only access the Property during normal working days and hours (Monday through Friday, from 7:00 a.m. to 4:00 p.m.) using the route identified as “Ingress/Egress” on Exhibit A. Work or activity outside normal working days/hours or use of any route not shown on Exhibit A must be approved in advance by the Authority General Manager or designee.
3. No Interference. Permittee shall not interfere with any existing or future use of the Property. Any interference with use of the Property by the Permittee, as determined by the Authority in its sole discretion, shall result in the immediate termination of this Permit.
4. Term. The Permit shall be effective for a period of [length of term] commencing on [beginning date] and expiring on [end date] (the “Term”). Any extension of this Permit beyond the Term shall be under the terms and conditions of a new Permit that may be granted by the Authority.
5. Restoration of Property. Permittee shall, prior to the expiration of this Permit and at Permittee’s sole expense, repair any damage to the Property caused by Permittee or its contractors or agents and restore all areas of the Property accessed by Permittee to the same condition which existed immediately prior to Permittee’s entry to the reasonable satisfaction of the Authority’s General Manager or designee. In the event this Permit is terminated before the end of the Term due to

a violation of the Permit, Permittee shall be responsible for restoration of the Property in a manner approved by the Authority in its sole and reasonable discretion.

6. Compliance with Applicable Law; Permit Requirements. Permittee shall not engage in, or permit any other party to engage in, any activity on the Property that violates local, state or federal law, ordinances, codes, rules or regulations, including any applicable environmental laws, and shall be responsible for complying with such laws, and shall obtain all necessary permits or approvals for its work from the appropriate regulatory agencies. Permittee shall be responsible for complying with laws pertaining to safety and the use of safety equipment.
6. Indemnification. Permittee hereby agrees to indemnify, defend, and hold harmless the Authority, its directors, its Member Agencies, officers, employees, agents, contractors, and authorized volunteers from and against any and all liabilities, claims, loss, costs, damages and expenses (including but not limited to defense costs, legal fees, and attorneys' fees) of whatsoever character, nature and kind, which directly or indirectly arise from or relate to an act or omission of Permittee, or any agent, employee, contractor, or invitee, or other person acting by or on behalf of Permittee resulting from (a) the use of the Property by Permittee, its officers, agents, employees, contractors or invitees; (b) any operations or activities of Permittee on the Property; or (c) the exercise by Permittee, its officers, agents, employees, members or invitees of any of the rights granted to Permittee by this Permit, or (d) Permittee's violation of local, state and/or federal laws, statutes or ordinances; provided, however, that Permittee shall have no duty to indemnify, defend or hold harmless any party indemnified hereunder from liability to the extent that such liability arises from the Authority's established sole negligence or willful misconduct. Permittee's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the Authority or other indemnified persons. The provisions of this Section 6 shall survive any expiration or early termination of this Permit.
7. Insurance. Permittee, at its own expense, shall obtain (a) broad form commercial general liability insurance with limits not less than One Million Dollars (\$1,000,000) per occurrence and Two Million Dollars (\$2,000,000) aggregate covering bodily injury, death and property damage; (b) auto liability insurance; and (c) employers liability insurance; and shall name the Authority and its officers, directors, and employees as additional insured on all policies with respect to any claims or occurrences arising out of the use of this Permit or entry onto the Property and shall furnish to the authority current certificates of insurance certifying such coverage, in addition to evidence of California Worker's Compensation Coverage, before entering the Property. Such coverages are subject to reasonable approval by the Authority.
8. Sensitive Habitats. Areas in the vicinities of access roads to be used by Permittee contain habitat and sensitive endangered species. Permittee represents and warrants the Permittee's use of the access roads will not jeopardize any habitat or

species on the Property. The Authority's approval of this entry permit does not constitute approval of the activities of Permittee with respect to the impact such activities may have on habitat or species on the Property.

9. Prohibited Activities. No vegetation or brush removal or off road use of any kind is allowed on Authority property. Permittee shall also not allow firearms or pets to be brought on to the Property. Smoking cannot occur in or adjacent to forested, brush, or weedy areas. All litter must be properly disposed of. With exception of the Purpose of this Permit and subject to Permittee-held federal and/or state authorizations, no collection, killing, harm, or harassment of any animals is authorized.
10. Coordination of Use and Access. The Authority has on-going work being performed on its Property. In order to avoid conflicts, Permittee shall coordinate its use of the Property with the Authority. Permittee shall contact the Authority's representative at (760) 268-8890, at least forty-eight (48) hours before accessing the Property.
11. Hazardous Materials. Permittee shall not transport, place, use, release, store, transfer, or cause to be transported, placed, used, or stored any petroleum or petroleum byproducts, or any other hazardous material, substance, or waste on the Property. Permittee shall also be responsible for preventing the release of any material, hazardous or otherwise, from its equipment onto the Property. If required by the Authority, Permittee shall be responsible for the development and implementation of a plan for the prevention of any release or leak onto the access road from its equipment. If required, Permittee shall submit this plan to the Authority, for its approval, prior to initial access. Such plan shall be prepared in addition to any other plan, permit, or approval required by any federal, state, or local law, regulation, or ordinance.
12. Assumption of Risk. Permittee's use of the Property is at its own risk. Areas adjacent to the Property may be used by others, including Authority's employees and visitors. The Authority is not responsible for the security of Permittee's property or operations.
13. Termination. The Authority reserves the right to immediately terminate this Entry Permit, in whole or in part, at any time and in its sole and absolute discretion.
14. Attorneys' Fees. In the event legal action by either party is brought to enforce any term hereof or in the recovery of damages for any breach hereof, or to determine any rights of the parties under this Permit, the prevailing party in such actions may recover reasonable attorneys' fees to be fixed by the court.
15. Integrated Agreement. This Permit constitutes the entire agreement between the parties. Any prior agreements, promises, negotiations, or representations not expressly set forth herein are of no force and effect.

16. Severability. If any term or provision of this Permit shall, to any extent, be held invalid or unenforceable, the remainder of this Permit shall not be affected and shall remain in full force and effect.
17. Waiver. A waiver or a breach of a covenant or provision of this Permit shall not be deemed a waiver of any other covenant or provision in this Permit and no waiver shall be valid, unless in writing, and executed by the waiving party.
18. Governing Law. This Permit shall be governed and construed in accordance with the laws of the State of California.
19. Assignment. Permittee may not assign or transfer its right, duties, or obligations under this Permit without the prior written consent of the Authority. Any attempted assignment without the prior written consent of the Authority shall be void.
20. Captions. The captions of this Permit are inserted only as a matter of convenience and for reference. It does not define, limit or describe the scope of intent of this Permit, and they shall not affect the interpretation thereof.
21. Counterparts. This Permit may be executed in multiple counterparts, each of which will be deemed an original, but all of which, together, will constitute one and the same instrument.
22. No Further Rights. This Permit constitutes a permit only to enter into the Property for the Purpose set forth above and shall not be construed as granting to Permittee any right-of-possession, estate, title or interest whatsoever in or to the Property, or any part thereof.

SIGNATURES ON FOLLOWING PAGE

**SIGNATURE PAGE TO ENTRY PERMIT BETWEEN ENCINA WASTEWATER
AUTHORITY AND [NAME OF PERMITTEE]**

Permittee has read this Permit, understands it, and agrees to be bound by its terms as of the date set forth below.

PERMITTEE:

[ENTITY NAME]

AUTHORITY:

ENCINA WASTEWATER
AUTHORITY

By: _____

Name: _____

Title: _____

Date: _____

By: _____

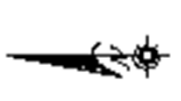
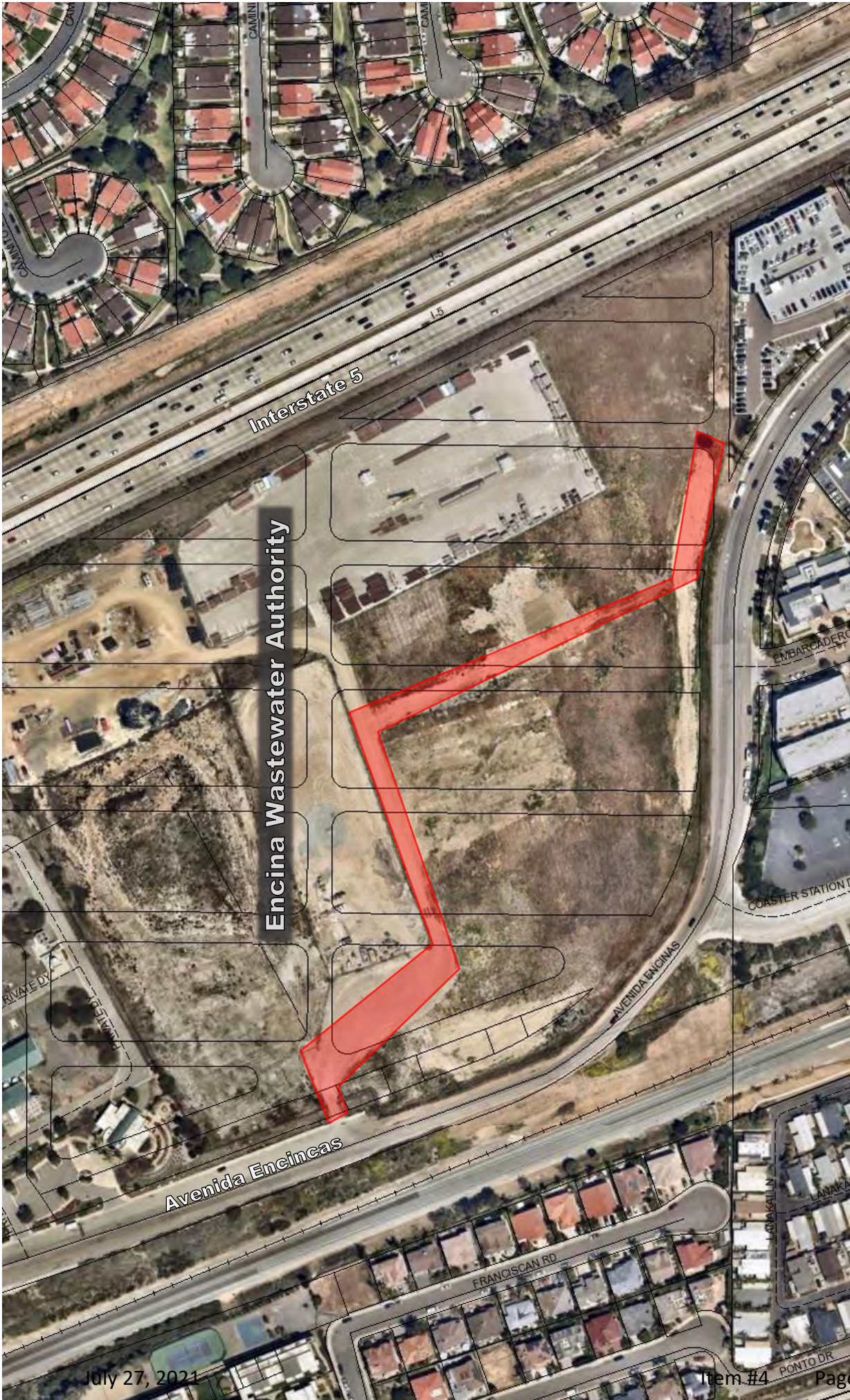
Name: _____

Title: _____

EXHIBIT A

PURPOSE

[Use if detailed information about the Purpose is necessary and is not stated on first page of the Permit]



Not to Scale

Altamira Water Main Relocation CIP 3904-F Project Access

Project Access



ATTACHMENT F

SECTION 02060

**SECTION 02060
ASBESTOS CEMENT PIPE REMOVAL AND DISPOSAL**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work of this Section includes the repair, removal, transport and disposal of asbestos cement pipe (ACP) or asbestos containing material (ACM) typically encountered in water distribution systems.
- B. This section includes a summary of the incidental procedures and equipment required to protect workers and the public from exposure to airborne asbestos fibers. This document is not a comprehensive manual on the state-of-the-art practice for asbestos abatement procedures, equipment, or materials. The selected contractor represents, by acceptance of this work, that the Contractor is aware of the various state-of-the-art practice procedures, equipment, and materials acceptable by regulatory agencies that are also efficient, effective, and protective of human health and the environment.

1.2 REFERENCED SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section.
 - AWWA C110 Ductile-Iron and Gray-Iron Fittings
 - AWWA C111 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
 - AWWA C115 Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
 - AWWA C151 Ductile-Iron Pipe, Centrifugally Cast
 - AWWA C153 Ductile-Iron Compact Fittings for Water Service
 - AWWA C213 Fusion-Bonded Epoxy Coatings and Linings for Steel Water Pipe and Fittings
 - AWWA C219 Bolted, Sleeve-Type Couplings for Plain-End Pipe
 - AWWA C800 Underground Service Line Valves and Fittings
 - Code of California Regulations, Title 8, Section 1529. Asbestos
 - 29 CFR 1926.1101 – Asbestos

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02223 – Trenching, Excavation, Backfilling and Compacting
- B. Section 02262 – Asbestos Cement Pipe Testing
- C. Section 15000 – General Piping Systems and Appurtenances

1.4 REGULATORY REQUIREMENTS

- A. Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable Federal, State, and local codes, regulations, and standards have the same force and effect (and are made a part of the contract documents) as if copied directly into the Contract Documents, or as if published copies are bound here within. Regulation references in the text

SECTION 02060
ASBESTOS CEMENT PIPE REMOVAL AND DISPOSAL

are Federal regulations except where the State of California codes are listed in this section. Where the Federal and State regulations differ, the more stringent regulation shall be relevant to this Specification.

- B. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site.
- C. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations.
- D. The Contractor shall hold the Agency and Agency's consultants harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulation on the part of the Contractor, the Contractor's employees, and the Contractor's subcontractors.
- E. Federal Requirements:
 - 1. Occupational Safety and Health Administration (OSHA), including, but not limited to Code of Federal Regulations (CFR) – Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite Final Rules:
 - 29 CFR 1910.1001 – General Industry Standard
 - 29 CFR 1926.1101 – Construction Industry Standard
 - 29 CFR 1910.134 – Respiratory Protection
 - 29 CFR 1910.20 – Access to Employee Exposure and Medical Records
 - 29 CFR 1910.1200 – Hazard Communication
 - 29 CFR 1910.145 – Specifications for Accident Prevention, Signs and Tags
 - 2. United States Department of Transportation (DOT), including, but not limited to:
 - 49 CFR 171 and 172 – Hazardous Substances
 - 3. United States Environmental Protection Agency (US EPA), including, but not limited to:
 - 40 CFR 763 Subpart E – Asbestos Abatement Projects, Worker Protection Rule
 - 40 CFR 763 Subpart E – Asbestos Hazard Emergency Response Act (AHERA) Regulation, Asbestos-Containing Materials in Schools Final Rule and Notice
 - 40 CFR 763 Subpart E, Appendix C – Training Requirements of AHERA Regulation, Asbestos-Containing Materials in Schools Final Rule and Notice
 - 40 CFR 61 Subpart A and Subpart M (Revised Subpart B)– National Emission Standards for Hazardous Air Pollutants (NESHAP), National Emission Standard for Asbestos

SECTION 02060
ASBESTOS CEMENT PIPE REMOVAL AND DISPOSAL

Public Law 101-637 – Asbestos School Hazard Abatement Reauthorization Act (ASHARA), enacted November 28, 1990

- F. State Requirements
1. Cal/OSHA, including but not limited to:
Title 8 California Code of Regulations (CCR) 1529 – Construction Standard
Title 8 CCR 2303 – Injury and Illness Prevention Plan
Title 8 CCR 5144 – Respiratory Protection
Title 8 CCR 5194 – Hazard Communication
Title 8 CCR 5208 – General Industry Safety Orders, Asbestos Regulations
Title 8, Article 2.5 – Asbestos-Related Work Registration
Title 22, Division 4, Chapter 30 – Minimum Standards for Management of Hazardous and Extremely Hazardous Waste
 2. California Department of Toxic Substances Control (DTSC) – Transport and Disposal Regulations
- G. Local Requirements
- Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials, including:
1. SDCAPCD Rule 1206 – Asbestos Removal, Renovation, and Demolition

1.5 DEFINITIONS

Asbestos – includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that has been chemically treated and/or altered. Asbestos includes PACM, as defined herein.

Asbestos-Containing Material (ACM) – any material containing more than one percent asbestos.

Asbestos-Containing Waste Material (ACWM): Any material, which is or is suspected of being ACM, or any material contaminated with an asbestos, which is to be removed from a work area for disposal.

Authorized Person – any person authorized by the employer and required by work duties to be present in regulated areas.

Class I Asbestos Work – activities involving the removal of thermal system insulation (TSI) and surfacing ACM and PACM.

Class II Asbestos Work – activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics. Removal of ACP is considered Class II asbestos work.

Class III Asbestos Work – repair and maintenance operations where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed. Repair and maintenance of ACP is considered Class III asbestos work.

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Class IV Asbestos Work – maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Competent Person – one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them: in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR part 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2). Note: For operations involving more than 100 square feet of asbestos containing construction material as defined in Title 8, CCR, Section 1529 (r), the competent person may fulfill the requirement contained in Section 341.9 to specify a certified supervisor for asbestos related work.

Consultant – assigned to record and report on the progress of asbestos abatement work. The Consultant is retained to conduct site visits, pre- and post-abatement visual surveys, and baseline, area, and clearance air monitoring.

Demolition – the wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

Disturbance – activities that disrupt the matrix or crumble or pulverize ACM or PACM or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM and PACM, no greater than the amount which can be contained in one standard sized glove bag or waste bag. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Glove Bag – an impervious plastic bag-like enclosure affixed around not more than a 60 x 60-inch asbestos-containing material, with glove-like appendages through which material and tools may be handled. Glove bags shall be seamless at the bottom.

HEPA Filter Vacuum Collection Equipment (or vacuum cleaner) – High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger. See P100 Filter Vacuum Collection Equipment (or vacuum cleaner).

HEPA Filter – A high efficiency particulate air filter capable of trapping and retaining 99.97% of mono-dispersed particles greater than 0.3 microns in diameter. See P100 Filter below.

Intact – the ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

Most Contaminated Worker – The employee assigned the breathing zone air sample representing the highest daily exposure in each work area (8-hour TWA).

Negative Initial Exposure Assessment: A demonstration by the Contractor, which complies with the criteria in 29 CFR 1926-1101 (f)(2)(iii), that employee exposure during an operation is expected to be consistently below the PEL.

Permissible Exposure Limit (PEL)-Asbestos – The airborne concentration of asbestos (0.1 f/cc) at which the Contractor shall ensure that no employee is exposed. Where the PEL

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is exceeded the Contractor shall establish and implement a written program to reduce employee exposure to or below the limit by (1) engineering and work practice controls, and (2) use of required proper respiratory protection. No employee shall be exposed at any time to airborne concentrations of asbestos in excess of 1.0 fibers/cc during any 30-minute period, which is the Excursion Limit.

P100 Filter Vacuum Collection Equipment (or vacuum cleaner) – High efficiency particulate air filter (formerly known as a HEPA filter, currently known as a P100 filter) vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

P100 Filter – A high efficiency particulate air filter (formerly known as a HEPA filter, currently known as a P100 filter) capable of trapping and retaining 99.97% of mono-dispersed particles greater than 0.3 microns in diameter.

PACM – presumed asbestos-containing material, or thermal system insulation and surfacing material found in buildings constructed no later than 1980 unless the designation of a material as PACM is rebutted pursuant to Title 8, CCR, Section 1529 (k)(5).

Regulated Area – an area established by the employer to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit (as defined in Title 8, CCR, Section 1529). Requirements for regulated areas are defined in Title 8, CCR, Section 1529 (e).

Removal – all operations where ACM and/or PACM is taken out or stripped from structures or substrates and includes demolition operations.

Wetting Agents – amended water (surfactant) used for asbestos removal and disposal activities. Airless sprayers are used to apply amended water during removal procedures.

Work Area – the area where asbestos-related work is performed which is defined and/or isolated to prevent the spread of asbestos fibers and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.

1.6 QUALITY ASSURANCE

A. Laboratory Qualification

The laboratory shall be regularly engaged in asbestos testing, and personnel used for monitoring airborne concentrations of asbestos fibers shall be proficient in this field. This proficiency shall be demonstrated by current acceptable participation in the Proficiency Analytical Testing (PAT) program and each analyst shall have completed the National Institute for Occupational Safety and Health (NIOSH) 582 Course (Sampling and Analysis for Asbestos) or the equivalent. The laboratory that performs PCM or TEM sample analysis must be accredited by National Voluntary Laboratory Accreditation Program (NVLAP).

B. Contractor and/or Contractor's Certified Industrial Hygienist

1. The Contractor or Contractor's CIH is responsible for the following:
 - a. Review of this Specification;

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- b. Assign air monitoring personnel to sample Contractor's employee exposures and an analytical laboratory that conforms to this Section;
 - c. Maintain complete air sampling records, keep a daily activity log, and provide a report, which contains all personal air sampling results; and,
 - d. Monitor air fiber concentrations inside and outside NPEs daily. Daily smoke-test the NPEs and visually check for leaks. Any holes or openings discovered in containment walls are to be immediately patched or repaired.
2. The Contractor shall conduct, on a regular basis, observations regarding the integrity of all barriers constructed to protect outside environment from asbestos fiber release; work and safety plans; and proper performance of measures used to protect employees, including removal, encapsulation, disposal. The Engineer shall be informed immediately of operational problems or deviations from this Specification, initially by telephone and then in writing.
 3. If, at any time the Contractor's Competent Person or CIH determines that practices are in violation of pertinent and applicable regulations or that air results exceed specified allowable levels, they will notify the Engineer immediately. All work activity in the affected area(s) will cease until corrective actions have been taken. Any cost resulting from such a stop work order issued by the CIH or the Engineer will be borne by the Contractor and will not be considered as a basis for an increase in the contract amount.
 4. The Contractor is responsible for the safety of all persons in or around the regulated area or within the areas the Contractor is using for ingress and egress.

1.7 ASBESTOS FIBER CONCENTRATION CONTROL LIMITS

- A. Inside Enclosed Work Area
 1. Air concentrations of asbestos shall not exceed an 8-hour TWA of 0.1 f/cc of air by PCM for personnel selected as Most Contaminated Worker. Air concentrations of asbestos shall not exceed the 30-minute excursion level of 1.0 f/cc of air.
- B. Outside Asbestos Work Area
 1. Air concentrations of asbestos fibers shall be maintained at an 8-hour TWA at or below 0.01 f/cc of air (by PCM). This applies to all areas outside the contained work areas while work is in progress, except for the asbestos Work Area.
- C. Area Clearance Sampling
 1. Asbestos abatement clearance may be conducted by the Engineer and will include visual inspection only.

1.8 TITLE OF WASTE MATERIAL

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ACWMs resulting from abatement activities, except as specified otherwise, shall be the property of the Owner and shall be disposed of by the Contractor as required by applicable Federal, State and local regulations. Waste manifests will be signed by the Owner or Owner's Representative. Copies of all waste manifests are to be maintained by the Contractor as part of the required "close-out" documents. Contractor will submit the waste disposal site name, location, and US EPA identification number where asbestos waste will be disposed. In addition, the Contractor will submit a letter from the disposal site certifying that the disposal site is legally authorized to receive ACM scheduled to be removed from the work area.

1.9 MEDICAL REQUIREMENTS

The Contractor shall provide workers with a comprehensive medical examination as required in 8 CCR 1529 (m). The Contractor shall submit one copy of most recent physical examination for each employee the Contractor will employ on the project. Physician's certificate must permit employee to work using a respirator and be dated within the last 12 months.

1.10 TRAINING

The Contractor shall certify that all workers performing asbestos abatement activities shall have successfully completed training provided by a Cal/OSHA approved training provider within the past 12 months and have in their possession a valid Asbestos Worker Training Certificate or Contractor/Supervisor Certificate, issued by a Cal/OSHA-accredited trainer within the past 12 months. All certifications must comply with the recent Model Accreditation Plan (MAP) provisions (8 CCR 1529 (k)(9)). Contractor will be required to submit a copy of each employee's training records prior to start of project and maintain a copy of all certifications on site for the duration of the project.

1.11 PERMITS, LICENSES, NOTIFICATIONS, AND PATENTS

The Contractor will secure necessary permits and pay fees for asbestos removal, hauling, and disposal and provide timely notification of such actions as may be required by Federal, State, and local authorities. Copies of such notification shall be provided to the Engineer prior to commencement and following completion of work. Post all notices required by applicable Federal, State, and local regulations at the job site where asbestos abatement work will be performed. One copy of all notices shall also be kept on file in Contractor's office.

1.12 SAFETY COMPLIANCE

- A. Contractor will comply with laws, ordinances, rules, and regulations of Federal, State, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work.
- B. The Contractor shall develop and keep on site an Emergency Evacuation Plan for each work area in which the Contractor expects to use for ingress and egress. The Emergency Evacuation Plan shall be distributed and read by all personnel required to enter the work area. The Contractor shall post this plan at the entrance to the work area.
- C. Post warning signs and labels and ensure the employees are properly trained and outside contractors are properly notified. Contractor will conduct "tail-gate" health

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and safety meetings prior to work each shift to review the Contractor's Health and Safety Plan and discuss new hazards, if applicable.

- D. The Contractor will institute all necessary precautions so that no unauthorized personnel enter the regulated areas by mistake or design. When the work Site is unattended, the regulated area shall be secured so that unauthorized personnel cannot enter the area.

1.13 RESPIRATORY PROTECTION

- A. The Contractor shall provide and ensure the proper use and selection of respirators, perform required respiratory fit tests and institute a respiratory program. The Contractor will be required to submit one copy of most recent fit test results for each employee who the Contractor will employ on the project. Evidence of successful fit test within the last year (from the start date of the project) must be provided for each employee.

PART 2 - PRODUCTS

2.1 DISPOSABLE CONTAINERS

Waste containers shall be suitable to receive and retain any asbestos-containing or asbestos-contaminated materials until disposal at an approved site. Separate waste bins shall be utilized for hazardous and non-hazardous wastes. The containers shall be labeled in accordance with Federal, State and local regulations. Containers must be lockable, closed top bins, which are both airtight and watertight.

2.2 EYE PROTECTION

Full-face masks or goggles must be provided to personnel engaged in asbestos operations. Eye protection must be worn during operations that may present risk or damage to the eyes.

2.3 FITTINGS

- A. Fittings (bends, tees, sleeves) used in connection or repair work shall be ductile iron conforming to AWWA C110, C111, C115, C150, C151, and C153 as applicable.
- B. Couplings for joining plain end pipe shall consist of ductile iron end and center rings meeting or exceeding ASTM A536 and shop coated with fusion bonded epoxy. Gaskets shall be virgin Styrene Butadiene Rubber (SBR) compounded for water and sewer service in accordance with ASTM D2000 MBA 710. Bolts and nuts shall be Type 316 stainless steel. Couplings shall be rated for 250 psi and comply with AWWA C219. Couplings shall be size-on-size. Reducing couplings shall not be used.

2.4 GLOVES

Gloves shall be disposable poly or rubber gloves to protect hands. Cloth gloves may be worn inside poly or rubber gloves for comfort but shall not be used alone.

2.5 PIPE

- A. Pipe for ACP connection or repair work shall consist of Polyvinyl Chloride (PVC) pipe conforming to AWWA C900 for 12 inch and smaller pipe diameters. For larger pipe diameters, pipe type shall be as approved by the Engineer and may consist

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of either PVC conforming to AWWA C900, ductile iron pipe conforming to AWWA C151 or steel pipe conforming to AWWA C200 (submittal required).

- B. Pipe linings and coatings for ductile iron or steel pipe shall conform to CMWD Standards.

2.6 PIPE SADDLES

- A. Bronze double strap saddles shall be used on pipe sizes 8 inch through 16 inch. The saddle body shall be manufactured from cast bronze in accordance with ASTM B62 or B584 and AWWA C800. The gasket shall be Buna N.
- B. A fabricated steel saddle shall be used for all connections on pipe sizes larger than 16 inch.
- C. The carbon steel used in the fabricated steel saddle shall have a minimum yield strength of 30,000 psi. The bolts and nuts shall be Type 316 stainless steel. The entire saddle shall be shop coated with 8 to 10 mils of fusion bonded powder epoxy in accordance with AWWA C213.
- D. No wet taps will be allowed where the outlet is the same size as the main.
- E. Fabricated steel and cast bronze saddles shall have a minimum 1/ 2-inch NPT threaded tap for testing.

2.7 POLYETHYLENE BAGS

- A. Polyethylene bags shall be a minimum 6-mil thickness and transparent, printed with warning labels per DOT and US EPA regulations and 8 CCR 1529 (k)(8).

2.8 POLYETHYLENE SHEETING

- A. Sheeting must be fire retardant and shall be sized in lengths and widths to minimize the frequency of joints. Drop sheets used inside a negative pressure enclosure must be fire retardant material. The minimum thickness shall be as follows:
 - 1. Wall and floor barriers – 6-mil
 - 2. Ceiling barriers – 4 mil
 - 3. All others (critical barriers, etc.) – 6-mil

2.9 RESPIRATORS

- A. Respirators shall be selected in accordance with the requirements of Title 8, CCR, Section 1529 and shall conform to not less than the following minimum requirements:
 - 1. Half-mask air purifying respirator equipped with a high efficiency P100 filter.

2.10 SIGNS AND LABELS

- A. Warning signs and labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible. Signs shall be visible from a distance of 20 feet.
- B. Warning signs shall bear the following information:

DANGER
ASBESTOS
MAY CAUSE CANCER

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CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

WEAR RESPIRATORY PROTECTION AND
PROTECTIVE CLOTHING IN THIS AREA

- C. Labels of bags or containers of protective clothing and equipment, scrap, waste, and debris containing asbestos fibers bear the following information:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

- D. The DOT requires the following language on waste containers:
HAZARDOUS WASTE, SOLID N.O.S., ORM-E, NA 9188 (ASBESTOS)(RQ)

2.11 WATER SPRAYERS

Water sprayer shall be an airless or other low-pressure type emitting a fine mist for amended water application.

PART 3 - EXECUTION

3.1 GENERAL

- A. All work involved in the removal, salvage or disposal of ACP shall be the responsibility and performed at the expense of the Contractor. B.
- B. Contractor will be responsible for submitting a Shut Down/Connection Request and scheduling the work with the City and CMWD and confirming that the water system has been shut down or otherwise isolated prior to starting work.
- C. Contractor shall furnish and utilize all required protective respirators, clothing and equipment, as applicable, in the performance of the work in accordance with applicable regulations.
- D. Connections and repairs to ACP systems shall be as approved by the Engineer. All pipe connections shall be made at existing joints. Field cutting of ACP shall not be permitted. Snap cutting of ACP may be allowed only with the prior approval of the Engineer.
- E. The Contractor shall install all repair and connection pipe, closure sections, fittings, valves and appurtenances as shown on the Plans including bolts, nuts, gaskets, and jointing materials.
- F. The Contractor shall maintain the inside of the pipe clean, sanitary, and free from foreign materials. At all times when the work of installing pipe is not in progress, all openings into the pipe and the ends of the pipe in the trenches shall be kept tightly closed to prevent the entrance of animals and foreign materials.
- G. Where closure sections are required, the sections shall be installed in accordance with the manufacturer's installation guide and shall only be used with the approval of the Engineer.

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- H. The radius of curvature of the trench shall determine the maximum length of pipe that can be used without exceeding the allowable deflection at a joint.
- I. Combined deflections at rubber gasket or flexible coupling joints shall not exceed 2-1/2 degrees or the maximum allowed by the coupling manufacturer, whichever is less.
- J. Use of pipe sections less than 5 feet shall only be permitted with the approval of the Engineer.
- K. Any ACP water line(s) being abandoned shall be abandoned in place in accordance with CMWD Standards unless otherwise approved.

3.2 REGULATED AREAS

- A. ACP removal or repair work shall be conducted in a regulated area demarcated in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Signs shall be provided and displayed pursuant to the requirements of this section.
- B. The Contractor shall ensure that all asbestos work performed within regulated areas is supervised by a competent person.
- C. The Contractor shall limit access to the work area to authorized representatives of the Owner. At no time shall any personnel enter a work area without notifying the on-site competent person first and signing the site entry log.

3.3 VISITOR COMMUNICATIONS

- A. All inquiries concerning work involving ACP shall be directed to the on-site competent person. The Contractor shall notify the Engineer of visitors (i.e., regulatory inspectors, law enforcement, press, etc.) that visit the site during the work.
- B. The Contractor shall immediately notify the Engineer if a regulatory agency issues a citation to the Contractor.

3.4 SIGNS AND LABELS

- A. Warning signs that demarcate the regulated area shall be provided and displayed at each location. Signs shall be posted at such a distance from such a location that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.
- B. Labels shall be affixed to all products containing asbestos and to all containers containing such products, including waste containers.

3.5 ACP ABANDONMENT

- A. If it is necessary to remove abandoned ACP line(s) and/or appurtenances, the appurtenances shall be removed and salvaged, if requested, by CMWD.
- B. ACP to be abandoned in-place shall be slurry filled with a sand-cement slurry conforming to Section 02223.

3.6 REMOVAL

- A. ACP shall be removed and disposed of in accordance with all applicable laws.

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- B. All persons entering a regulated area where employees are required to wear respirators pursuant to Title 8, CCR, Section 1529 (h)(1) shall wear a respirator conforming to the requirements therein. Respirators shall be used without exception when the removal of ACP cannot be performed intact.
- C. In accordance with Title 8, CCR, Section 1529, the following work practices and controls are prohibited during removal or cleanup of ACP or debris:
 - 1. Cutting or grinding with high-speed abrasive saws or grinding discs that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
 - 2. The use of compressed air to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.
 - 3. Dry sweeping, shoveling or other dry clean-up of dust and debris.
 - 4. Employee rotation as a means of reducing employee exposure to asbestos.
 - 5. Eating, drinking, smoking, chewing tobacco or gum or application of lotions, sunscreen or any other cosmetics.
- D. Proper methods shall be used to prevent the generation of friable asbestos during removal or handling of ACP. The following methods shall be used:
 - 1. The material shall be thoroughly wetted with amended water (containing a wetting agent to increase the ability of the liquid to penetrate ACP) prior to and during its removal.
 - 2. The material shall be removed in an intact state unless intact removal is demonstrated as not possible.
 - 3. Unnecessary cutting, abrading or breaking the material shall be prohibited unless demonstrated that methods less likely to result in asbestos fiber release are not feasible.
 - 4. Asbestos-containing material removed shall be immediately bagged or wrapped in two layers of 6-mil polyethylene prior to disposal or kept wetted until transferred to an approved closed receptacle no later than the end of the work shift.
 - 5. ACP debris remaining in trenches should be removed by hand and placed into sealed, impermeable, waste bags for appropriate disposal.
 - 6. If removal by hand is infeasible, use vacuum cleaners equipped with HEPA filters to collect fine debris containing ACM or PACM. The equipment shall be used and emptied in a manner that minimizes the reentry of asbestos into the work area.

3.7 SAMPLES FOR LABORATORY TESTING

- A. The Contractor shall take samples of ACP for laboratory testing in accordance with Section 02262 as follows:
 - 1. When the Work is related to the repair or replacement of ACP at valve replacement or pipeline repair sites, the Contractor shall retain the shortest

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ACP segment removed from each work site. Mark the top of pipe prior to removal, if feasible.

2. Where the project involves removal of ACP for pipeline replacement projects greater than 500 lineal feet, the Contractor shall retain the shortest segment of ACP as a sample for every 500 lineal feet of pipeline removed. Mark the top of pipe prior to removal .
- B. Individually package and label each sample. Carefully bag and seal the sample air-tight with approved bagging and packaging materials. Keep packaged samples dry, sealed, and away from direct sunlight and high temperature during transportation.
- C. Clearly label the outside of the bagging with the station/location, unique pipe ID designated by the Owner, and date of removal.
- D. Deliver or ship the bagged and sealed sample to the laboratory for testing in accordance with Section 02262.

3.8 DISPOSAL

- A. The Contractor shall determine current waste handling, transportation, and disposal regulations for the work area and for the waste disposal landfill to receive ACP. The Contractor must comply fully with these regulations and all DOT and US EPA requirements.
- B. Non-friable materials may be disposed as non-hazardous construction waste at a disposal site permitted to receive the waste. The Contractor shall notify the receiving non-hazardous waste landfill of the type and nature of the asbestos debris to be disposed.
- C. County of San Diego landfills do not accept friable asbestos-containing materials for disposal. Friable asbestos-containing materials are regulated as hazardous waste (22 CCR 66261.24). A friable material is defined as material that can be crumbled, pulverized, or reduced to powder in the hand.
- D. All removed ACP shall be properly manifested and prepared for transport following the criteria of the County of San Diego Department of Public Works, Solid Waste Division.
- E. County of San Diego landfills accept non-friable ACP under the following conditions:
 1. Small pieces of ACP less than three feet long must have all broken edges encapsulated (sealed) with an approved product and double wrapped in 6-mil plastic which is properly sealed to prevent expulsion of dust particles.
 2. Intact ACP over three feet long does not require double wrap in 6-mil plastic. Any broken edges, however, must be encapsulated with an approved product.
 3. Contractor shall confirm with the land fill the quantity of ACP to be accepted per day per generator and shall obtain prior approval from the Solid Waste Division prior to transport.

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4. Transport ACP to the landfill for disposal via dump truck or waste bins. CMWD will not transport or dispose of ACP generated by the Contractor's activities.
 5. Each load must be accompanied by a Department of Public Works Non-Hazardous, Non-Infectious Special Waste Manifest.
 6. All loads may be subject to inspection by County personnel prior to admittance to the landfill.
- F. Sealed waste containers may be stored within the work area until a sufficient volume of waste has accumulated for disposal, but not to exceed five days. This storage area will be prominently designated and waste containers will be covered with polyethylene sheeting. Waste should be stored out of sight of the public in a secure area.
- G. The Contractor shall fill out manifest forms for the Owner's (Generator's) signature. Original disposal receipts, manifests, and bill of lading forms must be submitted to the Engineer at project completion.

3.9 INSTALLATION

- A. Connections shall be made at existing pipe joints and snapping of existing ACP, either ratchet or hydraulic, is permitted only when necessary and with prior wetting of the pipe and throughout the entire process.
- B. The Contractor shall use PVC pipe, or other pipe type as approved by the Engineer, to replace removed ACP or where new connections are necessary. All new pipe shall comply with the CMWD Approved Materials List.
- C. The Contractor shall dewater the trench to prevent the pipe from floating and shall assume full responsibility for any damage caused and shall, at their own expense, remove and reinstall or replace the pipe to the original line and grade or to the specified line and grade.
- D. New pipe or materials shall not be dropped, dragged, or handled in a manner that will cause damage. All pipe, fittings, valves and other materials shall be lowered into the trench using nylon straps or by other approved methods. All materials damaged during installation shall be identified and removed from the job site.
- E. The bedding material beneath pipe bells shall be excavated at each joint to permit proper assembly and inspection of the entire joint.
- F. Pipe sections shall be laid in the trench to true alignment and grade in accordance with the drawings. The pipe grade shall be approved by the Engineer.
- G. New pipe segments shall be at least five feet long. Shorter lengths shall be permitted only when necessary due to connection length constraints and with the approval of the Engineer.
- H. Fittings shall be temporarily supported by concrete blocks until concrete thrust blocks and supports are placed so that the pipe is not subjected to the weight of the fitting.
- I. Concrete thrust blocks of the size shown on the Plans shall be constructed at all fittings and valves unless otherwise approved by the Engineer and at no additional cost.

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END OF SECTION

ATTACHMENT G
SECTION 02262

**SECTION 02262
ASBESTOS CEMENT PIPE TESTING**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work of this Section includes sampling and laboratory testing of asbestos cement pipe (ACP) using Laboratory Energy Dispersive Spectroscopy (EDS).

1.2 COORDINATION

- A. Sampling of ACP shall be conducted after the pipeline has been isolated by the Owner and authorization to proceed is provided by the Owner. Cutting and removal of ACP without previous authorization from the Owner is prohibited.
- B. Contractor shall coordinate with the testing laboratory to determine the requirements for the delivery of ACP and costs for handling and cutting (in the laboratory) of pipe segments that are longer than 16 inches in length.

1.3 REFERENCED SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section.

Code of California Regulations, Title 8, Section 1529. Asbestos
29 CFR 1926.1101 – Asbestos

1.4 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02060 – Asbestos Cement Pipe Removal and Disposal

1.5 QUALIFICATIONS

- A. Personnel responsible for cutting and handling the ACP:
 - 1. Trained and experienced in the means and methods of cutting ACP per the requirements of California OSHA.
 - 2. Performed successful cutting and handling of ACP three (3) times in the last five (5) years.
- B. Laboratory responsible for EDS testing:
 - 1. Experienced in performing EDS testing on ACP for a minimum of five (5) projects in the last five (5) years.
- C. Personnel responsible EDS testing
 - 1. Trained and experienced in operating scanning electron microscopy and energy dispersive spectroscopy equipment for a minimum of five (5) years, having worked with the equipment used for this project for a minimum of one (1) year.

1.6 SUBMITTALS

- A. Submit the following within 10 calendar days of the Notice to Proceed:
 - 1. Work experience of personnel responsible for cutting and handling of the ACP including:
 - a. Date and Location of work performed.

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- b. Name and phone number of contacts with Owner or Owner's representative for whom the work was performed.
2. Safety equipment and measures, including personnel safety gear, temporary enclosures, warning signs, fences, etc. to be used at the site.
3. Packaging materials to be used for safe storage and transportation of ACP samples.
4. Work experience of the laboratory in responsible charge of performing EDS testing:
 - a. Description of work performed and date.
 - b. Name and phone number of contacts with Agency, Owner, or Owner's representative for whom the work was performed.
5. Documentation verifying calibration of EDS testing equipment and devices to be used for this project.
6. Work experience of personnel responsible for administering EDS testing on ACP:
 - a. Date, Laboratory name, and location of work performed.
 - b. Name and phone number of contacts with Agency, Owner, or Owner's representative for whom the work was performed.
7. EDS scanning electron microscope to be used by laboratory for EDS testing.
8. Laboratory ACP testing work plan.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SAFETY MEASURES

- A. Perform all work in accordance with the local building codes, Federal Industrial Safety Orders, Asbestos NESHAP requirements, and requirements of Cal/OSHA. Personnel working on or in direct vicinity of cutting and handling ACP must wear protective outerwear, eyewear, and respirators per Cal/OSHA.
- B. Provide safeguards to public and personnel safety including warning signs, fences, lights, and/or other similar items that are necessary for the protection of all personnel during the cutting and handling activities of ACP.
- C. Assemble and use temporary enclosures to contain friable asbestos fibers and prevent them from release to the atmosphere during cutting. Wet the ACP during cutting to prevent generation of friable asbestos fibers.
- D. The Contractor shall assume full responsibility for personnel and site safety.

3.2 PIPE CUTTING

- A. ACP to be removed shall be removed to the nearest pipe joint. Unnecessary cutting or snapping of pipe shall not be allowed, and the shortest ACP segments removed shall be retained for delivery to the laboratory for cutting and testing.

SECTION 02262
ASBESTOS CEMENT PIPE TESTING

- B. Prior to cutting, clearly and accurately mark the following on the sample of pipe to be cut and extracted for testing:
 - 1. Crown of the pipe.
 - 2. Owner-approved unique pipe ID (GIS asset ID number), and date.
- C. Perform ACP cutting utilizing a snap cutter, chain cutter, or other tool capable of an even cut around the full cross section of the pipe without creation of ACP dust particles. Pipe samples must be 12 inches in length, minimum and 16 inches, maximum.
- D. Prevent the spread of friable asbestos fibers and dust using temporary enclosures and wetting agents.
- E. The Owner's representative shall be the sole judge of the quality and acceptability of each cut. Re-cut any chipped, broken, or otherwise defective cuts of ACP at no cost to the Owner.
- F. Avoid contamination of ACP samples (grease or other foreign matter) during extraction. Immediately repair the pipe in accordance with the Contract Documents.

3.3 PIPE HANDLING

- A. Carefully handle ACP sample to not damage the pipe. Mishandling of the ACP sample, including damage from transportation and delivery, that results in chipping, scraping, cracking, deforming, or other damage that may void the results of testing will not be acceptable. The Owner's representative shall be the sole judge of mishandling of the ACP sample. If a sample is mishandled, deliver an additional sample of ACP to the laboratory for testing at no additional cost to the Owner.
- B. Carefully bag and seal the sample air-tight with approved packaging materials. Clearly label the outside of the packaging with the unique pipe ID and date.
- C. Individually package and label each sample. Keep packaged samples dry, sealed, and away from direct sunlight and high temperature during transportation.
- D. Deliver the bagged and sealed sample to the Owner-approved laboratory for EDS testing.

3.4 LABORATORY TESTING

- A. Contract with one of the following Owner-approved laboratories to perform EDS testing on each ACP sample. Laboratory test results shall be delivered to the Owner within six (6) calendar weeks of pipe cutting.
 - 1. Wood PLC 9210 Sky Park Ct. San Diego, CA 92123
 - 2. Applied Materials & Engineering, Inc. 980 41st Street, Oakland, CA 94608
- B. Arrange for safe delivery of ACP samples to the Owner-approved laboratory. Coordinate with the laboratory to determine the laboratory's requirements for the maximum pipe length and all costs associated with handling and cutting of ACP samples.
- C. Equipment:

SECTION 02262
ASBESTOS CEMENT PIPE TESTING

1. EDS equipment shall be equipped with a scanning electron microscope (SEM) capable of producing high resolution SEM images of cross-section (where analyses are being performed) and shall be able to generate EDS elemental area maps or phase maps.
- D. Laboratory testing work and responsibilities
1. Prior to conducting testing, coordinate with the Owner to verify testing requirements, measurement and establish a testing protocol.
 2. Calibrate EDS equipment by using test peaks of known energy, covering the full analytical span prior to testing ACP samples.
 3. Perform EDS testing to measure and record percent element by weight for Aluminum (Al), Carbon (C), Calcium (Ca), Iron (Fe), Magnesium (Mg), Oxygen (O), and Silicon (Si) at the locations of largest internal stain loss and thinnest overall stain, as marked during Phenolphthalein stain testing. Phenolphthalein stain testing shall occur at the laboratory.
 4. Allow sufficient process time for analysis and ensure a statistically significant number of counts in order to decide if a peak is present or absent. Present a table of maximum number of counts and atomic percentage.
 5. At the lab, cut and perform testing on each segment of pipe per the following requirements:
 - a. Measure and record percent by weight of each element at 10 equally spaced locations across the cut pipe surface, in a line perpendicular to the inner and outer wall edge tangent (i.e. along line used to measure wall thickness).
 - b. Label each equally spaced location measurements 1 through 10, with point 1 being the reading closest to the inner pipe wall surface and point 10 being the reading closest to the outer pipe wall surface.
 - c. Document the location of each set of 10 measurements by pipe ID and clockwise location relative to the crown of the pipe (i.e. crown is 12 o'clock).
 - d. Document the total wall thickness where each set of measurements is taken.
 - e. Provide all required data results to the Owner in Microsoft Excel file format only (.xlsx), or in a summary report provided by the lab. See figure 1 for all required data, to be included in the result summary.
 6. Re-bag, seal and store ACP sample until confirmation from the Owner that the testing data provided is complete and received. After confirmation, the laboratory shall legally dispose of each tested ACP sample, at no additional cost to the owner.
 7. Document site measurements provided on hard copy print of Figure 1 delivered to the laboratory with the ACP samples in the digital Excel file of Figure 1. Transmit the completed file via email to the City's Project Manager with the file and email titled with the project name, project number, and unique pipe ID number. Include the project name, project number, and

**SECTION 02262
ASBESTOS CEMENT PIPE TESTING**

unique pipe ID number in the submittal e-mail, addressed to: Stephanie Harrison, Stephanie.Harrison@carlsbadca.gov

**SECTION 02262
ASBESTOS CEMENT PIPE TESTING**

Figure 1 – Owner’s approved Excel file template

Date of Cut Date of Lab Testing		10 ED5 Samples per Location, Equally Spaced Across the Width of the Coupon Percent Element by Weight										Comment				
		Inner Surface					Outer Surface									
Location	SampleID	Clock Position	Pipe Wall Thickness (mm)	Internal Stain Loss (mm)	External Stain Loss (mm)	Element	1	2	3	4	5	6	7	8	9	10
Thinnest Stain (1)	XXX-1					Al										
	XXX-1					C										
	XXX-1					Ca										
	XXX-1					Fe										
	XXX-1					Mg										
	XXX-1					O										
Maximum Internal Stain Loss (2)	XXX-1					Si										
	XXX-2					Al										
	XXX-2					C										
	XXX-2					Ca										
	XXX-2					Fe										
	XXX-2					Mg										
	XXX-2					O										
	XXX-2					Si										

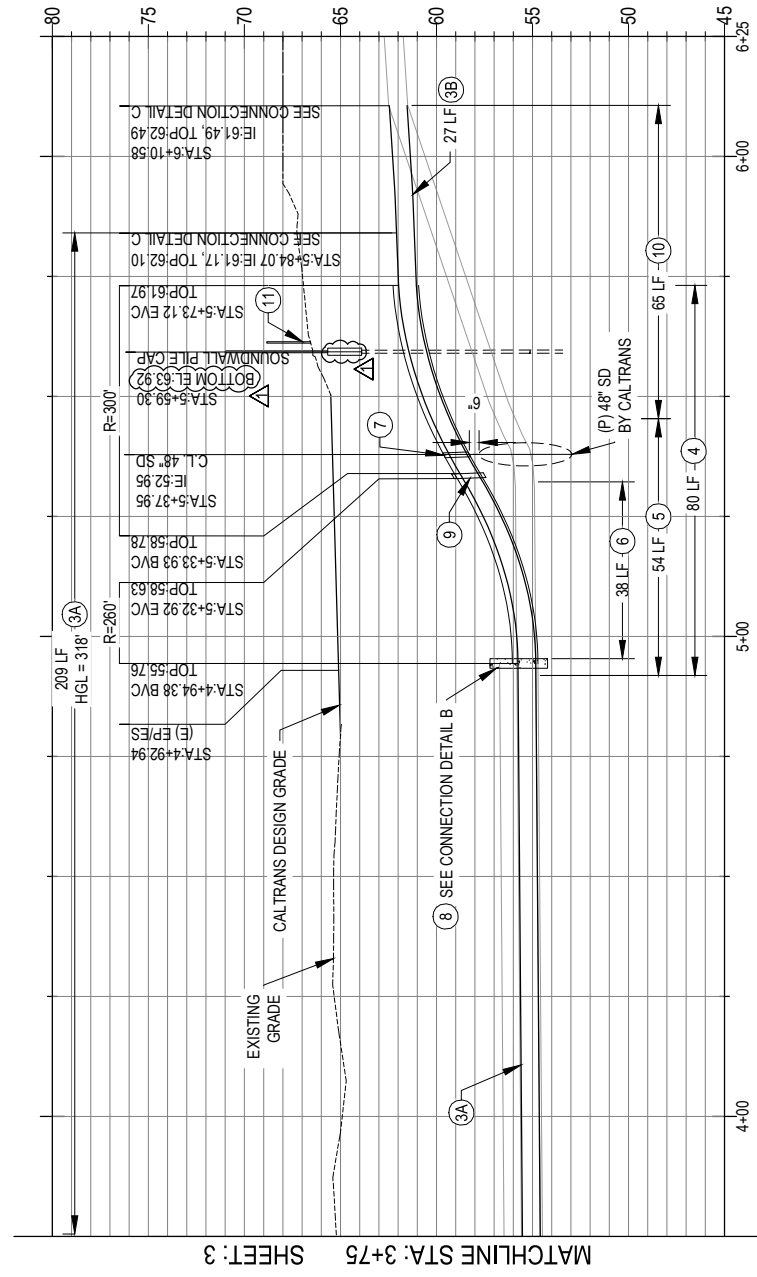
To be filled out in the field by Contractor
To be filled out in lab by Laboratory Technician

- Notes:**
1. If Lab leaves any cells blank inside Figure 1, state specific reason in the table as to why that cell was left blank.
 2. Remove grey shading in file once lab data has been entered into the spreadsheet
 3. Populate Comments only as needed. Comments maybe left by Contractor or Laboratory Technician

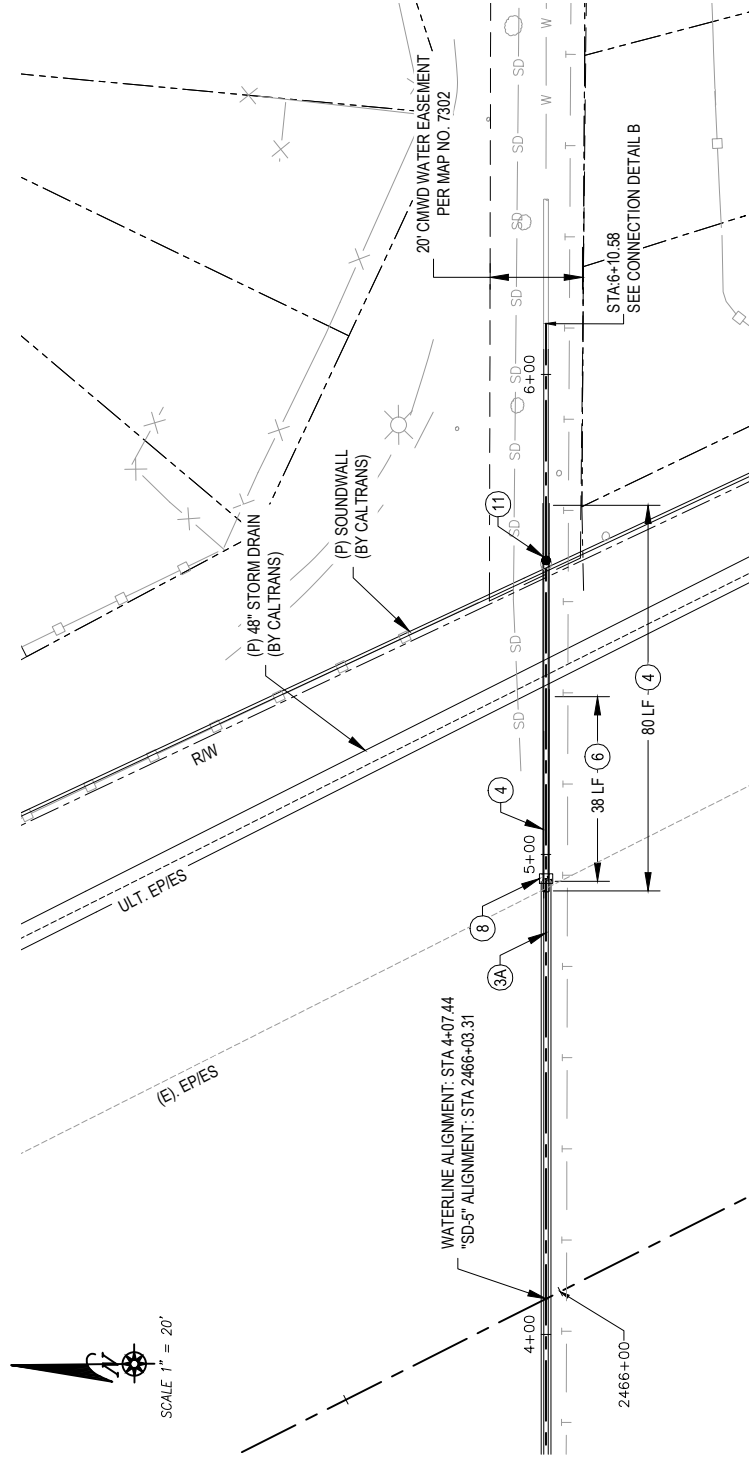
END OF SECTION

ATTACHMENT H

DRAWING 532-2, SHEET 4



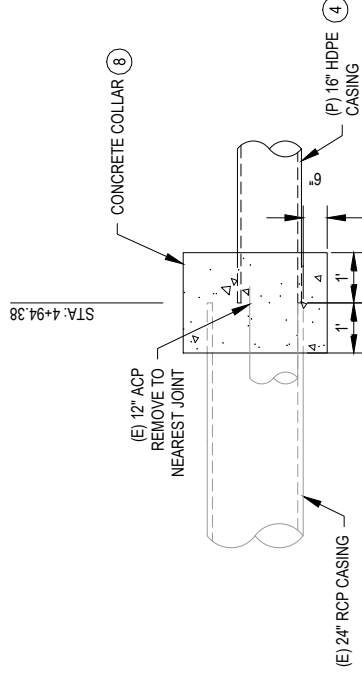
PROFILE STA: 3+75 TO 6+25
SCALE: HORIZ. 1" = 20' VERT. 1" = 5'



PLAN STA: 3+75 TO 6+25
SCALE: 1" = 20'

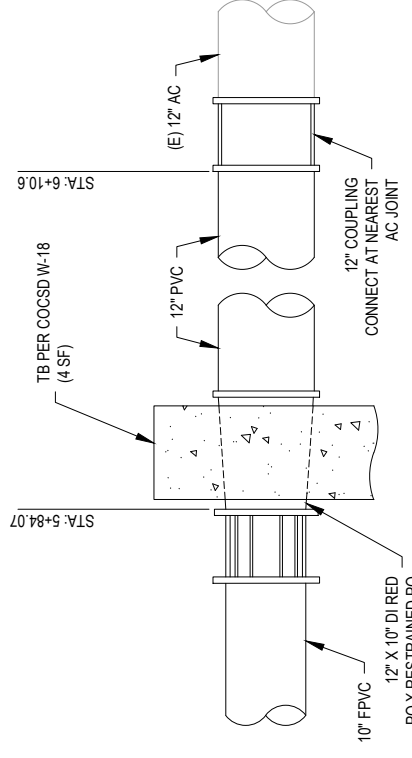
CONSTRUCTION NOTES

- 1 TAIL DITCH TEMPORARY EXCAVATION (CURVED, 350 FT RADIUS)
- 2 INSERTION PIT TEMPORARY EXCAVATION
- 3A CONSTRUCT 10" PPVC, AWWA C900 DR 18 (SLIPLINE)
- 3B CONSTRUCT 12" PVC, AWWA C900 DR 18
- 4 CONSTRUCT 16" HDPE, AWWA C906 DR 17 (CASING)
- 5 DEMOLISH (E) 12" ACP
- 6 DEMOLISH (E) 24" RCP CASING
- 7 INSTALL 3" ELASTOMERIC BEARING PAD
- 8 CONSTRUCT CONCRETE COLLAR MODIFIED CSD DS-5, 450-C-2000 CONCRETE
- 9 INSTALL 16" MECHANICAL COUPLING OR BUTT FUSION JOINT
- 10 SLURRY FILL AND ABANDON (E) 12" ACP
- 11 INSTALL CARSONITE CLM 72011808 PIPELINE MARKER POST



NOTE: SEE CSD DS-5 FOR REINFORCEMENT, NOT SHOWN IN THIS DETAIL

B CONNECTION DETAIL
STA: 4+94.38 SCALE: N.T.S.



C CONNECTION DETAIL
STA: 5+84.07, 6+10.6 SCALE: N.T.S.

"AS BUILT"

RCE _____ EXP. _____ DATE _____
REVIEWED BY: _____
INSPECTOR _____ DATE _____

SHEET 4	SHEETS 4
CITY OF CARLSBAD UTILITIES DEPARTMENT	
IMPROVEMENT PLAN FOR PLAN AND PROFILE	
ALTAMIRA WATER MAIN RELOCATION	
ACCEPTED BY: DAVE PADILLA	
DISTRICT ENGINEER: RCE 55974	EXP. 12/31/22
DWN BY: NI	PROJECT NO. 3904-F
CHKD BY: DP	DRAWING NO. 532-2
REVD BY: DP	

7/1/21	NI	ADDENDUM 1	7/1/21	DP
DATE	INITIAL	REVISION DESCRIPTION	DATE	INITIAL
ENGINEER OF WORK	OTHER APPROVAL		CITY APPROVAL	



ORIGINAL DRAWING SCALE
0 1/2" 1"

CARLSBAD MUNICIPAL WATER DISTRICT

San Diego County

California

CONTRACT DOCUMENTS,
GENERAL PROVISIONS,
SUPPLEMENTAL PROVISIONS, AND
TECHNICAL SPECIFICATIONS

FOR

ALTAMIRA WATER MAIN
RELOCATION

CONTRACT NO. 3904-F

BID NO. PWS21-1525UTIL



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CARLSBAD MUNICIPAL WATER DISTRICT, CALIFORNIA

NOTICE INVITING BIDS

Until 11 a.m. on July 7, 2021, the Carlsbad Municipal Water District shall accept bids via electronic format via the City of Carlsbad Electronic Bidding Site, PlanetBids, which may be accessed at <https://www.carlsbadca.gov/services/depts/finance/contracting/default.asp>, for performing the work as follows: remove and dispose of approximately 120 lineal feet of 12-inch diameter asbestos cement pipe water main and 40 lineal feet of 24-inch diameter reinforced concrete pipe casing; construct 480 lineal feet of 10-inch diameter fusible polyvinyl chloride (PVC) slipline and 16-inch diameter high density polyethylene (HDPE) casing; and all incidental work including, but not limited to, surveying, utility potholing, storm water and non-storm water pollution prevention, excavation support systems, earthwork, site restoration and coordination with City of Carlsbad, Carlsbad Municipal Water District and Caltrans.

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F BID NO. PWS21-1525UTIL

ELECTRONIC FORMAT RECEIPT AND OPENING OF BIDS: Bids will be received in electronic format (eBids) EXCLUSIVELY at the City of Carlsbad's electronic bidding (eBidding) site, at: <https://www.carlsbadca.gov/services/depts/finance/contracting/default.asp> and are due by the date and time shown on the cover of this solicitation.

BIDDERS MUST BE PRE-REGISTERED with the City's bidding system and possess a system-assigned Digital ID in order to submit an electronic bid.

The City's electronic bidding (eBidding) system will automatically track information submitted to the site including IP addresses, browsers being used and the URLs from which information was submitted. In addition, the City's bidding system will keep a history of every login instance including the time of login, and other information about the user's computer configuration such as the operating system, browser type, version, and more. Because of these security features, Bidders who disable their browsers' cookies will not be able to log in and use the City's bidding system.

The City's electronic bidding system is responsible for bid tabulations. Upon the bidder's or proposer's entry of their bid, the system will ensure that all required fields are entered. The system will not accept a bid for which any required information is missing. This includes all necessary pricing, subcontractor listing(s) and any other essential documentation and supporting materials and forms requested or contained in these solicitation documents.

BIDS REMAIN SEALED UNTIL DUE DATE AND TIME.

eBids are transmitted into the City's bidding system via hypertext transfer protocol secure (https) mechanism using SSL 128-256-bit security certificates issued from Verisign/Thawte which encrypts data being transferred from client to server. Bids submitted prior to the Due Date and Time are not available for review by anyone other than the submitter, who will have until the Due Date and Time to change, rescind or retrieve its bid should they desire to do so.

BIDS MUST BE SUBMITTED BY DUE DATE AND TIME.

Once the deadline is reached, no further submissions are accepted into the system. Once the Due Date and Time has passed, bidders, proposers, the general public, and City staff are able to

immediately see the results online. City staff may then begin reviewing the submissions for responsiveness, compliance and other issues.

RECAPITULATION OF THE WORK.

Bids shall not contain any recapitulation of the Work. Conditional Bids may be rejected as being non-responsive. Alternative proposals will not be considered unless called for.

BIDS MAY BE WITHDRAWN by the Bidder prior to, but not after, the time set as Due Date and Time.

Important Note: Submission of the electronic bid into the system may not be instantaneous. Due to the speed and capabilities of the user's internet service provider (ISP), bandwidth, computer hardware and other variables, it may take time for the bidder's submission to upload and be received by the City's eBidding system. It is the bidder's sole responsibility to ensure their bids are received on time by the City's eBidding system. The City of Carlsbad is not responsible for bids that do not arrive by the Due Date and Time.

ELECTRONIC SUBMISSIONS CARRY FULL FORCE AND EFFECT.

The Bidder, by submitting their electronic proposal, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certification, forms and affidavits submitted as part of this proposal are true and correct. The bidder, by submitting its electronic bid, acknowledges that doing so carries the same force and full legal effect as a paper submission with a longhand (wet) signature. By submitting an electronic bid, the bidder certifies that the bidder has thoroughly examined and understands the entire Contract Documents (which consist of the plans and specifications, drawings, forms, affidavits and the solicitation documents), and that by submitting the eBid as its bid proposal, the bidder acknowledges, agrees to and is bound by the entire Contract Documents, including any addenda issued thereto, and incorporated by reference in the Contract Documents.

BIDS ARE PUBLIC RECORDS

Upon receipt by the City, bids shall become public records subject to public disclosure. It is the responsibility of the Bidder to clearly identify any confidential, proprietary, trade secret or otherwise legally privileged information contained within the proposal's General references to sections of the California Public Records Act (PRA) will not suffice. If the Bidder does not provide applicable case law that clearly establishes that the requested information is exempt from the disclosure requirements of the PRA, the City shall be free to release the information when required in accordance with the PRA, pursuant to any other applicable law, or by order of any court or government agency, and the Bidder agrees to hold the City harmless for any such release of this information.

INSTRUCTIONS TO BIDDERS AND BID REQUIREMENTS

This bid and the terms of the Contract Documents and General Provisions constitute an irrevocable offer that shall remain valid and in full force for a period of 90 days and such additional time as may be mutually agreed upon by the Carlsbad Municipal Water District and the Bidder.

No bid will be received unless it is made on a proposal form furnished by the Purchasing Department. Each bid must be accompanied by security in a form and amount required by law. The bidder's security of the second and third next lowest responsive bidders may be withheld until the Contract has been fully executed. The security submitted by all other unsuccessful bidders shall be returned to them, or deemed void, within ten (10) days after the Contract is awarded. Pursuant to the provisions of law (Public Contract Code section 10263), appropriate securities



may be substituted for any obligation required by this notice or for any monies withheld by the District to ensure performance under this Contract. Section 10263 of the Public Contract Code requires monies or securities to be deposited with the District or a state or federally chartered bank in California as the escrow agent. The escrow agent shall maintain insurance to cover negligent acts and omissions of the agent in connection with the handling of retentions under this section in an amount not less than \$100,000 per contract.

The Carlsbad Municipal Water District may disqualify a contractor or subcontractor from participating in bidding when a contractor or subcontractor has been debarred by the Carlsbad Municipal Water District or another jurisdiction in the State of California as an irresponsible bidder.

The work shall be performed in strict conformity with the plans, provisions, and specifications as approved by the City Council of the City of Carlsbad on file with the Public Works Department. The specifications for the work include City of Carlsbad Technical Specifications and the Standard Specifications for Public Works Construction, Parts 2 & 3, all hereinafter designated "SSPWC", as amended. Specification Reference is hereby made to the plans and specifications for full particulars and description of the work. The General Provisions (Part 1) to the SSPWC do not apply.

The Carlsbad Municipal Water District encourages the participation of minority and women-owned businesses.

The Carlsbad Municipal Water District encourages all bidders, suppliers, manufacturers, fabricators and contractors to utilize recycled and recyclable materials when available, appropriate and approved by the Engineer.

BID DOCUMENTS

The bid documents comprise the following documents which must be completed and properly executed including notarization, where indicated.

1. Contractor's Proposal
2. Bidder's Bond (at time of Bid submit PDF copy via PlanetBids / All Bidders). Bid Bond (Original) within two (2) business days of bid Opening / three (3) Apparent Low Bidders.
3. Noncollusion Declaration
4. Designation of Subcontractor and Amount of Subcontractor's Bid
5. Bidder's Statement of Technical Ability and Experience
6. Acknowledgement of Addendum(a)
7. Certificate of Insurance. The riders covering the City, its officials, employees and volunteers may be omitted at the time of bid submittal but shall be provided by the Bidder prior to award of this contract.
8. Bidder's Statement Re Debarment
9. Bidder's Disclosure of Discipline Record
10. Escrow Agreement for Security Deposits - (optional, must be completed if the Bidder wishes to use the Escrow Agreement for Security)

ENGINEER'S ESTIMATE

All bids will be compared on the basis of the Engineer's Estimate. The estimated quantities are approximate and serve solely as a basis for the comparison of bids. The Engineer's Estimate is \$170,000

TIME OF COMPLETION

The contractor shall complete the Work within the time set in the contract as defined in the General Provisions Section 6-7.

SPECIALTY CONTRACTORS: ACCEPTABLE LICENSE TYPES

Except as provided herein, a bid submitted to the District by a Contractor who is not licensed as a contractor pursuant to the Business and Professions Code shall be considered nonresponsive and shall be rejected by the District. In all contracts where federal funds are involved, no bid submitted shall be invalidated by the failure of the bidder to be licensed in accordance with California law. Where federal funds are involved the contractor shall be properly licensed at the time the contract is awarded. In all other cases the contractor shall state their license number, expiration date and classification in the proposal, under penalty of perjury. This invitation to bid does not involve federal funds. The following classifications are acceptable for this contract: **A - General Engineering.**

ESCROW AGREEMENT

If the Contractor intends to utilize the escrow agreement included in the contract documents in lieu of the usual 5% retention from each payment, these documents must be completed and submitted with the signed contract. The escrow agreement may not be substituted at a later date.

OBTAINING PLANS AND SPECIFICATIONS

Sets of plans, various supplemental provisions, and Contract documents may be obtained from the City of Carlsbad website at <https://www.carlsbadca.gov/services/depts/finance/contracting/default.asp>. Paper copies will not be sold.

INTENT OF PLANS AND SPECIFICATIONS

Any prospective bidder who is in doubt as to the intended meaning of any part of the drawings, specifications or other contract documents, or finds discrepancies in or omissions from the drawings and specifications may submit to the Engineer a written request for clarification or correction. Any response will be made only by a written addendum duly issued by the Engineer a copy of which will be mailed or delivered to each person receiving a set of the contract documents. No oral response will be made to such inquiry. **Prior to the award of the contract, no addition to, modification of or interpretation of any provision in the contract documents will be given by any agent, employee or contractor of the Carlsbad Municipal Water District except as hereinbefore specified. No bidder may rely on directions given by any agent, employee or contractor of the Carlsbad Municipal Water District except as hereinbefore specified.**

BIDDER'S INQUIRIES

Questions on the bid documents during the bid period shall be submitted in writing, via email, solely to:

Graham Jordan, Contract Administrator
graham.jordan@carlsbadca.gov

Questions shall be definite and certain and shall reference applicable drawing sheets, notes, details or specification sheets.

The cutoff date to submit questions is June 29, 2021 at 5 p.m. No questions will be entertained after that date.



The answers to questions submitted during the bidding period will be published in an addendum and provided to those bidding on the project no later than July 2, 2021 at 5:00 p.m.

REJECTION OF BIDS

The Carlsbad Municipal Water District reserves the right to reject any or all bids and to waive any minor irregularity or informality in such bids.

PREVAILING WAGE TO BE PAID

The general prevailing rate of wages for each craft or type of worker needed to execute the Contract shall be those as determined by the Director of Industrial Relations pursuant to the sections 1770, 1773, and 1773.1 of the Labor Code. Pursuant to section 1773.2 of the Labor Code, a current copy of applicable wage rates is on file in the Office of the City Engineer. The Contractor to whom the Contract is awarded shall not pay less than the said specified prevailing rates of wages to all workers employed by him or her in the execution of the Contract.

The Prime Contractor shall be responsible for insuring compliance with provisions of section 1777.5 of the Labor Code and section 4100 et seq. of the Public Contracts Code, "Subletting and Subcontracting Fair Practices Act." The City Engineer is the District's "duly authorized officer" for the purposes of section 4107 and 4107.5.

The provisions of Part 7, Chapter 1, of the Labor Code commencing with section 1720 shall apply to the Contract for work.

A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The Prime Contractor and all subcontractors shall comply with Section 1776 of the Labor Code, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Contractor shall require all subcontractors to comply with Section 1776.

PRE-BID MEETING

A pre-bid meeting and tour of the project site will be held at the intersection of Camino de las Ondas and Harbor Point Road, Carlsbad, California on June 29, 2021 at 2:00 p.m. Bidders are advised that portions of the work site are inaccessible to the public and arrangements to view the site at other dates and times will not be made.

UNIT PRICES AND COMPUTATION OF BIDS

All bids are to be computed on the basis of the given estimated quantities of work, as indicated in this proposal, times the unit price as submitted by the bidder.

ADDENDA

Bidders are advised to verify the issuance of all addenda and receipt thereof one day prior to bidding. Submission of bids without acknowledgment of addenda may be cause of rejection of bid.

BOND AND INSURANCE REQUIREMENTS

The Contractor shall provide bonds to secure faithful performance and warranty of the work in an amount equal to one hundred percent (100%) of the Contract price on this project. The Contractor shall provide bonds to secure payment of laborers and materials suppliers, in an amount equal to one hundred percent (100%) of the total amount payable by the terms of the contract. These bonds shall be kept in full force and effect during the course of this project and shall extend in full force and effect and be retained by the District until they are released as stated in the General Provisions section of this contract. All bonds are to be placed with a surety insurance carrier admitted and authorized to transact the business of insurance in California and whose assets exceed their liabilities in an amount equal to or in excess of the amount of the bond. The bonds are to be accompanied by the following documents:

- 1) An original, or a certified copy, of the unrevoked appointment, power of attorney, by laws, or other instrument entitling or authorizing the person who executed the bond to do so.
- 2) A certified copy of the certificate of authority of the insurer issued by the insurance commissioner.

If the bid is accepted, the District may require copies of the insurer's most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code, within 10 calendar days of the insurer's receipt of a request to submit the statements.

Insurance is to be placed with insurers that:

- 1) Have a rating in the most recent Best's Key Rating Guide of at least A-:VII
- 2) Are admitted and authorized to transact the business of insurance in the State of California by the Insurance Commissioner.

Auto policies offered to meet the specification of this contract must:

- 1) Meet the conditions stated above for all insurance companies.
- 2) Cover any vehicle used in the performance of the contract, used onsite or offsite, whether owned, non-owned or hired, and whether scheduled or non-scheduled.

Workers' compensation insurance required under this contract must be offered by a company meeting the above standards with the exception that the Best's rating condition is waived. The District does accept policies issued by the State Compensation Fund meeting the requirement for workers' compensation insurance.

The Contractor shall be required to maintain insurance as specified in the Contract. Any additional cost of said insurance shall be included in the bid price.

The award of the contract by the District is contingent upon the Contractor submitting the required bonds and insurance, as described in the contract, within twenty days of bid opening. If the Contractor fails to comply with these requirements, the District may award the contract to the second or third lowest bidder and the bid security of the lowest bidder may be forfeited.

BUSINESS LICENSE

The prime contractor and all subcontractors are required to have and maintain a valid City of Carlsbad Business License for the duration of the contract.

June 17, 2021

Date



Graham Jordan, Deputy Clerk

CARLSBAD MUNICIPAL WATER DISTRICT

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

CONTRACTOR'S PROPOSAL

Board of Directors
Carlsbad Municipal Water District
1200 Carlsbad Village Drive
Carlsbad, California 92008

The undersigned declares he/she has carefully examined the location of the work, read the Notice Inviting Bids, examined the Plans, Specifications, General Provisions, Contract Documents, and addenda thereto, and hereby proposes to furnish all labor, materials, equipment, transportation, and services required to do all the work to complete Contract No. 3904-F in accordance with the Plans, Specifications, General Provisions, Contract Documents, and addenda thereto and that he/she will take in full payment therefore the following unit prices for each item complete, to wit:

SCHEDULE "A"

<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity And Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
1	Mobilization (not to exceed 5% of Total Bid)	LS		\$ _____
2	Storm Water Pollution Prevention Plan	LS		\$ _____
3	Excavation Support System	LS		\$ _____
4	Remove & Dispose of Asbestos Cement Pipe	LS		\$ _____
5	Demolish RCP Casing	LS		\$ _____
6	Abandon Water Main	LS		\$ _____
7	Proof Test 12-Inch AC Pipe	LS		\$ _____
8	Furnish & Install 16-Inch HDPE Casing	LS		\$ _____
9	Install 10-Inch Fusible PVC Slipline	LS		\$ _____



<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity And Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
10	Connect to Existing Water Main, Station 0+85	LS		\$ _____
11	Connect to Existing Water Main, Station 6+10	LS		\$ _____
12	Asbestos Cement Pipe Testing	2 EA	\$ _____	\$ _____

Total amount of bid in numbers for Schedule "A": \$ _____

Total amount of bid in words for Schedule "A": _____

SCHEDULE "B" – ADDITIVE ALTERNATE

<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity And Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
1	Disposal of Asbestos Cement Pipe	LS		\$ _____

Total amount of bid in numbers for Schedule "B": \$ _____

Total amount of bid in words for Schedule "B": _____

Total amount of bid in numbers for Schedule "A" plus Schedule "B": \$ _____

Total amount of bid in words for Schedule "A" plus Schedule "B": _____

Carlsbad Municipal Water District shall determine the lowest responsive bid based on Schedule "A" and Schedule "B". After the low Bid has been determined, Carlsbad Municipal Water District may, at its sole discretion, award the Contract based on the total of Schedule "A" and Schedule "B" or Schedule "A" only.

Price(s) given above are firm for 90 days after date of bid opening.

Addendum(a) No(s). _____ has/have been received and is/are included in this proposal.

The Undersigned has carefully checked all of the above figures and understands that the District will not be responsible for any error or omission on the part of the Undersigned in preparing this bid.

The Undersigned agrees that in case of default in executing the required Contract with necessary bonds and insurance policies within twenty (20) days from the date of award of Contract by the Board of Directors of the Carlsbad Municipal Water District, the District may administratively authorize award of the contract to the second or third lowest bidder and the bid security of the lowest bidder may be forfeited.

The Undersigned bidder declares, under penalty of perjury, that the undersigned is licensed to do business or act in the capacity of a contractor within the State of California, validly licensed under license number _____, classification _____ which expires on _____, and Department of Industrial Relations PWC registration number _____ which expires on _____, and that this statement is true and correct and has the legal effect of an affidavit.

A bid submitted to the District by a Contractor who is not licensed as a contractor pursuant to the Business and Professions Code shall be considered nonresponsive and shall be rejected by the District § 7028.15(e). In all contracts where federal funds are involved, no bid submitted shall be invalidated by the failure of the bidder to be licensed in accordance with California law. However, at the time the contract is awarded, the contractor shall be properly licensed.

The Undersigned bidder hereby represents as follows:

1. That no Board member, officer agent, or employee of the City of Carlsbad is personally interested, directly or indirectly, in this Contract, or the compensation to be paid hereunder; that no representation, oral or in writing, of the Board of Directors, its officers, agents, or employees has inducted him/her to enter into this Contract, excepting only those contained in this form of Contract and the papers made a part hereof by its terms; and
2. That this bid is made without connection with any person, firm, or corporation making a bid for the same work, and is in all respects fair and without collusion or fraud.

Accompanying this proposal is _____ (Cash, Certified Check, Bond or Cashier's Check) for ten percent (10%) of the amount bid.

The Undersigned is aware of the provisions of section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and agrees to comply with such provisions before commencing the performance of the work of this Contract and continue to comply until the contract is complete.

The Undersigned is aware of the provisions of the Labor Code, Part 7, Chapter 1, Article 2, relative to the general prevailing rate of wages for each craft or type of worker needed to execute the Contract and agrees to comply with its provisions.



IF A SOLE OWNER OR SOLE CONTRACTOR SIGN HERE:

(1) Name under which business is conducted _____

(2) Signature (given and surname) of proprietor _____

(3) Place of Business _____
(Street and Number)
City and State _____

(4) Zip Code _____ Telephone No. _____

(5) E-Mail _____

IF A PARTNERSHIP, SIGN HERE:

(1) Name under which business is conducted _____

(2) Signature (given and surname and character of partner) (Note: Signature must be made by a general partner)

(3) Place of Business _____
(Street and Number)
City and State _____

(4) Zip Code _____ Telephone No. _____

(5) E-Mail _____



IF A CORPORATION, SIGN HERE:

(1) Name under which business is conducted _____

(2) _____
(Signature)

(Title)

Impress Corporate Seal here

(3) Incorporated under the laws of the State of _____

(4) Place of Business _____
(Street and Number)

City and State _____

(5) Zip Code _____ Telephone No. _____

(6) E-Mail _____

**NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE
ATTACHED**



List below names of president, vice president, secretary and assistant secretary, if a corporation; if a partnership, list names of all general partners, and managing partners:

BID SECURITY FORM

(Check to Accompany Bid)

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

(NOTE: The following form shall be used if check accompanies bid.)

Accompanying this proposal is a *Certified *Cashier's check payable to the order of CARLSBAD MUNICIPAL WATER DISTRICT, in the sum of _____

_____ dollars (\$ _____), this amount being ten percent (10%) of the total amount of the bid. The proceeds of this check shall become the property of the District, provided this proposal shall be accepted by the District through action of its legally constituted contracting authorities and the undersigned shall fail to execute a contract and furnish the required Performance, Warranty and Payment Bonds and proof of insurance coverage within the stipulated time; otherwise, the check shall be returned to the undersigned. The proceeds of this check shall also become the property of the District if the undersigned shall withdraw his or her bid within the period of fifteen (15) days after the date set for the opening thereof, unless otherwise required by law, and notwithstanding the award of the contract to another bidder.

BIDDER

*Delete the inapplicable word.

(NOTE: If the Bidder desires to use a bond instead of check, the Bid Bond form on the following pages shall be executed--the sum of this bond shall be not less than ten percent (10%) of the total amount of the bid.)



BIDDER'S BOND TO ACCOMPANY PROPOSAL

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

KNOW ALL PERSONS BY THESE PRESENTS:

That we, _____, as Principal, and _____, as Surety are held and firmly bound unto the Carlsbad Municipal Water District, California, in an amount as follows: (must be at least ten percent (10%) of the bid amount) _____ for which payment, well and truly made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that if the proposal of the above-bounden Principal for:

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

in the City of Carlsbad, is accepted by the Board of Directors, and if the Principal shall duly enter into and execute a Contract including required bonds and insurance policies within twenty (20) days from the date of award of Contract by the Board of Directors of the Carlsbad Municipal Water District of the City of Carlsbad, being duly notified of said award, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect, and the amount specified herein shall be forfeited to the said District.

In the event Principal executed this bond as an individual, it is agreed that the death of Principal shall not exonerate the Surety from its obligations under this bond.

SIGNED AND SEALED, this _____ day of _____, 20_____

_____(SEAL) _____(SEAL)
(Principal) (Surety)

By: _____ By: _____
(Signature) (Signature)

_____(Print Name/Title) _____(Print Name/Title)

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY – ATTACH ATTORNEY-IN-FACT CERTIFICATE)

APPROVED AS TO FORM:

CELIA A. BREWER
General Counsel

By: _____
Assistant General Counsel

GUIDE FOR COMPLETING THE “DESIGNATION OF SUBCONTRACTORS” FORM

REFERENCES Prior to preparation of the following “Subcontractor Disclosure Form” Bidders are urged to review the definitions in section 1-2 of the General Provisions to this Contract, especially, “Bid”, “Bidder”, “Contract”, “Contractor”, “Contract Price”, “Contract Unit Price”, “Engineer”, “Own Organization”, “Subcontractor”, and “Work”. Bidders are further urged to review sections 2-3 SUBCONTRACTS of the General Provisions.

CAUTIONS This form will be used by the Agency to determine the percentage of work that the Bidder proposes to perform. Bidders are cautioned that failure to provide complete and correct information may result in rejection of the bid as non-responsive. Any bid that proposes performance of more than 50 percent of the work by subcontractors or otherwise to be performed by forces other than the Bidder’s own organization will be rejected as non-responsive. Specialty items of work that may be so designated by the Engineer on the “Contractor’s Proposal” are not included in computing the percentage of work proposed to be performed by the Bidder.

INSTRUCTIONS The Bidder shall set forth the name and location of business of each and every subcontractor whom the Bidder proposes to perform work or labor or render service in or about the work or improvement, and every subcontractor licensed as a contractor by the State of California whom the Bidder proposes to specially fabricate and install any portion of the work or improvement according to detailed drawings contained in the plans and specifications in excess of one-half of one percent (0.5%) of the Bidder’s total bid or, in the case of bids or offers for the construction of streets and highways, including bridges, in excess of one-half of one percent (0.5%) or ten thousand dollars (\$10,000) whichever is greater. Said name(s) and location(s) of business of subcontractor(s) shall be set forth and included as an integral part of the bid offer.

The Designation of Subcontractors form must be submitted as a part of the Bidder’s sealed bid. Failure to provide complete and correct information may result in rejection of the bid as non-responsive.

Suppliers of materials from sources outside the limits of work are not subcontractors. The value of materials and transport of materials from sources outside the limits of work, as shown on the plans, shall be assigned to the Contractor or the Subcontractor as the case may be, that the Bidder proposes as installer of said materials. The value of material incorporated in any Subcontractor-installed bid item that is supplied by the Bidder shall be included as a part of the work that the Bidder proposes to be performed by the Subcontractor installing said item.

When a Subcontractor has a Carlsbad business license, the number must be entered on the proper form. If the Subcontractor does not have a valid business license, enter “NONE” in the appropriate space.

When the Bidder proposes using a Subcontractor to construct or install less than 100 percent of a bid item, the Bidder shall attach an explanation sheet to the Designation of Subcontractor form. The explanation sheet shall clearly apprise the District of the specific facts that show the Bidder proposes to perform no less than fifty percent (50%) of the work with its own forces.

Determination of the subcontract amounts for purposes of award of the contract shall be determined by the Board of Directors in conformance with the provisions of the contract



documents and the various supplemental provisions. The decision of the Board of Directors shall be final.

Contractor is prohibited from performing any work on this project with a subcontractor who is ineligible to perform work on a public works project pursuant to Labor Code Sections 1771.1 or 1777.7.

Bidders shall make any additional copies of the disclosure forms as may be necessary to provide the required information. The page number and total number of additional form pages shall be entered in the location provided on each type of form so duplicated.



**DESIGNATION OF SUBCONTRACTOR AND
AMOUNT OF SUBCONTRACTOR'S BID ITEMS**

(To Accompany Proposal)

**ALTAMIRA WATER MAIN RELOCATION
CONTRACT NO. 3904-F**

The Bidder certifies that it has used the sub-bid of the following listed subcontractors in preparing this bid for the Work and that the listed subcontractors will be used to perform the portions of the Work as designated in this list in accordance with applicable provisions of the specifications and section 4100 et seq. of the Public Contract Code, "Subletting and Subcontracting Fair Practices Act." The Bidder further certifies that no additional subcontractor will be allowed to perform any portion of the Work in excess of one-half of one percent (0.5%) of the Bidder's total bid, or in the case of bids or offers for construction of streets and highways, including bridges, in excess of one-half of one percent (0.5%) or ten thousand dollars (\$10,000), whichever is greater, and that no changes in the subcontractors listed work will be made except upon the prior approval of the Agency.

SUBCONTRACTOR'S BID ITEMS

Portion of Work	Subcontractor Name and Location of Business	Phone No. and Email Address	DIR Registration No.	Subcontractor's License No. and Classification*	Amount of Work by Subcontractor in Dollars*

Page _____ of _____ pages of this Subcontractor Designation form

* Pursuant to section 4104 (a)(3)(A) California Public Contract Code, receipt of the information preceded by an asterisk may be submitted by the Bidder up to 24 hours after the deadline for submitting bids contained in the "Notice Inviting Bids."

BIDDER'S STATEMENT OF TECHNICAL ABILITY AND EXPERIENCE

(To Accompany Proposal)

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

The Bidder is required to state what work of a similar character to that included in the proposed Contract he/she has successfully performed and give references, with telephone numbers, which will enable the City to judge his/her responsibility, experience and skill. An attachment can be used.

Bidder shall demonstrate at least five years' experience successfully completing potable water pipeline replacement projects, with at least two projects involving trenchless construction via sliplining of 10-inch diameter or larger pipe and with contract values specific to water distribution system work of not less than \$1,000,000. Bidder shall also submit the qualifications of it's Representative in accordance with Section 7-6. The proposal shall be deemed non-responsive if the required technical ability and experience for the Bidder or it's Representative is not demonstrated.

Date Contract Completed	Name and Address of the Employer	Name and Phone No. of Person to Contract	Type of Work	Amount of Contract

**BIDDER'S CERTIFICATE OF INSURANCE FOR
GENERAL LIABILITY, EMPLOYERS' LIABILITY,
AUTOMOTIVE
LIABILITY AND WORKERS' COMPENSATION**

(To Accompany Proposal)

**ALTAMIRA WATER MAIN RELOCATION
CONTRACT NO. 3904-F**

As a required part of the Bidder's proposal the Bidder must attach either of the following to this page.

1) Certificates of insurance showing conformance with the requirements herein for each of:

- Comprehensive General Liability
- Automobile Liability
- Workers Compensation
- Employer's Liability

2) Statement with an insurance carrier's notarized signature stating that the carrier can, and upon payment of fees and/or premiums by the Bidder, will issue to the Bidder Policies of insurance for Comprehensive General Liability, Automobile Liability, Workers Compensation and Employer's Liability in conformance with the requirements herein and Certificates of insurance to the Agency showing conformance with the requirements herein.

All certificates of insurance and statements of willingness to issue insurance for auto policies offered to meet the specification of this contract must:

- 1) Meet the conditions stated in The Notice Inviting Bids and the General Provisions for this project for each insurance company that the Contractor proposes.
- 2) Cover any vehicle used in the performance of the contract, used onsite or offsite, whether owned, non-owned or hired, and whether scheduled or non-scheduled.



BIDDER'S STATEMENT RE DEBARMENT

(To Accompany Proposal)

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

- 1) Have you or any of your subcontractors ever been debarred as an irresponsible bidder by another jurisdiction in the State of California?

_____ _____
yes no

- 2) If yes, what was/were the name(s) of the agency(ies) and what was/were the period(s) of debarment(s)? Attach additional copies of this page to accommodate more than two debarments.

_____	_____
party debarred	party debarred
_____	_____
agency	agency
_____	_____
period of debarment	period of debarment

BY CONTRACTOR:

(name of Contractor)

By: _____
(sign here)

(print name/title)

Page _____ of _____ pages of this Re Debarment form



BIDDER'S DISCLOSURE OF DISCIPLINE RECORD

(To Accompany Proposal)

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.

- 1) Have you ever had your contractor's license suspended or revoked by the California Contractors' State License Board two or more times within an eight year period?

yes no

- 2) Has the suspension or revocation of your contractor's license ever been stayed?

yes no

- 3) Have any subcontractors that you propose to perform any portion of the Work ever had their contractor's license suspended or revoked by the California Contractors' State License Board two or more times within an eight year period?

yes no

- 4) Has the suspension or revocation of the license of any subcontractor's that you propose to perform any portion of the Work ever been stayed?

yes no

- 5) If the answer to either of 1. or 3. above is yes fully identify, in each and every case, the party disciplined, the date of and violation that the disciplinary action pertains to, describe the nature of the violation and the disciplinary action taken therefore.

(If needed attach additional sheets to provide full disclosure.)

Page _____ of _____ pages of this Disclosure of Discipline form

BIDDER'S DISCLOSURE OF DISCIPLINE RECORD

(CONTINUED)

(To Accompany Proposal)

ALTAMIRA WATER MAIN RELOCATION

CONTRACT NO. 3904-F

- 6) If the answer to either of 2. or 4. above is yes fully identify, in each and every case, the party whose discipline was stayed, the date of the violation that the disciplinary action pertains to, describe the nature of the violation and the condition (if any) upon which the disciplinary action was stayed.

(If needed attach additional sheets to provide full disclosure.)

BY CONTRACTOR:

(name of Contractor)

By: _____
(sign here)

(print name/title)

Page ____ of ____ pages of this Disclosure of Discipline form



**NONCOLLUSION DECLARATION TO BE EXECUTED BY
BIDDER AND SUBMITTED WITH BID
PUBLIC CONTRACT CODE SECTION 7106**

**ALTAMIRA WATER MAIN RELOCATION
CONTRACT NO. 3904-F**

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____, 20____ at _____ [city], _____ [state].

Signature of Bidder



CONTRACT PUBLIC WORKS

This agreement is made this _____ day of _____, 2021, by and between the Carlsbad Municipal Water District of the City of Carlsbad, California, a municipal corporation, (hereinafter called "District"), and _____ whose principal place of business is _____ (hereinafter called "Contractor").

District and Contractor agree as follows:

1. Description of Work. Contractor shall perform all work specified in the Contract documents for:

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

(hereinafter called "project")

2. Provisions of Labor and Materials. Contractor shall provide all labor, materials, tools, equipment, and personnel to perform the work specified by the Contract Documents.

3. Contract Documents. The Contract Documents consist of this Contract, Notice Inviting Bids, Contractor's Proposal, Bidder's Bond, Noncollusion Declaration, Designation of Subcontractors, Technical Ability and Experience, Bidder's Statement Re Debarment, Escrow Agreement, Release Form, the Plans and Specifications, the General Provisions, addendum(s) to said Plans and Specifications and General Provisions, and all proper amendments and changes made thereto in accordance with this Contract or the Plans and Specifications, and all bonds for the project; all of which are incorporated herein by this reference.

Contractor, her/his subcontractors, and materials suppliers shall provide and install the work as indicated, specified, and implied by the Contract Documents. Any items of work not indicated or specified, but which are essential to the completion of the work, shall be provided at the Contractor's expense to fulfill the intent of said documents. In all instances through the life of the Contract, the District will be the interpreter of the intent of the Contract Documents, and the District's decision relative to said intent will be final and binding. Failure of the Contractor to apprise subcontractors and materials suppliers of this condition of the Contract will not relieve responsibility of compliance.

4. Payment. For all compensation for Contractor's performance of work under this Contract, District shall make payment to the Contractor per section 9-3 PAYMENT of the General Provisions section of this contract. The Engineer will close the estimate of work completed for progress payments on the last working day of each month. The District shall withhold retention as required by Public Contract Code Section 9203.

5. Independent Investigation. Contractor has made an independent investigation of the jobsite, the soil conditions at the jobsite, and all other conditions that might affect the progress of the work and is aware of those conditions. The Contract price includes payment for all work that may be done by Contractor, whether anticipated or not, in order to overcome underground conditions. Any information that may have been furnished to Contractor by District about



underground conditions or other job conditions is for Contractor's convenience only, and District does not warrant that the conditions are as thus indicated. Contractor is satisfied with all job conditions, including underground conditions and has not relied on information furnished by District.

6. Hazardous Waste or Other Unusual Conditions. If the contract involves digging trenches or other excavations that extend deeper than four feet below the surface Contractor shall promptly, and before the following conditions are disturbed, notify District, in writing, of any:

A. Hazardous Waste. Material that Contractor believes may be material that is hazardous waste, as defined in section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

B. Differing Conditions. Subsurface or latent physical conditions at the site differing from those indicated.

C. Unknown Physical Conditions. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in contractor's costs of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in this contract.

In the event that a dispute arises between District and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the contractor's cost of, or time required for, performance of any part of the work, contractor shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

7. Immigration Reform and Control Act. Contractor certifies it is aware of the requirements of the Immigration Reform and Control Act of 1986 (8 USC sections 1101-1525) and has complied and will comply with these requirements, including, but not limited to, verifying the eligibility for employment of all agents, employees, subcontractors, and consultants that are included in this Contract.

8. Prevailing Wage. Pursuant to the California Labor Code, the director of the Department of Industrial Relations has determined the general prevailing rate of per diem wages in accordance with California Labor Code, section 1773 and a copy of a schedule of said general prevailing wage rates is on file in the office of the City Engineer, and is incorporated by reference herein. Pursuant to California Labor Code, section 1775, Contractor shall pay prevailing wages. Contractor shall post copies of all applicable prevailing wages on the job site. Contractor shall comply with California Labor Code, section 1776, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Contractor shall require all subcontractors to comply with Section 1776.

9. Indemnification. Contractor shall assume the defense of, pay all expenses of defense, and indemnify and hold harmless the District, and its officers and employees, from all claims, loss,



damage, injury and liability of every kind, nature and description, directly or indirectly arising from or in connection with the performance of the Contract or work; or from any failure or alleged failure of Contractor to comply with any applicable law, rules or regulations including those relating to safety and health; and from any and all claims, loss, damages, injury and liability, howsoever the same may be caused, resulting directly or indirectly from the nature of the work covered by the Contract, except for loss or damage caused by the sole or active negligence or willful misconduct of the District. The expenses of defense include all costs and expenses including attorneys' fees for litigation, arbitration, or other dispute resolution method.

Contractor shall also defend and indemnify the District against any challenges to the award of the contract to Contractor, and Contractor will pay all costs, including defense costs for the District. Defense costs include the cost of separate counsel for District, if District requests separate counsel.

Contractor shall also defend and indemnify the District against any challenges to the award of the contract to Contractor, arising in whole or in part from alleged inaccuracies or misrepresentation by the Contractor, whether intentional or otherwise, and Contractor will pay all costs, including defense costs for the District. Defense costs include the cost of separate counsel for District, if District requests separate counsel.

10. Insurance. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his or her agents, representatives, employees or subcontractors. Said insurance shall meet the City of Carlsbad's policy for insurance as stated in City Council Policy # 70.

(A) Coverages and Limits Contractor shall maintain the types of coverages and minimum limits indicated herein:

a. **Commercial General Liability (GLC) Insurance:** Insurance written on an "occurrence" basis, including products-completed operations, personal & advertising injury, with limits no less than **\$2,000,000** per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.

b. **Business Automobile Liability Insurance:** \$2,000,000 combined single limit per accident for bodily injury and property damage. In addition, the auto policy must cover any vehicle used in the performance of the contract, used onsite or offsite, whether owned, non-owned or hired, and whether scheduled or non-scheduled.

c. **Workers' Compensation and Employers' Liability Insurance:** Workers' compensation limits as required by the Labor Code of the State of California and Employers' Liability limits of \$1,000,000 per incident. Workers' compensation offered by the State Compensation Insurance Fund is acceptable to the District.

(B) Additional Provisions: Contractor shall ensure that the policies of insurance required under this agreement with the exception of Workers' Compensation and Business Automobile Liability Insurance contain, or are endorsed to contain, the following provisions.

a. The District, its officials, employees and volunteers are to be covered as additional insured as respects: liability arising out of activities performed by or on behalf of the Contractor; products



and completed operations of the contractor; premises owned, leased, hired or borrowed by the contractor. The coverage shall contain no special limitations on the scope of protection afforded to the District, its officials, employees or volunteers. All additional insured endorsements must be evidenced using separate documents attached to the certificate of insurance; one for each company affording general liability, and employers' liability coverage.

b. The Contractor's insurance coverage shall be primary insurance as respects the District, its officials, employees and volunteers. Any insurance or self-insurance maintained by the District, its officials, employees or volunteers shall be in excess of the contractor's insurance and shall not contribute with it.

c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the District, its officials, employees or volunteers.

d. Coverage shall state that the contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

(C) Notice of Cancellation. Each insurance policy required by this agreement shall be endorsed to state that coverage shall not be nonrenewed, suspended, voided, canceled, or reduced in coverage or limits except after ten (10) days' prior written notice has been sent to the District by certified mail, return receipt requested.

(D) Deductibles and Self-Insured Retention (S.I.R.) Levels. Any deductibles or self-insured retention levels must be declared to and approved by the District. At the option of the District, either: the insurer shall reduce or eliminate such deductibles or self-insured retention levels as respects the District, its officials and employees; or the contractor shall procure a bond guaranteeing payment of losses and related investigation, claim administration and defense expenses.

(E) Waiver of Subrogation. All policies of insurance required under this agreement shall contain a waiver of all rights of subrogation the insurer may have or may acquire against the District or any of its officials or employees.

(F) Subcontractors. Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. Coverages for subcontractors shall be subject to all of the requirements stated herein.

(G) Acceptability of Insurers. Insurance is to be placed with insurers that have a rating in Best's Key Rating Guide of at least A-:VII. Insurers must also be authorized to transact the business of insurance by the State of California Insurance Commissioner as admitted carriers as evidenced by a listing in the official publication of the Department of Insurance of the State of California and/or under the standards specified by City Council Policy # 70.

(H) Verification of Coverage. Contractor shall furnish the District with certificates of insurance and original endorsements affecting coverage required by this clause. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements are to be in forms approved by the District and are to be received and approved by the District before the Contract is executed by the District.



(I) Cost of Insurance. The Cost of all insurance required under this agreement shall be included in the Contractor's bid.

11. Claims and Lawsuits. All claims by Contractor shall be resolved in accordance with Public Contract Code section 9204, which is incorporated by reference. A copy of Section 9204 is included in Section 3 of the General Provisions. In addition, all claims by Contractor for \$375,000 or less shall be resolved in accordance with the provisions in the Public Contract Code, Division 2, Part 3, Chapter 1, Article 1.5 (commencing with section 20104) which are incorporated by reference. A copy of Article 1.5 is included in Section 3 of the General Provisions. In the event of a conflict between Section 9204 and Article 1.5, Section 9204 shall apply. Notwithstanding the provisions of this section of the contract, all claims shall comply with the Government Tort Claim Act (section 900 et seq., of the California Government Code) for any claim or cause of action for money or damages prior to filing any lawsuit for breach of this agreement.

(A) Assertion of Claims. Contractor hereby agrees that any contract claim submitted to the District must be asserted as part of the contract process as set forth in this agreement and not in anticipation of litigation or in conjunction with litigation.

(B) False Claims. Contractor acknowledges that if a false claim is submitted to the District, it may be considered fraud and the Contractor may be subject to criminal prosecution.

(C) Government Code. Contractor acknowledges that California Government Code sections 12650 et seq., the False Claims Act, provides for civil penalties where a person knowingly submits a false claim to a public entity. These provisions include false claims made with deliberate ignorance of the false information or in reckless disregard of the truth or falsity of the information.

(D) Penalty Recovery. If the Carlsbad Municipal Water District seeks to recover penalties pursuant to the False Claims Act, it is entitled to recover its litigation costs, including attorney's fees.

(E) Debarment for False Claims. Contractor hereby acknowledges that the filing of a false claim may subject the Contractor to an administrative debarment proceeding wherein the Contractor may be prevented from further bidding on public contracts for a period of up to five years.

(F) Carlsbad Municipal Code. The provisions of Carlsbad Municipal Code sections 3.32.025, 3.32.026, 3.32.027 and 3.32.028 pertaining to false claims are incorporated herein by reference.

(G) Debarment from Other Jurisdictions. Contractor hereby acknowledges that debarment by another jurisdiction is grounds for the Board of Directors of the Carlsbad Municipal Water District of the City of Carlsbad to disqualify the Contractor or subcontractor from participating in future contract bidding.

(H) Jurisdiction. Contractor agrees and hereby stipulates that the proper venue and jurisdiction for resolution of any disputes between the parties arising out of this agreement is San Diego County, California.

I have read and understand all provisions of Section 11 above. _____ init _____ init

12. Maintenance of Records. Contractor shall maintain and make available at no cost to the District, upon request, records in accordance with sections 1776 and 1812 of Part 7, Chapter 1,



Article 2, of the Labor Code. If the Contractor does not maintain the records at Contractor's principal place of business as specified above, Contractor shall so inform the District by certified letter accompanying the return of this Contract. Contractor shall notify the District by certified mail of any change of address of such records.

13. Labor Code Provisions. The provisions of Part 7, Chapter 1, commencing with section 1720 of the Labor Code are incorporated herein by reference.

14. Security. Securities in the form of cash, cashier's check, or certified check may be substituted for any monies withheld by the District to secure performance of this contract for any obligation established by this contract. Any other security that is mutually agreed to by the Contractor and the District may be substituted for monies withheld to ensure performance under this Contract.

15. Unfair Business Practices. In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.

16. Provisions Required by Law Deemed Inserted. Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and included herein, and if, through mistake or otherwise, any such provision is not inserted, or is not correctly inserted, then upon application of either party, the Contract shall forthwith be physically amended to make such insertion or correction.

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17. **Additional Provisions.** Any additional provisions of this agreement are set forth in the "General Provisions" or "Supplemental Provisions" attached hereto and made a part hereof.

NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE ATTACHED

(CORPORATE SEAL)

CONTRACTOR:

CARLSBAD MUNICIPAL WATER DISTRICT
a municipal corporation of the State of
California

(name of Contractor)

By: _____
(sign here)

(print name and title)

By: _____
(sign here)

(print name and title)

By: _____
Geoff Patnoe, Assistant Executive
Manager, as authorized by the Executive
Manager

ATTEST:

Barbara Engleson, Secretary

President or vice-president **and** secretary or assistant secretary must sign for corporations. If only one officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under the corporate seal empowering that officer to bind the corporation.

APPROVED AS TO FORM:

CELIA A. BREWER
General Counsel

By: _____
Assistant General Counsel



LABOR AND MATERIALS BOND

Board of Directors of the Carlsbad Municipal Water District located in the State of California has awarded to _____ (hereinafter designated as the "Principal"), a Contract for:

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

in the City of Carlsbad, in strict conformity with the drawings and specifications, and other Contract Documents now on file in the Office of the Secretary of the Carlsbad Municipal Water District and all of which are incorporated herein by this reference.

WHEREAS, Principal has executed or is about to execute said Contract and the terms thereof require the furnishing of a bond, providing that if Principal or any of their subcontractors shall fail to pay for any materials, provisions, provender or other supplies or teams used in, upon or about the performance of the work agreed to be done, or for any work or labor done thereon of any kind, the Surety on this bond will pay the same to the extent hereinafter set forth.

NOW, THEREFORE, WE, _____, as Principal, (hereinafter designated as the "Contractor"), and _____ as Surety, are held firmly bound unto the Carlsbad Municipal Water District in the sum of _____ Dollars (\$ _____), said sum being an amount equal to: One hundred percent (100%) of the total amount payable under the terms of the contract by the Carlsbad Municipal Water District, and for which payment well and truly to be made we bind ourselves, our heirs, executors and administrators, successors, or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Contractor or his/her subcontractors fail to pay for any materials, provisions, provender, supplies, or teams used in, upon, for, or about the performance of the work contracted to be done, or for any other work or labor thereon of any kind, consistent with California Civil Code section 9100, or for amounts due under the Unemployment Insurance Code with respect to the work or labor performed under this Contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the contractor and subcontractors pursuant to section 13020 of the Unemployment Insurance Code with respect to the work and labor, that the Surety will pay for the same, and, also, in case suit is brought upon the bond, reasonable attorney's fees, to be fixed by the court consistent with California Civil Code section 9554.

This bond shall inure to the benefit of any of the persons named in California Civil Code section 9100, so as to give a right of action to those persons or their assigns in any suit brought upon the bond.

Surety stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed hereunder or the specifications accompanying the same shall affect its obligations on this bond, and it does hereby waive notice of any change,



extension of time, alterations or addition to the terms of the contract or to the work or to the specifications.

In the event that Contractor is an individual, it is agreed that the death of any such Contractor shall not exonerate the Surety from its obligations under this bond.

SIGNED AND SEALED, this _____ day of _____, 20____

_____(SEAL)
(Principal)

_____(SEAL)
(Surety)

By: _____
(Signature)

By: _____
(Signature)

(Print Name & Title)

(Print Name & Title)

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY – ATTACH ATTORNEY-IN-FACT CERTIFICATE)

APPROVED AS TO FORM:

CELIA A. BREWER
General Counsel

By: _____
Assistant General Counsel



FAITHFUL PERFORMANCE/WARRANTY BOND

Board of Directors of the Carlsbad Municipal Water District located in the State of California has awarded to _____ (hereinafter designated as the "Principal"), a Contract for:

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

in the City of Carlsbad, in strict conformity with the contract, the drawings and specifications, and other Contract Documents now on file in the Office of the Secretary of the Carlsbad Municipal Water District, all of which are incorporated herein by this reference.

WHEREAS, Principal has executed or is about to execute said Contract and the terms thereof require the furnishing of a bond for the faithful performance and warranty of said Contract;

NOW, THEREFORE, WE, _____, as Principal, (hereinafter designated as the "Contractor"), and _____ as Surety, are held firmly bound unto the Carlsbad Municipal Water District in the sum of _____

_____ Dollars (\$ _____), said sum being an amount equal to: One hundred percent (100%) of the total amount payable under the terms of the contract by the Carlsbad Municipal Water District, and for which payment well and truly to be made we bind ourselves, our heirs, executors and administrators, successors, or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bounden Contractor, their heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided on their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the Carlsbad Municipal Water District, its officers, employees and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the District in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

Surety stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed there under or the specifications accompanying the same shall affect its obligations on this bond, and it does hereby waive notice of any change, extension of time, alterations or addition to the terms of the contract or to the work or to the specifications.



In the event that Contractor is an individual, it is agreed that the death of any such Contractor shall not exonerate the Surety from its obligations under this bond.

SIGNED AND SEALED, this _____ day of _____, 20____

_____(SEAL)
(Principal)

_____(SEAL)
(Surety)

By: _____
(Signature)

By: _____
(Signature)

(Print Name & Title)

(Print Name & Title)

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY – ATTACH ATTORNEY-IN-FACT CERTIFICATE)

APPROVED AS TO FORM:

CELIA A. BREWER
General Counsel

By: _____
Assistant General Counsel



OPTIONAL ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between the Carlsbad Municipal Water District whose address is 5950 El Camino Real, Carlsbad, California, 92008, hereinafter called "District" and _____ whose address is _____ hereinafter called "Contractor" and _____ whose address is _____ hereinafter called "Escrow Agent."

For the consideration hereinafter set forth, the District, Contractor and Escrow Agent agree as follows:

1. Pursuant to section 22300 of the Public Contract Code of the State of California, the Contractor has the option to deposit securities with the Escrow Agent as a substitute for retention earnings required to be withheld by the District pursuant to the Construction Contract entered into between the City and Contractor for

ALTAMIRA WATER MAIN RELOCATION CONTRACT NO. 3904-F

in the amount of _____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the District shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the District within 10 days of the deposit. The market value of the securities at the time of the substitution shall be a least equal to the cash amount then required to be withheld as retention under the terms of the contract between the District and Contractor. Securities shall be held in the name of the District and shall designate the Contractor as the beneficial owner.

2. The District shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

3. When the District makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the District pays the Escrow Agent directly.

4. The Contractor shall be responsible for paying all fees for the expenses incurred by the Escrow Agent in administering the Escrow Account and all expenses of the District. These expenses and payment terms shall be determined by the District, Contractor and Escrow Agent.

5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the District.



6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from District to the Escrow Agent that District consents to the withdrawal of the amount sought to be withdrawn by Contractor.

7. The District shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the District of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the District.

8. Upon receipt of written notification from the City certifying that the Contract is final and complete and that the Contractor has complied with all requirements and procedures applicable to the Contract, the Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

9. The Escrow Agent shall rely on the written notifications from the District and the Contractor pursuant to sections (1) to (8), inclusive, of this agreement and the District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release, conversion and disbursement of the securities and interest as set forth above.

10. The names of the persons who are authorized to give written notices or to receive written notice on behalf of the District and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

For District:

Title FINANCE DIRECTOR

Name _____

Signature _____

Address 1635 Faraday Avenue, Carlsbad, CA 92008

For Contractor:

Title _____

Name _____

Signature _____

Address _____

For Escrow Agent:

Title _____

Name _____

Signature _____

Address _____



At the time the Escrow Account is opened, the City and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

For District:

Title PRESIDENT

Name _____

Signature _____

Address 1200 Carlsbad Village Drive, Carlsbad, CA 92008

For Contractor:

Title _____

Name _____

Signature _____

Address _____

For Escrow Agent:

Title _____

Name _____

Signature _____

Address _____



**GENERAL PROVISIONS
FOR
ALTAMIRA WATER MAIN RELOCATION
CONTRACT NO. 3904-F**

CARLSBAD MUNICIPAL WATER DISTRICT

**BIDDERS ARE ADVISED THAT THIS SECTION REPLACES PART 1,
GENERAL PROVISIONS, OF THE STANDARD SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION**

**SECTION 1 -- TERMS, DEFINITIONS, ABBREVIATIONS, AND
SYMBOLS**

1-1 TERMS – Unless otherwise stated, the words *directed, required, permitted, ordered, instructed, designated, considered necessary, prescribed, approved, acceptable, satisfactory*, or words of like meaning, refer to actions, expressions, and prerogatives of the Engineer.

1-1.1 Reference to Drawings. Where words "shown", "indicated", "detailed", "noted", "scheduled", or words of similar import are used, it shall be understood that reference is made to the plans accompanying these provisions, unless stated otherwise.

1-1.2 Directions. Where words "directed", "designated", "selected", or words of similar import are used, it shall be understood that the direction, designation or selection of the Engineer is intended, unless stated otherwise. The word "required" and words of similar import shall be understood to mean "as required to properly complete the work as required and as approved by the Engineer," unless stated otherwise.

1-1.3 Equals and Approvals. Where the words "equal", "approved equal", "equivalent", and such words of similar import are used, it shall be understood such words are followed by the expression "in the opinion of the Engineer", unless otherwise stated. Where the words "approved", "approval", "acceptance", or words of similar import are used, it shall be understood that the approval, acceptance, or similar import of the Engineer is intended.

1-1.4 Perform. The word "perform" shall be understood to mean that the Contractor, at its expense, shall perform all operations, labor, tools and equipment, and further, including the furnishing and installing of materials that are indicated, specified or required to mean that the Contractor, at its expense, shall furnish and install the work, complete in place and ready to use, including furnishing of necessary labor, materials, tools, equipment, and transportation.

1-2 DEFINITIONS. The following words, or groups of words, shall be exclusively defined by the definitions assigned to them herein.



Addendum – Written or graphic instrument issued prior to the opening of Bids which clarifies, corrects, or changes the bidding or Contract Documents. The term Addendum shall include bulletins and all other types of written notices issued to potential bidders prior to opening of Bids.

Agency – the Carlsbad Municipal Water District.

Agreement – See Contract.

Assessment Act Contract – A Contract financed by special assessments authorized under a State Act or procedural ordinance of a City or County.

Base – A layer of specified material of planned thickness placed immediately below the pavement or surfacing.

Bid – The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work.

Bidder – Any individual, firm, partnership, corporation, or combination thereof, submitting a Bid for the Work, acting directly or through a duly authorized representative.

Board – The officer or body constituting the awarding authority of the Agency, the Board of Directors of Carlsbad Municipal Water District.

Bond – Bid, performance, and payment bond or other instrument of security.

Caltrans – The State of California, Department of Transportation.

Cash Contract – A Contract financed by means other than special assessments.

Certificate of Compliance – A written document signed and submitted by a supplier or manufacturer that certifies that the material or assembled material supplied to the Work site conforms to the requirements of the Contract Documents.

Change Order – A written order to the Contractor signed by the Agency directing an addition, deletion, or revision in the Work, or an adjustment in the Contract Price or the Contract time issued after the effective date of the Contract. A Change Order may or may not also be signed by the Contractor.

Code – The terms *Government Code*, *Labor Code*, etc., refer to codes of the State of California.

Construction Manager– the Project Inspector’s immediate supervisor and first level of appeal for informal dispute resolution.

Contract – The written agreement between the Agency and the Contractor covering the Work.

Contract Documents – Including but not limited to; the Contract, any Addendum (which pertain to the contract documents), Notice Inviting Bids, Instructions to Bidders; Bid (including documentation accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Contract, the Bonds, the General Provisions, permits, the Technical Specifications, the Supplemental Provisions, the Plans, Standard Plans,



Standard Specifications, Reference Specifications, and all Modifications issued after the execution of the Contract.

Contractor – The individual, partnership, corporation, joint venture, or other legal entity having a Contract with the Agency to perform the Work. In the case of work being done under permit issued by the Agency, the permittee shall be constructed to be the Contractor. The term “prime contractor” shall mean Contractor.

Contract Price – The total amount of money for which the Contract is awarded.

Contract Unit Price – The amount stated in the Bid for a single unit of an item of work.

County Sealer – The Sealer of Weights and Measures of the county in which the Contract is let.

Days – Days shall mean consecutive calendar’s days unless otherwise specified.

Deputy City Engineer – The Engineering Manager of the Construction Management & Inspection Department and the Construction Manager’s immediate supervisor and the Engineer’s designated representative and the second level of appeal for informal dispute resolution.

Dispute Board – persons designated by the City Manager of the City of Carlsbad or Executive Manager of the Carlsbad Municipal Water District to hear and advise the City Manager or Executive Manager on claims submitted by the Contractor. The City Manager for the City of Carlsbad or the Executive Manager for the Carlsbad Municipal Water District is the last appeal level for informal dispute resolution.

Disputed Work – Work in which the Agency and the Contractor are in disagreement.

Electrolier – Street light assembly complete, including foundation, standard, luminaire arm, luminaire, etc.

Engineer – the District Engineer of the Carlsbad Municipal Water District or his/her approved representative. The Engineer is the third level of appeal for informal dispute resolution.

Extra Work – New or unforeseen work not covered by a Contract Unit Price or Stipulated Unit Price.

House Connection Sewer – A sewer, within a public street or right-of-way, proposed to connect any parcel, lot, or part of a lot with a mainline sewer.

House Sewer – A sewer, wholly within private property, proposed to connect any building to a house connection sewer.

Luminaire – The lamp housing including the optical and socket assemblies (and ballast if so specified).

Luminaire Arm – The structural member, bracket, or mast arm, which, mounted on the standard, supports the luminaire.

Minor Bid Item – a single contract item constituting less than 10 percent (10%) of the original Contract Price bid.



Modification – Includes Change Orders and Supplemental Agreements. A Modification may only be used after the effective date of the Contract.

Notice of Award – The written notice by the Agency to the successful Bidder stating that upon compliance by it with the required conditions, the Agency will execute the Contract.

Notice to Proceed – A written notice given by the Agency to the Contractor fixing the date on which the Contract time will start.

Own Organization - When used in Sections 2-3.1 and 2-3.2 – Employees of the Contractor who are hired, directed, supervised and paid by the Contractor to accomplish the completion of the Work. Further, such employees have their employment taxes, State disability insurance payments, State and Federal income taxes paid and administered, as applicable, by the Contractor. Further, “own organization” means construction equipment that the Contractor owns or leases and uses to accomplish the Work. Equipment that is owner operated or leased equipment with an operator is not part of the Contractor's Own Organization and will not be included for the purpose of compliance with Sections 2-3.1 and 2-3.2.

Person – Any individual, firm, association, partnership, corporation, trust, joint venture, or other legal entity.

Plans – The drawings, profiles, cross sections, working drawings, and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions, or details of the Work.

Private Contract – Work subject to Agency inspection, control, and approval, involving private funds, not administered by the Agency.

Project Inspector – the Engineer’s designated representative for inspection, contract administration and first level for informal dispute resolution.

Proposal – See Bid.

Reference Specifications – Those bulletins, standards, rules, methods of analysis or test, codes, and specifications of other agencies, engineering societies, or industrial associations referred to in the Contract Documents. These refer to the latest edition, including amendments in effect and published at the time of advertising the project or issuing the permit, unless specifically referred to by edition, volume, or date.

Roadway – The portion of a street reserved for vehicular use.

Service Connection – Service connections are all or any portion of the conduit, cable, or duct, including meter, between a utility distribution line and an individual consumer.

Sewer – Any conduit intended for the reception and transfer of sewage and fluid industrial waste.

Shop Drawings – Drawings showing the details of manufactured or assembled products proposed to be incorporated into the Work.

Special Provisions – Revisions to the Standard Specifications setting forth conditions and requirements peculiar to the Work.



Specifications – General Provisions, Standard Specifications, Technical Specifications, Reference Specifications, Supplemental Provisions, and specifications in Supplemental Agreements between the Contractor and the Board.

Standard – The shaft or pole used to support street lighting luminaire, traffic signal heads, mast arms, etc.

Standard Plans – Details of standard structures, devices, or instructions referred to on the Plans or in Specifications by title or number.

Standard Specifications – The Standard Specifications for Public Works Construction (SSPWC), the “Greenbook”.

State – State of California.

Stipulated Unit Price – Unit prices established by the Agency in the Contract Documents.

Storm Drain – Any conduit and appurtenances intended for the reception and transfer of storm water.

Street – Any road, highway, parkway, freeway, alley, walk, or way.

Subbase – A layer of specified material of planned thickness between a base and the subgrade.

Subcontractor – An individual, firm, or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work.

Subgrade – For roadways, that portion of the roadbed on which pavement, surfacing, base, subbase, or a layer of other material is placed. For structures, the soil prepared to support a structure.

Supervision – Supervision, where used to indicate supervision by the Engineer, shall mean the performance of obligations, and the exercise of rights, specifically imposed upon and granted to the Agency in becoming a party to the Contract. Except as specifically stated herein, supervision by the Agency shall not mean active and direct superintendence of details of the Work.

Supplemental Agreement – A written amendment of the Contract Documents signed by both parties.

Supplemental Provisions – See Special Provisions.

Surety – Any individual, firm, or corporation, bound with and for the Contractor for the acceptable performance, execution, and completion of the Work, and for the satisfaction of all obligations incurred.

Tonne – Also referred to as “metric ton”. Represents a unit of measure in the International System of Units equal to 1,000 kilograms.

Utility – Tracks, overhead or underground wires, pipelines, conduits, ducts, or structures, sewers, or storm drains owned, operated, or maintained in or across a public right of way or easement.



Work – That which is proposed to be constructed or done under the Contract or permit, including the furnishing of all labor, materials, equipment, and services.

Working Drawings – Drawings showing the details not shown on the Plans which are required to be designed by the Contractor.

1-3 ABBREVIATIONS

1-3.1 General. The abbreviation herein, together with others in general use, are applicable to these Standard Specifications and to project Plans or other Contract Documents.

All abbreviations and symbols used on Plans for structural steel construction shall conform to those given by the “Manual of Steel Construction” published by the American Institute of Steel Construction, Inc.

1-3.2 Common Usage

<u>Abbreviation</u>	<u>Word or Words</u>	<u>Abbreviation</u>	<u>Word or Words</u>
ABAN	Abandon	CMB	Crushed miscellaneous base
ABAND	Abandoned	CMC	Cement mortar-coated
ABS	Acrylonitrile – butadiene – styrene	CML	Cement mortar-lined
AC	Asphalt Concrete	CMWD	Carlsbad Municipal Water District
ACP	Asbestos cement pipe	CO	Cleanout (Sewer)
ACWS	Asphalt concrete wearing surface	COL	Column
ALT	Alternate	COMM	Commercial
APTS	Apartment and Apartments	CONC	Concrete
AMER STD	American Standard	CONN	Connection
AWG	American Wire Gage (nonferrous wire)	CONST	Construct, Construction
BC	Beginning of curve	COORD	Coordinate
BCR	Beginning of curb return	CSP	Corrugated steel pipe
BDRY	Boundary	CSD	Carlsbad Standard Drawings
BF	Bottom of footing	CTB	Cement treated base
BLDG	Building and Buildings	CV	Check valve
BM	Benchmark	CY	Cubic yard
BVC	Beginning of vertical curve	D	Load of pipe
B/W	Back of wall	dB	Decibels
C/C	Center to center	DBL	Double
CAB	Crushed aggregate base	DF	Douglas fir
CAL/OSHA	California Occupational Safety and Health Administration	DIA	Diameter
CalTrans	California Department of Transportation	DIP	Ductile iron pipe
CAP	Corrugated aluminum pipe	DL	Dead load
CB	Catch Basin	DR	Dimension Ratio
Cb	Curb	DT	Drain Tile
CBP	Catch Basin Connection Pipe	DWG	Drawing
CBR	California Bearing Ratio	DWY	Driveway
CCR	California Code of Regulations	DWY APPR	Driveway approach
CCTV	Closed Circuit TV	E	Electric
CES	Carlsbad Engineering Standards	EA	Each
CF	Curb face	EC	End of curve
CF	Cubic foot	ECR	End of curb return
C&G	Curb and gutter	EF	Each face
CFR	Code of Federal Regulations	EG	Edge of gutter
CFS	Cubic Feet per Second	EGL	Energy grade line
CIP	Cast iron pipe	EI	Elevation
CIPP	Cast-in place pipe	ELC	Electrolier lighting conduit
CL	Clearance, center line	ELT	Extra long ton
CLF	Chain link fence	ENGR	Engineer, Engineering
		EP	Edge of pavement

ESMT Easement
 ETB Emulsion-treated base
 EVC End of vertical curb
 EWA Encina Wastewater Authority
 EXC Excavation
 EXP JT Expansion joint
 EXST Existing
 F Fahrenheit
 F&C Frame and cover
 F&I Furnish and install
 FAB Fabricate
 FAS Flashing arrow sign
 FD Floor drain
 FDN Foundation
 FED SPEC Federal Specification
 FG Finished grade
 FH Fire hydrant
 FL Flow line
 FS Finished surface
 FT-LB Foot-pound
 FTG Footing
 FW Face of wall
 G Gas
 GA Gauge
 GAL Gallon and Gallons
 GALV Galvanized
 GAR Garage and Garages
 GIP Galvanized iron pipe
 GL Ground line or grade line
 GM Gas meter
 GNV Ground Not Visible
 GP Guy pole
 GPM gallons per minute
 GR Grade
 GRTG Grating
 GSP Galvanized steel pipe
 H High or height
 HB Hose bib
 HC House connection
 HDWL Headwall
 HGL Hydraulic grade line
 HORIZ Horizontal
 HP Horsepower
 HPG High pressure gas
 HPS High pressure sodium (Light)
 HYDR Hydraulic
 IE Invert Elevation
 ID Inside diameter
 INCL Including
 INSP Inspection
 INV Invert
 IP Iron pipe
 JC Junction chamber
 JCT Junction
 JS Junction structure
 JT Joint
 L Length
 LAB Laboratory
 LAT Lateral
 LB Pound
 LD Local depression
 LF Linear foot
 LH Lamp hole

LL Live load
 LOL Layout line
 LONG Longitudinal
 LP Lamp post
 LPS Low pressure sodium (Light)
 LS Lump sum
 LTS Lime treated soil
 LWD Leucadia Wastewater District
 MAINT Maintenance
 MAX Maximum
 MCR Middle of curb return
 MEAS Measure
 MH Manhole, maintenance hole
 MIL SPEC Military specification
 MISC Miscellaneous
 MOD Modified, modify
 MON Monument
 MSL Mean Sea Level (Reg. Standard Drawing M-12)
 MTBM Microtunneling Boring Machine
 MULT Multiple
 MUTCD Manual on Uniform Traffic Control Devices
 MVL Mercury vapor light
 NCTD North County Transit District
 NRCP Nonreinforced concrete pipe
 OBS Obsolete
 OC On center
 OD Outside diameter
 OE Outer edge
 OHE Overhead Electric
 OMWD Olivenhain Municipal Water District
 OPP Opposite
 ORIG Original
 PB Pull box
 PC Point of curvature
 PCC Portland cement concrete or point
 of compound curvature
 PCVC Point of compound vertical curve
 PE Polyethylene
 PI Point of intersection
 PL Property line
 PMB Processed miscellaneous base
 POC Point on curve
 POT Point on tangent
 PP Power pole
 PRC Point of reverse curve
 PRVC Point of reverse vertical curve
 PSI Pounds per square inch
 PT Point of tangency
 PVC Polyvinyl chloride
 PVMT Pavement
 PVT R/W Private right-of-way
 Q Rate of flow in cubic feet per second
 QUAD Quadrangle, Quadrant
 R Radius
 R&O Rock and oil
 R/W Right-of-way
 RA Recycling agent
 RAC Recycled asphalt concrete
 RAP Reclaimed asphalt pavement
 RBAC Rubberized asphalt concrete
 RC Reinforced concrete
 RCB Reinforced concrete box
 RCE Registered civil engineer
 RCP Reinforced concrete pipe
 RCV Remote control valve



REF Reference
 REINF Reinforced or reinforcement
 RES Reservoir
 RGE Registered geotechnical engineer
 ROW Right-of-Way
 RR Railroad
 RSE Registered structural engineer
 RTE Registered traffic engineer
 S Sewer or Slope, as applicable
 SCCP Steel cylinder concrete pipe
 SD Storm drain
 SDNR San Diego Northern Railway
 SDR Standard thermoplastic pipe dimension ratio
 (ratio of pipe O.D. to minimum wall thickness)
 SDRSD San Diego Regional Standard Drawings
 SE Sand Equivalent
 SEC Section
 SF Square foot
 SFM Sewer Force Main
 SI International System of Units (Metric)
 SPEC Specifications
 SPPWC Standard Plans for
 Public Works Construction
 SSPWC Standard Specifications for
 Public Works Construction
 ST HWY State highway
 STA Station
 STD Standard
 STR Straight
 STR GR Straight grade
 STRUC Structural/Structure
 SW Sidewalk

SWD Sidewalk drain
 SY Square yard
 T Telephone
 TAN Tangent
 TC Top of curb
 TEL Telephone
 TF Top of footing
 TOPO Topography
 TR Tract
 TRANS Transition
 TS Traffic signal or transition structure
 TSC Traffic signal conduit
 TSS Traffic signal standard
 TW Top of wall
 TYP Typical
 UE Underground Electric
 USA Underground Service Alert
 VAR Varies, Variable
 VB Valve box
 VC Vertical curve
 VCP Vitrified clay pipe
 VERT Vertical
 VOL Volume
 VWD Vallecitos Water District
 W Water, Wider or Width, as applicable
 WATCH Work Area Traffic Control Handbook
 WI Wrought iron
 WM Water meter
 WPJ Weakened plane joint
 XCONN Cross connection
 XSEC Cross section

1-3.3 Institutions.

Abbreviation

Word or Words

AASHTO American Association of State Highway and Transportation Officials
 ACI American Concrete Institute
 AISC American Institute of Steel Construction
 ANSI American National Standards Institute
 AREA American Railway Engineering Association
 ASME American Society of Mechanical Engineers
 ASQ American Society for Quality
 ASTM American Society for Testing and Materials
 AWPA American Wood Preservers Association
 AWS American Welding Society
 AWWA American Water Works Association
 EEI Edison Electric Institute
 EIA Electronic Industries Alliance
 EPA Environmental Protection Agency
 ETL Electrical Testing Laboratories
 FCC Federal Communications Commission
 FHWA Federal Highway Administration
 GRI Geosynthetic Research Institute
 IEEE Institute of Electrical and Electronics Engineers
 IMSA International Municipal Signal Association
 ISSA International Slurry Surfacing Association



ITE	Institute of Transportation Engineers
NCHRP	National Cooperative Highway Research Program
NEMA	National Electrical Manufacturers Association
NSF	National Science Foundation
OSHA	Occupational Safety and Health Administration
PPI	Plastics Pipe Institute
RUS	Rural Utilities Service
SAE	Society of Automotive Engineers
SSPC	Society for Protective Coatings
UL	Underwriters' Laboratories Inc.

1-4 UNITS OF MEASURE.

1-4.1 General. U.S. Standard Measures, also called U.S. Customary System, are the principal measurement system in these specifications. However, certain material specifications and test requirements contained herein use SI units specifically and conversions to U.S. Standard Measures may or may not have been included in these circumstances. When U.S. Standard Measures are not included in parenthesis, then the SI units shall control. S.I. units and U.S. Standard Measures in parenthesis may or may not be exactly equivalent.

Reference is also made to ASTM E 380 for definitions of various units of the SI system and a more extensive set of conversion factors.

1-4.2 Units of Measure and Their Abbreviations.

<u>U.S. Customary Unit</u> <u>(Abbreviations)</u>	(Equal To)	<u>SI Unit</u> <u>(Abbreviations)</u>
1 mil (=0.001 in)		25.4 micrometer (µm)
1 inch (in)		25.4 millimeter (mm)
1 inch (in)		2.54 centimeter (cm)
1 foot (ft)		0.3048 meter (m)
1 yard (yd)		0.9144 meter (m)
1 mile (mi)		1.6093 kilometer (km)
1 square foot (ft ²)		0.0929 square meter (m ²)
1 square yard (yd ²)		0.8361 square meter (m ²)
1 cubic foot (ft ³)		0.0283 cubic meter (m ³)
1 cubic yard (yd ³)		0.7646 cubic meter (m ³)
1 acre		0.4047 hectare (ha)
1 U.S. gallon (gal)		3.7854 Liter (L)
1 fluid ounce (fl. oz.)		29.5735 millileter (mL)
1 pound mass (lb) (avoirdupois)		0.4536 kilogram (kg)
1 ounce mass (oz)		0.02835 kilogram (kg)
1 Ton (=2000 lb avoirdupois)		0.9072 Tonne (= 907 kg)
1 Poise		0.1 pascal · second (Pa · s)
1 centistoke (cs)		1 square millimeters per second (mm ² /s)
1 pound force (lbf)		4.4482 Newton (N)
1 pounds per square inch (psi)		6.8948 Kilopascal (kPa)
1 pound force per foot (lbf/ft)		1.4594 Newton per meter (N/m)
1 foot-pound force (ft-lbf)		1.3558 Joules (J)
1 foot-pound force per second ([ft-lbf]/s)		1.3558 Watt (W)
1 part per million (ppm)		1 milligram/liter (mg/L)

Temperature Units and Abbreviations

Degree Fahrenheit (°F):	Degree Celsius (°C):
°F = (1.8 x °C) + 32	°C = (°F – 32)/1.8



SI Units (abbreviation) Commonly Used in Both Systems

- 1 Ampere (A)
- 1 Volt (V)
- 1 Candela (cd)
- 1 Lumen (lm)
- 1 second (s)

Common Metric Prefixes

kilo (k)	10 ³
centi (c)	10 ⁻²
milli (m)	10 ⁻³
micro (μ)	10 ⁻⁶
nano (n)	10 ⁻⁹
pico (p)	10 ⁻¹²

1-5 SYMBOLS

- Δ Delta, the central angle or angle between tangents
- ∠ Angle
- % Percent
- ' Feet or minutes
- " Inches or seconds
- 1 Number
- / per or (between words)
- ° Degree
- PL** Property line
- CL** Centerline
- SL** Survey line or station line



SECTION 2 – SCOPE AND CONTROL OF WORK

2-1 AWARD AND EXECUTION OF CONTRACT. Award and execution of Contract will be as provided for in the Specifications, Instruction to Bidders, or Notice Inviting Bids.

2-2 ASSIGNMENT. No Contract or portion thereof may be assigned without consent of the Board, except that the Contractor may assign money due or which will accrue to it under the Contract. If given written notice, such assignment will be recognized by the Board to the extent permitted by law. Any assignment of money shall be subject to all proper withholdings in favor of the Agency and to all deductions provided for in the Contract. All money withheld, whether assigned or not, shall be subject to being used by the Agency for completion of the Work, should the Contractor be in default.

2-3 SUBCONTRACTS.

2-3.1 General. Each Bidder shall comply with the Chapter of the Public Contract Code including Sections 4100 through 4113. The following excerpts or summaries of some of the requirements of this Chapter are included below for information:

The Bidder shall set forth in the Bid, as provided in 4104:

“(a) The name and location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvements, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor’s total bid, or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor’s total bid or ten thousand dollars (\$10,000), whichever is greater.”

“(b) The portion of the work which will be done by each such subcontractor under this act. The prime contractor shall list only one subcontractor for each such portion as is defined by the prime contractor in his bid.”

If the Contractor fails to specify a Subcontractor, or specifies more than one Subcontractor for the same portion of the work to be performed under the Contract (in excess of one-half of 1 percent of the Contractor’s total Bid), the Contractor shall be qualified to perform that portion itself, and shall perform that portion itself, except as otherwise provided in the Code.

As provided in Section 4107, no Contractor whose Bid is accepted shall substitute any person as Subcontractor in place of the Subcontractor listed in the original Bid, except for causes and by procedures established in Section 4107.5. This section provides procedures to correct a clerical error in the listing of a Subcontractor.

Section 4110 provides that a Contractor violating any of the provisions of the Chapter violates the Contract and the Board may exercise the option either to cancel the Contract or assess the Contractor a penalty in an amount of not more than 10 percent of the subcontract involved, after a public hearing.



Should the Contractor fail to adhere to the provisions requiring the Contractor to complete **50 percent** of the contract price with its own organization, the Agency may at its sole discretion elect to cancel the contract or deduct an amount equal to 10 percent of the value of the work performed in excess of **50 percent** of the contract price by other than the Contractor's own organization. The Board shall be the sole body for determination of a violation of these provisions. In any proceedings under this section, the prime contractor shall be entitled to a public hearing before the Board and shall be notified ten (10) days in advance of the time and location of said hearing. The determination of the Board shall be final.

2-3.2 Additional Responsibility. The Contractor shall give personal attention to the fulfillment of the Contract and shall keep the Work under its control.

The Contractor shall perform, with its own organization, Contract work amounting to at least 50 percent of the Contract Price except that any designated "Specialty Items" may be performed by subcontract, and the amount of any such "Specialty Items" so performed may be deducted from the Contract Price before computing the amount required to be performed by the Contractor with its own organization. "Specialty Items" will be identified by the Agency in the Bid or Proposal. Where an entire item is subcontracted, the value of work subcontracted will be based on the Contract Unit Price. When a portion of an item is subcontracted, the value of work subcontracted will be based on the estimated percentage of the Contract Unit Price. This will be determined from information submitted by the Contractor, and subject to approval by the Engineer.

Before the work of any Subcontractor is started, the Contractor shall submit to the Engineer for approval a written statement showing the work to be subcontracted giving the name and business of each Subcontractor and description and value of each portion of the work to be so subcontracted.

2-3.3 Status of Subcontractors. Subcontractors shall be considered employees of the Contractor, and the Contractor shall be responsible for their work.

2-4 CONTRACT BONDS. Before execution of the Contract, the Bidder shall file surety bonds with the Agency to be approved by the Board in the amounts and for the purposes noted below. Bonds issued by a surety, who is authorized to issue bonds in California, and whose bonding limitation shown in said circular is sufficient to provide bonds in the amount required by the Contract shall be deemed to be approved unless specifically rejected by the Agency. Bonds from all other sureties shall be accompanied by all of the documents enumerated in Code of Civil Procedure 995.660 (a). The Bidder shall pay all bond premiums, costs, and incidentals.

Each bond shall incorporate, by reference, the Contract and be signed by both the Bidder and Surety and the signature of the authorized agent of the Surety shall be notarized.

The Contractor shall provide a faithful performance/warranty bond and payment bond (labor and materials bond) for this contract. The faithful performance/warranty bond shall be in a sum not less than one hundred percent of the total amount payable by the terms of this contract. The Contractor shall provide bonds to secure payment of laborers and materials suppliers in a sum not less than one hundred percent of the total amount payable by the terms of this contract.

Both bonds shall extend in full force and effect and be retained by the Agency during this project until they are released according to the provisions of this section.

The faithful performance/warranty bond will be reduced to 25 percent of the original amount 30 days after recordation of the Notice of Completion and will remain in full force and effect for the one-year warranty period and until all warranty repairs are completed to the satisfaction of the



Engineer. The bonds to secure payment of laborers and materials suppliers shall be released six months plus 30 days after recordation of the Notice of Completion if all claims have been paid.

All bonds are to be placed with a surety insurance carrier admitted and authorized to transact the business of insurance in California and whose assets exceed their liabilities in an amount equal to or in excess of the amount of the bond. The bonds are to contain the following documents:

- 1) An original, or a certified copy, of the un-revoked appointment, power of attorney, by laws, or other instrument entitling or authorizing the person who executed the bond to do so.
- 2) A certified copy of the certificate of authority of the insurer issued by the insurance commissioner.

If the bid is accepted, the Agency may require a financial statement of the assets and liabilities of the insurer at the end of the quarter calendar year prior to 30 days next preceding the date of the execution of the bond. The financial statement shall be made by an officer's certificate as defined in Section 173 of the Corporations Code. In the case of a foreign insurer, the financial statement may be verified by the oath of the principal officer or manager residing within the United States.

Should any bond become insufficient, the Contractor shall renew the bond within 10 days after receiving notice from the Agency.

Should any Surety at any time be unsatisfactory to the Board, notice will be given the Contractor to that effect. No further payments shall be deemed due or will be made under the contract until a new Surety shall qualify and be accepted by the Board.

Changes in the Work or extensions of time, made pursuant to the Contract, shall in no way release the Contractor or Surety from its obligations. Notice of such changes or extensions shall be waived by the Surety.

2-5 PLANS AND SPECIFICATIONS.

2-5.1 General. The Contractor shall keep at the Work site a copy of the Plans and Specifications, to which the Engineer shall have access at all times.

The specifications for the work include the General Provisions, Project Technical Specifications, Carlsbad Engineering Standards (CES), Standard Specifications for Public Works Construction, (SSPWC) and the latest supplements thereto, current edition at the time of bid opening as published by the "Greenbook" Committee of Public Works Standards, Inc., hereinafter designated "SSPWC", as amended.

The Plans shall consist of the construction drawings, Drawing No. 532-2 issued under this Contract.

The Standard Drawings consist of the latest edition of the San Diego Area Regional Standard Drawings, hereinafter designated SDRSD, as issued by the San Diego County Department of Public Works, together with the most recent editions of the City of Carlsbad Engineering Standards and Carlsbad Standard Drawings, as issued by the City of Carlsbad and the Carlsbad Municipal Water District, hereinafter designated as CES and CSD, respectively. Modified standard drawings, as applicable, are enclosed in the appendices to these General Provisions.

The Plans, Specifications, and other Contract Documents shall govern the Work. The Contract Documents are intended to be complementary and cooperative. Anything specified in the Specifications and not shown on the Plans or shown on the Plans and not specified in the Specifications, shall be as though shown on or specified in both.



The Plans shall be supplemented by such working drawings and shop drawings as are necessary to adequately control the Work.

The Contractor shall ascertain the existence of any conditions affecting the cost of the Work through a reasonable examination of the Work site prior to submitting the Bid.

Existing improvements visible at the Work site, for which no specific disposition is made on the Plans, but which interfere with the completion of the Work, shall be removed and disposed of by the Contractor.

The Contractor shall, upon discovering any error or omission in the Plans or Specifications, immediately call it to the attention of the Engineer.

2-5.2 Precedence of Contract Documents.

If there is a conflict in the Contract Documents, the document highest in precedence shall control. The precedence shall be the most recent edition of the following documents listed in order of highest to lowest precedence:

1. Permits from other agencies as may be required by law.
2. Change orders, whichever occurs last.
3. Contract addenda, whichever occurs last.
4. Contract
5. Supplemental Provisions
6. Carlsbad General Provisions
7. Technical Specifications
8. Plans.
9. Standards plans.
 - a. City of Carlsbad Standard Drawings.
 - b. Carlsbad Municipal Water District Standard Drawings.
 - c. City of Carlsbad modifications to the San Diego Area Regional Standard Drawings.
 - d. San Diego Area Regional Standard Drawings.
 - e. Traffic Signal Design Guidelines and Standards.
 - f. State of California Department of Transportation Standard Plans.
 - g. State of California Department of Transportation Standard Specifications.
 - h. California Manual on Uniform Traffic Control Devices (CA MUTCD).
10. Standard Specifications for Public Works Construction, as amended.
11. Reference Specifications.
12. Manufacturer's Installation Recommendations

Detail drawings shall take precedence over general drawings.

Detailed plans and plan views shall have precedence over general plans.

2-5.2.1 Precedence of Contract Documents. Where CALTRANS specifications are used to modify the SSPWC or added to the SSPWC by any of the contract documents, the CALTRANS specifications shall have precedence only in reference to the materials and construction materials referred to in the CALTRANS specifications. The Invitation to Bid, Contract for Public Works, Part 1 of these General Provisions, in the order of precedence in Section 2-5.2 of the SSPWC, shall prevail over the CALTRANS specifications in all other matters.



2-5.3 Submittals.

2-5.3.1 General. Submittals shall be provided, at the Contractor's expense, as required in 2-5.3.2, 2-5.3.3 and 2-5.3.4, when required by the Plans or Special Provisions, or when requested by the Engineer.

One electronic (PDF) file shall be submitted. If revisions are required, the Engineer will return one redlined copy for resubmission. Upon acceptance, the Engineer will return one electronic copy to the Contractor.

Materials shall neither be furnished nor fabricated, nor shall any work for which submittals are required be performed, before the required submittals have been reviewed and accepted by the Engineer. Neither review nor acceptance of submittals by the Engineer shall relieve the Contractor from responsibility for errors, omissions, or deviations from the Contract Documents, unless such deviations were specifically called to the attention of the Engineer in the letter of transmittal. The Contractor shall be responsible for the correctness of the submittals.

The Contractor shall allow a minimum of 10 working days for review of submittals unless otherwise specified in the Special Provisions. Each submittal shall be accompanied by a letter of transmittal.

Each submittal shall be consecutively numbered. Resubmittals shall be labeled with the number of the original submittal followed by an ascending alphabetical designation (e.g. The label '4-C' would indicate the third instance that the fourth submittal had been given to the Engineer). Each sheet of each submittal shall be consecutively numbered. Each set of shop drawings and submittals shall be accompanied by a letter of transmittal on the Contractor's letterhead. The Letter of Transmittal shall contain the following:

1. Project title and Agency contract number.
2. Number of complete sets.
3. Submittal number (Submittal numbers shall be consecutive including subsequent submittals for the same materials.)
4. Specification section number(s) pertaining to material submitted for review.
5. Description of the contents of the submittal.
6. Identification and description of deviations from the contract documents.
7. The signature, printed name, title and company name of the Contractor's representative.
8. Contractor's certification statement.

The Contractor shall subscribe to and shall place the following certification on all submittals:

"I hereby certify that the (equipment, material, procedure(s)) shown and marked in this submittal is that proposed to be incorporated into this Project, is in compliance with the Contract Documents, can be installed in the allocated spaces, and is submitted for approval."

or

"I hereby certify that the (equipment, material, procedure(s)) contained herein meet all requirements shown or specified in the Contract Documents, except for the following deviation(s): _____"

2-5.3.2 Working Drawings. Working drawings are drawings showing details not shown on the Plans which are required to be designed by the Contractor. Working drawings shall be of a size and scale to clearly show all necessary details.



Working drawings are required in the following sections:

TABLE 2-5.3.2 (A)

Item	Section Number	Title	Subject
1	7-10.4.1	Safety Orders	Trench Shoring
2	207-2.5	Joints	Reinforced Concrete Pipe
3	207-8.4	Joints	Vitrified Clay Pipe
4	207-10.2.1	General	Fabricated Steel Pipe
5	300-3.2	Cofferdams	Structure Excavation & Backfill
6	303-1.6.1	General	Falsework
7	303-1.7.1	General	Placing Reinforcement
8	303-3.1	General	Prestressed Concrete Construction
9	304-1.1.1	Shop Drawings	Structural Steel
10	304-1.1.2	Falsework Plans	Structural Steel
11	304-2.1	General	Metal Hand Railings
12	306-2.1	General	Jacking Operations
13	306-3.1	General	Tunneling Operations
14	306-3.4	Tunnel Supports	Tunneling Operations
15	306-6	Remodeling Existing Sewer Facilities	Polyethylene Liner Installation
16	306-8	Microtunneling	Microtunneling Operations
17	307-4.3	Controller Cabinet Wiring Diagrams	Traffic Signal Construction

Working drawings listed above as Items 5, 6, 8, 9, 10, 12, 13, 14 and 16 shall be prepared by a Civil or Structural Engineer registered by the State of California.

2-5.3.3 Shop Drawings. Shop drawings are drawings showing details of manufactured or assembled products proposed to be incorporated into the Work. Shop drawings required shall be as specified in the Special Provisions.

2-5.3.4 Supporting Information. Supporting information is information required by the Specifications for the purposes of administration of the Contract, analysis for verification of conformance with the Specifications, the operation and maintenance of a manufactured product or system to be constructed as part of the Work, and other information as may be required by the Engineer. Three hard copies and one electronic (PDF) file of the supporting information shall be submitted to the Engineer prior to the start of the Work unless otherwise specified in the Special Provisions or directed by the Engineer. Supporting information for systems shall be bound together and include all manufactured items for the system. If resubmittal is not required, one red lined copy will be returned to the Contractor. Supporting information shall consist of the following and is required unless otherwise specified in the Special Provisions:

1. List of Subcontractors per 2-3.2.
2. List of Materials per 4-1.4.
3. Certifications per 4-1.5.
4. Construction Schedule per 6-1 and Work Plan per 6-2.2.
5. Confined Space Entry Program per 7-10.4.4.
6. Concrete mix designs per 201-1.1.
7. Asphalt concrete mix designs per 203-6.1.
8. Data, including, but not limited to, catalog sheets, manufacturer's brochures, technical bulletins, specifications, diagrams, product samples, and other information necessary to describe a system, product or item. This information is required for irrigation systems, street lighting systems, and traffic signals, and may also be required for any product, manufactured item, or system.



2-5.4 Record Drawings. The Contractor shall provide and keep up-to-date a complete "as-built" record set of blue-line prints, which shall be corrected in red ink daily and show every change from the original drawings and specifications and the exact "as-built" locations, sizes and kinds of equipment, underground piping conduits, valves, and all other work not visible at surface grade. Prints for this purpose may be obtained from the Agency at cost. This set of drawings shall be kept on the job and shall be used only as a record set and shall be delivered to the Engineer within ten (10) days of completion of the work. Payment for performing the work required herein shall be included in the various bid items and no additional payment will be made therefore.

2-6 WORK TO BE DONE. The Contractor shall perform all work necessary to complete the Contract in a satisfactory manner. Unless otherwise provided, the Contractor shall furnish all materials, equipment, tools, labor, and incidentals necessary to complete the Work.

2-7 SUBSURFACE DATA. All soil and test hole data, water table elevations, and soil analyses shown on the drawings or included in the Specifications apply only at the location of the test holes and to the depths indicated. Soil test reports for test holes which have been drilled are available for inspection at the office of the Engineer. Any additional subsurface exploration shall be done by Bidders or the Contractor at their own expense.

The indicated elevation of the water table is that which existed on the date when test hole data was determined. It is the Contractor's responsibility to determine and allow for the elevation of groundwater at the time of project construction. A difference in elevation between groundwater shown in soil boring logs and groundwater actually encountered during construction will not be considered as a basis for extra work.

2-8 RIGHT-OF-WAY. Rights-of-way, easements, or rights-of-entry for the Work will be provided by the Agency. Unless otherwise provided, the Contractor shall make arrangements, pay for, and assume all responsibility for acquiring, using, and disposing of additional work areas and facilities temporarily required. The Contractor shall indemnify and hold the Agency harmless from all claims for damages caused by such actions.

2-9 SURVEYING.

2-9.1 General. The Contractor will perform and be responsible for the accuracy of surveying adequate for construction. The Contractor shall set and preserve construction survey stakes and marks for the duration of their usefulness. If any construction survey stakes are lost or disturbed and need to be replaced, such replacement shall be performed at the expense of the Contractor.

The Contractor shall notify the Engineer in writing at least 2 Working Days before survey services in connection with the laying out of any portion of the Work. The Contractor shall dig all holes necessary for line and grade stakes.

Unless otherwise specified in the Special Provisions, stakes will be set and stationed for curbs, headers, sewers, storm drains, structures, and rough grade. A corresponding cut or fill to finished grade (or flowline) will be indicated on a grade sheet.

2-9.2 Permanent Survey Markers. The Contractor shall not cover or disturb permanent survey monuments or benchmarks without the consent of the Engineer. Where the Engineer concurs, in writing, with the Contractor that protecting an existing monument in place is impractical, the Contractor shall employ a licensed land surveyor or a registered civil engineer authorized to practice land surveying within the State of California, hereinafter Surveyor, to establish the location of the monument before it is disturbed. The Contractor shall have the monument replaced by the Surveyor no later than thirty (30) days after construction at the site of the replacement is



completed. The Surveyor shall file corner record(s) as required by §§ 8772 and 8773, et seq. of the California Business and Professions Code.

When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the Contractor shall adjust the monument frame and cover to the new grade within 7 days of paving unless the Engineer shall approve otherwise. Monument frames and covers shall be protected during street sealing or painting projects or be cleaned to the satisfaction of the Engineer.

2-9.3 Line and Grade. The Work shall conform to the lines, elevations, and grades shown on the Plans.

Three consecutive points set on the same slope shall be used together so that any variation from a straight grade can be detected. Any such variation shall be reported to the Engineer. In the absence of such report, the Contractor shall be responsible for any error in the grade of the Work.

Grades for underground conduits will be set at the surface of the ground. The Contractor shall transfer them to the bottom of the trench.

2-9.4 Payment for Survey, Payment for survey work shall be included in the bid items requiring the survey work and no additional payment will be made. Extension of unit prices for extra work shall include full compensation for attendant survey work and no additional payment will be made. Payment for the replacement of disturbed monuments and the filing of records of survey and/or corner records, including filing fees, shall be incidental to the work necessitating the disturbance of said monuments and no additional payment will be made.

2-10 AUTHORITY OF BOARD AND ENGINEER. The Board has the final authority in all matters affecting the Work. Within the scope of the Contract, the Engineer has the authority to enforce compliance with the Plans and Specifications. The Contractor shall promptly comply with instructions from the Engineer or an authorized representative.

The decision of the Engineer is final and binding on all questions relating to quantities; acceptability of material, equipment, or work; execution, progress or sequence of work; and interpretation of the Plans, Specifications, or other drawings. This shall be precedent to any payment under the Contract, unless otherwise ordered by the Board.

2-10.1 Availability of Records, The Contractor shall, at no charge to the Agency, provide copies of all records in the Contractor's or subcontractor's possession pertaining to the work that the Engineer may request.

2-10.2 Audit and Inspection, Contractor agrees to maintain and/or make available, to the Engineer, within San Diego County, accurate books and accounting records relative to all its activities and to contractually require all subcontractors to this Contract to do the same. The Engineer shall have the right to monitor, assess, and evaluate Contractor's and its subcontractors' performance pursuant to this Agreement, said monitoring, assessments, and evaluations to include, but not be limited to, audits, inspection of premises, reports, contracts, subcontracts and interviews of Contractor's staff and the staff of all subcontractors to this contract. At any time during normal business hours and as often as the Engineer may deem necessary, upon reasonable advance notice, Contractor shall make available to the Engineer for examination, all of its, and all subcontractors to this contract, records with respect to all matters covered by this Contract and will permit the Engineer to audit, examine, copy and make excerpts or transcripts from such data and records, and to make audits of all invoices, materials, payrolls, records of personnel, and other data relating to all matters covered by this Contract. However, any such



activities shall be carried out in a manner so as to not unreasonably interfere with Contractor's ongoing business operations. Contractor and all subcontractors to this contract shall maintain such data and records for as long as may be required by applicable laws and regulations.

2-11 INSPECTION. The Work is subject to inspection and approval by the Engineer. The Contractor shall notify the Engineer before noon of the working day before inspection is required. Work shall be done only in the presence of the Engineer, unless otherwise authorized. Any work done without proper inspection will be subject to rejection. The Engineer and any authorized representatives shall at all times have access to the Work during its construction at shops and yards as well as the project site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with these specifications. Inspection of the Work shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract.



SECTION 3 – CHANGES IN WORK

3-1 CHANGES REQUESTED BY THE CONTRACTOR.

3-1.1 General. Changes in the Plans and Specifications, requested in writing by the Contractor, which do not materially affect the Work and which are not detrimental to the Work or to the interests of the Agency, may be granted by the Engineer. Nothing herein shall be construed as granting a right to the Contractor to demand acceptance of such changes.

3-1.2 Payment for Changes Requested by the Contractor. If such changes are granted, they shall be made at a reduction in cost or no additional cost to the Agency.

3-2 CHANGES INITIATED BY THE AGENCY.

3-2.1 General. The Agency may change the Plans, Specifications, character of the work, or quantity of work provided the total arithmetic dollar value of all such changes, both additive and deductive, does not exceed 25 percent of the Contract Price. Should it become necessary to exceed this limitation, the change shall be by written Supplemental Agreement between the Contractor and Agency, unless both parties agree to proceed with the change by Change Order.

Change Orders shall be in writing and state the dollar value of the change or established method of payment, any adjustment in contract time of completion, and when negotiated prices are involved, shall provide for the Contractor's signature indicating acceptance.

3-2.2 Payment.

3-2.2.1 Contract Unit Prices. If a change is ordered in an item of work covered by a Contract Unit Price, and such change does not involve substantial change in character of the work from that shown on the Plans or specified in the Specifications, then an adjustment in payment will be made. This adjustment will be based upon the increase or decrease in quantity and the Contract Unit Price.

If the actual quantity of an item of work covered by a Contract Unit Price and constructed in conformance with the Plans and Specifications varies from the Bid quantity by 50 percent or less, payment will be made at the Contract Unit Price. If the actual quantity of said item of work varies from the Bid quantity by more than 50 percent, payment will be made per Section 3-2.2.2 or 3-2.2.3 as appropriate.

If a change is ordered in an item of work covered by a Contract Unit Price, and such change does involve a substantial change in the character of the work from that shown on the Plans or specified in the Specifications, an adjustment in payment will be made per Section 3-2.4.

3-2.2.2 Increases of More Than 50 Percent. Should the actual quantity of an item of work covered by a Contract Unit Price and constructed in conformance with the Plans and Specifications, exceed the Bid quantity by more than 50 percent, payment for the quantity in excess of 125 percent of the Bid quantity will be made on the basis of an adjustment in the Contract Unit Price mutually agreed to by the Contractor and the Agency, or at the option of the Engineer, on the basis of Extra Work per Section 3-3. The Extra Work per Section 3-3, basis of payment, shall not include fixed costs. Fixed costs shall be deemed to have been recovered by the Contractor through payment for 150 percent of the Bid quantity at the Contract Unit Price.



3-2.2.3 Decreases of More Than 50 Percent. Should the actual quantity of an item of work covered by a Contract Unit Price, and constructed in conformance with the Plans and Specifications, be less than 50 percent of the Bid quantity, an adjustment in payment will not be made unless so requested in writing by the Contractor. If the Contractor so requests, payment will be made on the basis of an adjustment in the Contract Unit Price mutually agreed to by the Contractor and the Agency, or at the option of the Engineer, on the basis of Extra Work per Section 3-3; however, in no case will payment be less than would be made for the actual quantity at the Contract Unit Price nor more than would be made for 50 percent of the Bid quantity at the Contract Unit Price.

3-2.3 Stipulated Unit Prices. Stipulated Unit Prices are unit prices established by the Agency in the Contract Documents as distinguished from Contract Unit Prices submitted by the Contractor. Stipulated Unit Prices may be used for the adjustment of Contract changes when so specified in the Special Provisions.

3-2.4 Agreed Prices. Agreed Prices are prices for new or unforeseen work, or adjustments in Contract Unit Prices per Section 3-2.2, established by mutual agreement between the Contractor and the Agency. If mutual agreement cannot be reached, the Engineer may direct the Contractor to proceed on the basis of Extra Work in accordance per Section 3-3, except as otherwise specified in Sections 3-2.2.2 and 3-2.2.3.

3.2.4.1 Schedule of Values. Prior to construction, Contractor shall provide a schedule of values for all lump sum bid items that shall be used for the purpose of progress payments. The prices shall be valid for the purpose of change orders to the project.

3.2.5 Eliminated Items. Should any Bid item be eliminated in its entirety, payment will be made to the Contractor for its actual costs incurred in connection with the eliminated item prior to notification in writing from the Engineer so stating its elimination. If material conforming to the Plans and Specifications is ordered by the Contractor for use in the eliminated item prior to the date of notification of elimination by the Engineer, and if the order for that material cannot be canceled, payment will be made to the Contractor for the actual cost of the material. In this case, the material shall become the property of the Agency. Payment will be made to the Contractor for its actual costs for any further handling. If the material is returnable, the material shall be returned and payment will be made to the Contractor for the actual cost of charges made by the supplier for returning the material and for handling by the Contractor. Actual costs, as used herein, shall be computed on the basis of Extra Work per Section 3-3.

3-3 EXTRA WORK.

3-3.1 General. New or unforeseen work will be classified as “extra work” when the Engineer determines that it is not covered by Contract Unit Prices or stipulated unit prices.

3-3.2 Payment.

3-3.2.1 General. When the price for the extra work cannot be agreed upon, the Agency will pay for the extra work based on the accumulation of costs as provided herein.

3-3.2.2 Basis for Establishing Costs.

(a) **Labor.** The costs of labor will be the actual cost for wages of workers performing the extra work at the time the extra work is done, plus employer payments of payroll taxes, workers compensation insurance, liability insurance, health and welfare, pension, vacation, apprenticeship



funds, and other direct costs, resulting from Federal, State, or local laws, as well as assessments or benefits required by lawful collective bargaining agreements.

The use of a labor classification which would increase the extra work cost will not be permitted unless the Contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental. The labor cost for foremen shall be proportioned to all of their assigned work and only that applicable to extra work will be paid.

Nondirect labor costs, including superintendence, shall be considered part of the markup of Section 3-3.2.3 (a).

(b) **Materials.** The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the job site in the quantities involved, plus sales tax, freight, and delivery.

The Agency reserves the right to approve materials and sources of supply, or to supply materials to the Contractor if necessary, for the progress of the Work. No markup shall be applied to any material provided by the Agency.

(c) **Tool and Equipment Rental.** No payment will be made for the use of tools which have a replacement value of \$200 or less.

Regardless of ownership, the rates and right-of-way delay factors to be used in determining rental and delay costs shall be the edition of the, "Labor Surcharge and Equipment Rental Rates" published by CALTRANS, current at the time of the actual use of the tool or equipment. The right-of-way delay factors therein shall be used as multipliers of the rental rates for determining the value of costs for delay to the Contractor and subcontractors, if any. The labor surcharge rates published therein are not a part of this contract.

The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the extra work shall be included.

If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the Agency than holding it at the Work site, it shall be returned, unless the Contractor elects to keep it at the Work site, at no expense to the Agency.

All equipment shall be acceptable to the Engineer, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and approved modifications shall be used to classify equipment and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

The reported rental time for equipment already at the Work site shall be the duration of its use on the extra work. This time begins when equipment is first put into actual operation on the extra work, plus the time required to move it from its previous site and back, or to a closer site.

(d) **Other Items.** The Agency may authorize other items which may be required on the extra work, including labor, services, material, and equipment. These items must be different in their nature from those required for the Work and be of a type not ordinarily available from the Contractor or Subcontractors.



Invoices covering all such items in detail shall be submitted with the request for payment.

(e) **Invoices.** Vendors' invoices for material, equipment rental and other expenditures shall be submitted with the request for payment. If the request for payment is not substantiated by invoices or other documentation, the Agency may establish the cost of the item involved at the lowest price which was current at the time of the report.

3-3.2.3 Markup.

(a) **Work by Contractor.** The following percentages shall be added to the Contractor's costs and shall constitute the markup for all overhead and profits:

1. Labor 20
2. Materials 15
3. Equipment Rental 15
4. Other Items and Expenditures ... 15

To the sum of the costs and markups provided for in this section, 1 percent shall be added as compensation for bonding.

(b) **Work by Subcontractor.** When all or any part of the extra work is performed by a Subcontractor, the markup established in Section 3-3.2.3(a) shall be applied to the Subcontractor's actual cost of such work. A markup of 10 percent on the first \$5,000 of the subcontracted portion of the extra work and a markup of 5 percent on work added in excess of \$5,000 of the subcontracted portion of the extra work may be added by the Contractor.

3-3.3 Daily Reports by Contractor. When the price for the extra work cannot be agreed upon, the Contractor shall submit a daily report to the Engineer on forms approved by the Agency. Included are applicable delivery tickets, listing all labor, materials, and equipment involved for that day, and other services and expenditures when authorized. Payment for extra work will not be made until such time that the Contractor submits completed daily reports and all supporting documents to the Engineer. Failure to submit the daily report by the close of the next working day may waive any rights for that day. An attempt shall be made to reconcile the report daily, and it shall be signed by the Engineer and the Contractor. In the event of disagreement, pertinent notes shall be entered by each party to explain points which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by Subcontractors or others shall be submitted through the Contractor.

The report shall:

1. Show names of workers, classifications, and hours worked.
2. Describe and list quantities of materials used.
3. Show type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable.
4. Describe other services and expenditures in such detail as the Agency may require.

3-4 CHANGED CONDITIONS. The Contractor shall promptly notify the Engineer of the following Work site conditions (hereinafter called changed conditions), in writing, upon their discovery and before they are disturbed:

1. Subsurface or latent physical conditions differing materially from those represented in the Contract Documents; and

2. Unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character being performed; and
3. Material differing from that represented in the Contract which the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

The Engineer will promptly investigate conditions which appear to be changed conditions. If the Engineer determines that conditions are changed conditions and they will materially affect performance time, the Contractor, upon submitting a written request, will be granted an extension of time subject to the provisions of 6-6.

If the Engineer determines that the conditions do not justify an adjustment in compensation, the Contractor will be notified in writing. This notice will also advise the Contractor of its obligation to notify the Engineer in writing if the Contractor disagrees.

The Contractor's failure to give notice of changed conditions promptly upon their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith.

The Contractor shall not be entitled to the payment of any additional compensation for any act, or failure to act, by the Engineer, including failure or refusal to issue a change order, or for the happening of any event, thing, occurrence, or other cause, unless the Contractor shall have first given the Engineer due written notice of potential claim as hereinafter specified. Compliance with this section shall not be required as a prerequisite to notice provisions in Section 6-7.3 Contract Time Accounting, nor to any claim that is based on differences in measurement or errors of computation as to contract quantities. The written notice of potential claim for changed conditions shall be submitted by the Contractor to the Engineer upon their discovery and prior to the time that the Contractor performs the work giving rise to the potential claim. The Contractor's failure to give written notice of potential claim for changed conditions to the agency upon their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith.

The Contractor shall provide the District with a written document containing a description of the particular circumstances giving rise to the potential claim, the reasons for which the Contractor believes additional compensation may be due and nature of any and all costs involved within 20 working days of the date of service of the written notice of potential claim for changed conditions. Verbal notifications are disallowed.

The potential claim shall include the following certification relative to the California False Claims Act, Government Code Sections 12650-12655:

"The undersigned certifies that the above statements are made in full cognizance of the California False Claims Act, Government Code Sections 12650-12655. The undersigned further understands and agrees that this potential claim, unless resolved, must be restated as a claim in response to the City's proposed final estimate in order for it to be further considered."

By: _____ Title: _____

Date: _____

Company Name: _____



The Contractor's estimate of costs may be updated when actual costs are known. The Contractor shall submit substantiation of its actual costs to the Engineer within 20 working days after the affected work is completed. Failure to do so shall be sufficient cause for denial of any claim subsequently filed on the basis of said notice of potential claim.

It is the intention of this section that differences between the parties arising under and by virtue of the contract be brought to the attention of the Engineer at the earliest possible time in order that such matters be settled, if possible, or other appropriate action promptly taken.

3-5 DISPUTED WORK. The Contractor shall give the agency written notice of potential claim prior to commencing any disputed work. Failure to give said notice shall constitute a waiver of all claims in connection therewith. If the contractor and the agency are unable to reach agreement on disputed work, the Agency may direct the contractor to proceed with the work.

Prior to proceeding with dispute resolution pursuant to Public Contract Code provisions specified hereinafter, the contractor shall attempt to resolve all disputes informally through the following dispute resolution chain of command:

1. Project Inspector
2. Construction Manager
3. Deputy City Engineer
4. District Engineer
5. Executive Manager, Carlsbad Municipal Water District

The Contractor shall submit a complete report within 20 working days after completion of the disputed work stating its position on the claim, the contractual basis for the claim, along with all documentation supporting the costs and all other evidentiary materials. At each level of claim or appeal of claim the District will, within 10 working days of receipt of said claim or appeal of claim, review the Contractor's report and respond with a position, request additional information or request that the Contractor meet and present its report. When additional information or a meeting is requested the District will provide its position within 10 working days of receipt of said additional information or Contractor's presentation of its report. The Contractor may appeal each level's position up to the Executive Manager after which the Contractor may proceed under the provisions of the Public Contract Code.

The authority within the dispute resolution chain of command is limited to recommending a resolution to a claim to the Executive Manager. Actual approval of the claim is subject to the change order provisions in the contract.

All claims by the -Contractor shall be resolved in accordance with Public Contract Code section 9204, which is set forth below:

9204. (a) The Legislature finds and declares that it is in the best interests of the state and its citizens to ensure that all construction business performed on a public works project in the state that is complete and not in dispute is paid in full and in a timely manner.

(b) Notwithstanding any other law, including, but not limited to, Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, Chapter 10 (commencing with Section 19100) of Part 2, and Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, this section shall apply to any claim by a contractor in connection with a public works project.



(c) For purposes of this section:

(1) "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

(A) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.

(B) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.

(C) Payment of an amount that is disputed by the public entity.

(2) "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.

(3) (A) "Public entity" means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency.

(B) "Public entity" shall not include the following:

(i) The Department of Water Resources as to any project under the jurisdiction of that department.

(ii) The Department of Transportation as to any project under the jurisdiction of that department.

(iii) The Department of Parks and Recreation as to any project under the jurisdiction of that department.

(iv) The Department of Corrections and Rehabilitation with respect to any project under its jurisdiction pursuant to Chapter 11 (commencing with Section 7000) of Title 7 of Part 3 of the Penal Code.

(v) The Military Department as to any project under the jurisdiction of that department.

(vi) The Department of General Services as to all other projects.

(vii) The High-Speed Rail Authority.

(4) "Public works project" means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.

(5) "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.

(d) (1) (A) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision.

(B) The claimant shall furnish reasonable documentation to support the claim.

(C) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.

(D) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.

(2) (A) If the claimant disputes the public entity's written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in



dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(B) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

(C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

(D) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

(E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.

(3) Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.

(4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.

(5) If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

(e) The text of this section or a summary of it shall be set forth in the plans or specifications for any public works project that may give rise to a claim under this section.

(f) A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as



applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.

(g) This section applies to contracts entered into on or after January 1, 2017.

(h) Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

(i) This section shall remain in effect only until January 1, 2020, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2020, deletes or extends that date.

In addition, all claims by Contractor for \$375,000 or less shall be resolved in accordance with the procedures in the Public Contract Code, Division 2, Part 3, Chapter 1, Article 1.5 (commencing with Section 20104) which is set forth below

ARTICLE 1.5 RESOLUTION OF CONSTRUCTION CLAIMS

20104. (a)(1) This article applies to all public works claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between a contractor and a local agency.

(2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.

(b)(1) "Public work" has the same meaning as in Sections 3100 and 3106 of the Civil Code, except that "public work" does not include any work or improvement contracted for by the state or the Regents of the University of California.

(2) "Claim" means a separate demand by the contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the local agency.

(c) The provisions of this article or a summary thereof shall be set forth in the plans or specifications for any work which may give rise to a claim under this article.

(d) This article applies only to contracts entered into on or after January 1, 1991.

20104.2. For any claim subject to this article, the following requirements apply:

(a) The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

(b)(1) For claims of less than fifty thousand dollars (\$50,000), the local agency shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.



(c)(1) For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the local agency shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

(d) If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the local agency shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(e) Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

(f) This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

20104.4. The following procedures are established for all civil actions filed to resolve claims subject to this article:

(a) Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

(b)(1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil procedure) shall apply to any proceeding brought under the subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.

(3) In addition to Chapter 2.5 (commencing with Section 1141.10) Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but



does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

(c) The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

20104.6. (a) No local agency shall fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in the contract.

(b) In any suit filed under Section 20104.4, the local agency shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

Although not to be construed as proceeding under extra work provisions, the Contractor shall keep and furnish records of disputed work in accordance with Section 3-3.



SECTION 4 – CONTROL OF MATERIALS

4-1 MATERIALS AND WORKMANSHIP.

4-1.1. General. All materials, parts, and equipment furnished by the Contractor in the Work shall be new, high grade, and free from defects. Quality of work shall be in accordance with the generally accepted standards. Material and work quality shall be subject to the Engineer's approval.

Materials and work quality not conforming to the requirements of the Specifications shall be considered defective and will be subject to rejection. Defective work or material, whether in place or not, shall be removed immediately from the site by the Contractor, at its expense, when so directed by the Engineer.

If the Contractor fails to replace any defective or damaged work or material after reasonable notice, the Engineer may cause such work or materials to be replaced. The replacement expense will be deducted from the amount to be paid to the Contractor.

Used or secondhand materials, parts, and equipment may be used only if permitted by the Specifications.

4-1.2 Protection of Work and Materials. The Contractor shall provide and maintain storage facilities and employ such measures as will preserve the specified quality and fitness of materials to be used in the Work. Stored materials shall be reasonably accessible for inspection. The Contractor shall also adequately protect new and existing work and all items of equipment for the duration of the Contract.

The Contractor shall not, without the Agency's consent, assign, sell, mortgage, hypothecate, or remove equipment or materials which have been installed or delivered and which may be necessary for the completion of the Contract.

4-1.3 Inspection Requirements.

4-1.3.1 General. Unless otherwise specified, inspection is required at the source for such typical materials and fabricated items as bituminous paving mixtures, structural concrete, metal fabrication, metal casting, welding, concrete pipe manufacture, protective coating application, and similar shop or plant operations.

Steel pipe in sizes less than 6 inches and vitrified clay and cast-iron pipe in all sizes are acceptable upon certification as to compliance with the Specifications, subject to sampling and testing by the Agency. Standard items of equipment such as electric motors, conveyors, elevators, plumbing fixtures, etc., are subject to inspection at the job site only. Special items of equipment such as designed electrical panel boards, large pumps, sewage plant equipment, etc., are subject to inspection at the source, normally only for performance testing. The Specifications may require inspection at the source for other items not typical of those listed in this section.

The Contractor shall provide the Engineer free and safe access to any and all parts of work at any time. Such free and safe access shall include means of safe access and egress, ventilation, lighting, shoring, dewatering and all elements pertaining to the safety of persons as contained in the State of California, California Code of Regulations, Title 8, Industrial Relations, Chapter 4, Division of Industrial Safety, Subchapter 4, Construction Safety Orders and such other safety regulations as may apply. Contractor shall furnish Engineer with such information as may be



necessary to keep the Engineer fully informed regarding progress and manner of work and character of materials. Inspection or testing of the whole or any portion of the work or materials incorporated in the work shall not relieve Contractor from any obligation to fulfill this Contract.

4-1.3.2 Inspection of Materials Not Locally Produced. When the Contractor intends to purchase materials, fabricated products, or equipment from sources located more than 50 miles outside the geographical limits of the Agency, an inspector or accredited testing laboratory (approved by the Engineer), shall be engaged by the Contractor at its expense, to inspect the materials, equipment or process. This approval shall be obtained before producing any material or equipment. The inspector or representative of the testing laboratory shall judge the materials by the requirements of the Plans and Specifications. The Contractor shall forward reports required by the Engineer. No material or equipment shall be shipped nor shall any processing, fabrication or treatment of such materials be done without proper inspection by the approved agent. Approval by said agent shall not relieve the Contractor of responsibility for complying with the Contract requirements.

4-1.3.3 Inspection by the Agency. The Agency will provide all inspection and testing laboratory services within 50 miles of the geographical limits of the Agency. For private contracts, all costs of inspection at the source, including salaries and mileage costs, shall be paid by the permittee.

4-1.4 Test of Material. Before incorporation in the Work, the Contractor shall submit samples of materials, as the Engineer may require, at no cost to the Agency. The Contractor, at its expense, shall deliver the materials for testing to the place and at the time designated by the Engineer. Unless otherwise provided, all initial testing will be performed under the direction of the Engineer, and at no expense to the Contractor. If the Contractor is to provide and pay for testing, it will be stated in the Specifications. For private contracts, the testing expense shall be borne by the permittee.

The Contractor shall notify the Engineer in writing, at least 15 days in advance, of its intention to use materials for which tests are specified, to allow sufficient time to perform the tests. The notice shall name the proposed supplier and source of material.

If the notice of intent to use is sent before the materials are available for testing or inspection, or is sent so far in advance that the materials on hand at the time will not last but will be replaced by a new lot prior to use on the Work, it will be the Contractor's responsibility to renotify the Engineer when samples which are representative may be obtained.

Except as specified in these Provisions, the Agency will bear the cost of testing of locally produced materials and/or on-site workmanship where the results of such tests meet or exceed the requirements indicated in the Standard Specifications, Technical Specification, and any Supplemental Provisions. The cost of all other tests shall be borne by the Contractor.

At the option of the Engineer, the source of supply of each of the materials shall be approved by the Engineer before the delivery is started. All materials proposed for use may be inspected or tested at any time during their preparation and use. If, after incorporating such materials into the Work, it is found that sources of supply that have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from other approved sources. If any product proves unacceptable after improper storage, handling or for any other reason it shall be rejected, not incorporated into the work and shall be removed from the project site all at the Contractor's expense.

Compaction tests may be made by the Engineer and all costs for tests that meet or exceed the requirements of the specifications shall be borne by the Agency. Said tests may be made at any



place along the work as deemed necessary by the Engineer. The costs of any retests made necessary by noncompliance with the specifications shall be borne by the Contractor.

4-1.5 Certification. The Engineer may waive materials testing requirements of the Specifications and accept the manufacturer's written certification that the materials to be supplied meet those requirements. Material test data may be required as part of the certification.

4-1.6 Trade Names or Equals. The Contractor may supply any of the materials specified or offer an equivalent. The Engineer shall determine whether the material offered is equivalent to that specified. Adequate time shall be allowed for the Engineer to make this determination.

Whenever any particular material, process, or equipment is indicated by patent, proprietary or brand name, or by name of manufacturer, such wording is used for the purpose of facilitating its description and shall be deemed to be followed by the words "**or equal**". A listing of materials is not intended to be comprehensive, or in order of preference. The Contractor may offer any material, process, or equipment considered to be equivalent to that indicated. The substantiation of offers shall be submitted as provided in the contract documents.

The Contractor shall, at its expense, furnish data concerning items offered by it as equivalent to those specified. The Contractor shall have the material tested as required by the Engineer to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the item will fulfill its intended function.

Test methods shall be subject to the approval of the Engineer. Test results shall be reported promptly to the Engineer, who will evaluate the results and determine if the substitute item is equivalent. The Engineer's findings shall be final. Installation and use of a substitute item shall not be made until approved by the Engineer.

If a substitute offered by the Contractor is not found to be equal to the specified material, the Contractor shall furnish and install the specified material.

The specified Contract completion time shall not be affected by any circumstance developing from the provisions of this section.

The Contractor is responsible for the satisfactory performance of substituted items. If, in the sole opinion of the Engineer, the substitution is determined to be unsatisfactory in performance, appearance, durability, compatibility with associated items, availability of repair parts and suitability of application the Contractor shall remove the substituted item and replace it with the originally specified item at no cost to the Agency.

4-1.7 Weighing and Metering Equipment. All scales and metering equipment used for proportioning materials shall be inspected for accuracy and certified within the past 12 months by the State of California Bureau of Weights and Measures, by the County Director or Sealer of Weights and Measures, or by a scale mechanic registered with or licensed by the County.

The accuracy of the work of a scale service agency, except as stated herein, shall meet the standards of the California Business and Professions Code and the California Code of Regulations pertaining to weighing devices. A certificate of compliance shall be presented, prior to operation, to the Engineer for approval and shall be renewed whenever required by the Engineer at no cost to the Agency.



All scales shall be arranged so they may be read easily from the operator's platform or area. They shall indicate the true net weight without the application of any factor. The figures of the scales shall be clearly legible. Scales shall be accurate to within 1 percent when tested with the plant shut down. Weighing equipment shall be so insulated against vibration or moving of other operating equipment in the plant area that the error in weighing with the entire plant running will not exceed 2 percent for any setting nor 1.5 percent for any batch.

4-1.8 Calibration of Testing Equipment. Testing equipment, such as, but not limited to pressure gages, metering devices, hydraulic systems, force (load) measuring instruments, and strain-measuring devices shall be calibrated by a testing agency acceptable to the Engineer at intervals not to exceed 12 months and following repairs, modification, or relocation of the equipment. Calibration certificates shall be provided when requested by the Engineer.

4-1.9 Construction Materials Dispute Resolution (Soils, Rock Materials, Concrete, Mortar and Related Materials, Masonry Materials, Bituminous Materials, Rock Products, and Modified Asphalts). In the interest of safety and public value, whenever credible evidence arises to contradict the test values of materials, the Agency and the Contractor will initiate an immediate and cooperative investigation. Test values of materials are results of the materials' tests, as defined by these Specifications or by the special provisions, required to accept the Work. Credible evidence is process observations or test values gathered using industry accepted practices. A contradiction exists whenever test values or process observations of the same or similar materials are diverse enough such that the work acceptance or performance becomes suspect. The investigation shall allow access to all test results, procedures, and facilities relevant to the disputed work and consider all available information and, when necessary, gather new and additional information in an attempt to determine the validity, the cause, and if necessary, the remedy to the contradiction. If the cooperative investigation reaches any resolution mechanism acceptable to both the Agency and the Contractor, the contradiction shall be considered resolved and the cooperative investigation concluded. Whenever the cooperative investigation is unable to reach resolution, the investigation may then either conclude without resolution or continue by written notification of one party to the other requesting the implementation of a resolution process by committee. The continuance of the investigation shall be contingent upon recipient's agreement and acknowledged in writing within 3 calendar days after receiving a request. Without acknowledgement, the investigation shall conclude without resolution. The committee shall consist of three State of California Registered Civil Engineers. Within 7 calendar days after the written request notification, the Agency and the Contractor will each select one engineer. Within 14 calendar days of the written request notification, the two selected engineers will select a third engineer. The goal in selection of the third member is to complement the professional experience of the first two engineers. Should the two engineers fail to select the third engineer, the Agency and the Contractor shall each propose 2 engineers to be the third member within 21 calendar days after the written request notification. The first two engineers previously selected shall then select one of the four proposed engineers in a blind draw. The committee shall be a continuance of the cooperative investigation and will re-consider all available information and if necessary, gather new and additional information to determine the validity, the cause, and if necessary, the remedy to the contradiction. The committee will focus upon the performance adequacy of the material(s) using standard engineering principles and practices and to ensure public value, the committee may provide engineering recommendations as necessary. Unless otherwise agreed, the committee will have 30 calendar days from its formation to complete their review and submit their findings. The final resolution of the committee shall be by majority opinion, in writing, stamped and signed. Should the final resolution not be unanimous, the dissenter may attach a written, stamped, and signed minority opinion. Once started, the resolution process by committee shall continue to full conclusion unless:



1. Within 7 days of the formation of the committee, the Agency and the Contractor reach an acceptable resolution mechanism; or
2. Within 14 days of the formation of the committee, the initiating party withdraws its written notification and agrees to bear all investigative related costs thus far incurred; or
3. At any point by the mutual agreement of the Agency and the Contractor. Unless otherwise agreed, the Contractor shall bear and maintain a record for all the investigative costs until resolution. Should the investigation discover assignable causes for the contradiction, the assignable party, the Agency or the Contractor, shall bear all costs associated with the investigation. Should assignable causes for the contradiction extended to both parties, the investigation will assign costs cooperatively with each party or when necessary, equally. Should the investigation substantiate a contradiction without assignable cause, the investigation will assign costs cooperatively with each party or when necessary, equally. Should the investigation be unable to substantiate a contradiction, the initiator of the investigation shall bear all investigative costs. All claim notification requirements of the contract pertaining to the contradiction shall be suspended until the investigation is concluded.

4-2 MATERIALS TRANSPORTATION, HANDLING AND STORAGE. The Contractor shall order, purchase, transport, coordinate delivery, accept delivery, confirm the quantity and quality received, prepare storage area(s), store, handle, protect, move, relocate, remove and dispose excess of all materials used to accomplish the Work. Materials shall be delivered to the site of the work only during working hours, as defined in Section 6-7.2, and shall be accompanied by bills of lading that shall clearly state for each delivery: the name of the Contractor as consignee, the project name and number, address of delivery and name of consignor and a description of the material(s) shipped. Prior to storage of any materials which have been shipped to or by the Contractor to any location within the Agency's boundaries the Contractor shall provide the Engineer a copy of lease agreements for each property where such materials are stored. The lease agreement shall clearly state the term of the lease, the description of materials allowed to be stored and shall provide for the removal of the materials and restoration of the storage site within the time allowed for the Work. All such storage shall conform to all laws and ordinances that may pertain to the materials stored and to preparation of the storage site and the location of the site on which the materials are stored. Loss, damage or deterioration of all stored materials shall be the Contractor's responsibility. Conformance to the requirements of this section, both within and outside the limits of work are a part of the Work. The Engineer shall have the right to verify the suitability of materials and their proper storage at any time during the Work.



SECTION 5 – UTILITIES

5-1 LOCATION. The Agency and affected utility companies have, by a search of known records, endeavored to locate and indicate on the Plans, all utilities which are known to exist within the limits of the work. However, the accuracy and/or completeness of the nature, size and/or location of utilities indicated on the Plans is not guaranteed.

Where underground main distribution conduits such as water, gas, sewer, electric power, telephone, or cable television are shown on the Plans, the Contractor shall assume that every property parcel will be served by a service connection for each type of utility.

As provided in Section 4216 of the California Government Code, at least 2 working days prior to commencing any excavation, the Contractor shall contact the regional notification center (Underground Service Alert of Southern California) and obtain an inquiry identification number.

The California Department of Transportation is not required by Section 4216 to become a member of the regional notification center. The Contractor shall contact it for location of its subsurface installations.

The Contractor shall determine, by potholing, the location and depth of all utilities, including service connections, which are shown or have been marked by the respective owners and which may affect or be affected by its operations. If no separate pay item is provided in the Contract for this work, full compensation for such work shall be considered as included in the prices bid for other items of work.

5-2 PROTECTION. The Contractor shall not interrupt the service function or disturb the support of any utility without authority from the owner or order from the Agency. All valves, switches, vaults, and meters shall be maintained readily accessible for emergency shutoff.

Where protection is required to ensure support of utilities located as shown on the Plans or in accordance with Section 5-1, the Contractor shall, unless otherwise provided, furnish and place the necessary protection at its expense.

Upon learning of the existence and location of any utility omitted from or shown incorrectly on the Plans, the Contractor shall immediately notify the Engineer in writing. When authorized by the Engineer, support or protection of the utility will be paid for as provided in Section 3-2.2.3 or 3-3.

The Contractor shall immediately notify the Engineer and the utility owner if any utility is disturbed or damaged. The Contractor shall bear the costs of repair or replacement of any utility damaged if located as noted in Section 5-1.

When placing concrete around or contiguous to any non-metallic utility installation, the Contractor shall at its expense:

1. Furnish and install a 2-inch cushion of expansion joint material or other similar resilient material; or
2. Provide a sleeve or other opening which will result in a 2-inch minimum-clear annular space between the concrete and the utility; or
3. Provide other acceptable means to prevent embedment in or bonding to the concrete.

Where concrete is used for backfill or for structures which would result in embedment, or partial embedment, of a metallic utility installation; or where the coating, bedding or other cathodic protection system is exposed or damaged by the Contractor's operations, the Contractor shall



notify the Engineer and arrange to secure the advice of the affected utility owner regarding the procedures required to maintain or restore the integrity of the system.

5-3 REMOVAL. Unless otherwise specified, the Contractor shall remove all interfering portions of utilities shown on the Plans or indicated in the Bid documents as “abandoned” or “to be abandoned in place”. Before starting removal operations, the Contractor shall ascertain from the Agency whether the abandonment is complete, and the costs involved in the removal and disposal shall be included in the Bid for the items of work necessitating such removals.

5-4 RELOCATION. When feasible, the owners responsible for utilities within the area affected by the Work will complete their necessary installations, relocations, repairs, or replacements before commencement of work by the Contractor. When the Plans or Specifications indicate that a utility installation is to be relocated, altered, or constructed by others, the Agency will conduct all negotiations with the owners and work will be done at no cost to the Contractor, except for manhole frame and cover sets to be brought to grade as provided in the Standard Specifications for Public Works Construction, latest edition, and supplements thereto. Utilities which are relocated in order to avoid interference shall be protected in their position and the cost of such protection shall be included in the Bid for the items of work necessitating such relocation.

After award of the Contract, portions of utilities which are found to interfere with the Work will be relocated, altered or reconstructed by the owners, or the Engineer may order changes in the Work to avoid interference. Such changes will be paid for in accordance with Section 3-2.

When the Plans or Specifications provide for the Contractor to alter, relocate, or reconstruct a utility, all costs for such work shall be included in the Bid for the items of work necessitating such work. Temporary or permanent relocation or alteration of utilities requested by the Contractor for its convenience shall be its responsibility and it shall make all arrangements and bear all costs.

The utility owner will relocate service connections as necessary within the limits of the Work or within temporary construction or slope easements. When directed by the Engineer, the Contractor shall arrange for the relocation of service connections as necessary between the meter and property line, or between a meter and the limits of temporary construction or slope easements. The relocation of such service connections will be paid for in accordance with provisions of Section 3-3. Payment will include the restoration of all existing improvements which may be affected thereby. The Contractor may agree with the owner of any utility to disconnect and reconnect interfering service connections. The Agency will not be involved in any such agreement.

In conformance with Section 5-6 the Contractor shall coordinate the work with utility agencies and companies. Prior to the installation of any and all utility structures within the limits of work by any utility agency or company, or its contractor, the Contractor shall place all curb or curb and gutter that is a part of the work and adjacent to the location where such utility structures are shown on the plans and are noted as being located, relocated or are otherwise shown as installed by others. In order to minimize delays to the Contractor caused by the failure of other parties to relocate utilities that interfere with the construction, the Contractor, upon the Engineer’s approval, may be permitted to temporarily omit the portion of work affected by the utility. If such temporary omission is approved by the Engineer the Contractor shall place survey or other physical control markers sufficient to locate the curb or curb and gutter to the satisfaction of the utility agency or company. Such temporary omission shall be for the Contractor’s convenience and no additional compensation will be allowed therefore or for additional work, materials or delay associated with the temporary omission. The portion thus omitted shall be constructed by the Contractor immediately following the relocation of the utility involved unless otherwise directed by the Engineer.



5-5 DELAYS. The Contractor shall notify the Engineer of its construction schedule insofar as it affects the protection, removal, or relocation of utilities. Said notification shall be included as a part of the construction schedule required in Section 6-1. The Contractor shall notify the Engineer in writing of any subsequent changes in the construction schedule which will affect the time available for protection, removal, or relocation of utilities.

The Contractor will not be entitled to damages or additional payment for delays attributable to utility relocations or alterations if correctly located, noted, and completed in accordance with Section 5-1.

The Contractor may be given an extension of time for unforeseen delays attributable to unreasonably protracted interference by utilities in performing work correctly shown on the Plans.

The Agency will assume responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities within the area affected by the Work if such utilities are not identified in the Contract Documents. The Contractor will not be assessed liquidated damages for any delay caused by failure of Agency to provide for the timely removal, relocation, or protection of such existing facilities.

If the Contractor sustains loss due to delays attributable to interferences, relocations, or alterations not covered by Section 5-1, which could not have been avoided by the judicious handling of forces, equipment, or plant, there shall be paid to the Contractor such amount as the Engineer may find to be fair and reasonable compensation for such part of the Contractor's actual loss as was unavoidable and the Contractor may be granted an extension of time.

5-6 COOPERATION. When necessary, the Contractor shall so conduct its operations as to permit access to the Work site and provide time for utility work to be accomplished during the progress of the Work.

SECTION 6 – PROSECUTION, PROGRESS, AND ACCEPTANCE OF THE WORK

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK. Except as otherwise provided herein and unless otherwise prohibited by permits from other agencies as may be required by law the Contractor shall begin work within ten (10) calendar days after receipt of the "Notice to Proceed".

6-1.1 Pre-Construction Meeting. After, or upon, notification of contract award, the Engineer will set the time and location for the Preconstruction Meeting. Attendance of the Contractor's management personnel responsible for the management, administration, and execution of the project is mandatory for the meeting to be convened. Failure of the Contractor to have the Contractor's responsible project personnel attend the Preconstruction Meeting will be grounds for default by Contractor per Section 6-4. No separate payment will be made for the Contractor's attendance at the meeting. The notice to proceed will only be issued on or after the completion of the preconstruction meeting.

6-1.1.1 Baseline Construction Schedule. The Contractor shall prepare the Baseline Construction Schedule as a Critical Path Method (CPM) Schedule in the precedence diagram method (activity-on-node) format and submit the schedule in accordance with 2-5.3. The schedule shall:

- A. Be prepared using a commercially available, Windows compatible software program, "Suretrak" by Primavera or "Project" by Microsoft Corporation or approved equal.
- B. Be prepared in hard copy (paper) and electronic format (compact disc) readable by the scheduling software specified herein and free of file locking, encryption or any other protocol that would impede full access to the data. The disc shall be labeled with the project name and number, the Contractor's name and the date of preparation.
- C. Begin with the date projected for the Notice to Proceed and conclude with the date of final completion conforming with the Contract time.
- D. Depict a time-scaled network diagram of all activities, logic relationships of interdependent activities, and milestones comprising the complete period of Work with tasks on the vertical axis and their durations on the horizontal axis. Use distinctive texture patterns or line types to show the critical path within the Contract time. Include a tabular listing of each activity and its identification number, description, duration, early start, early finish, late start, late finish, total float, and all predecessor and successor activities. The number of activities will communicate the Contractor's plan for project execution, accurately describe the project work and allow monitoring and evaluation of progress and time impacts. Activity descriptions shall accurately define the work planned for the activity. Activity durations shall not be shorter than 1 working day or longer than 15 working days unless approved by the Engineer.
- E. Include detail of all project phasing, staging and sequencing including all milestones necessary to define beginning and ending of each phase or stage and constraints which may impact any activity. Include time allowances for coordination with utility companies and other agencies, equipment and material deliveries, reviews and approvals, Work performed by others, inspections, testing and commissioning, corrective work, and any non-work periods.

Float or slack time within the schedule is available without charge or compensation to whatever party or contingency first exhausts it. A schedule which shows a project duration longer than the Contract Time will not be acceptable and will be grounds to consider the Contractor in default of the Contract per 6-4.



The Engineer may choose to accept the Contractor's proposal of a project duration which is shorter than the Contract time provided the shortened Baseline Construction Schedule is reasonable and demonstrates, to the satisfaction of the Engineer, that the Agency and all other entities, public and private, which interface with the project are able to support the provisions of the shortened schedule. Acceptance of a shortened Baseline Construction Schedule will be confirmed through the execution of a Change Order revising the Contract time.

The Engineer's approval of the Baseline Construction Schedule is a condition precedent to issuance of the Notice to Proceed. If the schedule does not meet the requirements of these specifications, the Contractor shall revise the schedule and resubmit it to the Engineer. Failure to obtain the Engineer's approval of the schedule within thirty (30) working days after the date of the preconstruction meeting shall be grounds to consider the Contractor in default of the Contract per 6-4. The number of working days used by the Engineer to review the initial Baseline Construction Schedule submittal will not be included in the 30 working days. The Engineer shall complete subsequent reviews of the revised schedule and progress updates within 5 working days of receipt. The Engineer's response to each review will consist of one of the following:

"Accepted." The Contractor may proceed with the Work upon issuance of the Notice to Proceed. Payment for the schedule may be requested by the Contractor.

"Accepted with Comments." The Contractor may proceed with the Work upon issuance of the Notice to Proceed. The Contractor must revise and resubmit the schedule and receive the Engineer's acceptance of the schedule before payment for the schedule is requested by the Contractor.

"Not Accepted." The Contractor may not proceed with the Work, must revise and resubmit the schedule and may not request payment for the schedule.

6-1.1.2 Schedule Updates and Revisions. The Contractor shall meet with the Engineer during the last week of each month to agree upon the completion level of each activity as a basis for progress payments. Schedule updates shall conform with the requirements for the initial submittal in 6-1.1.1 and shall:

- A. Show the actual dates of each activity start and/or finish during the month. The schedule update shall include specific notation for any changes in actual dates after they are first reported.
- B. Report the percent complete for each activity in progress at the end of the month as determined by the Engineer.
- C. Include a list and explanation of all changes made to the activities, dates or interconnecting logic.
- D. Include activity and network revisions reflecting the Change Orders approved in the previous month as agreed upon during the review and acceptance of the Change Orders.

The Engineer's responses to the progress schedule updates shall be as described in 6-1.1.1. The Contractor shall proceed with Work and request payment for the progress schedule updates as described therein.

If the Contractor fails to submit the progress schedule updates as required herein, the Contractor may elect to proceed with the Work at its own risk and shall forfeit payment for the progress schedule update until compliance is met. If the Contractor elects to delay or cease Work after failure to submit the progress schedule updates, any resulting delay, impact, or disruption to the Work will be the Contractor's responsibility.



6-1.1.3 Interim Revisions. Should the actual or projected progress of the Work exceed 5 percent of the Contract Time, the Contractor shall prepare and submit a revised Baseline Construction Schedule independently of and prior to the next progress schedule update with a list and explanation of each change made to the schedule. The submittal, schedule review and acceptance requirements of 6-1.1.2 shall apply.

6-1.1.4 Late Completion or Milestone Dates. If a schedule update indicates a completion date later than the Contract time or contractually required milestone completion date, the Agency may withhold Liquidated Damages for the number of days late. Should a subsequent schedule update which removes all or a portion of the delay be "Accepted" by the Engineer, all or the allocated portion of the previously held Liquidated Damages shall be released in the monthly payment to the Contractor immediately following such acceptance.

6-1.1.5 Final Schedule Update. The Contractor shall prepare and submit a final schedule update when one hundred percent of the Work is completed. The update must accurately represent the actual dates for all activities. The final schedule update shall be prepared and reviewed in accordance with 6-1.1.2. Acceptance of the final schedule update is required for release of funds retained per 9-3.2.

6-1.1.6 Measurement and Payment. The Contractor's preparation, revision and maintenance of the Construction Schedule are incidental to the Work and no separate payment will be made therefore.

6-2 PROSECUTION OF WORK. To minimize public inconvenience and possible hazard and to restore street and other work areas to their original condition and state of usefulness as soon as practicable, the Contractor shall diligently prosecute the Work to completion. If the Engineer determines that the Contractor is failing to prosecute the Work to the proper extent, the Contractor shall, upon orders from the Engineer, immediately take steps to remedy the situation. All costs of prosecuting the Work as described herein shall be included in the Contractor's Bid. Should the Contractor fail to take the necessary steps to fully accomplish said purposes, after orders of the Engineer, the Engineer may suspend the work in whole or part, until the Contractor takes said steps.

As soon as possible under the provisions of the Specifications, the Contractor shall backfill all excavations and restore to usefulness all improvements existing prior to the start of the Work.

If Work is suspended through no fault of the Agency, all expenses and losses incurred by the Contractor during such suspensions shall be borne by the Contractor. If the Contractor fails to properly provide for public safety, traffic, and protection of the Work during periods of suspension, the Agency may elect to do so, and deduct the cost thereof from monies due the Contractor. Such actions will not relieve the Contractor from liability.

6-2.1 Order of Work. The work to be done shall consist of furnishing all labor, equipment and materials, and performing all operations necessary to complete the Project Work as shown on the Project Plans and as specified in the Specifications. The Contractor shall conduct the following general work activities:

1. Coordinate with Agency forces for isolation of the water main affected by the Work.
2. Excavate, remove and dispose of portions of the existing 12-inch diameter asbestos cement (AC) pipe water main and 24-inch diameter reinforced concrete pipe casing.
3. Coordinate with Agency forces during cleaning and internal inspection of the 12-inch AC water main. Agency forces will conduct cleaning and CCTV inspection of the host pipe.



4. Proof the host pipe (12-inch AC) by pulling a segment of PVC pipe with the same outside diameter as the slipline pipe through the host pipe.
5. Excavate trenches for the sliplining tail ditch, insertion pit and termination trench.
6. Slipline the existing 12-inch AC pipe with fusible PVC pipe.
7. Construct 16-inch HDPE casing and connect to existing 24-inch RCP casing on the east side of Interstate 5.
8. Hydrostatic pressure test and disinfect the fusible PVC slipline pipe.
9. Complete the connections to the existing 12-inch AC pipe water main, backfill the trench excavations and restore the site.

6-2.2 Construction Phasing. The following construction phase guidelines are provided for the Contractor's use in developing the construction schedule and a Work Plan that describes the labor, materials, equipment and procedures to conduct the Work. Portions of the Work will be performed by Agency forces as described below and the Contractor shall coordinate with and incorporate the work of the Agency. The phasing guidelines listed herein shall not relieve the Contractor from its responsibilities to coordinate and perform the Work, revise the phasing descriptions, or to develop additional phases necessary to complete the Work in its entirety in accordance with the Contract Documents.

The Contractor shall develop a detailed Work Plan describing the materials, equipment and procedures for each phase of the Work and submit the Work Plan in accordance with Section 2-5.3. Any modification of the phasing described below shall be approved by the Engineer.

Phase 1. Submit construction schedule, schedule of values, working drawings and shop drawings.

Fusible PVC pipe and fusion services are to be procured by CMWD (see Appendix A).

Phase 2. Secure necessary permits. Conduct surveying and construction staking, pre-construction video and photographs, and Underground Service Alert (DigAlert) notification for utility mark-out.

The Contractor shall comply with the conditions of the Caltrans encroachment permit (Appendix B) and the double permit to be obtained by the Contractor.

Phase 3. Submit a Utility Shutdown/Connection Request (Form E-28) with 5-day advance notice and all required information (See Appendix C). Pothole all utilities that cross or parallel (within 5 feet of) planned excavations and immediately notify the Engineer of any potential conflicts. Mobilize labor force, temporary facilities and BMPs, materials and equipment for subsequent phases of the Work.

CMWD forces will isolate the 12-inch AC host pipe on the scheduled date. The Contractor shall drain the pipeline and dewater the excavation.

Phase 4. On the west and east sides of Interstate 5, Contractor excavates and removes portions of the existing 12-inch AC pipe to enable cleaning and CCTV inspection of the host pipe (by City) and proof testing of the host pipe (by Contractor).

City forces conduct cleaning and CCTV inspection of the host pipe. The Engineer will furnish the inspection video to the Contractor for the Contractor's review. The Contractor shall notify the Engineer of any host pipe obstructions, ovality or offset pipe joints that may interfere with sliplining operations. If no such conditions are observed by the Contractor and the Contractor deems the host pipe to be suitable for sliplining, the Contractor shall proceed with Phase 5.



If conditions of concern are observed by the Contractor and are confirmed by the Engineer, the Contractor shall proceed with Phase 5B.

Phase 5. Contractor conducts proof testing of the host pipe using a PVC pipe segment not less than 18 feet in length and of the same outside diameter and wall thickness as the sliplining pipe. Contractor shall continuously record the pulling force during the proof testing along the stationing of the alignment and provide the results to the Engineer. Upon successful proof testing of the host pipe and acceptance by the Engineer, Contractor shall proceed with the next phase.

Phase 6. Agency mobilizes pipe and fusion services to fuse the slipline pipe on the west side of Interstate 5. The outside diameter of the slipline pipe will be de-beaded of the pipe fusion joints. Contractor shall allow five working days for mobilization and pipe fusion welding to be completed by the pipe supplier.

Upon completion of fusion welding, the fusible PVC pipe string shall be tested by the Contractor with low air pressure (10 psi max.) in accordance with the pipe suppliers recommended practices and prior to insertion into the host pipe.

Phase 7. On the west side of Interstate 5, Contractor excavates the tail ditch for insertion of the slipline pipe string into the 12-inch AC host pipe.

On the east side of Interstate 5, Contractor excavates the trench to remove the interfering portions of the host pipe (12-inch AC) and the 24-inch RCP casing pipe to the limits shown on the Plans. Contractor shall slurry fill and abandon in-place the remaining section of AC pipe to the limits shown on the Plans. Contractor completes excavation of the slipline termination trench to the line and grade shown on the Plans, extending the trench to the east point of connection to the existing 12-inch AC pipe water main.

At the conclusion of this phase, the tail ditch and slipline insertion pit are completed on the west side of Interstate 5, and the slipline termination trench is completed on the east side of Interstate 5.

Phase 8. On the east side of Interstate 5, Contractor installs winch and cable equipment and pulls the slipline pipe into 12-inch host pipe.

Contractor installs the 16-inch HDPE casing and connects the HDPE casing to the existing 24-inch RCP casing.

During this phase, City forces will provide, at Contractor's option and with Contractor's 5-day advance request, hydro-jetting equipment to pull the Contractor's steel cable through the 12-inch host pipe for subsequent pull-back during the sliplining operation.

Phase 9. Contractor backfills the tail ditch on the west side of Interstate 5 and extends the insertion pit excavation west to expose the existing 12-inch AC pipe as shown in the Plans. Contractor removes remaining 12-inch AC to the connection to the existing 12-inch PVC.

Phase 10. Contractor conducts hydrostatic pressure test and disinfects the new fusible PVC slipline.

Temporary water meter and water source to be provided by Agency.

Phase 11. Contractor installs appurtenances, thrust block as shown on the Plans and connects new fusible PVC pipe to existing water mains on the east and west connection points.

Phase 12. Contractor backfills all excavations and restores the site to the condition existing prior to the start of Work and to the satisfaction of the Engineer.

Phase 5B. If the CCTV inspection video conducted in Phase 4 reveals conditions in the host pipe that may impede the sliplining operations, the Engineer may elect as follows:

1. The Engineer may substitute 8-inch fusible PVC pipe instead of 10-inch fusible PVC pipe for the sliplining operations. The Contractor shall be granted a no-cost time extension for completion of the project for the duration of the delay for procurement of smaller diameter pipe by the Agency. The Contractor shall proceed with Phase 5.
2. If repair of the host pipe is deemed infeasible by the Engineer, the Agency may cancel the sliplining work and direct the Contractor to restore the 12-inch AC water main to service including, but not limited to disinfection of the 12-inch AC water main, replacement of removed AC pipe with new 12-inch PVC pipe, backfill the excavations and restore the site in accordance with the Contract Documents.

6-2.3 Project Meetings. The Engineer will establish the time and location of weekly Project Meetings. The Contractor's Representative shall attend each Project Meeting. The Project Representative shall be the individual determined under Section 7-6, "The Contractor's Representative". No separate payment for attendance of the Contractor, the Contractor's Representative or any other employee or subcontractor or subcontractor's employee at these meetings will be made.

6-3 SUSPENSION OF WORK.

6-3.1 General. The Work may be suspended in whole or in part when determined by the Engineer that the suspension is necessary in the interest of the Agency. The Contractor shall comply immediately with any written order of the Engineer. Such suspension shall be without liability to the Contractor on the part of the Agency except as otherwise specified in Section 6-6.3.

6-3.2 Archaeological and Paleontological Discoveries. If discovery is made of items of archaeological or paleontological interest, the Contractor shall immediately cease excavation in the area of discovery and shall not continue until ordered by the Engineer. When resumed, excavation operations within the area of discovery shall be as directed by the Engineer.

Discoveries which may be encountered may include, but not be limited to, dwelling sites, stone implements or other artifacts, animal bones, human bones, and fossils.

The Contractor shall be entitled to an extension of time and compensation in accordance with the provisions of Section 6-6.

6-4 DEFAULT BY CONTRACTOR. If the Contractor fails to begin delivery of material and equipment, to commence the Work within the time specified, to maintain the rate of delivery of material, to execute the Work in the manner and at such locations as specified, or fails to maintain the Work schedule which will insure the Agency's interest, or, if the Contractor is not carrying out the intent of the Contract, the Agency may serve written notice upon the Contractor and the Surety on its Faithful Performance Bond demanding satisfactory compliance with the Contract.



The Contract may be canceled by the Board without liability for damage, when in the Board's opinion the Contractor is not complying in good faith, has become insolvent, or has assigned or subcontracted any part of the Work without the Board's consent. In the event of such cancellation, the Contractor will be paid the actual amount due based on Contract Unit Prices or lump sums bid and the quantity of the Work completed at the time of cancellation, less damages caused to the Agency by acts of the Contractor. The Contractor, in having tendered a Bid, shall be deemed to have waived any and all claims for damages because of cancellation of Contract for any such reason. If the Agency declares the Contract canceled for any of the above reasons, written notice to that effect shall be served upon the Surety. The Surety shall, within five (5) days, assume control and perform the Work as successor to the Contractor.

If the Surety assumes any part of the Work, it shall take the Contractor's place in all respects for that part and shall be paid by the Agency for all work performed by it in accordance with the Contract. If the Surety assumes the entire Contract, all money due the Contractor at the time of its default shall be payable to the Surety as the Work progresses, subject to the terms of the Contract.

If the Surety does not assume control and perform the Work within 5 days after receiving notice of cancellation, or fails to continue to comply, the Agency may exclude the Surety from the premises. The Agency may then take possession of all material and equipment and complete the Work by Agency forces, by letting the unfinished Work to another Contractor, or by a combination of such methods. In any event, the cost of completing the Work shall be charged against the Contractor and its Surety and may be deducted from any money due or becoming due from the Agency. If the sums due under the Contract are insufficient for completion, the Contractor or Surety shall pay to the Agency within 5 days after the completion, all costs in excess of the sums due.

The provisions of this section shall be in addition to all other rights and remedies available to the Agency under law.

6-5 TERMINATION OF CONTRACT. The Board may terminate the Contract at its own discretion or when conditions encountered during the Work make it impossible or impracticable to proceed, or when the Agency is prevented from proceeding with the Contract by act of God, by law, or by official action of a public authority.

6-6 DELAYS AND EXTENSIONS OF TIME.

6-6.1 General. If delays are caused by unforeseen events beyond the control of the Contractor, such delays will entitle the Contractor to an extension of time as provided herein, but the Contractor will not be entitled to damages or additional payment due to such delays, except as provided in 6-6.3. Such unforeseen events may include war, government regulations, labor disputes, strikes, fires, floods, adverse weather or elements necessitating cessation of work, inability to obtain materials, labor or equipment, required extra work, or other specific events as may be further described in the Specifications.

No extension of time will be granted for a delay caused by the Contractor's inability to obtain materials unless the Contractor furnishes to the Engineer documentary proof. the proof must be provided in a timely manner in accordance with the sequence of the Contractor's operations and the approved construction schedule.

If delays beyond the Contractor's control are caused by events other than those mentioned above, the Engineer may deem an extension of time to be in the best interests of the Agency. The



Contractor will not be entitled to damages or additional payment due to such delays, except as provided in Section 6-6.3.

If delays beyond the Contractor's control are caused solely by action or inaction by the Agency, such delays will entitle the Contractor to an extension of time as provided in Section 6-6.2.

6-6.2 Extensions of Time. Extensions of time, when granted, will be based upon the effect of delays to the Work. They will not be granted for noncontrolling delays to minor portions of the Work unless it can be shown that such delays did or will delay the progress of the Work.

6-6.3 Payment for Delays to Contractor. The Contractor will be compensated for damages incurred due to delays for which the Agency is responsible. Such actual costs will be determined by the Engineer. The Agency will not be liable for damages which the Contractor could have avoided by any reasonable means, such as judicious handling of forces, equipment, or plant. The determination of what damages the Contractor could have avoided will be made by the Engineer.

6-6.4 Written Notice and Report. The Contractor shall provide written notice to the Engineer within two hours of the beginning of any period that the Contractor has placed any workers or equipment on standby for any reason that the Contractor has determined to be caused by the Agency or by any organization that the Agency may otherwise be obligated by. The Contractor shall provide continuing daily written notice to the Engineer, each working day, throughout the duration of such period of delay. The initial and continuing written notices shall include the classification of each workman and supervisor and the make and model of each piece of equipment placed on standby, the cumulative duration of the standby, the Contractor's opinion of the cause of the delay and a cogent explanation of why the Contractor could not avoid the delay by reasonable means. Should the Contractor fail to provide the notice(s) required by this section the Contractor agrees that no delay has occurred and that it will not submit any claim(s) therefore.

6-7 TIME OF COMPLETION.

6-7.1 General. The Contractor shall complete the Work within the time set forth in the Contract. The Contractor shall complete each portion of the Work within such time as set forth in the Contract for such portion. The time of completion of the Contract shall be expressed in working days. The Contractor shall diligently prosecute the work to completion within **45 working days** after the starting date specified in the Notice to Proceed.

6-7.2 Working Day. A working day is any day within the period between the start of the Contract time as defined in Section 6-1 and the date provided for completion, or upon field acceptance by the Engineer for all work provided for in the Contract, whichever occurs first, other than:

1. Saturday,
2. Sunday,
3. any day designated as a holiday by the Agency,
4. any other day designated as a holiday in a Master Labor Agreement entered into by the Contractor or on behalf of the Contractor as an eligible member of a contractor association,
5. any day the Contractor is prevented from working at the beginning of the workday for cause as defined in Section 6-6.1,
6. any day the Contractor is prevented from working during the first 5 hours with at least 60 percent of the normal work force for cause as defined in Section 6-6.1.

Unless otherwise approved in writing by the Engineer, the hours of work shall be between the hours of 7:00 a.m. and 4:00 p.m. on Mondays through Fridays, excluding Agency holidays. The Contractor shall obtain the written approval of the Engineer if the Contractor desires to work



outside said hours or at any time during weekends and/or holidays. This written permission must be obtained at least 48 hours prior to such work. The Engineer may approve work outside the hours and/or days stated herein when, in his/her sole opinion, such work conducted by the Contractor is beneficial to the best interests of the Agency. The Contractor shall pay the inspection costs of such work.

The Contractor shall incorporate the dates, areas and types of work prohibited elsewhere in the Contract Documents into the Construction Schedule. No additional payment, adjustment of bid prices or adjustment of contract time of completion will be allowed as a consequence of the prohibition of work being performed within the dates, areas and/or types of work prohibited in this section.

Contractor is hereby advised that the Engineer may require after hours or weekend work if required for the protection and safety of existing facilities, workers or the public.

6-7.3 Contract Time Accounting. The Engineer will make a daily determination of each working day to be charged against the Contract time. These determinations will be discussed and the Contractor will be furnished a periodic statement showing allowable number of working days of Contract time, as adjusted, at the beginning of the reporting period. The statement will also indicate the number of working days charged during the reporting period and the number of working days of Contract time remaining. If the Contractor does not agree with the statement, it shall file a written protest within 15 days after receipt, setting forth the facts of the protest. Otherwise, the statement will be deemed to have been accepted.

6-8 COMPLETION, ACCEPTANCE, AND WARRANTY. The Work will be inspected by the Engineer for acceptance upon receipt of the Contractor's written assertion that the Work has been completed.

The Engineer will not accept the Work or any portion of the Work before all of the Work is completed and all outstanding deficiencies that may exist are corrected by the Contractor and the Engineer is satisfied that all the materials and workmanship, and all other features of the Work, meet the requirements of all of the specifications for the Work. Use, temporary, interim or permanent, of all, or portions of, the Work does not constitute acceptance of the Work. If, in the Engineer's judgment, the Work has been completed and is ready for acceptance, the Engineer will so certify to the Board. Upon such certification by the Engineer, the Board may accept the completed Work. Upon the Board's acceptance of the Work, the Engineer will cause a "Notice of Completion" to be filed in the office of the San Diego County Recorder. The date of recordation shall be the date of completion of the Work.

All work shall be warranted for one (1) year after recordation of the "Notice of Completion" and any faulty work or materials discovered during the warranty period shall be repaired or replaced by the Contractor, at its expense. Twenty-five percent of the faithful performance bond shall be retained as a warranty bond for the one-year warranty period. The Contractor shall replace or repair any such defective work in a manner satisfactory to the Engineer, after notice to do so from the Engineer, and within the time specified in the notice. If the Contractor fails to make such replacement or repairs within the time specified in the notice, the Agency may perform this work and the Contractor's sureties shall be liable for the cost thereof.

6-9 LIQUIDATED DAMAGES. Failure of the Contractor to complete the Work within the time allowed will result in damages being sustained by the Agency. For each consecutive calendar day in excess of the time specified for completion of Work, as adjusted in accordance with Section 6-6, the Contractor shall pay the Agency, or have withheld monies due it, the sum of **two**



thousand Dollars (\$2,000.00). Such sum is liquidated damages and shall not be construed as a penalty and may be deducted from payments due the Contractor if such delay occurs.

Execution of the Contract shall constitute agreement by the Agency and Contractor that the amount specified above per day is the minimum value of costs and actual damages caused by the Contractor to complete the Work within the allotted time. Any progress payments made after the specified completion date shall not constitute a waiver of this paragraph or of any damages.

6-10 USE OF IMPROVEMENT DURING CONSTRUCTION. The Agency reserves the right to take over and utilize all or part of any completed facility or appurtenance. The Contractor will be notified in writing in advance of such action. Such action by the Agency will relieve the Contractor of responsibility for injury or damage to said completed portions of the improvement resulting from use by public traffic or from the action of the elements or from any other cause, except Contractor operations or negligence. The Contractor will not be required to reclean such portions of the improvement before field acceptance, except for cleanup made necessary by its operations. Nothing in this section shall be construed as relieving the Contractor from full responsibility for correcting defective work or materials.

In the event the Agency exercises its right to place into service and utilize all or part of any completed facility or appurtenance, the Agency will assume the responsibility and liability for injury to persons or property resulting from the utilization of the facility or appurtenance so placed into service, except for any such injury to persons or property caused by any willful or negligent act or omission by the Contractor, Subcontractor, their officers, employees, or agents.



SECTION 7 – RESPONSIBILITIES OF THE CONTRACTOR

7-1 CONTRACTOR'S EQUIPMENT AND FACILITIES. The Contractor shall furnish and maintain in good condition all equipment and facilities as required for the proper execution and inspection of the Work. Such equipment and facilities shall meet all requirements of applicable ordinances and laws.

7-2 LABOR.

7-2.1 General. Only competent workers shall be employed on the Work. Any person employed who is found to be incompetent, intemperate, troublesome, disorderly, or otherwise objectionable, or who fails or refuses to perform work properly and acceptably, shall be immediately removed from the Work by the Contractor and not be reemployed on the Work.

7-2.2 Laws. The Contractor, its agents, and employees shall be bound by and comply with applicable provisions of the Labor Code and Federal, State, and local laws related to labor.

The Contractor shall strictly adhere to the provisions of the Labor Code regarding minimum wages; the 8-hour day and 40-hour week; overtime; Saturday, Sunday, and holiday work; and nondiscrimination because of race, color, national origin, sex, or religion. The Contractor shall forfeit to the Agency the penalties prescribed in the Labor Code for violations.

In accordance with the Labor Code, the Board has on file and will publish a schedule of prevailing wage rates for the types of work to be done under the Contract. The Contractor shall not pay less than these rates.

Each worker shall be paid subsistence and travel as required by the collective bargaining agreement on file with the State of California Department of Industrial Relations.

The Contractor's attention is directed to Section 1776 of the Labor Code which imposes responsibility upon the Contractor for the maintenance, certification, and availability for inspection of such records for all persons employed by the Contractor or Subcontractor in connection with the project. The Contractor shall agree through the Contract to comply with this Section and the remaining provisions of the Labor Code.

7-3 LIABILITY INSURANCE. Insurance shall be required as specified in section 10 of the Public Works Contract.

The cost of this insurance shall be included in the Contractor's Bid.

7-4 WORKERS' COMPENSATION INSURANCE. Before execution of the Contract by the Board, the Contractor shall file with the Engineer the following signed certification:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

The Contractor shall also comply with Section 3800 of the Labor Code by securing, paying for, and maintaining in full force and effect for the duration of the contract, complete Workers' Compensation Insurance, and shall furnish a Certificate of Insurance to the Engineer before



execution of the Contract. The Agency, its officers, or employees, will not be responsible for any claims in law or equity occasioned by failure of the Contractor to comply with this paragraph.

All compensation insurance policies shall bear an endorsement or shall have attached a rider whereby it is provided that, in the event of expiration or proposed cancellation of such policies for any reason whatsoever, the Agency shall be notified by registered mail not less than 30 days before expiration or cancellation is effective.

All insurance is to be placed with insurers that are admitted and authorized to conduct business in the state of California and are listed in the official publication of the Department of Insurance of the State of California. Policies issued by the State Compensation Fund meet the requirement for workers' compensation insurance.

7-5 PERMITS. Except as specified herein the Contractor will obtain, at no cost to the Contractor all City of Carlsbad encroachment, right-of-way, grading and building permits necessary to perform work for this contract on Agency property, streets, or other rights-of-way. Contractor shall not begin work until all permits incidental to the work are obtained. The Contractor shall obtain and pay for all permits for the disposal of all materials removed from the project. The cost of said permit(s) shall be included in the price bid for the appropriate bid item and no additional compensation will be allowed therefore. The Contractor shall obtain and pay for all costs incurred for permits necessitated by its operations such as, but not limited to, those permits required for night work, overload, blasting, and demolition. For private contracts, the Contractor shall obtain all permits incidental to the Work or made necessary by its operations, and pay all costs incurred by the permit requirements.

The Contractor shall pay all business taxes or license fees that are required for the work.

The Contractor shall comply with the requirements of the Caltrans Encroachment Permit issued to the Agency and included in the appendices.

7-5.1 Resource Agency Permits. Not used.

7-6 THE CONTRACTOR'S REPRESENTATIVE. Before starting work, the Contractor shall designate in writing a representative who shall have complete authority to act for it. An alternative representative may be designated as well. The representative or alternate shall be present at the Work site whenever work is in progress or whenever actions of the elements necessitate its presence to take measures necessary to protect the Work, persons, or property. Any order or communication given to this representative shall be deemed delivered to the Contractor. A joint venture shall designate only one representative and alternate. In the absence of the Contractor or its representative, instructions or directions may be given by the Engineer to the superintendent or person in charge of the specific work to which the order applies. Such order shall be complied with promptly and referred to the Contractor or its representative.

In order to communicate with the Agency, the Contractor's representative, superintendent, or person in charge of specific work shall be able to speak, read, and write the English language.

The qualifications of the Contractor's Representative shall demonstrate at least five years of experience in a superintendent capacity for projects that are similar in scope and cost to the projects identified in the Contractor's Statement of Technical Ability and Experience submitted with the bid. The Contractor shall be responsible for submitting verifiable experience records.

In the event that the Contractor proposes to change the Contractor's Representative prior to Project completion, Contractor shall notify the Agency at least and submit the qualifications of the



proposed Contractor's Representative for the Engineer's review at least two weeks prior to the proposed change. The qualifications shall demonstrate that the minimum requirements of the position, as described herein, are satisfied. Engineer will review qualifications of proposed Contractor's Representative within 5 working days of receipt. In the event of a change in Contractor's Representative, the City of Carlsbad reserves the right to suspend work, with no additional cost to the agency and no extension of time to the contract, until a qualified Contractor's Representative is approved by the Engineer.

7-7 COOPERATION AND COLLATERAL WORK. The Contractor shall be responsible for ascertaining the nature and extent of any simultaneous, collateral, and essential work by others. The Agency, its workers and contractors and others, shall have the right to operate within or adjacent to the Work site during the performance of such work.

The Agency, the Contractor, and each of such workers, contractors and others, shall coordinate their operations and cooperate to minimize interference.

The Contractor shall include in its Bid all costs involved as a result of coordinating its work with others. The Contractor will not be entitled to additional compensation from the Agency for damages resulting from such simultaneous, collateral, and essential work. If necessary, to avoid or minimize such damage or delay, the Contractor shall redeploy its work force to other parts of the Work.

Should the Contractor be delayed by the Agency, and such delay could not have been reasonably foreseen or prevented by the Contractor, the Engineer will determine the extent of the delay, the effect on the project, and any extension of time.

7-7.1 Coordination. The Contractor shall coordinate and cooperate with all the utility companies during the relocation or construction of their lines. The Contractor may be granted a time extension if, in the opinion of the Engineer, a delay is caused by the utility company. No additional compensation will be made to the Contractor for any such delay.

7-8 PROJECT SITE MAINTENANCE.

7-8.1 Cleanup and Dust Control. Throughout all phases of construction, including suspension of work, and until the final acceptance, the Contractor shall keep the site clean and free from rubbish and debris. The Contractor shall also abate dust nuisance by cleaning, sweeping and sprinkling with water, or other means as necessary. The use of water resulting in mud on public streets will not be permitted as a substitute for sweeping or other methods.

When required by the Plans or Specifications, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day for the purpose of keeping paved areas acceptably clean wherever construction, including restoration, is incomplete.

Materials and equipment shall be removed from the site as soon as they are no longer necessary. Before the final inspection, the site shall be cleared of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance. All cleanup costs shall be included in the Contractor's Bid.

Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed immediately and the area cleaned.



Excess excavation material from catch basins or similar structures shall be removed from the site immediately. Sufficient material may remain for use as backfill if permitted by the Specifications. Forms and form lumber shall be removed from the site as soon as practicable after stripping.

Failure of the Contractor to comply with the Engineer's cleanup orders may result in an order to suspend work until the condition is corrected. No additional compensation will be allowed as a result of such suspension.

Cleanup and dust control required herein shall also be executed on weekends and other non-working days when needed to preserve the health safety or welfare of the public. The Contractor shall conduct effective cleanup and dust control throughout the duration of the Contract. The Engineer may require increased levels of cleanup and dust control that, in his/her sole discretion, are necessary to preserve the health, safety and welfare of the public. Cleanup and dust control shall be considered incidental to the items of work that they are associated with and no additional payment will be made therefor.

7-8.2 Air Pollution Control. The Contractor shall not discharge smoke, dust, or any other air contaminants into the atmosphere in such quantity as will violate the regulations of any legally constituted authority.

7-8.3 Vermin Control. At the time of acceptance, structures entirely constructed under the Contract shall be free of rodents, insects, vermin, and pests. Necessary extermination work shall be arranged and paid for by the Contractor as part of the Work within the Contract time and shall be performed by a licensed exterminator in accordance with requirements of governing authorities. The Contractor shall be liable for injury to persons or property and responsible for the elimination of offensive odors resulting from extermination operations.

7-8.4 Sanitation. The Contractor shall provide and maintain enclosed toilets for the use of employees engaged in the Work. These accommodations shall be maintained in a neat and sanitary condition. They shall also comply with all applicable laws, ordinances, and regulations pertaining to public health and sanitation of dwellings and camps.

Wastewater shall not be interrupted. Should the Contractor disrupt existing sewer facilities, sewage shall be conveyed in closed conduits and disposed of in a sanitary sewer system. Sewage shall not be permitted to flow in trenches or be covered by backfill.

7-8.5 Temporary Light, Power, and Water. The Contractor shall furnish, install, maintain, and remove all temporary light, power, and water at its own expense. These include piping, wiring, lamps, and other equipment necessary for the Work. The Contractor shall not draw water from any fire hydrant (except to extinguish a fire), without obtaining permission from the water agency concerned. The Contractor shall obtain a construction meter for water used for the construction, plant establishment, maintenance, cleanup, testing and all other work requiring water related to this contract. The Contractor shall contact the appropriate water agency for requirements. The Contractor shall pay all costs of temporary light, power and water including hookup, service, meter and any, and all, other charges, deposits and/or fees therefor. Said costs shall be considered incidental to the items of work that they are associated with and no additional payment will be made therefor.

7-8.6 Water Pollution Control. The Contractor shall exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution. It shall conduct and schedule operations so as to minimize or avoid muddying and silting of said channels, drains, and waters. Water pollution control work shall consist of constructing those facilities which may be required to provide prevention, control, and abatement of water pollution.



The Contractor shall limit the land disturbance area resulting from construction activities to less than 1 acre and comply with a City of Carlsbad Tier 1 Construction SWPPP (Appendix E). The Contractor shall comply with the Regional Water Quality Control Board (RWQCB) San Diego Region Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100, National Pollutant Discharge Elimination System (NPDES) No. CAS0109266, Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within San Diego Region and any amendment, revision or re-issuance thereto.

The Contractor shall cooperate with the City during the preparation of the Notice of Intent (NOI), which shall be filed by the City of Carlsbad per the requirements of the applicable Order before a Notice to Proceed is issued. The Contractor shall cooperate with the City and furnish all data and reports necessary to demonstrate compliance with applicable Orders and for the filing of the Notice of Termination (NOT) by the City and acceptance by the State Water Resources Control Board.

At least one Conditional Waiver of the California Water Quality Control Board, San Diego Region, Order No. R9-2014-0041, Conditional Waivers of Waste Discharge Requirements for Low Threat Discharges in the San Diego Region is deemed applicable to the Work. The Contractor shall evaluate its means and methods required to construct the Work in a manner that complies with the conditional waivers and shall notify the Engineer in the event of conflict and prior to mobilization. Construction activities which create a potential for storm water or non-storm water pollution and which are not authorized by the conditional waivers shall be addressed in the project SWPPP prepared by the Contractor.

All costs for preparing and implementing the Storm Water Pollution Prevention and Monitoring Plans in accordance with applicable Orders and coordinating with the City and the Regional Water Quality Control Board shall be included in the bid item for Storm Water Pollution Prevention Plan or, if no such bid item exists, shall be included as part of the total bid price and no separate payment will be made.

7-8.7 Drainage Control. The Contractor shall maintain drainage within and through the work areas. Earth dams will not be permitted in paved areas. Temporary dams of sandbags, asphaltic concrete, or other acceptable material will be permitted when necessary. Such dams shall be removed from the site as soon as their use is no longer necessary.

7-8.8 Noise Control. All internal combustion engines used in the construction shall be equipped with mufflers in good repair when in use on the project with special attention to the City Noise Control Ordinance, Carlsbad Municipal Code Chapter 8.48.

7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS. The Contractor shall be responsible for the protection of public and private property adjacent to the Work and shall exercise due caution to avoid damage to such property.

The Contractor shall repair or replace all existing improvements within the right-of-way which are not designated for removal (e.g., curbs, sidewalks, driveways, fences, walls, signs, utility installations, pavement, structures, etc.) which are damaged or removed as a result of its operations. When a portion of a sprinkler system within the right-of-way must be removed, the remaining lines shall be capped. Repairs and replacements shall be at least equal to existing improvements and shall match them in finish and dimension.



Maintenance of street and traffic signal systems that are damaged, temporarily removed or relocated shall be done in conformance with 307-1.5.

Trees, lawns, and shrubbery that are not to be removed shall be protected from damage or injury. If damaged or removed due to Contractor's operations, they shall be restored or replaced in as nearly the original condition and location as is reasonably possible. Lawns shall be reseeded and covered with suitable mulch.

The Contractor shall give reasonable notice to occupants or owners of adjacent property to permit them to salvage or relocate plants, trees, fences, sprinklers, and other improvements, within the right-of-way which are designated for removal and would be destroyed because of the Work.

All costs to the Contractor for protecting, removing, and restoring existing improvements shall be included in the Bid.

7-10 PUBLIC CONVENIENCE AND SAFETY.

7-10.1 Traffic and Access. The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. Unless otherwise authorized, traffic shall be permitted to pass through the Work, or an approved detour shall be provided.

Safe and adequate pedestrian and vehicular access shall be provided and maintained to: fire hydrants; commercial and industrial establishments; churches, schools and parking lots; service stations and motels; hospitals; police and fire stations; and establishments of similar nature. Access to these facilities shall be continuous and unobstructed unless otherwise approved by the Engineer.

Safe and adequate pedestrian zones and public transportation stops, as well as pedestrian crossings of the Work at intervals not exceeding 90 m (300 feet), shall be maintained unless otherwise approved by the Engineer.

Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time. If backfill has been completed to the extent that safe access may be provided, and the street is opened to local traffic, the Contractor shall immediately clear the street and driveways and provide and maintain access.

The Contractor shall cooperate with the various parties involved in the delivery of mail and the collection and removal of trash and garbage to maintain existing schedules for these services.

Grading operations, roadway excavation and fill construction shall be conducted by the Contractor in a manner to provide a reasonably satisfactory surface for traffic. When rough grading is completed, the roadbed surface shall be brought to a smooth, even condition satisfactory for traffic.

Unless otherwise authorized, work shall be performed in only one-half the roadway at one time. One half shall be kept open and unobstructed until the opposite side is ready for use. If one-half a street only is being improved, the other half shall be conditioned and maintained as a detour.

The Contractor shall schedule the work so as to prevent damage by all traffic, including but not limited to mail delivery. The Contractor shall not schedule work so as to conflict with trash pickup. The trash hauling schedule can be obtained by calling the City's contracted waste disposal company, Waste Management at 760-929-9400 (until 6/30/2022).



During pavement overlay operations, the Contractors schedule for overlay application shall be designated to provide residents and business owners whose streets are to be overlaid sufficient paved parking within an 800-foot distance from their homes or businesses.

Seventy-two hours prior to the start of any construction in the public right-of-way that affects vehicular traffic and/or parking or pedestrian routes, the Contractor shall give written notification of the impending disruption. For a full street closure, all residences and/or businesses on the affected street or alley shall be notified. For partial street closures, or curb, sidewalk and driveway repairs, the residences and/or businesses directly affected by the work shall be notified.

The notification shall be hand delivered and shall state the date and time the work will begin and its anticipated duration. The notification shall list two telephone numbers that may be called to obtain additional information. One number shall be the Contractor's permanent office or field office and the other number shall be a 24-hour number answered by someone who is knowledgeable about the project. At least one of the phone numbers shall be in the (760) area code. An answering machine shall not be connected to either number. The notification shall also give a brief description of the work and simple instructions to the home or business owner on what they need to do to facilitate the construction. The Contractor shall submit the contents of the notification to the Engineer for approval. Notices shall not be distributed until approved by the Engineer.

For residences, the notification shall be pre-cut in a manner that enables it to be affixed to a doorknob without adhesives. It shall be a minimum size of 3-1/2 inches by 8-1/2 inches and shall be brightly colored with contrasting printing. The material shall be equivalent in strength and durability to 65 lb. card stock. The printing on the notice shall be no smaller than 12 point.

In addition to the notifications, the contractor shall post no parking signs 72 hours in advance of the work being performed. The no parking signs shall state the date and time of parking restriction for a duration not to exceed the time necessary to complete the work at that location. Failure of the contractor to meet the posted date requires re-posting the no parking signs 72 hours in advance of the rescheduled work. If the work is delayed or rescheduled the no parking signs shall be removed and re-posted 72 hours in advance of the rescheduled work.

The preparation, materials, printing and distribution of the notifications shall be included in the contract price bid and the Contractor will not be entitled to any additional compensation for printing and distributing these notices.

The contractor shall replace all street markings and striping damaged by construction activities.

The Contractor shall include in its Bid all costs for the above requirements.

7-10.2 Storage of Equipment and Materials in Public Streets. Construction materials shall not be stored in streets, roads, or highways for more than 5 days after unloading. All materials or equipment not installed or used in construction within 5 days after unloading shall be stored elsewhere by the Contractor at its expense unless authorized additional storage time.

Construction equipment shall not be stored at the Work site before its actual use on the Work nor for more than 5 days after it is no longer needed. Time necessary for repair or assembly of equipment may be authorized by the Engineer.

Excavated material, except that which is to be used as backfill in the adjacent trench, shall not be stored in public streets unless otherwise permitted. After placing backfill, all excess material shall be removed immediately from the site.



7-10.3 Street Closures, Detours, Barricades. The Contractor shall comply with all applicable State, County, and City requirements for closure of streets. The Contractor shall provide barriers, guards, lights, signs, temporary bridges, flag persons, and watchpersons. The Contractor shall be responsible for compliance with additional public safety requirements which may arise. The Contractor shall furnish and install signs and warning devices and promptly remove them upon completion of the Work.

After obtaining the Engineers approval and at least 5 working days before closing, detouring, partially closing or reopening any street, alley or other public thoroughfare the Contractor shall notify the following:

- | | |
|---|--------------|
| 1. The Engineer..... | 760-602-2720 |
| 2. Carlsbad Fire Department Dispatch..... | 760-931-2197 |
| 3. Carlsbad Police Department Dispatch..... | 760-931-2197 |
| 4. Carlsbad Traffic Signals Maintenance (extension 2937)..... | 760-438-2980 |
| 5. Carlsbad Traffic Signals Operations..... | 760-602-2752 |
| 6. North County Transit District..... | 760-967-2828 |
| 7. Waste Management..... | 760-929-9400 |

The Contractor shall comply with their requirements. The Contractor shall obtain the Engineer’s written approval prior to deviating from the requirements of 2) through, and including, 7) above. The Contractor shall obtain the written approval no less than five working days prior to placing any traffic control that affects bus stops.

The Contractor shall secure approval, in advance, from authorities concerned for the use of any bridges proposed by it for public use. Temporary bridges shall be clearly posted as to load limit, with signs and posting conforming to current requirements covering “signs” as set forth in the Traffic Manual published by the California Department of Transportation. This manual shall also apply to the street closures, barricades, detours, lights, and other safety devices required.

All costs involved shall be included in the Bid.

Traffic controls shall be in accordance with the plans, The California Manual on Uniform Traffic Control Devices (FHWA MUTCD 2003 Revision 1, as amended for use in California) and these provisions. If any component in the traffic control system is damaged, displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair said component to its original condition or replace said component and shall restore the component to its original location. In the event that the Contractor fails to install and/or maintain barricades or such other traffic signs, markings, delineation or devices as may be required herein, the Engineer may, at his/her sole option, install the traffic signs, markings, delineation or devices and charge the Contractor twenty dollars (\$25.00) per day per traffic sign or device, or the actual cost of providing such traffic control facility, whichever is the greater.

7-10.3.1 Construction Area Signs and Control Devices. All construction traffic signs and control devices shall be maintained throughout the duration of work in good order and according to the approved traffic control plan. All construction area signs shall conform to the provisions of Section 206-7.2 et seq. All temporary reflective pavement markers shall conform to the provisions of Section 214-5.1 et seq. All temporary reflective channelizers shall conform to the provisions of Section 214-5.2 et seq. All paint for temporary traffic striping, pavement marking, and curb marking shall conform to the provisions of Section 210-1.6 et seq. except that all temporary paint shall be rapid dry water borne conforming to Section 210-1.6 for materials and Section 310-5 et seq. For workmanship. Warning and advisory signs, lights and devices installed or placed to



provide traffic control, direction and/or warning shall be furnished, installed and maintained by the Contractor. Warning and advisory signs, lights and devices shall be promptly removed by the Contractor when no longer required. Warning and advisory signs that remain in place overnight shall be stationary mounted signs. Stationary signs that warn of non-existent conditions shall be removed from the traveled way and from the view of motorists in the traveled way or shielded from the view of the traveling public during such periods that their message does not pertain to existing conditions. Care shall be used in performing excavation for signs in order to protect underground facilities. All excavation required to install stationary construction area signs shall be performed by hand methods without the use of power equipment. Warning and advisory signs that are used only during working hours may be portable signs. Portable signs shall be removed from the traveled way and shielded from the view of the traveling public during non-working hours. During the hours of darkness, as defined in Division 1, Section 280, of the California Vehicle Code, portable signs shall be illuminated or, at the option of the Contractor, shall be in conformance with the provisions in Section 206-7.2 et seq. If illuminated traffic cones rather than post-type delineators are used during the hours of darkness, they shall be affixed or covered with reflective cone sleeves as specified in CALTRANS "Standard Specifications", except the sleeves shall be 7" long. Personal vehicles of the Contractor's employees shall not be parked within the traveled way, including any Section closed to public traffic. Whenever the Contractor's vehicles or equipment are parked on the shoulder within 6' of a traffic lane, the shoulder area shall be closed with fluorescent traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at not less than 25' intervals to a point not less than 25' past the last vehicle or piece of equipment. A minimum of nine (9) cones or portable delineators shall be used for the taper. A W20-1 (Road Work Ahead) or C24 (Shoulder Work Ahead) sign shall be mounted, as required herein, on a signpost or telescoping flag tree with flags. The signpost or flag tree shall be placed where directed by the Engineer.

7-10.3.2 Maintaining Traffic. The Contractor's personnel shall not work closer than 1.8 m (6') nor operate equipment within 0.6 m (2') from any traffic lane occupied by traffic. For equipment, the distance shall be measured from the closest approach of any part of the equipment as it is operated and/or maneuvered in performing the work. This requirement may be waived when the Engineer has given written authorization to the reduction in clearance that is specific to the time, duration and location of such waiver, when such reduction is shown on the traffic control plans included in these contract documents, when such reduction is shown on the traffic control plans prepared by the Contractor and approved by the Engineer or for the work of installing, maintaining and removing traffic control devices. As a condition of such waiver the Engineer may require the Contractor to detour traffic, adjust the width of, or realign the adjacent traffic lane, close the adjacent traffic lane or provide barriers.

During the entire construction, a minimum of one, 12-foot wide paved traffic lane shall be open for use by public traffic in each direction of travel.

7-10.3.3 Traffic Control System for Lane Closure. A traffic control system consists of closing traffic lanes or pedestrian walkways in accordance with the details shown on the plans, California Manual on Uniform Traffic Control Devices (FHWA MUTCD 2003 Revision 1, as amended for use in California) and provisions under "Maintaining Traffic" elsewhere in these Provisions. The provisions in this section will not relieve the Contractor from its responsibility to provide such additional devices or take such measures as may be necessary to maintain public safety.

When lanes are closed for only the duration of work periods, all components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way, shall be removed from the traveled way and shoulder at the end work period. If the Contractor so elects, said components may be stored at selected central locations, approved by the Engineer, within the limits of the right-of-way.



7-10.3.4 Traffic Control for Permanent and Temporary Traffic Striping. During traffic stripe operations, traffic shall be controlled with lane closures, as provided for under "Traffic Control System for Lane Closure" of these Supplemental Provisions or by use of an alternative traffic control plan proposed by the Contractor and approved by the Engineer. The Contractor shall not start traffic striping operations using an alternative plan until the Contractor has submitted its plan to the Engineer and has received the Engineer's written approval of said plan.

7-10.3.5 Temporary Pavement Delineation. Temporary pavement delineation shall be furnished, placed, maintained and removed in accordance with the minimum standards specified in the latest California Manual on Uniform Traffic Control Devices (CAMUTCD) published by CALTRANS. Whenever the work causes obliteration of pavement delineation, temporary or permanent pavement delineation shall be in place prior to opening the traveled way to public traffic. Lane line or centerline pavement delineation shall be provided at all times for traveled ways open to public traffic. All work necessary, including any required lines or marks, to establish the alignment of temporary pavement delineation shall be performed by the Contractor. When temporary pavement delineation is removed, all lines and marks used to establish the alignment of the temporary pavement delineation shall be removed by grinding.

Surfaces to receive temporary pavement delineation shall be dry and free of dirt and loose material. Temporary pavement delineation shall not be applied over existing pavement delineation or other temporary pavement delineation. Temporary pavement delineation shall be maintained until superseded or replaced with permanent pavement delineation.

Temporary pavement delineation shall be removed when, as determined by the Engineer, the temporary pavement delineation conflicts with the permanent pavement delineation or with a new traffic pattern for the area and is no longer required for the direction of public traffic. When temporary pavement delineation is required to be removed, all lines and marks used to establish the alignment of the temporary pavement delineation shall be removed.

7-10.3.6 Preparation of New, or Modifications and Additions to Existing, Traffic Control Plan Sheets. If no traffic control plans (TCP) or Traffic Control Staging plans (TCP) are included in the project plans, or if the Contractor elects to modify TCP included in the project plans, the Contractor shall have such new or modified TCP prepared and submitted as a part of the Work for any and all construction activities that are located within the traveled way. The Contractor shall have TCP prepared and submitted as a part of the Work for any construction activities that are a part of this project that are not included in the project plans. The Contractor must submit the TCP for the Engineer's review in conformance with the requirements of Section 2-5.3, et seq. and obtain the Engineer's approval of the TCP prior to implementing them. The minimum 20-day review period specified in Section 2-5.3.1 for shop drawings and submittals shall pertain to each submittal of TCP, new, modified or added to, for the Engineer's review. New or revised TCP submittals shall include all TCP needed for the entire duration of the Work. Each phase of the TCP shall be shown in sufficient scale and detail to show the lane widths, transition lengths, curve radii, stationing of features affecting the traffic control plan and the methodology proposed to transition to the subsequent TCP phase. When the vertical alignment of the traveled surface differs from the finished pavement elevation vertical curves must also be shown. Such modifications, supplements and/or new design of TCP shall meet the requirements of the Engineer and the latest California Manual on Uniform Traffic Control Devices (CA MUTCD) as published by CALTRANS. Such modification, addition, supplement, and/or new design of TCP shall be prepared by a registered professional engineer appropriately registered in the State of California. The Engineer shall be the sole judge of the suitability and quality of any such modifications, supplements, and/or new designs to TCP. The Engineer may approve any such modifications, supplements, and/or new designs to the TCP when, in the Engineer's sole opinion,



such modifications, supplements, and/or new designs to the TCP prepared by the registered professional engineer retained by the Contractor will be beneficial to the best interests of the Agency. Such modification, addition, supplement, and/or new design shall not be implemented and no work shall be commenced that is contingent on such approval until the changed TCP are approved by the Engineer. The preparation of such modification, addition, supplement, and/or new designs of TCP shall not presuppose their approval or obligate the Agency in any fashion. Submittal and review requirements for such modifications, supplements, and/or new designs to TCP shall conform to the requirements of Section 2-5.3 Shop Drawings and Submittals.

7-10.3.7 Payment

The Contractor shall prepare and implement traffic control plans and shall furnish all labor and materials to perform, install, maintain, replace and remove all traffic control as incidentals to the work with which they are associated and no other compensation will be allowed therefore.

7-10.4 Safety.

7-10.4.1 Safety Orders. The Contractor shall have at the Work site, copies or suitable extracts of: Construction Safety Orders, Tunnel Safety Orders and General Industry Safety Orders issued by the State Division of Industrial Safety. The Contractor shall comply with provisions of these and all other applicable laws, ordinances, and regulations.

Before excavating any trench 5 feet or more in depth, the Contractor shall submit a detailed plan to the Agency showing the design of shoring, bracing, sloping, or other provisions to be made for the workers' protection from the hazard of caving ground during the excavation of such trench. If the plan varies from the shoring system standards, the plan shall be prepared by a registered Civil Engineer. No excavation shall start until the Engineer has accepted the plan and the Contractor has obtained a permit from the State Division of Industrial Safety. A copy of the permit shall be submitted to the Engineer.

Payment for performing all work necessary to provide safety measures shall be included in the prices bid for other items of work except where separate bid items for excavation safety are provided or required by law.

7-10.4.2 Use of Explosives. Explosives may be used only when authorized in writing by the Engineer, or as otherwise stated in the Specifications. Explosives shall be handled, used, and stored in accordance with all applicable regulations.

The Engineer's approval of the use of explosives shall not relieve the Contractor from liability for claims caused by blasting operations.

7-10.4.3 Special Hazardous Substances and Processes. Materials that contain hazardous substances or mixtures may be required on the Work. A Material Safety Data Sheet as described in Section 5194 of the California Code of Regulations shall be requested by the Contractor from the manufacturer of any hazardous products used.

Material usage shall be accomplished with strict adherence to California Division of Industrial Safety requirements and all manufacturer warnings and application instructions listed on the Material Safety Data Sheet and on the product container label.

The Contractor shall notify the Engineer if a specified product cannot be used under safe conditions.



7-10.4.4 Confined Spaces.

(a) Confined Space Entry Program. The Contractor shall be responsible for implementing, administering and maintaining a confined space entry program (CSEP) in accordance with Sections 5156, 5157 and 5158, Title 8, CCR.

Prior to starting the Work, the Contractor shall prepare and submit its comprehensive CSEP to the Engineer. The CSEP shall address all potential physical and environmental hazards and contain procedures for safe entry into confined spaces, including, but not limited to the following:

1. Training of personnel
2. Purging and cleaning the space of materials and residue
3. Potential isolation and control of energy and material inflow
4. Controlled access to the space
5. Atmospheric testing of the space
6. Ventilation of the space
7. Special hazards consideration
8. Personal protective equipment
9. Rescue plan provisions

The Contractor's submittal shall include the names of its personnel, including subcontractor personnel, assigned to the project who will have CSEP responsibilities, their CSEP training, and their specific assignment and responsibility in carrying out the CSEP.

(b) Permit-Required Confined Spaces. Entry into permit-required confined spaces as defined in Section 5157, Title 8, CCR may be required as a part of the Work. All manholes, tanks, vaults, pipelines, excavations, or other enclosed or partially enclosed spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. The Contractor shall implement a permit space program prior to performing any work in a permit-required confined space. A copy of the permit shall be available at all times for review by Contractor and Agency personnel at the Work site.

(c) Payment. Payment for implementing, administering, and providing all equipment and personnel to perform the CSEP shall be included in the bid items for which the CSEP is required.

7-10.4.5 Safety and Protection of Workers and Public. The Contractor shall take all necessary precautions for the safety of employees on the work and shall comply with all applicable provisions of Federal, State and Municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being performed. The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workers and public, and shall use danger signs warning against hazards created by such features of construction as protruding nails, hoists, well holes, and falling materials.

7-11 PATENT FEES OR ROYALTIES. The Contractor shall absorb in its Bid the patent fees or royalties on any patented article or process furnished or used in the Work. The Contractor shall indemnify and hold the Agency harmless from any legal action that may be brought for infringement of patents.

7-12 ADVERTISING. The names, addresses and specialties of Contractors, Subcontractors, architects, or engineers may be displayed on removable signs. The size and location shall be subject to the Engineer's approval.



Commercial advertising matter shall not be attached to or painted on the surfaces of buildings, fences, canopies, or barricades.

7-13 LAWS TO BE OBSERVED. The Contractor shall keep fully informed of State and National laws and County and Municipal ordinances and regulations which in any manner affect those employed in the Work or the materials used in the Work or in any way affect the conduct of the Work. The Contractor shall at all times observe and comply with such laws, ordinances, and regulations. Municipal ordinances that affect this work include Chapter 11.06. Excavation and Grading. If this notice specifies locations or possible materials, such as borrow pits or gravel beds, for use in the proposed construction project which would be subject to Section 1601 or Section 1603 of the Fish and Game Code, the conditions established pursuant to Section 1601 et seq. of the Fish and Game Code shall become conditions of the contract.

7-14 ANTITRUST CLAIMS. Section 7103.5 of the Public Contract Code provides:

“In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec 15) or Cartwright Act (Chapter 2 [commencing with Section 16700] of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or subcontract. The assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment of the parties.”



SECTION 8 – FACILITIES FOR AGENCY PERSONNEL

8-1 **GENERAL.** No office space is required for Agency personnel.



SECTION 9 – MEASUREMENT AND PAYMENT

9-1 MEASUREMENT OF QUANTITIES FOR UNIT PRICE WORK.

9-1.1 General. Unless otherwise specified, quantities of work shall be determined from measurements or dimensions in horizontal planes. However, linear quantities of pipe, piling, fencing and timber shall be considered as being the true length measured along longitudinal axis.

Unless otherwise provided in Specifications, volumetric quantities shall be the product of the mean area of vertical or horizontal sections and the intervening horizontal or vertical dimension. The planimeter shall be considered an instrument of precision adapted to measurement of all areas.

9-1.2 Methods of Measurement. Materials and items of work which are to be paid for on basis of measurement shall be measured in accordance with methods stipulated in the particular sections involved.

9-1.3 Certified Weights. When payment is to be made on the basis of weight, the weighing shall be done on certified platform scales or, when approved by the Engineer, on a completely automated weighing and recording system. The Contractor shall furnish the Engineer with duplicate licensed weighmaster's certificates showing actual net weights. The Agency will accept the certificates as evidence of weights delivered.

9-1.4 Units of Measurement. The system of measure for this contract shall be the U.S. Standard Measures.

9-2 LUMP SUM WORK. Items for which quantities are indicated "Lump Sum", "L.S.", or "Job", shall be paid for at the price indicated in the Bid. Such payment shall be full compensation for the items of work and all work appurtenant thereto.

When required by the Specifications or requested by the Engineer, the Contractor shall submit to the Engineer within 15 days after award of Contract, a detailed schedule in triplicate, to be used as a basis for determining progress payments on a lump sum contract or designated lump sum bid item. This schedule shall equal the lump sum bid and shall be in such form and sufficiently detailed as to satisfy the Engineer that it correctly represents a reasonable apportionment of the lump sum.

9-3 PAYMENT.

9-3.1 General. The quantities listed in the Bid schedule will not govern final payment. Payment to the Contractor will be made only for actual quantities of Contract items constructed in accordance with the Plans and Specifications. Upon completion of construction, if the actual quantities show either an increase or decrease from the quantities given in the Bid schedule, the Contract Unit Prices will prevail subject to the provisions of Section 3-2.2.1.

The unit and lump sum prices to be paid shall be full compensation for the items of work and all appurtenant work, including furnishing all materials, labor, equipment, tools, and incidentals.

Payment will not be made for materials wasted or disposed of in a manner not called for under the Contract. This includes rejected material not unloaded from vehicles, material rejected after it has been placed, and material placed outside of the Plan lines. No compensation will be allowed for disposing of rejected or excess material.



Payment for work performed or materials furnished under an Assessment Act Contract will be made as provided in particular proceedings or legislative act under which such contract was awarded.

Whenever any portion of the Work is performed by the Agency at the Contractor's request, the cost thereof shall be charged against the Contractor, and may be deducted from any amount due or becoming due from the Agency.

Whenever immediate action is required to prevent violation of any law, injury, death, or property damage, and precautions which are the Contractor's responsibility have not been taken and are not reasonably expected to be taken, the Agency may, after reasonable attempt to notify the Contractor, cause such precautions to be taken and shall charge the cost thereof against the Contractor, or may deduct such cost from any amount due or becoming due from the Agency. Agency action or inaction under such circumstances shall not be construed as relieving the Contractor or its Surety from liability.

Payment shall not relieve the Contractor from its obligations under the Contract; nor shall such payment be construed to be acceptance of any of the Work. Payment shall not be construed as the transfer of ownership of any equipment or materials to the Agency. Responsibility of ownership shall remain with the Contractor who shall be obligated to store any fully or partially completed work or structure for which payment has been made; or replace any materials or equipment required to be provided under the Contract which may be damaged, lost, stolen or otherwise degraded in any way prior to acceptance of the Work, except as provided in Section 6-10.

Guarantee periods shall not be affected by any payment but shall commence on the date of recordation of the "Notice of Completion."

If, within the time fixed by law, a properly executed notice to stop payment is filed with the Agency, due to the Contractor's failure to pay for labor or materials used in the Work, all money due for such labor or materials will be withheld from payment to the Contractor in accordance with applicable laws.

At the expiration of 35 days from the date of acceptance of the Work by the Board, or as prescribed by law, the amount deducted from the final estimate and retained by the Agency will be paid to the Contractor except such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be authorized by the Contract to be further retained.

9-3.2 Partial and Final Payment. The Engineer will, after award of Contract, establish a closure date for the purpose of making monthly progress payments. The Contractor may request in writing that such monthly closure date be changed. The Engineer may approve such request when it is compatible with the Agency's payment procedure.

Each month, the Engineer will make an approximate measurement of the work performed to the closure date as basis for making monthly progress payments. The estimated value will be based on contract unit prices, completed change order work and as provided for in Section 9-2 of these General Provisions. Progress payments shall be made no later than thirty (30) calendar days after the closure date. Five (5) working days following the closure date, the Engineer shall complete the detailed progress pay estimate and submit it to the Contractor for the Contractor's information. Should the Contractor assert that additional payment is due, the Contractor shall within ten (10) days of receipt of the progress estimate, submit a supplemental payment request to the Engineer with adequate justification supporting the amount of supplemental payment request. Upon receipt



of the supplemental payment request, the Engineer shall, as soon as practicable after receipt, determine whether the supplemental payment request is a proper payment request. If the Engineer determines that the supplemental payment request is not proper, then the request shall be returned to the Contractor as soon as practicable, but not later than seven (7) days after receipt. The returned request shall be accompanied by a document setting forth in writing the reasons why the supplemental payment request was not proper. In conformance with Public Contract Code Section 20104.50, the City shall make payments within thirty (30) days after receipt of an undisputed and properly submitted supplemental payment request from the Contractor. If payment of the undisputed supplemental payment request is not made within thirty (30) days after receipt by the Engineer, then the City shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

From each progress estimate, 10 percent will be deducted and retained by the Agency, and the remainder less the amount of all previous payments will be paid. After 50 percent of the Work has been completed and if progress on the Work is satisfactory, the deduction to be made from remaining progress estimates and from the final estimate may be limited to \$500 or 10 percent of the first half of total Contract amount, whichever is greater.

No progress payment made to the Contractor or its sureties will constitute a waiver of the liquidated damages under 6-9.

As provided in Section 22300 of the California Public Contract Code, the Contractor may substitute securities for any monies withheld by the Agency to ensure performance under the Contract.

After final inspection, the Engineer will make a Final Payment Estimate and process a corresponding payment. This estimate will be in writing and shall be for the total amount owed the Contractor as determined by the Engineer and shall be itemized by the contract bid item and change order item with quantities and payment amounts and shall show all deductions made or to be made for prior payments and amounts to be deducted under provisions of the contract. All prior estimates and progress payments shall be subject to correction in the Final Payment Estimate.

The Contractor shall have 30 calendar days from receipt of the Final Payment Estimate to make written statement disputing any bid item or change order item quantity or payment amount. The Contractor shall provide all documentation at the time of submitting the statement supporting its position. Should the Contractor fail to submit the statement and supporting documentation within the time specified, the Contractor acknowledges that full and final payment has been made for all contract bid items and change order items.

If the Contractor submits a written statement with documentation in the aforementioned time, the Engineer will review the disputed item within 30 calendar days and make any appropriate adjustments on the Final Payment. Remaining disputed quantities or amounts not approved by the Engineer will be subject to resolution as specified in Section 3-5, Disputed Work.

The written statement filed by the Contractor shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of said disputed items. The Engineer will consider the merits of the Contractor's claims. It will be the responsibility of the Contractor to furnish within a reasonable time such further information and details as may be required by the Engineer to determine the facts or contentions involved in its claims. Failure to submit such information and details will be sufficient cause for denying payment for the disputed items.



9-3.2.1 Payment for Claims. Except for those final payment items disputed in the written statement required in Section 9-3.2 all claims of any dollar amount shall be submitted in a written statement by the Contractor no later than the date of receipt of the final payment estimate. Those final payment items disputed in the written statement required in Section 9-3.2 shall be submitted no later than 30 days after receipt of the Final Payment estimate. No claim will be considered that was not included in this written statement, nor will any claim be allowed for which written notice or protest is required under any provision of this contract including Sections 3-4 Changed Conditions, 3-5 Disputed Work, 6-6.3 Payment for Delays to Contractor, 6-6.4 Written Notice and Report, or 6-7.3 Contract Time Accounting, unless the Contractor has complied with notice or protest requirements.

The claims filed by the Contractor shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of said claims. The Engineer will consider and determine the Contractor's claims and it will be the responsibility of the Contractor to furnish within a reasonable time such further information and details as may be required by the Engineer to determine the facts or contentions involved in its claims. Failure to submit such information and details will be sufficient cause for denying the claims.

Payment for claims shall be processed within 30 calendar days of their resolution for those claims approved by the Engineer. The Contractor shall proceed with informal dispute resolution under Section 3-5, Disputed Work, for those claims remaining in dispute.

9-3.3 Delivered Materials. The cost of materials and equipment delivered but not incorporated into the work will not be included in the progress estimate.

9-3.4 Mobilization. When a bid item is included in the Proposal form for mobilization and subject to the conditions and limitations in the Specifications, the costs of work in advance of construction operations and not directly attributable to any specific bid item will be included in the progress estimate. When no such bid item is provided, payment for such costs will be considered to be included in the other items of work.

9-3.4.1 Mobilization and Preparatory Work. Payment for mobilization and preparatory Work will be made at the Contract lump-sum price for mobilization and includes full compensation for furnishing all insurance, bonds, licenses, labor, materials, utilities, tools, equipment and incidentals, and for doing all the work involved in mobilization and preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidental to preparing to conduct work on and off the project site and other offsite facilities necessary for work on the project; for all other facilities, sureties, work and operations which must be performed or costs incurred prior to beginning work on various contract items on or off the project site, excepting those specifically paid for under separate sections of these specifications. Such activities shall include, but are not be limited to, coordination with Agency forces, surveying and staking, pre-construction video and photographs, traffic control, utility potholing and any other incidental work or services not included in any other bid item. The Contractor hereby agrees that the price paid is sufficient for Mobilization and Preparatory Work, as described in this section, and that the Contractor shall have no right to additional compensation for Mobilization and Preparatory Work.

Progress payments for Mobilization and Preparatory Work will be made as follows:

For the first progress payment (after the issuance of the Notice to Proceed), forty percent (40%) of the amount bid for Mobilization and Preparatory Work will be allowed. For the second progress payment, sixty percent (60%) of the amount bid for mobilization and preparatory work will be allowed therefor.



9-4 BID ITEMS. Payment for each Bid Item shall be made at the quantity and type as listed in the Contractor's Proposal. All work shown or mentioned in the Contract Documents shall be considered as included in the Bid Items. Contractor must protect existing utilities, improvements, landscaping, irrigation systems, and vegetation in place. If damaged during the work, Contractor is responsible to repair or replace any utilities, improvements, landscaping, irrigation systems, and vegetation at Contractor's expense.

Bid Schedule A

Bid Item No. 1 - Mobilization

Payment for this bid item shall be made in accordance with Section 9-3.4.1.

A field office will not be required for this project.

Bid Item No. 2 – Storm Water Pollution Prevention Plan

Payment for this bid item shall constitute full compensation for the preparation of a storm water pollution prevention plan and implementation of the approved plan during construction in accordance with applicable storm water regulations. This item shall include Contractor's compliance with applicable requirements of the Caltrans Storm Water Permit for work within Caltrans right-of-way and the City of Carlsbad Tier 1 SWPPP in all other areas.

Bid Item No. 3 – Excavation Support System

The contract price paid for this bid item shall constitute full compensation to furnish and install sheeting, shoring, bracing, sloping or equivalent method of support for excavations for the protection of life or limb and conforming to applicable safety orders. This includes, but is not limited to, the preparation, signing and stamping and submittal of plans by a civil or structural engineer, approval of said plan by the Engineer, and obtaining any required permit from the State Division of Industrial Safety.

Bid Item No. 4 – Remove Asbestos Cement Pipe

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to remove existing 12-inch diameter asbestos cement pipe in accordance with the Contract Documents. This item shall include the preparation and submittal of any required health and safety plans, excavation, dewatering, removal of ACP, wrapping and sealing in polyethylene encasement, and placement of ACP in designated waste containers at the site for later disposal by Agency forces or its separate contractor, all in accordance with applicable regulations and all incidental work or services.

Agency forces will isolate the existing AC pipe water main. Contractor shall provide dewatering BMPs and shall dechlorinate and dispose of water drained from the pipeline.

Bid Item No. 5 – Demolish RCP Casing

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to demolish and dispose of 24-inch diameter reinforced concrete pipe casing in accordance with the Contract Documents. This item shall include all excavation, saw-cutting, removal and disposal of RCP casing and all incidental work or services.

Bid Item No. 6 – Abandon Water Main

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to slurry fill and abandon in-place the existing 12-inch diameter asbestos cement pipe in accordance with the Contract Documents. This item shall include all excavation,



dewatering, concrete slurry filling of pipe to be abandoned in-place and all incidental work or services.

Bid Item No. 7 – Proof Test 12-Inch AC Pipe

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to proof test the existing 12-inch asbestos cement host pipe prior to sliplining in accordance with the Contract Documents. This item shall include all coordination during cleaning and CCTV inspection of the host pipe by Agency forces; review of the CCTV inspection results by the Contractor; excavations; and furnishing and installing cable, winch, cable tension measurement devices, and any required thrust blocks and supports for proof testing and all incidental work or services.

Bid Item No. 8 – Furnish & Install 16-Inch HDPE Casing

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment and install HDPE casing in accordance with the Contract Documents. Work shall include excavation of slipline termination trench and furnishing and installing all pipe; fittings; tracer wire; utility warning tape; connection of new HDPE casing to existing 24-inch RCP casing; import, placement and compaction of pipe zone bedding and backfill and trench zone backfill; and all incidental work or services.

Bid Item No. 9 – Install 10-Inch Fusible PVC Slipline

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to install fusible PVC carrier pipe via the sliplining method in accordance with the Contract Documents. Work shall include excavation of sliplining tail ditch, insertion pit, and termination trench not covered in Bid Item No. 6; any required thrust blocks and supports; pulling the carrier pipe through existing host pipe; installation of tracer wire and utility warning tape; import, placement and compaction of pipe zone bedding and backfill and trench zone backfill; hydrostatic pressure testing; disinfection; and all incidental work or services.

Agency forces will procure fusible PVC pipe and fusion services in accordance with the quote for materials and fusion services contained in Appendix A.

Bid Item Nos. 10 and 11 – Connect to Existing Water Main

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to connect the new water main to the existing water main after successful bacteriological testing and approval by the Agency. This item shall include PVC pipe up to 20 feet in length at each connection location, fittings, thrust blocks, corrosion protection, hydrostatic testing, disinfection, and incidental work or services.

Agency forces will make a temporary connection to an existing water source and flush the new pipeline prior to connection to the existing water main. Contractor shall provide water control and disposal of flushed water at the west side of the project limits.

Bid Item No. 12 – Asbestos Cement Pipe Testing

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to provide asbestos cement pipe testing in accordance with the Contract Documents.

Bid Schedule B

Bid Item No. 1 – Dispose of Asbestos Cement Pipe

The contract price paid for this bid item shall constitute full compensation to furnish all labor, materials and equipment to dispose of asbestos cement pipe removed under Bid Schedule A, Bid



Item 4, in accordance with the Contract Documents. This item shall include furnishing of waste containers for ACP disposal, coordination with and obtaining approvals from the landfill, and transport from the site to the approved landfill for legal disposal in accordance with applicable regulations and all incidental work or services.

END OF PART 1



**SUPPLEMENTAL PROVISIONS
TO
STANDARD SPECIFICATIONS FOR PUBLIC WORKS
CONSTRUCTION**

NOT USED



TECHNICAL SPECIFICATIONS

**TECHNICAL SPECIFICATIONS
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PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work of this Section includes the repair, removal, transport and disposal of asbestos cement pipe (ACP) or asbestos containing material (ACM) typically encountered in water distribution systems.
- B. This section includes a summary of the incidental procedures and equipment required to protect workers and the public from exposure to airborne asbestos fibers. This document is not a comprehensive manual on the state-of-the-art practice for asbestos abatement procedures, equipment, or materials. The selected contractor represents, by acceptance of this work, that the Contractor is aware of the various state-of-the-art practice procedures, equipment, and materials acceptable by regulatory agencies that are also efficient, effective, and protective of human health and the environment.

1.2 REFERENCED SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section.
 - AWWA C110 Ductile-Iron and Gray-Iron Fittings
 - AWWA C111 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
 - AWWA C115 Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
 - AWWA C151 Ductile-Iron Pipe, Centrifugally Cast
 - AWWA C153 Ductile-Iron Compact Fittings for Water Service
 - AWWA C213 Fusion-Bonded Epoxy Coatings and Linings for Steel Water Pipe and Fittings
 - AWWA C219 Bolted, Sleeve-Type Couplings for Plain-End Pipe
 - AWWA C800 Underground Service Line Valves and Fittings
 - Code of California Regulations, Title 8, Section 1529. Asbestos
 - 29 CFR 1926.1101 – Asbestos

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02223 – Trenching, Excavation, Backfilling and Compacting
- B. Section 02262 – Asbestos Cement Pipe Testing
- C. Section 15000 – General Piping Systems and Appurtenances

1.4 REGULATORY REQUIREMENTS

- A. Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable Federal, State, and local codes, regulations, and standards have the same force and effect (and are made a part of the contract documents) as if copied directly into the Contract Documents, or as if published copies are bound here within. Regulation references in the text

are Federal regulations except where the State of California codes are listed in this section. Where the Federal and State regulations differ, the more stringent regulation shall be relevant to this Specification.

- B. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site.
- C. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations.
- D. The Contractor shall hold the Agency and Agency's consultants harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulation on the part of the Contractor, the Contractor's employees, and the Contractor's subcontractors.
- E. Federal Requirements:
 - 1. Occupational Safety and Health Administration (OSHA), including, but not limited to Code of Federal Regulations (CFR) – Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite Final Rules:
 - 29 CFR 1910.1001 – General Industry Standard
 - 29 CFR 1926.1101 – Construction Industry Standard
 - 29 CFR 1910.134 – Respiratory Protection
 - 29 CFR 1910.20 – Access to Employee Exposure and Medical Records
 - 29 CFR 1910.1200 – Hazard Communication
 - 29 CFR 1910.145 – Specifications for Accident Prevention, Signs and Tags
 - 2. United States Department of Transportation (DOT), including, but not limited to:
 - 49 CFR 171 and 172 – Hazardous Substances
 - 3. United States Environmental Protection Agency (US EPA), including, but not limited to:
 - 40 CFR 763 Subpart E – Asbestos Abatement Projects, Worker Protection Rule
 - 40 CFR 763 Subpart E – Asbestos Hazard Emergency Response Act (AHERA) Regulation, Asbestos-Containing Materials in Schools Final Rule and Notice
 - 40 CFR 763 Subpart E, Appendix C – Training Requirements of AHERA Regulation, Asbestos-Containing Materials in Schools Final Rule and Notice
 - 40 CFR 61 Subpart A and Subpart M (Revised Subpart B)– National Emission Standards for Hazardous Air Pollutants (NESHAP), National Emission Standard for Asbestos

Public Law 101-637 – Asbestos School Hazard Abatement Reauthorization Act (ASHARA), enacted November 28, 1990

F. State Requirements

1. Cal/OSHA, including but not limited to:
 - Title 8 California Code of Regulations (CCR) 1529 – Construction Standard
 - Title 8 CCR 2303 – Injury and Illness Prevention Plan
 - Title 8 CCR 5144 – Respiratory Protection
 - Title 8 CCR 5194 – Hazard Communication
 - Title 8 CCR 5208 – General Industry Safety Orders, Asbestos Regulations
 - Title 8, Article 2.5 – Asbestos-Related Work Registration
 - Title 22, Division 4, Chapter 30 – Minimum Standards for Management of Hazardous and Extremely Hazardous Waste
2. California Department of Toxic Substances Control (DTSC) – Transport and Disposal Regulations

G. Local Requirements

Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials, including:

1. SDCAPCD Rule 1206 – Asbestos Removal, Renovation, and Demolition

1.5 DEFINITIONS

Asbestos – includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that has been chemically treated and/or altered. Asbestos includes PACM, as defined herein.

Asbestos-Containing Material (ACM) – any material containing more than one percent asbestos.

Asbestos-Containing Waste Material (ACWM): Any material, which is or is suspected of being ACM, or any material contaminated with an asbestos, which is to be removed from a work area for disposal.

Authorized Person – any person authorized by the employer and required by work duties to be present in regulated areas.

Class I Asbestos Work – activities involving the removal of thermal system insulation (TSI) and surfacing ACM and PACM.

Class II Asbestos Work – activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics. Removal of ACP is considered Class II asbestos work.

Class III Asbestos Work – repair and maintenance operations where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed. Repair and maintenance of ACP is considered Class III asbestos work.

Class IV Asbestos Work – maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Competent Person – one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them: in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR part 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2). Note: For operations involving more than 100 square feet of asbestos containing construction material as defined in Title 8, CCR, Section 1529 (r), the competent person may fulfill the requirement contained in Section 341.9 to specify a certified supervisor for asbestos related work.

Consultant – assigned to record and report on the progress of asbestos abatement work. The Consultant is retained to conduct site visits, pre- and post-abatement visual surveys, and baseline, area, and clearance air monitoring.

Demolition – the wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

Disturbance – activities that disrupt the matrix or crumble or pulverize ACM or PACM or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM and PACM, no greater than the amount which can be contained in one standard sized glove bag or waste bag. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Glove Bag – an impervious plastic bag-like enclosure affixed around not more than a 60 x 60-inch asbestos-containing material, with glove-like appendages through which material and tools may be handled. Glove bags shall be seamless at the bottom.

HEPA Filter Vacuum Collection Equipment (or vacuum cleaner) – High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger. See P100 Filter Vacuum Collection Equipment (or vacuum cleaner).

HEPA Filter – A high efficiency particulate air filter capable of trapping and retaining 99.97% of mono-dispersed particles greater than 0.3 microns in diameter. See P100 Filter below.

Intact – the ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

Most Contaminated Worker – The employee assigned the breathing zone air sample representing the highest daily exposure in each work area (8-hour TWA).

Negative Initial Exposure Assessment: A demonstration by the Contractor, which complies with the criteria in 29 CFR 1926-1101 (f)(2)(iii), that employee exposure during an operation is expected to be consistently below the PEL.

Permissible Exposure Limit (PEL)-Asbestos – The airborne concentration of asbestos (0.1 f/cc) at which the Contractor shall ensure that no employee is exposed. Where the PEL

is exceeded the Contractor shall establish and implement a written program to reduce employee exposure to or below the limit by (1) engineering and work practice controls, and (2) use of required proper respiratory protection. No employee shall be exposed at any time to airborne concentrations of asbestos in excess of: 1.0 fibers/cc during any 30-minute period, which is the Excursion Limit.

P100 Filter Vacuum Collection Equipment (or vacuum cleaner) – High efficiency particulate air filter (formerly known as a HEPA filter, currently known as a P100 filter) vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

P100 Filter – A high efficiency particulate air filter (formerly known as a HEPA filter, currently known as a P100 filter) capable of trapping and retaining 99.97% of mono-dispersed particles greater than 0.3 microns in diameter.

PACM – presumed asbestos-containing material, or thermal system insulation and surfacing material found in buildings constructed no later than 1980 unless the designation of a material as PACM is rebutted pursuant to Title 8, CCR, Section 1529 (k)(5).

Regulated Area – an area established by the employer to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit (as defined in Title 8, CCR, Section 1529). Requirements for regulated areas are defined in Title 8, CCR, Section 1529 (e).

Removal – all operations where ACM and/or PACM is taken out or stripped from structures or substrates and includes demolition operations.

Wetting Agents – amended water (surfactant) used for asbestos removal and disposal activities. Airless sprayers are used to apply amended water during removal procedures.

Work Area – the area where asbestos-related work is performed which is defined and/or isolated to prevent the spread of asbestos fibers and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.

1.6 QUALITY ASSURANCE

A. Laboratory Qualification

The laboratory shall be regularly engaged in asbestos testing, and personnel used for monitoring airborne concentrations of asbestos fibers shall be proficient in this field. This proficiency shall be demonstrated by current acceptable participation in the Proficiency Analytical Testing (PAT) program and each analyst shall have completed the National Institute for Occupational Safety and Health (NIOSH) 582 Course (Sampling and Analysis for Asbestos) or the equivalent. The laboratory that performs PCM or TEM sample analysis must be accredited by National Voluntary Laboratory Accreditation Program (NVLAP).

B. Contractor and/or Contractor's Certified Industrial Hygienist

1. The Contractor or Contractor's CIH is responsible for the following:
 - a. Review of this Specification;

- b. Assign air monitoring personnel to sample Contractor's employee exposures and an analytical laboratory that conforms to this Section;
 - c. Maintain complete air sampling records, keep a daily activity log, and provide a report, which contains all personal air sampling results; and,
 - d. Monitor air fiber concentrations inside and outside NPEs daily. Daily smoke-test the NPEs and visually check for leaks. Any holes or openings discovered in containment walls are to be immediately patched or repaired.
2. The Contractor shall conduct, on a regular basis, observations regarding the integrity of all barriers constructed to protect outside environment from asbestos fiber release; work and safety plans; and proper performance of measures used to protect employees, including removal, encapsulation, disposal. The Engineer shall be informed immediately of operational problems or deviations from this Specification, initially by telephone and then in writing.
 3. If, at any time the Contractor's Competent Person or CIH determines that practices are in violation of pertinent and applicable regulations or that air results exceed specified allowable levels, they will notify the Engineer immediately. All work activity in the affected area(s) will cease until corrective actions have been taken. Any cost resulting from such a stop work order issued by the CIH or the Engineer will be borne by the Contractor and will not be considered as a basis for an increase in the contract amount.
 4. The Contractor is responsible for the safety of all persons in or around the regulated area or within the areas the Contractor is using for ingress and egress.

1.7 ASBESTOS FIBER CONCENTRATION CONTROL LIMITS

- A. Inside Enclosed Work Area
 1. Air concentrations of asbestos shall not exceed an 8-hour TWA of 0.1 f/cc of air by PCM for personnel selected as Most Contaminated Worker. Air concentrations of asbestos shall not exceed the 30-minute excursion level of 1.0 f/cc of air.
- B. Outside Asbestos Work Area
 1. Air concentrations of asbestos fibers shall be maintained at an 8-hour TWA at or below 0.01 f/cc of air (by PCM). This applies to all areas outside the contained work areas while work is in progress, except for the asbestos Work Area.
- C. Area Clearance Sampling
 1. Asbestos abatement clearance may be conducted by the Engineer and will include visual inspection only.

1.8 TITLE OF WASTE MATERIAL

ACWMs resulting from abatement activities, except as specified otherwise, shall be the property of the Owner and shall be disposed of by the Contractor as required by applicable Federal, State and local regulations. Waste manifests will be signed by the Owner or Owner's Representative. Copies of all waste manifests are to be maintained by the Contractor as part of the required "close-out" documents. Contractor will submit the waste disposal site name, location, and US EPA identification number where asbestos waste will be disposed. In addition, the Contractor will submit a letter from the disposal site certifying that the disposal site is legally authorized to receive ACM scheduled to be removed from the work area.

1.9 MEDICAL REQUIREMENTS

The Contractor shall provide workers with a comprehensive medical examination as required in 8 CCR 1529 (m). The Contractor shall submit one copy of most recent physical examination for each employee the Contractor will employ on the project. Physician's certificate must permit employee to work using a respirator and be dated within the last 12 months.

1.10 TRAINING

The Contractor shall certify that all workers performing asbestos abatement activities shall have successfully completed training provided by a Cal/OSHA approved training provider within the past 12 months and have in their possession a valid Asbestos Worker Training Certificate or Contractor/Supervisor Certificate, issued by a Cal/OSHA-accredited trainer within the past 12 months. All certifications must comply with the recent Model Accreditation Plan (MAP) provisions (8 CCR 1529 (k)(9)). Contractor will be required to submit a copy of each employee's training records prior to start of project and maintain a copy of all certifications on site for the duration of the project.

1.11 PERMITS, LICENSES, NOTIFICATIONS, AND PATENTS

The Contractor will secure necessary permits and pay fees for asbestos removal, hauling, and disposal and provide timely notification of such actions as may be required by Federal, State, and local authorities. Copies of such notification shall be provided to the Engineer prior to commencement and following completion of work. Post all notices required by applicable Federal, State, and local regulations at the job site where asbestos abatement work will be performed. One copy of all notices shall also be kept on file in Contractor's office.

1.12 SAFETY COMPLIANCE

- A. Contractor will comply with laws, ordinances, rules, and regulations of Federal, State, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work.
- B. The Contractor shall develop and keep on site an Emergency Evacuation Plan for each work area in which the Contractor expects to use for ingress and egress. The Emergency Evacuation Plan shall be distributed and read by all personnel required to enter the work area. The Contractor shall post this plan at the entrance to the work area.
- C. Post warning signs and labels and ensure the employees are properly trained and outside contractors are properly notified. Contractor will conduct "tail-gate" health

and safety meetings prior to work each shift to review the Contractor's Health and Safety Plan and discuss new hazards, if applicable.

- D. The Contractor will institute all necessary precautions so that no unauthorized personnel enter the regulated areas by mistake or design. When the work Site is unattended, the regulated area shall be secured so that unauthorized personnel cannot enter the area.

1.13 RESPIRATORY PROTECTION

- A. The Contractor shall provide and ensure the proper use and selection of respirators, perform required respiratory fit tests and institute a respiratory program. The Contractor will be required to submit one copy of most recent fit test results for each employee who the Contractor will employ on the project. Evidence of successful fit test within the last year (from the start date of the project) must be provided for each employee.

PART 2 - PRODUCTS

2.1 DISPOSABLE CONTAINERS

Waste containers shall be suitable to receive and retain any asbestos-containing or asbestos-contaminated materials until disposal at an approved site. Separate waste bins shall be utilized for hazardous and non-hazardous wastes. The containers shall be labeled in accordance with Federal, State and local regulations. Containers must be lockable, closed top bins, which are both airtight and watertight.

2.2 EYE PROTECTION

Full-face masks or goggles must be provided to personnel engaged in asbestos operations. Eye protection must be worn during operations that may present risk or damage to the eyes.

2.3 FITTINGS

- A. Fittings (bends, tees, sleeves) used in connection or repair work shall be ductile iron conforming to AWWA C110, C111, C115, C150, C151, and C153 as applicable.
- B. Couplings for joining plain end pipe shall consist of ductile iron end and center rings meeting or exceeding ASTM A536 and shop coated with fusion bonded epoxy. Gaskets shall be virgin Styrene Butadiene Rubber (SBR) compounded for water and sewer service in accordance with ASTM D2000 MBA 710. Bolts and nuts shall be Type 316 stainless steel. Couplings shall be rated for 250 psi and comply with AWWA C219. Couplings shall be size-on-size. Reducing couplings shall not be used.

2.4 GLOVES

Gloves shall be disposable poly or rubber gloves to protect hands. Cloth gloves may be worn inside poly or rubber gloves for comfort but shall not be used alone.

2.5 PIPE

- A. Pipe for ACP connection or repair work shall consist of Polyvinyl Chloride (PVC) pipe conforming to AWWA C900 for 12 inch and smaller pipe diameters. For larger pipe diameters, pipe type shall be as approved by the Engineer and may consist

of either PVC conforming to AWWA C900, ductile iron pipe conforming to AWWA C151 or steel pipe conforming to AWWA C200 (submittal required).

- B. Pipe linings and coatings for ductile iron or steel pipe shall conform to CMWD Standards.

2.6 PIPE SADDLES

- A. Bronze double strap saddles shall be used on pipe sizes 8 inch through 16 inch. The saddle body shall be manufactured from cast bronze in accordance with ASTM B62 or B584 and AWWA C800. The gasket shall be Buna N.
- B. A fabricated steel saddle shall be used for all connections on pipe sizes larger than 16 inch.
- C. The carbon steel used in the fabricated steel saddle shall have a minimum yield strength of 30,000 psi. The bolts and nuts shall be Type 316 stainless steel. The entire saddle shall be shop coated with 8 to 10 mils of fusion bonded powder epoxy in accordance with AWWA C213.
- D. No wet taps will be allowed where the outlet is the same size as the main.
- E. Fabricated steel and cast bronze saddles shall have a minimum 1/ 2-inch NPT threaded tap for testing.

2.7 POLYETHYLENE BAGS

- A. Polyethylene bags shall be a minimum 6-mil thickness and transparent, printed with warning labels per DOT and US EPA regulations and 8 CCR 1529 (k)(8).

2.8 POLYETHYLENE SHEETING

- A. Sheeting must be fire retardant and shall be sized in lengths and widths to minimize the frequency of joints. Drop sheets used inside a negative pressure enclosure must be fire retardant material. The minimum thickness shall be as follows:
 - 1. Wall and floor barriers – 6-mil
 - 2. Ceiling barriers – 4 mil
 - 3. All others (critical barriers, etc.) – 6-mil

2.9 RESPIRATORS

- A. Respirators shall be selected in accordance with the requirements of Title 8, CCR, Section 1529 and shall conform to not less than the following minimum requirements:
 - 1. Half-mask air purifying respirator equipped with a high efficiency P100 filter.

2.10 SIGNS AND LABELS

- A. Warning signs and labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible. Signs shall be visible from a distance of 20 feet.
- B. Warning signs shall bear the following information:

DANGER
ASBESTOS
MAY CAUSE CANCER

CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

WEAR RESPIRATORY PROTECTION AND
PROTECTIVE CLOTHING IN THIS AREA

- C. Labels of bags or containers of protective clothing and equipment, scrap, waste, and debris containing asbestos fibers bear the following information:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

- D. The DOT requires the following language on waste containers:

HAZARDOUS WASTE, SOLID N.O.S., ORM-E, NA 9188 (ASBESTOS)(RQ)

2.11 WATER SPRAYERS

Water sprayer shall be an airless or other low-pressure type emitting a fine mist for amended water application.

PART 3 - EXECUTION

3.1 GENERAL

- A. All work involved in the removal, salvage or disposal of ACP shall be the responsibility and performed at the expense of the Contractor. B.
- B. Contractor will be responsible for submitting a Shut Down/Connection Request and scheduling the work with the City and CMWD and confirming that the water system has been shut down or otherwise isolated prior to starting work.
- C. Contractor shall furnish and utilize all required protective respirators, clothing and equipment, as applicable, in the performance of the work in accordance with applicable regulations.
- D. Connections and repairs to ACP systems shall be as approved by the Engineer. All pipe connections shall be made at existing joints. Field cutting of ACP shall not be permitted. Snap cutting of ACP may be allowed only with the prior approval of the Engineer.
- E. The Contractor shall install all repair and connection pipe, closure sections, fittings, valves and appurtenances as shown on the Plans including bolts, nuts, gaskets, and jointing materials.
- F. The Contractor shall maintain the inside of the pipe clean, sanitary, and free from foreign materials. At all times when the work of installing pipe is not in progress, all openings into the pipe and the ends of the pipe in the trenches shall be kept tightly closed to prevent the entrance of animals and foreign materials.
- G. Where closure sections are required, the sections shall be installed in accordance with the manufacturer's installation guide and shall only be used with the approval of the Engineer.

- H. The radius of curvature of the trench shall determine the maximum length of pipe that can be used without exceeding the allowable deflection at a joint.
- I. Combined deflections at rubber gasket or flexible coupling joints shall not exceed 2-1/2 degrees or the maximum allowed by the coupling manufacturer, whichever is less.
- J. Use of pipe sections less than 5 feet shall only be permitted with the approval of the Engineer.
- K. Any ACP water line(s) being abandoned shall be abandoned in place in accordance with CMWD Standards unless otherwise approved.

3.2 REGULATED AREAS

- A. ACP removal or repair work shall be conducted in a regulated area demarcated in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Signs shall be provided and displayed pursuant to the requirements of this section.
- B. The Contractor shall ensure that all asbestos work performed within regulated areas is supervised by a competent person.
- C. The Contractor shall limit access to the work area to authorized representatives of the Owner. At no time shall any personnel enter a work area without notifying the on-site competent person first and signing the site entry log.

3.3 VISITOR COMMUNICATIONS

- A. All inquiries concerning work involving ACP shall be directed to the on-site competent person. The Contractor shall notify the Engineer of visitors (i.e., regulatory inspectors, law enforcement, press, etc.) that visit the site during the work.
- B. The Contractor shall immediately notify the Engineer if a regulatory agency issues a citation to the Contractor.

3.4 SIGNS AND LABELS

- A. Warning signs that demarcate the regulated area shall be provided and displayed at each location. Signs shall be posted at such a distance from such a location that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.
- B. Labels shall be affixed to all products containing asbestos and to all containers containing such products, including waste containers.

3.5 ACP ABANDONMENT

- A. If it is necessary to remove abandoned ACP line(s) and/or appurtenances, the appurtenances shall be removed and salvaged, if requested, by CMWD.
- B. ACP to be abandoned in-place shall be slurry filled with a sand-cement slurry conforming to Section 02223.

3.6 REMOVAL

- A. ACP shall be removed and disposed of in accordance with all applicable laws.

- B. All persons entering a regulated area where employees are required to wear respirators pursuant to Title 8, CCR, Section 1529 (h)(1) shall wear a respirator conforming to the requirements therein. Respirators shall be used without exception when the removal of ACP cannot be performed intact.
- C. In accordance with Title 8, CCR, Section 1529, the following work practices and controls are prohibited during removal or cleanup of ACP or debris:
 - 1. Cutting or grinding with high-speed abrasive saws or grinding discs that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
 - 2. The use of compressed air to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.
 - 3. Dry sweeping, shoveling or other dry clean-up of dust and debris.
 - 4. Employee rotation as a means of reducing employee exposure to asbestos.
 - 5. Eating, drinking, smoking, chewing tobacco or gum or application of lotions, sunscreen or any other cosmetics.
- D. Proper methods shall be used to prevent the generation of friable asbestos during removal or handling of ACP. The following methods shall be used:
 - 1. The material shall be thoroughly wetted with amended water (containing a wetting agent to increase the ability of the liquid to penetrate ACP) prior to and during its removal.
 - 2. The material shall be removed in an intact state unless intact removal is demonstrated as not possible.
 - 3. Cutting, abrading or breaking the material shall be prohibited unless demonstrated that methods less likely to result in asbestos fiber release are not feasible.
 - 4. Asbestos-containing material removed shall be immediately bagged or wrapped or in two layers of 6-mil polyethylene prior to disposal or kept wetted until transferred to an approved closed receptacle no later than the end of the work shift.
 - 5. ACP debris remaining in trenches should be removed by hand and placed into sealed, impermeable, waste bags for appropriate disposal.
 - 6. If removal by hand is infeasible, use vacuum cleaners equipped with HEPA filters to collect fine debris containing ACM or PACM. The equipment shall be used and emptied in a manner that minimizes the reentry of asbestos into the work area.

3.7 SAMPLES FOR LABORATORY TESTING

- A. The Contractor shall take samples of ACP for laboratory testing in accordance with Section 02262 as follows:

1. When the Work is related to the repair or replacement of ACP at valve replacement or pipeline repair sites, the Contractor shall provide one 12-inch-long sample of ACP for every work site.
 2. Where the project involves removal of ACP for pipeline replacement projects greater than 500 lineal feet, the Contractor shall provide one sample of ACP for every 500 lineal feet of pipeline removed. The top of pipe shall be marked prior to removal and wrapped in 6-mil polyethylene for laboratory testing.
- B. Individually package and label each sample. Carefully bag and seal the sample air-tight with approved bagging and packaging materials. Keep packaged samples dry, sealed, and away from direct sunlight and high temperature during transportation.
 - C. Clearly label the outside of the bagging with the station/location, unique pipe ID designated by the Owner, and date of removal.
 - D. Deliver or ship the bagged and sealed sample to the laboratory for testing in accordance with Section 02262.

3.8 DISPOSAL

- A. The Contractor shall determine current waste handling, transportation, and disposal regulations for the work area and for the waste disposal landfill to receive ACP. The Contractor must comply fully with these regulations and all DOT and US EPA requirements.
- B. Non-friable materials may be disposed as non-hazardous construction waste at a disposal site permitted to receive the waste. The Contractor shall notify the receiving non-hazardous waste landfill of the type and nature of the asbestos debris to be disposed.
- C. County of San Diego landfills do not accept friable asbestos-containing materials for disposal. Friable asbestos-containing materials are regulated as hazardous waste (22 CCR 66261.24). A friable material is defined as material that can be crumbled, pulverized, or reduced to powder in the hand.
- D. All removed ACP shall be properly manifested and prepared for transport following the criteria of the County of San Diego Department of Public Works, Solid Waste Division.
- E. County of San Diego landfills accept non-friable ACP under the following conditions:
 1. Small pieces of ACP less than three feet long must have all broken edges encapsulated (sealed) with an approved product and double wrapped in 6-mil plastic which is properly sealed to prevent expulsion of dust particles.
 2. Intact ACP over three feet long does not require double wrap in 6-mil plastic. Any broken edges, however, must be encapsulated with an approved product.
 3. Contractor shall confirm with the land fill the quantity of ACP to be accepted per day per generator and shall obtain prior approval from the Solid Waste Division prior to transport.

4. Transport ACP to the landfill for disposal via dump truck or waste bins. CMWD will not transport or dispose of ACP generated by the Contractor's activities.
 5. Each load must be accompanied by a Department of Public Works Non-Hazardous, Non-Infectious Special Waste Manifest.
 6. All loads may be subject to inspection by County personnel prior to admittance to the landfill.
- F. Sealed waste containers may be stored within the work area until a sufficient volume of waste has accumulated for disposal, but not to exceed five days. This storage area will be prominently designated and waste containers will be covered with polyethylene sheeting. Waste should be stored out of sight of the public in a secure area.
- G. The Contractor shall fill out manifest forms for the Owner's (Generator's) signature. Original disposal receipts, manifests, and bill of lading forms must be submitted to the Engineer at project completion.

3.9 INSTALLATION

- A. Connections shall be made at existing pipe joints and snapping of existing ACP, either ratchet or hydraulic, is permitted only when necessary and with prior wetting of the pipe and throughout the entire process.
- B. The Contractor shall use PVC pipe, or other pipe type as approved by the Engineer, to replace removed ACP or where new connections are necessary. All new pipe shall comply with the CMWD Approved Materials List.
- C. The Contractor shall dewater the trench to prevent the pipe from floating and shall assume full responsibility for any damage caused and shall, at their own expense, remove and reinstall or replace the pipe to the original line and grade or to the specified line and grade.
- D. New pipe or materials shall not be dropped, dragged, or handled in a manner that will cause damage. All pipe, fittings, valves and other materials shall be lowered into the trench using nylon straps or by other approved methods. All materials damaged during installation shall be identified and removed from the job site.
- E. The bedding material beneath pipe bells shall be excavated at each joint to permit proper assembly and inspection of the entire joint.
- F. Pipe sections shall be laid in the trench to true alignment and grade in accordance with the drawings. The pipe grade shall be approved by the Engineer.
- G. New pipe segments shall be at least five feet long. Shorter lengths shall be permitted only when necessary due to connection length constraints and with the approval of the Engineer.
- H. Fittings shall be temporarily supported by concrete blocks until concrete thrust blocks and supports are placed so that the pipe is not subjected to the weight of the fitting.
- I. Concrete thrust blocks of the size shown on the Plans shall be constructed at all fittings and valves unless otherwise approved by the Engineer and at no additional cost.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work of this Section includes sampling and laboratory testing of asbestos cement pipe (ACP) using Laboratory Energy Dispersive Spectroscopy (EDS).

1.2 COORDINATION

- A. Sampling of ACP shall be conducted after the pipeline has been isolated by the Owner and authorization to proceed is provided by the Owner. Cutting and removal of ACP without previous authorization from the Owner is prohibited.

1.3 REFERENCED SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section.

Code of California Regulations, Title 8, Section 1529. Asbestos
29 CFR 1926.1101 – Asbestos

1.4 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02060 – Asbestos Cement Pipe Removal and Disposal

1.5 QUALIFICATIONS

- A. Personnel responsible for cutting and handling the ACP:
 - 1. Trained and experienced in the means and methods of cutting ACP per the requirements of California OSHA.
 - 2. Performed successful cutting and handling of ACP three (3) times in the last five (5) years.
- B. Laboratory responsible for EDS testing:
 - 1. Experienced in performing EDS testing on ACP for a minimum of five (5) projects in the last five (5) years.
- C. Personnel responsible EDS testing
 - 1. Trained and experienced in operating scanning electron microscopy and energy dispersive spectroscopy equipment for a minimum of five (5) years, having worked with the equipment used for this project for a minimum of one (1) year.

1.6 SUBMITTALS

- A. Submit the following within 10 calendar days of the Notice to Proceed:
 - 1. Work experience of personnel responsible for cutting and handling of the ACP including:
 - a. Date and Location of work performed.
 - b. Name and phone number of contacts with Owner or Owner's representative for whom the work was performed.

2. Safety equipment and measures, including personnel safety gear, temporary enclosures, warning signs, fences, etc. to be used at the site.
3. Packaging materials to be used for safe storage and transportation of ACP samples.
4. Work experience of the laboratory in responsible charge of performing EDS testing:
 - a. Description of work performed and date.
 - b. Name and phone number of contacts with Agency, Owner, or Owner's representative for whom the work was performed.
5. Documentation verifying calibration of EDS testing equipment and devices to be used for this project.
6. Work experience of personnel responsible for administering EDS testing on ACP:
 - a. Date, Laboratory name, and location of work performed.
 - b. Name and phone number of contacts with Agency, Owner, or Owner's representative for whom the work was performed.
7. EDS scanning electron microscope to be used by laboratory for EDS testing.
8. Laboratory ACP testing work plan.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SAFETY MEASURES

- A. Perform all work in accordance with the local building codes, Federal Industrial Safety Orders, Asbestos NESHAP requirements, and requirements of Cal/OSHA. Personnel working on or in direct vicinity of cutting and handling ACP must wear protective outerwear, eyewear, and respirators per Cal/OSHA.
- B. Provide safeguards to public and personnel safety including warning signs, fences, lights, and/or other similar items that are necessary for the protection of all personnel during the cutting and handling activities of ACP.
- C. Assemble and use temporary enclosures to contain friable asbestos fibers and prevent them from release to the atmosphere during cutting. Wet the ACP during cutting to prevent generation of friable asbestos fibers.
- D. The Contractor shall assume full responsibility for personnel and site safety.

3.2 PIPE CUTTING

- A. All cutting/snapping of ACP samples shall occur after pipe removal from the water system. ACP to be removed shall be removed to the nearest pipe joint. Therefore, no cutting/snapping of pipe is allowed, except to generate the ACP samples required for lab testing.

- B. Prior to cutting, clearly and accurately mark the following on the sample of pipe to be cut and extracted for testing:
 - 1. Crown of the pipe.
 - 2. Owner-approved unique pipe ID (GIS asset ID number), and date.
- C. Perform ACP cutting utilizing a snap cutter, chain cutter, or other tool capable of an even cut around the full cross section of the pipe without creation of ACP dust particles. Pipe samples must be 12 inches in length, minimum and 16 inches, maximum.
- D. Prevent the spread of friable asbestos fibers and dust using temporary enclosures and wetting agents.
- E. The Owner's representative shall be the sole judge of the quality and acceptability of each cut. Re-cut any chipped, broken, or otherwise defective cuts of ACP at no cost to the Owner.
- F. Avoid contamination of ACP samples (grease or other foreign matter) during extraction. Immediately repair the pipe in accordance with the Contract Documents.

3.3 PIPE HANDLING

- A. Carefully handle ACP sample to not damage the cuts, or pipe integrity. Mishandling of the ACP sample, including damage from transportation and delivery, that results in chipping, scraping, cracking, deforming, or other damage that may void the results of testing will not be acceptable. The Owner's representative shall be the sole judge of mishandling of the ACP sample. If a sample is mishandled, re-cut, test, and properly handle a new sample of ACP at no additional cost to the Owner.
- B. Carefully bag and seal the sample air-tight with approved packaging materials. Clearly label the outside of the packaging with the unique pipe ID and date.
- C. Individually package and label each sample. Keep packaged samples dry, sealed, and away from direct sunlight and high temperature during transportation.
- D. Deliver the bagged and sealed sample to the Owner-approved laboratory for EDS testing.

3.4 LABORATORY TESTING

- A. Contract with one of the following Owner-approved laboratories to perform EDS testing on each ACP sample. Laboratory test results shall be delivered to the Owner within six (6) calendar weeks of pipe cutting.
 - 1. Wood PLC 9210 Sky Park Ct. San Diego, CA 92123
 - 2. Applied Materials & Engineering, Inc. 980 41st Street, Oakland, CA 94608
 - 3. Levelton (WSP) Laboratories Richmond, BC, Canada 150-12791 Clarke Place Richmond, BC V6V 2H9
- B. Arrange for safe delivery of ACP samples to the Owner-approved laboratory.
- C. Equipment:
 - 1. EDS equipment shall be equipped with a scanning electron microscope (SEM) capable of producing high resolution SEM images of cross-section

(where analyses are being performed) and shall be able to generate EDS elemental area maps or phase maps.

D. Laboratory testing work and responsibilities

1. Prior to conducting testing, coordinate with the Owner to verify testing requirements, measurement and establish a testing protocol.
2. Calibrate EDS equipment by using test peaks of known energy, covering the full analytical span prior to testing ACP samples.
3. Perform EDS testing to measure and record percent element by weight for Aluminum (Al), Carbon (C), Calcium (Ca), Iron (Fe), Magnesium (Mg), Oxygen (O), and Silicon (Si) at the locations of largest internal stain loss and thinnest overall stain, as marked during Phenolphthalein stain testing. Phenolphthalein stain testing shall occur at the laboratory.
4. Allow sufficient process time for analysis and ensure a statistically significant number of counts in order to decide if a peak is present or absent. Present a table of maximum number of counts and atomic percentage.
5. At the lab, cut and perform testing on each segment of pipe per the following requirements:
 - a. Measure and record percent by weight of each element at 10 equally spaced locations across the cut pipe surface, in a line perpendicular to the inner and outer wall edge tangent (i.e. along line used to measure wall thickness).
 - b. Label each equally spaced location measurements 1 through 10, with point 1 being the reading closest to the inner pipe wall surface and point 10 being the reading closest to the outer pipe wall surface.
 - c. Document the location of each set of 10 measurements by pipe ID and clockwise location relative to the crown of the pipe (i.e. crown is 12 o'clock).
 - d. Document the total wall thickness where each set of measurements is taken.
 - e. Provide all required data results to the Owner in Microsoft Excel file format only (.xlsx), or in a summary report provided by the lab. See figure 1 for all required data, to be included in the result summary.
6. Re-bag, seal and store ACP sample until confirmation from the Owner that the testing data provided is complete and received. After confirmation, the laboratory shall legally dispose of each tested ACP sample, at no additional cost to the owner.
7. Document site measurements provided on hard copy print of Figure 1 delivered to the laboratory with the ACP samples in the digital Excel file of Figure 1. Transmit the completed file via email to the City's Project Manager with the file and email titled with the project name, project number, and unique pipe ID number. Include the project name, project number, and unique pipe ID number in the submittal e-mail, addressed to: Stephanie Harrison, Stephanie.Harrison@carlsbadca.gov

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope

This section specifies fusible polyvinyl chloride (PVC) pipe, including standards for dimensionality, testing, quality, acceptable fusion practice, safe handling, storage and installation of the pipe by sliplining.

B. Pipe Description

1. Pipe Supplier shall furnish fusible polyvinylchloride (PVC) pipe conforming to the standards, testing and material properties in this specification.
2. Pipe shall conform to the following nominal size(s), dimensions and pressure designation(s) shown on the Plans and conforming to the standards referenced herein.

1.2 QUALITY ASSURANCE

A. References:

1. This section contains references to published standards, manuals of practice or guidelines and are incorporated herein by reference as specified and modified. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of contract award.

ANSI/AWWA C110/A21.10	Standard for Ductile-Iron and Gray-Iron Fittings
ANSI/AWWA C111/A21.11	Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
ANSI/AWWA C153/A21.53	Standard for Ductile-Iron Compact Fittings
AWWA C605	Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings
AWWA C651	Standard for Disinfecting Water Mains
AWWA C900	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 60 in. (100mm Through 1500mm) ¹
AWWA C907	Standard for Injection-Molded Polyvinyl Chloride (PVC) Pressure Fittings, 4 In. Through 12 In. (100 Mm Through 300 Mm), For Water, Wastewater, And Reclaimed Water Service

¹ Prior to 2017, AWWA C905 was the standard for PVC pipe and fabricated fittings larger than 12 in. (300 mm). “AWWA C905” marking on pipe larger than 12 in. is acceptable.

AWWA M23	AWWA Manual of Supply Practices for PVC Pipe—Design and Installation, Third Edition
ASTM C923	Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
ASTM D1784	Standard Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds
ASTM D1785	Standard Specification for Poly Vinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2152	Test Method for Degree of Fusion of Extruded PolyVinyl Chloride (PVC) Pipe and Molded Fittings by Acetone Immersion
ASTM D2241	Standard Specification for Poly Vinyl Chloride (PVC) Plastic Pipe (SDR-PR)
ASTM D2665	Poly Vinyl Chloride (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings
ASTM F477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F679	Standard Specification for PolyVinyl Chloride (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F1057	Standard Practice for Estimating the Quality of Extruded Poly Vinyl Chloride (PVC) Pipe by the Heat Reversion Technique
ASTM F1336	Standard Specification for Poly Vinyl Chloride (PVC) Gasketed Sewer Fittings
ASTM F1417	Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
UNI-B-6	Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe
UNI-PUB-08	Tapping Guide for PVC Pressure Pipe
NSF-14	Plastics Piping System Components and Related Materials
NSF/ANSI-61-G	Drinking Water System Components--Health Effects
PPI TR-2	PVC Range Composition Listing of Qualified Ingredients

B. Manufacturer Requirements:

All piping shall be made from PVC compound conforming to cell classification 12454 per ASTM D1784.

C. Fusion Technician Requirements:

Fusion technician(s) shall be qualified by the pipe supplier to install fusible polyvinylchloride (PVC) pipe of the type(s) and size(s) specified. Qualification shall be current as of the actual date of fusion performance on the project.

D. Specified Fusion Process and Pipe Suppliers:

1. The pipe fusion joining process shall be that of Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051.
2. The pipe manufacturers shall be fully experienced, reputable, and qualified in the manufacture of fusible polyvinyl chloride (PVC) products for Underground Solutions, Inc., Poway, CA, (858) 679-9551. Fusible polyvinyl chloride (PVC) pipe marking shall include either Fusible PVC®, Fusible C-900®, or FPVC®.

E. Warranty

1. The pipe shall be warranted for one year per the pipe supplier's standard terms.
2. In addition to the standard pipe warranty, the fusion services shall be warranted for one year per the fusion service provider's standard terms.

F. Submittals

1. The following product data shall be required from the pipe supplier and fusion provider:
 - a. Pipe Size
 - b. Dimensions
 - c. Pressure Class or Pressure Rating per applicable standard
 - d. Color and markings
 - e. Recommended Minimum Bending Radius
 - f. Recommended Maximum Safe Pull Force
 - g. Fusion technician qualification indicating conformance with this specification.
2. The following work plan and information is required from the Contractor and/or slipline installer. This work plan and information shall also be supplied to the pipe supplier, upon request:
 - a. The work plan for each sliplining installation shall include all excavation locations, excavation dimensions, the locations of interfering utilities, and flow bypass and traffic control schematics as applicable.
 - b. At least 2 weeks prior to the start of work, the pipe installation Contractor shall submit its sliplining schedule identifying daily work hours and working dates for each installation.
 - c. If grout is to be used for filling the annular space, the pipe installation Contractor shall provide information detailing the grout design mixes, installation plan and contingency plan for all grouting.

G. Post-Construction Submittals

The Contractor and fusion provider shall present the following information to the owner or pipe supplier upon request:

1. The joint fusion datalogger reports.
2. Fusion joint documentation containing the following information:
3. Pipe size (Diameter) and Thickness

4. Fusion Machine Make, Model and Serial Number
5. Fusion Technician Identification and Qualification Level
6. Job Identification (Name, Location and/or Project Number)
7. Fusion Joint Number
8. Fusion, Heating, and Drag Pressure Settings
9. Heat Plate Temperature
10. Time Stamp
11. Fusion Heating Time and Cool Down Time
12. Ambient Temperature and Weather Conditions
13. If grout is used in the annular space, the Contractor and/or slipline installer shall present the as-recorded grout testing reports to the owner or pipe supplier upon request.

PART 2 – PRODUCTS

2.1 FUSIBLE POLYVINYL CHLORIDE (PVC) PIPE

- A. Fusible polyvinyl chloride (PVC) pipe shall conform to AWWA C900, ASTM D2241, ASTM D1785, ASTM D3034 (non-pressure), or ASTM D679 (non-pressure), as specified in the Contract Documents. Pipe QA/QC testing shall be in accordance with the test methods provided or referenced in the specified pipe standard.
- B. Fusible polyvinylchloride (PVC) pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe unless specified for connections with appurtenances or for connections at the sliplining termination locations.
- C. Fusible polyvinyl chloride (PVC) pipe shall be manufactured in a standard 40' or 45' nominal length or specified custom lengths.
- D. Marking on the pipe exterior shall include:
 1. Pipe size (nominal diameter)
 2. PVC
 3. Dimension Ratio (DR) or Standard Dimension Ratio (SDR) or Schedule (SCH)
 4. Pressure Class (PC) or Pressure Rating (PR) for pressure pipe applications
 5. Pipe stiffness (PS) may be required for non-pressure pipe applications
 6. AWWA or ASTM standard designation
 7. NSF-61-G mark verifying suitability, when required for potable water applications
 8. Extrusion production-record code
 9. Trademark or trade name
 10. Cell Classification 12454 or PVC material designation code 1120
 11. If color coding is required, the pipe exterior shall be the required color or include exterior stripes of the required color.

2.2 FUSION JOINT ASSEMBLY

- A. Unless otherwise specified, fusible PVC pipe shall be assembled via thermal butt-fusion in the field. The Contractor shall follow the pipe supplier's written guidelines and comply with the requirements of Part 1 of this specification.

- B. The exterior fusion joint bead shall be removed by approved means to provide a smooth, pipe outside diameter with no reduction in diameter at the fusion joint.

2.3 DUCTILE IRON MECHANICAL AND FLANGED FITTINGS

- A. Acceptable fittings for use with fusible PVC pipe shall include standard ductile iron fittings conforming to AWWA/ANSI C110/A21.10, or AWWA/ANSI C153/A21.53 and AWWA/ANSI C111/A21.11.
- B. Connections to fusible PVC pipe may be made using a restrained or non-restrained fittings specifically designed for use with PVC pipe including push-on, mechanical joint or flanged fittings.
- C. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.

2.4 PVC GASKETED, PUSH-ON FITTINGS

- A. PVC pressure fittings for use with fusible polyvinyl chloride pipe require the prior approval of the Engineer and shall conform to AWWA C900 or C907. PVC non-pressure fittings for use with fusible PVC pipe shall conform to ASTM D3034, F679 or F1336.
- B. PVC fittings for joining fusible PVC pipe to other sections of fused or gasket-joint PVC pipe shall include gasketed, push-on type couplings and fittings, including bends, tees, and couplings as shown in the Approved Plans.
- C. Bends, tees and other PVC fittings shall be restrained with the use of thrust blocking or other restraint products as indicated in the Contract Documents.
- D. PVC gasketed, push-on fittings and mechanical restraints, if used, must be installed per the manufacturer's guidelines.

2.5 FUSIBLE POLYVINYL CHLORIDE PIPE SWEEPS OR BENDS

- A. Fusible polyvinyl chloride (PVC) pipe sweeps or bends shall conform to the same sizing convention, diameter, dimensional tolerances, and pressure class of the pipe being joined using the sweep or bend.
- B. Fusible polyvinyl chloride (PVC) pipe sweeps or bends shall be manufactured from the same fusible polyvinyl chloride pipe being used for the installation and shall have at least 2 feet of straight section on either end of the sweep or bend to allow for fusion of the sweep to the pipe installation.
- C. Standard fusible polyvinyl chloride pipe sweep or bend angles shall not be greater than 22.5 degrees and shall only be allowed for nominal diameters ranging from 4-inch through 16-inch.

2.6 SLEEVE-TYPE COUPLINGS

- A. Sleeve-type, mechanical couplings shall be manufactured for use with PVC pipe and may be restrained or unrestrained as indicated in the Contract Documents.
- B. Sleeve-type couplings shall be rated at the same, or greater, pressure as the pipe.

2.7 EXPANSION AND FLEXIBLE COUPLINGS

- A. Only expansion-type mechanical couplings manufactured for use with PVC pipe shall be permitted and may be restrained or unrestrained as indicated in the Approved Plans.
- B. Expansion-type mechanical couplings shall be rated at the same, or greater, pressure as the pipe.

2.8 CONNECTION HARDWARE

Unless otherwise specified, bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

2.9 CONNECTION TO SANITARY SEWER MANHOLES AND STRUCTURES

- A. Fusible polyvinyl chloride (PVC) pipe shall be connected to manholes and other structures to provide a leak-free, properly graded flow into or out of the manhole or structure.
- B. Unless otherwise indicated in the Contract Documents, connections to existing manholes and structures shall be the following.
 - 1. For cored or drilled openings a flexible, watertight connection that meets and/or exceeds ASTM C923 shall be installed.
 - 2. For knock-out openings, a watertight connection (waterstop or mechanical link seal) meeting the material requirements of ASTM C923 that is securely attached to the pipe with stainless steel bands or other means provided in the Contract Documents shall be installed.
 - 3. Grout Openings in manhole walls shall be filled with non-shrink grout. Concrete collars shall be poured around pipe and outside manhole openings. Flexible pipe joints or flexible connectors shall be installed within 2 feet of the collar.
- C. Unless otherwise indicated in the Contract Documents, connections to a new manhole or structure shall be the following.
 - 1. A flexible, watertight gasket per ASTM C 923 shall be cast integrally with riser section(s) for all precast manholes and structures.
 - 2. Drop connections shall be installed where shown on the Approved Plans.
 - 3. Joint gaps and openings around the connection shall be grouted with non-shrink grout.

2.10 GROUT

- A. When specified or shown on the Plans, grout used to fill the annular space between the fusible PVC pipe and the host pipe shall be a non-pervious closed cell, low-density, highly flowable cellular concrete. Grout shall meet the following requirements:
 - 1. Portland cement shall comply with ASTM C150 (Type I, II or III).
 - 2. Fly ash: Class C or Class F and compatible with foaming agent.
 - 3. Water shall be free from deleterious substances.

4. Foaming agent shall conform to ASTM C796.
 5. Admixtures for water reducing, retarding, accelerating, and other specific properties may be used when recommended by the manufacturer of the foaming agent.
 6. Cast Density: 40 – 60 lbs./cubic foot.
 7. Compressive Strength (28 Days): 50 – 200 psi
 8. Flow Consistency, ASTM D6103: Greater than 7 inches
- B. Testing requirements shall be in accordance with the Contract Documents. Grout additives to improve its flow properties shall be permitted, provided that the grout strength property requirements are met.

2.11 PIPE PULL HEADS

- A. When used, pipe pull heads and their connection to the pipe shall employ a positive through-bolt design that provides a smooth pull head exterior against the host pipe interior throughout the pipe insertion. The connection shall be designed to withstand the calculated pulling forces.
- B. Pipe pull heads shall be specifically designed for use with fusible PVC pipe and shall be as recommended by the pipe supplier.

2.12 PIPE ROLLERS

- A. Pipe rollers shall be sized to fully support the weight of the pipe during handling and pullback operations.
- B. To assure adequate support and resist excessive sagging of the pipe, the quantity and spacing of pipe rollers shall be per the pipe supplier's guidelines.

PART 3 -- EXECUTION

3.1 DELIVERY AND OFF-LOADING

- A. All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the Engineer.
- B. Each pipe shipment shall be inspected prior to unloading to see if the load has shifted or otherwise been damaged. The Engineer shall be notified immediately if more than immaterial damage is found. Each pipe shipment shall also be checked for quantity and proper pipe size and type.
- C. Pipe shall be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all the pipe supplier's guidelines shall be followed.
- D. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.
- E. During off-loading and handling, care shall be taken to avoid the pipe striking hard objects. Substantial impact could cause damage, particularly during freezing weather.
- F. If appropriate unloading equipment is not available, pipe may be unloaded by removing pieces individually. Care should be taken to ensure that pipe is not dropped or damaged. Pipe shall be carefully lowered, not dropped, from trucks.

3.2 HANDLING AND STORAGE

- A. Visibly damaged pipe sections and sections with suspected damage, shall be segregated and set aside for thorough evaluation.
- B. Any damage, scratch or gouge that is deeper than 10% of the wall thickness shall be significant and is basis for rejection unless determined acceptable by the Engineer. Significantly damaged pipe sections shall be rejected or cut out. Cutting shall be performed according to the pipe supplier's recommendations.
- C. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution shall be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.
- D. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut into, gouge, scratch or otherwise abrade the pipe.
- E. If pipe is to be stored for a period in excess of 6 months, the pipe should be shaded or otherwise shielded from direct sunlight. If pipe is shielded with a cover, adequate air circulation above and around the pipe shall be provided to prevent excess heat from accumulating.
- F. Pipe shall be stored and stacked per the pipe supplier's guidelines.

3.3 FUSION PROCESS

- A. General Requirements
 - 1. Fusible polyvinylchloride (PVC) pipe shall be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
 - 2. Fusible polyvinylchloride pipe shall be fused by qualified fusion technicians, as documented by the pipe supplier.
 - 3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) properly connected to the fusion machine.
 - 4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following elements:
 - a. Heat Plate - Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly. The cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
 - b. Carriage – The carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.

- c. Fusion Machine Overview - The entire fusion machine shall be examined for defects, missing parts, or potential safety issues. All issues shall be rectified prior to use.
 - d. Data Logging Device – An approved electronic datalogging device with the current version of the pipe supplier’s recommended and compatible software shall be used. The operation and maintenance manual shall always be kept with the datalogging device. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.
5. Other equipment specifically required for the fusion process shall include the following:
- a. Pipe rollers shall be used to adequately support the pipe on both sides of the machine
 - b. A weather protection canopy or like protection that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and/or windy weather conditions, per the pipe supplier’s recommendations. When the pipe temperature is below 40°F, the pipe supplier’s cold weather operating procedures shall be followed.
 - c. An infrared (IR) pyrometer with an accuracy of ±1% or better, shall be used to check pipe and heat plate temperatures.
 - d. The fusion machine operations and maintenance manual shall always be kept with the fusion machine.
 - e. Facing blades specifically designed for use on fusible PVC pipe shall be used.

B. Fusion Joint Report Requirements

Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging report shall be generated by software developed specifically for the butt-fusion of fusible polyvinyl chloride (PVC) pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Pertinent data not logged by the data logger shall be logged manually and be included in the Fusion Technician’s report.

3.4 HOST PIPE PREPARATION

- A. The host pipe shall be cleaned in accordance with all applicable standards and guidelines. Unless otherwise specified, all interior pipe surfaces shall be cleaned per AWWA M28. The number of cleaning passes will depend on the method used and what is needed to create a uniform interior host pipe surface that is free of all loose material and sharp edges. Any potentially deleterious areas of the host pipe should be removed or secured in place, prior to the insertion of fusible polyvinyl chloride (PVC) pipe.
- B. Hazardous materials shall be removed and disposed of per all applicable requirements and regulations.

3.5 VIDEO INSPECTION

- A. The host pipe shall be inspected by video camera after or during the cleaning process in accordance with these specifications.
- B. Video camera inspection after host pipe cleaning shall indicate condition of host pipe and the suitability of host pipe for fusible PVC pipe insertion.
- C. Obstructions such as corporation taps, valves and valve bodies, and collapsed piping shall be remedied prior to pipe insertion. Spot repairs shall be made in accordance with the Approved Plans and these specifications.

3.6 FUSIBLE POLYVINYL CHLORIDE (PVC) PIPE INSTALLATION

- A. Access pit excavations shall be performed at all points where the fusible PVC pipe will be inserted into the existing pipeline. When possible, access pit excavations shall coincide with host pipe lateral connection points or other appurtenance locations.
- B. Access pit length shall be such that the minimum bending radius, per the pipe supplier, for the fusible PVC pipe is maintained. Sheeting, shoring and bracing requirements shall be in accordance with applicable worker safety requirements and regulations.
- C. Pipe shall be handled with care to minimize the possibility of it being cut, kinked, gouged, or otherwise damaged. Metal cables or hooks shall not be permitted.
- D. The pulling mechanism shall be properly connected to the end of the fusible PVC pipe via a pulling head or arrangement approved by the pipe supplier.
- E. The maximum pulling tension on the pipe shall not exceed the pipe supplier's recommended safe pulling force.
- F. If possible and immediately following the completion of an installation by sliplining, the pipe should be pushed back into the host pipe, at the pulling head, until a small amount of pipe movement is observed at the insertion pit, i.e., on the other end of the installation from the pulling equipment.
- G. Damaged, cut, or gouged fusible PVC pipe shall be removed by cutting out the damaged section(s) of pipe. Cutting and beveling shall be performed according to the pipe supplier's recommendations.
- H. Field bending involves excavating the trench to the desired bend radius which shall not exceed the pipe manufacturer's minimum allowable bending radius, then sweeping or pulling the pipe string into the required bend and placing it in the trench. Temporary restraints may be required to bend the pipe, and to maintain the bend while placing the pipe in the trench and placing initial backfill. Temporary blocks or restraints must be removed before installing final backfill, and any voids must be filled with compacted initial backfill material. Considerable force may be required to field bend the pipe, and the pipe may spring back forcibly if the restraints slip or are inadvertently released while bending. Observe appropriate safety precautions during field bending.

3.7 ANNULAR SPACE GROUTING

- A. If required in the Contract Documents, the annular space between the outside of the fusible polyvinylchloride (PVC) pipe and the inside of the existing host pipe can be filled with a flowable grout in accordance with the Contract Documents.

- B. Samples of grout shall be obtained in accordance with ASTM C495. One set of four standard cylinders shall be cast for each grout batch. Special handling and sampling procedures shall be followed if indicated by the grout manufacturer. The samples must meet the design compressive strength of the grout as outlined in the Contract Documents and per the grout manufacturer. Samples shall be tested in accordance with ASTM C495.
- C. The fusible PVC pipe shall be filled with water prior to grouting. This shall aid in keeping the pipe from excessive floating or collapsing during grouting and aid in dissipating the grout's heat of hydration as the grout cures. The water filling can be done in conjunction with the post-installation pipe pressure testing.
- D. Grouting of the annular space shall be done in such a manner as to prevent damage or collapse of the fusible polyvinyl chloride (PVC) pipe. Grouting operations shall be properly vented and grouting pressures monitored. Grouting pressure shall be limited to no higher than 5 psi.
- E. If the grouting pressure exceeds the allowable pressure, additional grouting points shall be installed by the Contractor.

3.8 CONNECTIONS TO ADJOINING PIPE SYSTEMS

- A. Unless otherwise specified in the Contract Documents, the new sliplining pipeline shall be completely assembled and successfully tested and disinfected prior to making connections into existing pipe systems.
- B. The sizes, type and locations of adjoining piping systems, as shown in the project construction documents, shall be verified in the field prior to making connections.
- C. All required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents shall be delivered to their respective connection location(s) as shown on the Approved Plans.
- D. All temporary pumps and/or pipes shall be in place and operational in accordance with the Contract Documents prior to making connections.
- E. Pipe connections shall be installed per applicable standards and regulations and the fitting or structure manufacturer's guidelines and as indicated in the Contract Documents. Pipe connections shall be installed in accordance with the connection details shown on the Approved Plans.

3.9 INTERMEDIATE TESTING

Short lengths or segments of the pipe may be tested separately in accordance with standard testing procedures and safety practices, when approved by the Engineer. The specific test sections shall be submitted to the Engineer for review.

3.10 HYDROSTATIC TESTING OF PRESSURE PIPELINES

- A. Hydrostatic pressure and leakage testing shall be conducted according to and comply with AWWA C605 and Section 15044. Leakage testing shall comply with all applicable codes and standards.
- B. Prior to pressure testing the following preparations shall be completed:
 - 1. All air must be vented from the pipeline prior to pressurization. This may be accomplished with the use of the air relief valves or corporation stop valves, vent piping in the testing hardware or end caps, or any other

method which adequately allows air to escape the pipeline at all high points. Venting may also be accomplished by 'flushing' the pipeline in accordance with the parameters and procedures as described in AWWA C605.

2. The pipeline must be fully restrained prior to pressurization. This includes complete installation of approved mechanical restraints per the restraint manufacturer's guidelines, whether permanent or temporary to the final installation. This also includes the installation and curing of any and all required thrust blocking. All appurtenances included in the pressure test, including valves, blow-offs, and air-relief valves shall be checked for proper installation and restraint prior to beginning the test.
3. Temporary pipeline alignments that are being tested, such as those that are partially installed in their permanent location shall be configured to minimize the amount of potentially trapped air in the pipeline.

3.11 LEAKAGE TESTING FOR NON-PRESSURE PIPING

- A. Gravity sanitary sewer leakage testing may include appropriate water or low-pressure air testing. The leakage outward or inward (exfiltration or infiltration) shall not exceed 25 gallons per inch of pipe diameter per mile per day for any section of the system. Water exfiltration or infiltration test shall be performed with a minimum positive head of two feet. The air test, when used, shall be conducted in accordance with either ASTM F1417 or UNI-B-6.
- B. Gravity sanitary sewers that contain mechanical jointing in addition to fused PVC joints shall be tested for leakage in accordance with Section 15043.

3.12 DISINFECTION OF POTABLE WATER PIPING

- A. After installation and successfully passing all required hydrostatic testing, the fusible polyvinyl chloride (PVC) pipeline shall be disinfected prior to being put into service. Unless otherwise directed by the Engineer, the pipeline will be disinfected per AWWA C651 and Section 15041.
- B. Chlorine granules shall not be used or be present near the pipe ends while the pipe sections are being joined.

END OF SECTION

PART 1 – GENERAL

1.1 DESCRIPTION

This section designates the requirements for the manufacture and installation of high density polyethylene pipe (HDPE) to be furnished and installed by the Contractor at the location and to the lines and grades shown on the Plans as herein specified.

1.2 REFERENCE STANDARDS

ASTM D3350
ASTM D3035
ASTM F714
ASTM D3261
ASTM D2321
ASTM D2000
ASTM 2837
ASTM F714
ASTM F1055
ASTM F1290
AWWA C906

1.3 RELATED WORK DESCRIBED ELSEWHERE

The Contractor shall refer to the following Specification section(s) for additional requirements:

- A. Trenching, Excavation, Backfilling & Compacting: 02223
- B. Open Trench Pipe Casing: 15121

1.4 SUBMITTALS

The Contractor shall furnish submittals in accordance with the GENERAL PROVISIONS. Submittals are required for the following:

- A. Submit Shop Drawings, material lists, manufacturer's literature and catalog cuts of, but not limited to, the following:

Shop Drawings
Layout Schedule
Special Fittings
Dimensional Checks

Shop Drawings shall be submitted and approved prior to manufacture of special fittings. The layout schedule shall indicate the order of installation, the length and location of each pipe section and special, the station and elevation of the pipe invert at all changes in grade, and all data on curves and bends for both horizontal and vertical alignment.

- B. Submit data used by the Contractor in manufacture and quality control.

1.5 QUALITY ASSURANCE

- A. The Contractor shall ensure that persons making heat fusion joints have received training in the Manufacturer's recommended procedure. The Contractor shall maintain records of trained personnel and shall certify that training was received not more than 12 months before commencing construction. Certifications shall be provided to the owner through the submittal process.
- B. The pipe and/or fitting manufacturer's production facility shall be open by the owner or his designated agents with a reasonable advance notice. During inspection, the manufacturer shall demonstrate that it has facilities capable of manufacturing and testing the pipe and/or fittings to the standards required by this specification.

1.6 PAYMENT

- A. Payment for the Work in this section shall be included as part of the lump-sum or unit-price bid amount for which such Work is appurtenant thereto.
- B. Payment by the linear foot shall be for each diameter and for each pipe strength designation measured horizontally over the pipe centerline.

PART 2 – MATERIALS

2.1 GENERAL

- A. High Density Polyethylene Pipe (PE 4710) and fittings shall be manufactured in accordance with ASTM D3350 shall be of the outside diameter (IPS/DIPS) and pressure class or dimension ratio (DR) shown on the Plans.
- B. HDPE pipe color or color identification markings shall conform to the APWA color designation for the service application and be approved by the Engineer. This requirement may be waived for pipe used as a casing with the written approval of the Engineer.
- C. The manufacturer shall have quality control facilities capable of producing and assuring the quality of the pipe and fittings required by the reference standards and these specifications.
- D. HDPE pipe and fittings shall be supplied by the same manufacturer. Pipe and fittings from different manufacturers shall not be interchanged without each manufacturer's written certification that the materials are compatible for the intended use.

2.2 PIPE MATERIAL

- A. Materials used for the manufacture of polyethylene pipe and fittings shall be high density polyethylene conforming to cell classification 445474C or E per ASTM D3350; and shall be as listed in the name of the pipe and fitting manufacturer in the Plastic Pipe Institute's Recommended Hydrostatic and Design Stresses for Thermoplastic Pipe and Fittings Compounds, with a standard grade HDB rating of 1,600 psi at 73° F. The Manufacturer shall provide a certification that the materials used to manufacture the pipe and fittings meets these requirements.
- B. Polyethylene pipe shall be manufactured in accordance with ASTM F714, Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter and shall be so marked. Each production

lot of pipe shall be tested for (from material or pipe) melt index, density, % carbon, (from pipe) dimensions and ring tensile strength. The results of these tests shall be submitted to the Owner for review.

2.3 FITTINGS

- A. Butt Fusion Fittings: Butt Fusion Fittings shall be in accordance with ASTM D3261 and shall be manufactured by injection molding, a combination of extrusion and machining, or fabricated from HDPE pipe conforming to this specification. All fittings shall be pressure rated to provide a working pressure rating no less than that of the pipe. Fabricated fittings shall be manufactured using a McElroy Datalogger to record fusion joints made producing fittings shall be maintained as part of the quality control. The fitting shall be homogenous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.
- B. Electrofusion Fittings: Electrofusion Fittings shall be the same base resin as the pipe. Fittings shall have a minimum pressure rating equal to or greater than the pipe to which they are joined unless otherwise specified by the engineer. For potable water systems, all electrofusion fittings shall have AWWA and NSF 61 approval. Electrofusion fittings shall not be permitted when subjected to pipe bending forces associated with the installation process.
- C. Flanged and Mechanical Joint Adapters: Flanged and Mechanical Joint Adapters shall be the same base resin as the pipe. Flanged and mechanical joint adapters shall have a manufacturing standard of ASTM D3261. All adapters shall be pressure rated to provide a working pressure rating no less than that of the pipe. Flange adapters shall be made with sufficient through-bore length to be clamped in a butt fusion joining machine without the use of a stub-end holder.
- D. Mechanical Joint Restraint: Mechanical Joint Restraint for HDPE may be provided by mechanical means separate from the mechanical joint gasket sealing gland. The restrainer shall provide wide, supportive contact around the full circumference of the pipe and be equal to the listed widths. Means of restraint shall be machined serrations on the inside surface of the restrainer equal to or greater than the listed serrations per inch and width. Loading of the restrainer shall be by a ductile iron follower that provides even circumferential loading over the entire restrainer. Design shall be such that restraint shall be increased with increases in line pressure.

Serrated restrainer shall be ductile iron ASTM A536, Grade 65-45-12 with a ductile iron follower; bolts and nuts shall be corrosive resistant, high strength quality alloy steel.

The restrainer shall have a pressure rating of, or equal to that of the pipe on which it is used or 150 PSI whichever is greater. Restraint shall be ASC Engineering Solutions Gruvlok Figure 7305 HDPE coupling or approved equal.

Mechanical Joint Restraint gasket properties shall be in accordance with ASTM D2000 and be manufactured of Grade E EPDM.

Pipe stiffeners shall be used in conjunction with restrainers. The pipe stiffeners shall be designed to support the interior wall of the HDPE. The stiffeners shall support the pipe's end and control the "necking down" reaction to the pressure applied during normal installation. The pipe stiffeners shall be formed of 316 stainless steel to the HDPE

manufacturers published average inside diameter of the specific size pipe. Stiffeners shall be by JCM Industries or pre-approved equal.

2.4 COMPLIANCE TESTS

The manufacturer's production facilities shall be open for inspection by the owner or his Authorized Representative. The manufacturer's inspection and testing shall comply with applicable ASTM standards, a list of the inspection certifications and test certifications shall be submitted prior to the shop drawing submittal for the HDPE pipe itself. The list shall be submitted as a shop drawing. In case of conflict with Manufacturer's certifications, the Contractor, the Engineer, or the Owner may request retesting by the manufacturer or have retests performed by an outside testing service. All failed retesting shall be paid for by the manufacturer.

PART 3 – EXECUTION

3.1 GENERAL

High Density Polyethylene pipe and fittings shall be handled, assembled and installed in accordance with the applicable sections of AWWA C906, ASTM D2774 or ASTM D2321, as applicable, and the manufacturer's recommendations and as specified herein.

3.2 EXCAVATION

- A. Excavation and backfill, including the pipe bedding and pipe zone backfill, shall conform to the provisions of Section 02223 except as herein modified.
- B. Crushed rock shall comply with Section 200-1.2 SSPWC, 3/8-inch maximum size.
- C. Pipe Bedding: Imported sand or crushed rock shall be used for pipe bedding and shall be compacted to obtain a relative density of 95-percent unless otherwise specified. The thickness of the pipe bedding shall be a minimum of four inches. The pipe bedding shall be placed over the full width of the trench.
- D. Backfill Within Pipe Zone: Imported sand or crushed rock shall be placed and compacted within the pipe zone from the bottom of the pipe to one foot above top of pipe and compacted to obtain a relative density of 95-percent unless otherwise specified.

3.3 PIPE HANDLING

The manufacturer's written procedures for unloading, inspection and handling of the HDPE pipe shall be adhered to by the Contractor. A copy of these Manufacturer's written procedures shall be submitted as a shop drawing and included with the shop drawings for the pipe material.

When lifting with slings, only wide fabric choker slings capable of safely carrying the load, shall be used to lift, move, or lower pipe and fittings. Wire rope or chain shall not be used. Slings shall be of sufficient capacity for the load and shall be inspected before use. Worn or damaged equipment shall not be used.

3.4 FUSION AND JOINING

Polyethylene pipe and fittings may be joined together or to other materials by means of flanged connections, mechanical couplings designed for joining polyethylene pipe or for joining polyethylene pipe to another material or electrofusion, as shown on the approved plans or as approved by the Engineer. The installation instructions of the joining device manufacturer shall be strictly followed when joining by other means is performed.

- A. Butt Fusion: Sections of polyethylene pipe should be joined into continuous lengths on the jobsite above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The butt fusion equipment used in the joining procedures should be capable of meeting all conditions recommended by the pipe manufacturer, including but not limited to, temperature requirements of 400 degrees Fahrenheit, alignment, and an interfacial fusion pressure of 75 PSI. The butt fusion joining will produce a joint weld strength equal to or greater than the tensile strength of the pipe itself. All field welds shall be made with fusion equipment equipped with McElroy Data Logger. Temperature, fusion pressure and a graphic representation of the fusion cycle shall be part of the quality control records. Interior bead from butt fusion welds shall be removed.
- B: Electrofusion: Electrofusion joining shall be done in accordance with the manufacturers recommended procedure. Other sources of electrofusion joining information are ASTM F1290, PPI TN 34, and PPI Municipal Advisory Board (MAB) Generic Electrofusion Procedure for Field Joining of 12 Inch and Smaller Polyethylene (PE) Pipe. The electrofusion processor must be capable of reading and storing the input parameters and the fusion results for later download to a record file. Qualification of the fusion technician shall be demonstrated by evidence of electrofusion training within the past year on the equipment to be utilized for this project.
- B. Sidewall Fusion: Sidewall fusions for connections to outlet piping shall be performed in accordance with HDPE pipe and fitting manufacturer's specifications. The heating irons used for sidewall fusion shall have an inside diameter equal to the outside diameter of the HDPE pipe being fused. The size of the heating iron shall be ¼ inch larger than the size of the outlet branch being fused.
- C. Mechanical: Bolted joining may be used where the butt fusion method cannot be used. Flange joining will be accomplished by using HDPE flange adapter with a ductile iron back-up ring. Mechanical joint joining will be accomplished using either a molded mechanical joint adapter or the combination of a Sur-Grip Restrainer and Pipe Stiffener as manufactured by JCM Industries, Inc. Either mechanical joint joining method will have a ductile iron mechanical joint gland.
- D. Other: Socket fusion, hot gas fusion, threading solvents, and epoxies may not be used to join HDPE pipe.

3.5 FIELD BENDING

Field bending involves excavating the trench to the desired bend radius which shall not exceed the pipe manufacturer's minimum allowable bending radius, then sweeping or pulling the pipe string into the required bend and placing it in the trench. Temporary restraints may be required to bend the pipe, and to maintain the bend while placing the pipe in the trench and placing backfill. Temporary blocks or restraints must be removed before installing final backfill, and any voids must be filled with compacted backfill material. Considerable force may be required to field bend the pipe, and the pipe may spring back forcibly if the restraints slip or are inadvertently released while bending. Observe appropriate safety precautions during field bending.

3.6 PREVENTING FOREIGN MATTER FROM ENTERING THE PIPE

At all times when pipe laying is not in progress, the open end of the pipe shall be closed with a tight-fitting cap or plug to prevent the entrance of foreign matter into the pipe. These provisions shall apply during the noon hour as well as overnight. In no event shall the pipeline be used as a drain for removing water which has infiltrated into the trench. The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by the Engineer.

3.7 DAMAGED PIPE OR FITTINGS

Sections of pipe having been discovered with cuts or gouges in excess of 1/8-inch thickness shall be cut out and removed. The undamaged portions of the pipe shall be rejoined using the heat fusion joining method.

3.8 TESTING

A. Butt Fusion Welds

On every day butt fusion welds are made, the first fusion joint of the day shall be a trial fusion. The trial fusion shall be cooled completely, then fusion test straps shall be cut. The test strap shall be 12-inch (min.) or 30 times the wall thickness in length with the fusion in the center, and 1-inch (min.) or 1.5 times the wall thickness in width. Bend the test strap until the ends of the strap touch. If failure occurs at the fusion joint, a new trial fusion shall be made, cooled completely and tested. Butt fusion of the pipe to be installed shall not commence until a trial fusion joint has passed the bent strap test.

B. Pressure Testing

All pressure pipelines shall be flushed and tested in accordance with Section 15044 and the applicable provisions of AWWA C600.

C. Allowable Leakage

There will be no leakage allowed for the butt fused portions of the pipeline.

3.9 DISINFECTION

Disinfection of pipe used for potable water mains shall be in accordance with Section 15041.

END OF SECTION

APPENDIX “A”

Proposal for Fusible PVC Pipe and Fusion Services



13135 Danielson Street, Suite 201
Poway, CA 92064
Tel: (858) 679-9551
Fax: (858) 679-9555
www.undergroundsolutions.com

Date Prepared: 6/21/2021

Mr. David Padilla
City of Carlsbad Public Works
5950 El Camino Real
Carlsbad, CA 92008

**Ref: Carlsbad I-5 Crossing - Carlsbad, CA
Proposal No. P21-0708**

Dear Mr. Padilla,

Underground Solutions, Inc. (UGS) is pleased to provide the following Firm Proposal for Fusible PVC® pipe and fusion services for the Carlsbad I-5 Crossing project. Pricing for pipe (including freight) and related fusion services is detailed in the following section.

Fusible C-900® pipe meets all applicable industry standards: AWWA C900/C905, NSF-61 Certification for Drinking Water Components, ASTM cell classification 12454, and formulation requirements of Plastics Pipe Institute TR-2. FPVC® pressure pipe is tested in accordance with AWWA C900/C905 requirements, meets the same ASTM cell classification and PPI formulation requirements, and is NSF-61 certified when used for potable water.

In evaluating Fusible PVC® pipe for this project, we would like to call your attention to the following total installed cost advantages associated with using Fusible PVC® pipe:

- Maximum Flow Area:** Fusible PVC® pipe generally offers the largest internal diameter in a slipline material. In addition, Fusible PVC® pipe does not utilize bells for connections, which allows for a larger nominal diameter pipe to be installed.
- Standard Fittings:** Fusible PVC® pipe utilizes standard mechanical joint fittings. No special fittings or equipment are required for connections. As a result, Fusible PVC® pipe is easy to connect to and maintain.
- Lower Material Weight:** Fusible PVC® pipe will have a lower overall material weight than other pipe systems. This means that equipment costs may be lower to install Fusible PVC® pipe and/or the section lengths required to install the pipe may be longer.
- Safe Pulling Allowance:** Fusible PVC® pipe has a safe pulling allowance that is significantly greater than that of most other pipe systems, and does not depend on pull-in duration.
- Immediate Reconections:** Fusible PVC® pipe may be reconnected to a system immediately after installation, with no "relaxation time" required.

Thank you for considering UGS. Please do not hesitate to contact us for any additional information or with any questions or clarifications.

Sincerely,

Brett Fornelli

Date Prepared: 6/21/2021 **Prepared For:** Carlsbad Public Works **Project Reference:** Carlsbad I-5 Crossing
Proposal No.: P21-0708 **Prepared By:** Brett Fornelli **Project Site:** Carlsbad, CA

PRODUCTS AND SERVICES:

No.	Pipe Description	Pipe Size	DR	Type	Color	Qty.	Unit Cost	Total Cost, \$
1	10" DR 18 FPVC®	10"	18	DIPS	Any	495	\$30.50	\$15,097.50
Freight to Project Site								\$9,600
10" Pull-head Rental(s) for up to 1 Week(s). Return freight to be provided by the buyer.								Included
Purchase Price								\$24,697.50

No.	Description	Unit	Est. Qty.*	Unit Cost	Total Cost, \$
1	Fusion Services for 6"-16" Pipe (618 Machine & Labor)	Per Day	2	\$1,750	TBD
2	Mobilization/Demobilization Event to the Site	Per Event	1	Included	Included
3	Performance Bond Insurance	Per Event	1	\$200	\$200

*Total number of billed fusion days will be based on actual time on-site.
UGS California Contractor License No. 930859 & California DIR Registration No. 1000014790

SCOPE OF WORK:

Equipment/Services Provided by Underground Solutions, Inc., d/b/a UGS, Inc. in California ("UGS" or "Seller"):

- Pipe Supply and freight to project site.
- Fusion Services are estimated at 2 consecutive 8-hour work days. The actual duration of fusion services may vary based on site conditions and contractor support, and will be charged at the daily rate listed above for actual days on-site.
- Mobilization/demobilization event to the site.
- Fusion machine with inserts, heater, datalogger, and 2 rollers.
- 10" pull-head rental(s) for up to 1 week(s). Additional time will be billed at the rate listed below. Return freight to be provided by the buyer.
- Per diem expenses have been included in the Daily Rate.
- Minimum charge will be one 8-hour day. Any work performed in excess of ten (8) hours per day will be charged an additional \$97.50 per hour.
- Any work performed on holidays or Sundays will be charged an additional \$130.00 per hour.

Equipment/Services Provided by Buyer:

- All labor, equipment, and material required to unload and stage pipe and fusion equipment at site (and restage as necessary).
- All labor, equipment, and materials for loading and unloading pipe onto the fusion machine, positioning fused pipe, pipe reconnections, pipe ballasting, pipe handling, required testing, and pipe installation.
- Any additional labor, equipment, and materials required to fuse based on actual weather conditions (contact UGS for guidance).
- Pipe rollers required for installation and any intermediate fusion (contact UGS for guidance).
- All excavation, traffic control, permits, bonds, repairs, etc.
- All utilities at the job site **including power and fuel for UGS's equipment (~1.5 gal/machine/hour).**
- All temporary bypass piping.
- Installation hardware and equipment for fittings, valves or additional accessories not identified in UGS Scope of Work.

PULL-HEAD TERMS:

A pull-head is available for rental or purchase from UGS via the following link: <http://www.ugsproducts.com>. Actual freight costs will be added to the final pull-head rental charge following return of the pull-head to UGS. For pull-head purchases, a freight cost to the shipping destination will be added to the final purchase amount.
 Typical lead time for pull-head shipment is 7-10 days from receipt of order. Pull-heads ship out of Warrendale, PA.

	Initial Rental Fee	Weekly Rental Rate (After Week 1)	Estimated Return Freight	Purchase Price
10" Pull-head	Included	\$53	\$233	\$2,204

PAYMENT TERMS:

100% of each purchase price component shown above, net 30 days after completion of such component.

PIPE SHIPPING TERMS:

F.O.B. Shipping Point with full freight allowed to the job site.

PROPOSAL VALIDITY:

Price quoted is valid for 10 business days from the date of this Proposal.

DELIVERY SCHEDULE:

To be negotiated. UGS will take reasonable action to meet Buyers's installation schedule. Buyer must provide 10 business days notice to UGS prior to the start date for fusion services (see Section 4 of Supplemental Terms and Conditions Fusion Services).

REMOBILIZATION TERMS:

Additional mobilization events will be charged at the following rates.

Fusion Machine	Crew Mobilization	Equipment Mobilization
T-500/618	\$300	\$100

TAXES: The Purchase Price does not include any sales or similar taxes, which are the Buyer's responsibility (see Section 3 of Terms and Conditions of Sale).

This Proposal is subject to the Terms and Conditions at <http://www.aegion.com/-/media/Aegion2017/Files/Terms/UGS-Terms-Conditions.pdf>, which form an integral part of this Proposal. Such Terms and Conditions will govern any transaction resulting from this Proposal. Any contract resulting from this Proposal is made subject to prior acceptance by UGS at its offices in Poway, California. All orders are subject to prior credit approval.

Buyer's signature indicates acceptance of the UGS Order Summary and Terms and Conditions.

Buyer's Authorized Signature _____

Date _____

Print Name & Title _____

Print Company Name _____

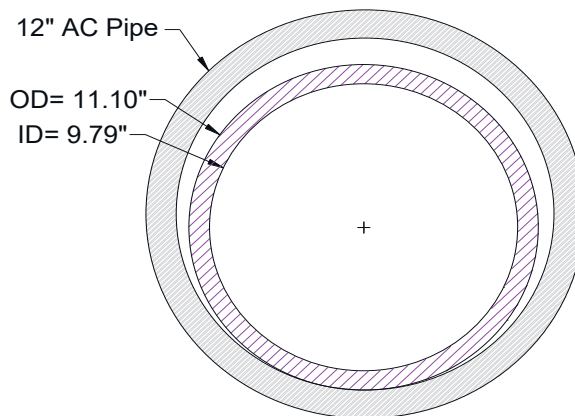
Tax Exempt (must provide Tax Exempt Certificate with order)

Taxable

State Registered Wholesaler

Pipe Technical Data Sheet:

	10" DR 18 FPVC®
Pipe Material	FPVC®
Total Pipe Length (LF)	495
Nominal Diameter (in)	10
Dimension Ratio	DR 18
Series	DIPS
Pressure Rating (PSIG)	235
Safety Factor	2.0
Outside Diameter (in)	11.10
Inside Diameter (in)	9.79
Cross Sectional Flow Area (in ²)	75.3
Bend Radius (LF)	231
Tensile Strength (PSIG)	7,000
Safe Pulling Force (lbs)	56,800
Safe Pulling Stress (PSIG)	2,800
Relaxation Period (hrs)	0
Hydrostatic Design Basis (PSIG)	4,000
Critical Buckling Pressure (PSIG)	191
Connection to Host Pipe	Standard Mechanical Joint
Material Weight (lbs/ft)	13.2
Total Pipe Weight (lbs)	6,524
Water Disinfectant Induced Oxidation	High Resistance
Hydrocarbon Permeation	High Resistance



10" DR 18 FPVC®
Sliplining in 12" AC Host Pipe

Product and Installation Guide for Fusible PVC® Pipe

Recommended handling and installation practices for Fusible PVC® pipe are straightforward and well within current construction practice in terms of required equipment, appurtenances, procedures, and labor skillset. For operators and installers accustomed to working with PVC pipe, Fusible PVC® pipe will only require adjustment to the longer lengths of pipe (including both delivered and assembled pipe) and the proper way to handle and install the product. For operators and installers accustomed to working with high density polyethylene (HDPE) pipe, Fusible PVC® pipe is joined in a similar method, however, the requirements for handling, installing, and connecting the pipe will be different.

UGS has developed a Product and Installation Guide, which covers the following topics:

- Shipping and Receiving
- Thermal Butt Fusion
- Fusible PVC® Pipe Connections
- Testing and Disinfection
- Tapping Fusible PVC® Pipe
- Pulling Parameters
- Cutting Fusible PVC® Pipe
- Horizontal Directional Drilling
- Sliplining
- Pipe Bursting
- Direct Bury
- Special Considerations

Proper handling and installation of Fusible PVC® pipe in accordance with the Product and Installation Guide will preserve your warranty protection.

UGS will provide a copy of the Product and Installation Guide upon the acceptance of your order in accordance with the terms of the Proposal. In the meantime, contact your UGS representative if you have any questions or concerns regarding the proper handling and use of Fusible PVC® pipe products.

APPENDIX “B”

Caltrans Encroachment Permit

(Permit to be issued via addendum)

APPENDIX “C”

Utility Shutdown/Connection Request E-28



**UTILITY SHUTDOWN/
CONNECTION REQUEST
E-28**

Public Works
Construction Management & Inspection
1635 Faraday Ave
760-602-2780
www.carlsbadca.gov

DATE OF CONNECTION _____ LOCATION OF WORK _____

CONTRACTORS NAME _____ TEL NO. _____

NAME OF REP. AT SITE _____ TITLE _____

SIGNATURE _____ DATE _____

TYPE OF CONNECTION

SEWER _____ WATER _____ RECYCLED _____ WET TAP _____ SHUT DOWN _____

LENGTH OF SHUT DOWN _____ FROM _____ TO _____ TOTAL HOURS _____

SERVICES EFFECTED _____

MATERIAL/EQUIPMENT TO BE USED _____

PLEASE READ BELOW

1. Request must include a **DETAILED SKETCH** showing proposed construction. (See other side for details.)
2. Submission of this request shall be a minimum of two weeks prior to desired shutdown/connection date.
3. If the weather or a situation develops where the time of shutdown is not feasible, a new shutdown time shall be resubmitted to the district for approval.
4. Temporary water supply shall be only from an approved and accepted CMWD line.
5. No CMWD valves shall be operated except under direction of CMWD representative.
6. There shall be **NO SHUTDOWNS MONDAYS, FRIDAYS, WEEKENDS OR HOLIDAYS.**
7. The contractor shall have his representative, listed above, on the site of construction during the entire duration of the shutdown and will have authority to act in the company's behalf.

**CONSTRUCTION MANAGEMENT AND INSPECTION
1635 FARADAY AVE
CARLSBAD, CALIFORNIA 92008
TEL. NO. (760) 602-2780**

CITY INSPECTOR _____

DATE: _____

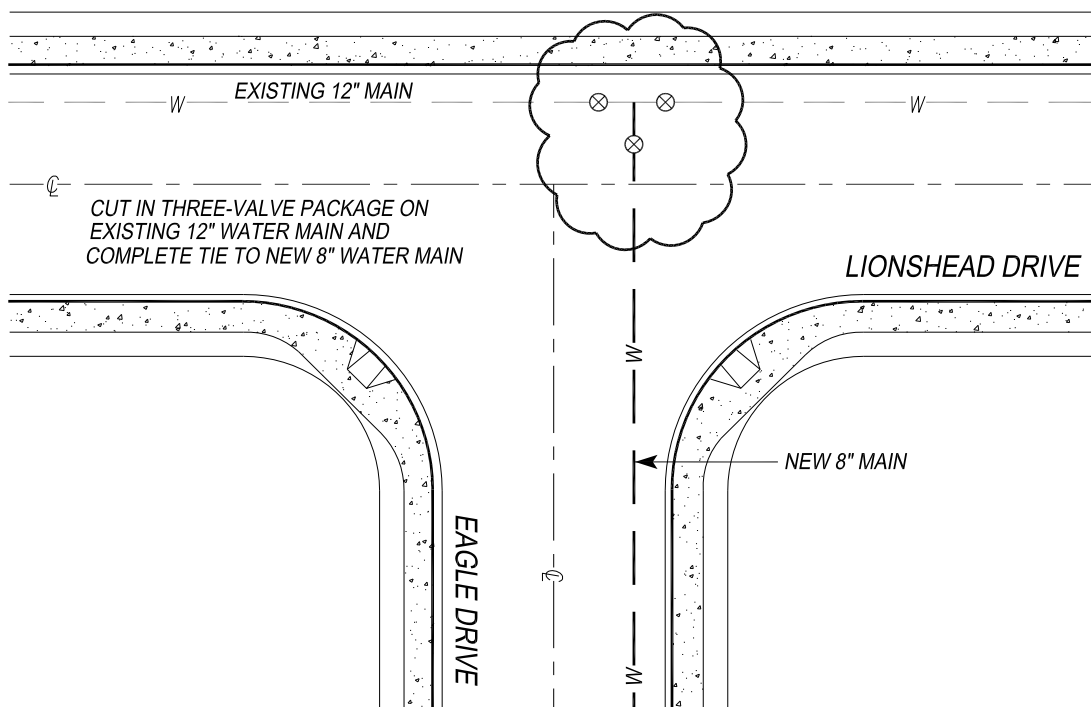
DISTRICT APPROVAL SIGNATURE

PUBLIC WORKS MANAGER, UTILITY OPERATIONS

DATE: _____

CONTRACTOR INSTRUCTIONS – PLEASE READ BEFORE SUBMITTING

1. Request shall not be approved unless a **DETAILED SKETCH IS ATTACHED** showing proposed construction. (See example below.)
2. Utility shutdown/connection request shall be submitted to Construction Management & Inspections **two weeks** before anticipated connection date.
3. Scheduling: Prior to start of work, there shall be a **MINIMUM OF TWO WEEKS NOTICE GIVEN TO DISTRICT.**
4. Connection shall not be permitted unless **BACTERIOLOGICAL TEST RESULTS** are attached (required for all potable use lines).
5. If the weather or a situation develops where the time of shutdown is not feasible, a new shutdown time shall be resubmitted to the District for approval.
6. Temporary water supply shall be only from an approved and accepted CMWD line.
7. **NO CMWD VALVES** shall be operated except under the direction of CMWD Representative.
8. There shall be **NO SHUTDOWNS MONDAYS, FRIDAYS, WEEKENDS OR HOLIDAYS.**
9. The contractor shall have his representative (listed on the front) on the site of construction during the entire duration of the shutdown and will have authority to act in the company's behalf.
10. If the contractor has preferred connection date, please provide with submittal.
11. The City reserves the right to change the schedule.

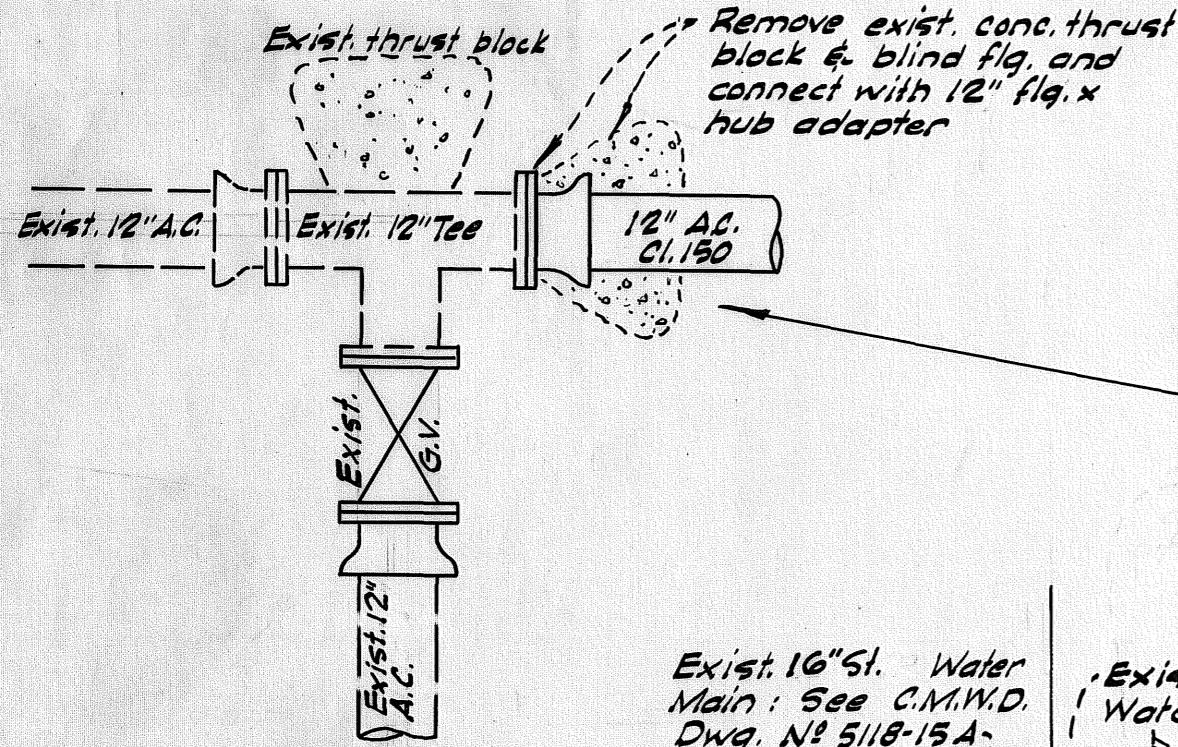
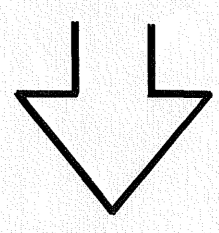


APPENDIX “D”

Record Drawings

23 of 30

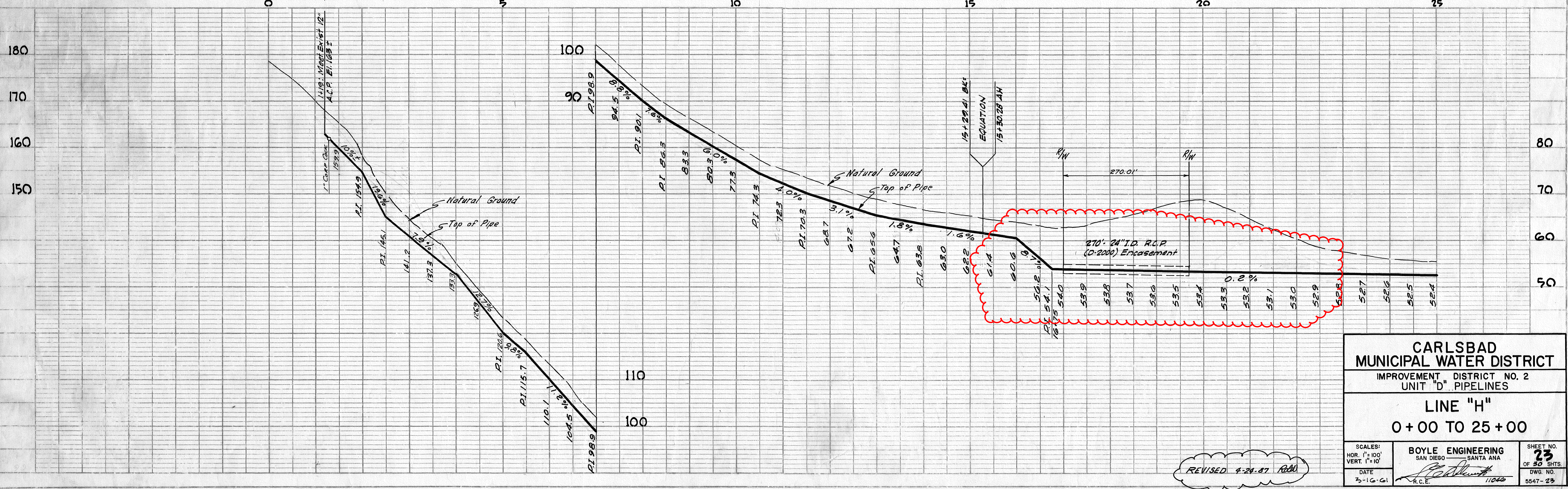
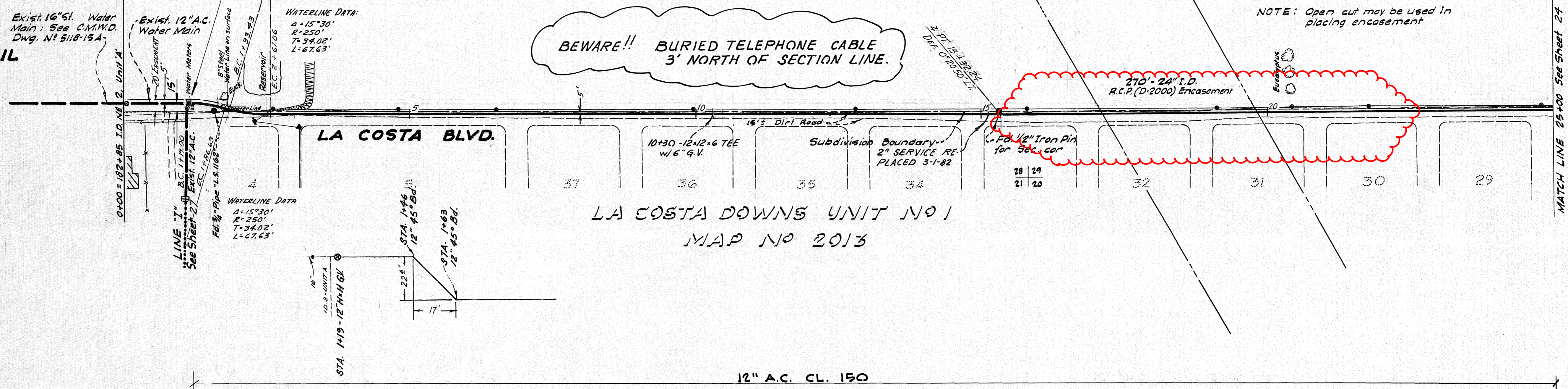
61-5547



BEGIN CONSTR.
1+10: Remove exist. plug assembly and connect to exist. 12" See Detail, Left

BEWARE!! BURIED TELEPHONE CABLE 3' NORTH OF SECTION LINE.

NOTE: Open cut may be used in placing encasement



CARLSBAD MUNICIPAL WATER DISTRICT
IMPROVEMENT DISTRICT NO. 2
UNIT "D" PIPELINES
LINE "H"
0 + 00 TO 25 + 00

BOYLE ENGINEERING
SAN DIEGO - SANTA ANA

DATE: 3-1-01
R.C.E.

SHEET NO. 23
OF 30 SHTS.
DWG. NO. 5547-23

REVISED 4-24-07 RBB

TRANS. D3

ID2

TRANS

DWG 921-6
23 OF 30

CARLSBAD TRACT NO. 72-2.2

MAP NO. 7476

SHEET 7 OF 7 SHEETS

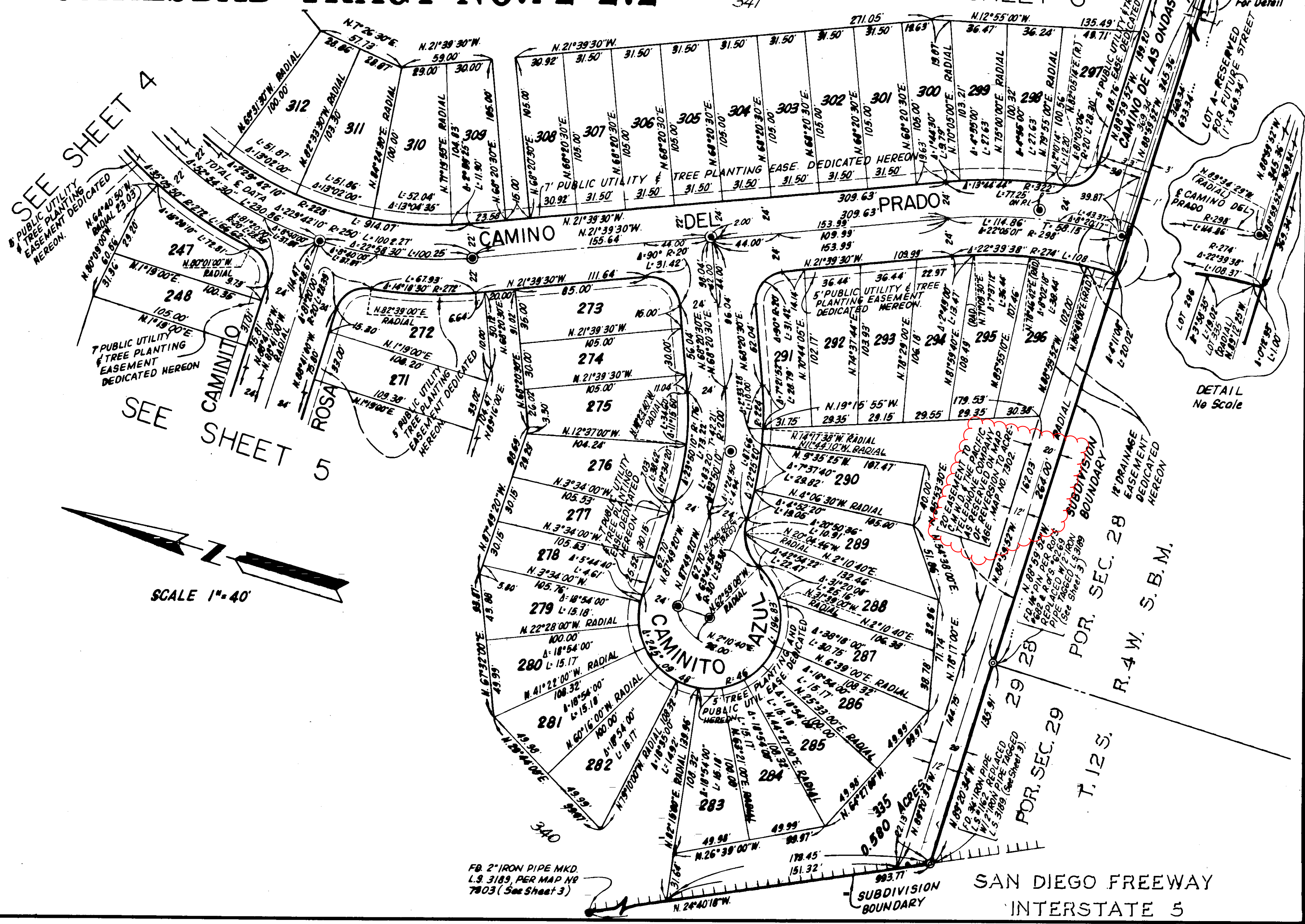
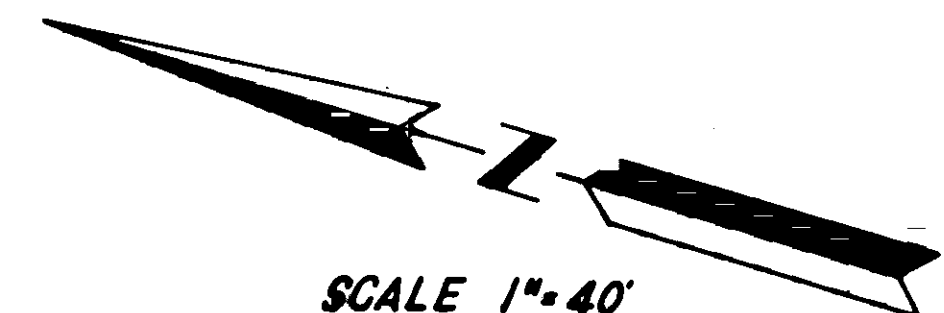
SEE SHEET 6

341

SEE SHEET 4

SEE SHEET 5

DETAIL
No Scale



FB. 2" IRON PIPE MKD.
L.S. 3189, PER MAP NO
7803 (See Sheet 3)

SAN DIEGO FREEWAY
INTERSTATE 5

APPENDIX “E”

City of Carlsbad SWPPP Template

STORM WATER COMPLIANCE FORM TIER 1 CONSTRUCTION SWPPP E-29

CB _____
SW _____ - _____

STORM WATER POLLUTION PREVENTION NOTES

- ALL NECESSARY EQUIPMENT AND MATERIALS SHALL BE AVAILABLE ON SITE TO FACILITATE RAPID INSTALLATION OF EROSION AND SEDIMENT CONTROL BMPs WHEN RAIN IS EMINENT.
- THE OWNER/CONTRACTOR SHALL RESTORE ALL EROSION CONTROL DEVICES TO WORKING ORDER TO THE SATISFACTION OF THE CITY INSPECTOR AFTER EACH RUN-OFF PRODUCING RAINFALL.
- THE OWNER/CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL MEASURES AS MAY BE REQUIRED BY THE CITY INSPECTOR DUE TO INCOMPLETE GRADING OPERATIONS OR UNFORESEEN CIRCUMSTANCES WHICH MAY ARISE.
- ALL REMOVABLE PROTECTIVE DEVICES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE FIVE (5) DAY RAIN PROBABILITY FORECAST EXCEEDS FORTY PERCENT (40%). SILT AND OTHER DEBRIS SHALL BE REMOVED AFTER EACH RAINFALL.
- ALL GRAVEL BAGS SHALL CONTAIN 3/4 INCH MINIMUM AGGREGATE.
- ADEQUATE EROSION AND SEDIMENT CONTROL AND PERIMETER PROTECTION BEST MANAGEMENT PRACTICE MEASURES MUST BE INSTALLED AND MAINTAINED.
- THE CITY INSPECTOR SHALL HAVE THE AUTHORITY TO ALTER THIS PLAN DURING OR BEFORE CONSTRUCTION AS NEEDED TO ENSURE COMPLIANCE WITH CITY STORM WATER QUALITY REGULATIONS.

BEST MANAGEMENT PRACTICES (BMP) SELECTION TABLE

Best Management Practice* (BMP) Description →	Erosion Control BMPs				Sediment Control BMPs								Tracking Control BMPs		Non-Storm Water Management BMPs				Waste Management and Materials Pollution Control BMPs							
	Geotextiles & Mats	Wood Mulching	Earth Dikes and Drainage Swales	Slope Drains	Silt Fence	Sediment Trap	Check Dam	Fiber Rolls	Gravel Bag Berm	Street Sweeping and Vacuuming	Sandbag Barrier	Storm Drain Inlet Protection	Stabilized Construction Ingress/Egress	Stabilized Construction Roadway	Water Conservation Practices	Paving and Grinding Operations	Potable Water/Irrigation	Vehicle and Equipment Cleaning	Material Delivery and Storage	Material Use	Stockpile Management	Spill Prevention and Control	Solid Waste Management	Hazardous Waste Management	Concrete Waste Management	
CASQA Designation →	EC-7	EC-8	EC-9	EC-11	SE-1	SE-3	SE-4	SE-5	SE-6	SE-7	SE-8	SE-10	TR-1	TR-2	NS-1	NS-3	NS-7	NS-8	WM-1	WM-2	WM-3	WM-4	WM-5	WM-6	WM-8	
Construction Activity																										
Grading/Soil Disturbance																										
Trenching/Excavation																										
Stockpiling																										
Drilling/Boring																										
Concrete/Asphalt Sawcutting																										
Concrete Flatwork																										
Paving																										
Conduit/Pipe Installation																										
Stucco/Mortar Work																										
Waste Disposal																										
Staging/Lay Down Area																										
Equipment Maintenance and Fueling																										
Hazardous Substance Use/Storage																										
Dewatering																										
Site Access Across Dirt																										
Other (list):																										

Instructions:

- Check the box to the left of all applicable construction activity (first column) expected to occur during construction.
- Located along the top of the BMP Table is a list of BMP's with it's corresponding California Stormwater Quality Association (CASQA) designation number. Choose one or more BMPs you intend to use during construction from the list. Check the box where the chosen activity row intersects with the BMP column.
- Refer to the CASQA construction handbook for information and details of the chosen BMPs and how to apply them to the project.

OWNER'S CERTIFICATE:

I UNDERSTAND AND ACKNOWLEDGE THAT I MUST: (1) IMPLEMENT BEST MANAGEMENT PRACTICES (BMPs) DURING CONSTRUCTION ACTIVITIES TO THE MAXIMUM EXTENT PRACTICABLE TO AVOID THE MOBILIZATION OF POLLUTANTS SUCH AS SEDIMENT AND TO AVOID THE EXPOSURE OF STORM WATER TO CONSTRUCTION RELATED POLLUTANTS; AND (2) ADHERE TO, AND AT ALL TIMES, COMPLY WITH THIS CITY APPROVED TIER 1 CONSTRUCTION SWPPP THROUGHOUT THE DURATION OF THE CONSTRUCTION ACTIVITIES UNTIL THE CONSTRUCTION WORK IS COMPLETE AND APPROVED BY THE CITY OF CARLSBAD.

OWNER(S)/OWNER'S AGENT NAME (PRINT)

OWNER(S)/OWNER'S AGENT NAME (SIGNATURE)

DATE

SHOW THE LOCATIONS OF ALL CHOSEN BMPs ABOVE ON THE PROJECTS SITE PLAN/EROSION CONTROL PLAN. SEE THE REVERSE SIDE OF THIS SHEET FOR A SAMPLE EROSION CONTROL PLAN.

PROJECT INFORMATION

Site Address: _____

Assessor's Parcel Number: _____

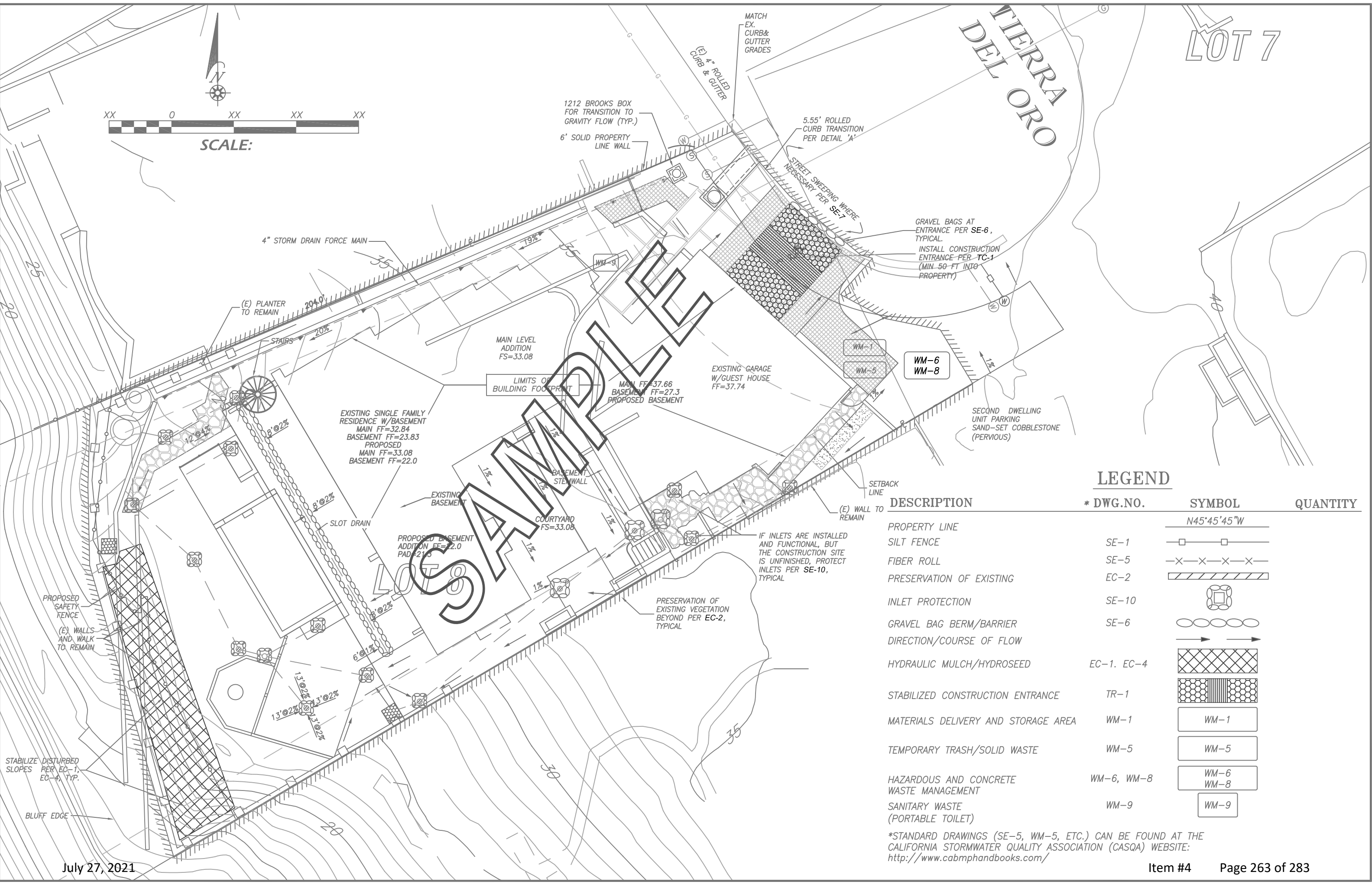
Emergency Contact:
Name: _____

24 Hour Phone: _____

Construction Threat to Storm Water Quality (Check Box)

MEDIUM LOW

TIERRA DEL ORO



LEGEND

DESCRIPTION	* DWG.NO.	SYMBOL	QUANTITY
PROPERTY LINE			N45°45'45\"/>
SILT FENCE	SE-1		
FIBER ROLL	SE-5		
PRESERVATION OF EXISTING	EC-2		
INLET PROTECTION	SE-10		
GRAVEL BAG BERM/BARRIER	SE-6		
DIRECTION/COURSE OF FLOW			
HYDRAULIC MULCH/HYDROSEED	EC-1, EC-4		
STABILIZED CONSTRUCTION ENTRANCE	TR-1		
MATERIALS DELIVERY AND STORAGE AREA	WM-1		
TEMPORARY TRASH/SOLID WASTE	WM-5		
HAZARDOUS AND CONCRETE WASTE MANAGEMENT	WM-6, WM-8		
SANITARY WASTE (PORTABLE TOILET)	WM-9		

*STANDARD DRAWINGS (SE-5, WM-5, ETC.) CAN BE FOUND AT THE CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) WEBSITE: <http://www.cabmphandbooks.com/>

APPENDIX “A”

Proposal for Fusible PVC Pipe and Fusion Services



13135 Danielson Street, Suite 201
Poway, CA 92064
Tel: (858) 679-9551
Fax: (858) 679-9555
www.undergroundolutions.com

Date Prepared: 6/21/2021

Mr. David Padilla
City of Carlsbad Public Works
5950 El Camino Real
Carlsbad, CA 92008

**Ref: Carlsbad I-5 Crossing - Carlsbad, CA
Proposal No. P21-0708**

Dear Mr. Padilla,

Underground Solutions, Inc. (UGS) is pleased to provide the following Firm Proposal for Fusible PVC® pipe and fusion services for the Carlsbad I-5 Crossing project. Pricing for pipe (including freight) and related fusion services is detailed in the following section.

Fusible C-900® pipe meets all applicable industry standards: AWWA C900/C905, NSF-61 Certification for Drinking Water Components, ASTM cell classification 12454, and formulation requirements of Plastics Pipe Institute TR-2. FPVC® pressure pipe is tested in accordance with AWWA C900/C905 requirements, meets the same ASTM cell classification and PPI formulation requirements, and is NSF-61 certified when used for potable water.

In evaluating Fusible PVC® pipe for this project, we would like to call your attention to the following total installed cost advantages associated with using Fusible PVC® pipe:

- Maximum Flow Area:** Fusible PVC® pipe generally offers the largest internal diameter in a slipline material. In addition, Fusible PVC® pipe does not utilize bells for connections, which allows for a larger nominal diameter pipe to be installed.
- Standard Fittings:** Fusible PVC® pipe utilizes standard mechanical joint fittings. No special fittings or equipment are required for connections. As a result, Fusible PVC® pipe is easy to connect to and maintain.
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- Immediate Reconections:** Fusible PVC® pipe may be reconnected to a system immediately after installation, with no "relaxation time" required.

Thank you for considering UGS. Please do not hesitate to contact us for any additional information or with any questions or clarifications.

Sincerely,

Brett Fornelli

Date Prepared: 6/21/2021 **Prepared For:** Carlsbad Public Works **Project Reference:** Carlsbad I-5 Crossing
Proposal No.: P21-0708 **Prepared By:** Brett Fornelli **Project Site:** Carlsbad, CA

PRODUCTS AND SERVICES:

No.	Pipe Description	Pipe Size	DR	Type	Color	Qty.	Unit Cost	Total Cost, \$
1	10" DR 18 FPVC®	10"	18	DIPS	Any	495	\$30.50	\$15,097.50
Freight to Project Site								\$9,600
10" Pull-head Rental(s) for up to 1 Week(s). Return freight to be provided by the buyer.								Included
Purchase Price								\$24,697.50

No.	Description	Unit	Est. Qty.*	Unit Cost	Total Cost, \$
1	Fusion Services for 6"-16" Pipe (618 Machine & Labor)	Per Day	2	\$1,750	TBD
2	Mobilization/Demobilization Event to the Site	Per Event	1	Included	Included
3	Performance Bond Insurance	Per Event	1	\$200	\$200

*Total number of billed fusion days will be based on actual time on-site.
UGS California Contractor License No. 930859 & California DIR Registration No. 1000014790

SCOPE OF WORK:

Equipment/Services Provided by Underground Solutions, Inc., d/b/a UGS, Inc. in California ("UGS" or "Seller"):

- Pipe Supply and freight to project site.
- Fusion Services are estimated at 2 consecutive 8-hour work days. The actual duration of fusion site services may vary based on site conditions and contractor support, and will be charged at the daily rate listed above for actual days on-site.
- Mobilization/demobilization event to the site.
- Fusion machine with inserts, heater, datalogger, and 2 rollers.
- 10" pull-head rental(s) for up to 1 week(s). Additional time will be billed at the rate listed below. Return freight to be provided by the buyer.
- Per diem expenses have been included in the Daily Rate.
- Minimum charge will be one 8-hour day. Any work performed in excess of ten (8) hours per day will be charged an additional \$97.50 per hour.
- Any work performed on holidays or Sundays will be charged an additional \$130.00 per hour.

Equipment/Services Provided by Buyer:

- All labor, equipment, and material required to unload and stage pipe and fusion equipment at site (and restage as necessary).
- All labor, equipment, and materials for loading and unloading pipe onto the fusion machine, positioning fused pipe, pipe reconnections, pipe ballasting, pipe handling, required testing, and pipe installation.
- Any additional labor, equipment, and materials required to fuse based on actual weather conditions (contact UGS for guidance).
- Pipe rollers required for installation and any intermediate fusion (contact UGS for guidance).
- All excavation, traffic control, permits, bonds, repairs, etc.
- All utilities at the job site **including power and fuel for UGS's equipment (~1.5 gal/machine/hour).**
- All temporary bypass piping.
- Installation hardware and equipment for fittings, valves or additional accessories not identified in UGS Scope of Work.

PULL-HEAD TERMS:

A pull-head is available for rental or purchase from UGS via the following link: <http://www.ugsproducts.com>. Actual freight costs will be added to the final pull-head rental charge following return of the pull-head to UGS. For pull-head purchases, a freight cost to the shipping destination will be added to the final purchase amount.
 Typical lead time for pull-head shipment is 7-10 days from receipt of order. Pull-heads ship out of Warrendale, PA.

	Initial Rental Fee	Weekly Rental Rate (After Week 1)	Estimated Return Freight	Purchase Price
10" Pull-head	Included	\$53	\$233	\$2,204

PAYMENT TERMS:

100% of each purchase price component shown above, net 30 days after completion of such component.

PIPE SHIPPING TERMS:

F.O.B. Shipping Point with full freight allowed to the job site.

PROPOSAL VALIDITY:

Price quoted is valid for 10 business days from the date of this Proposal.

DELIVERY SCHEDULE:

To be negotiated. UGS will take reasonable action to meet Buyers's installation schedule. Buyer must provide 10 business days notice to UGS prior to the start date for fusion services (see Section 4 of Supplemental Terms and Conditions Fusion Services).

REMOBILIZATION TERMS:

Additional mobilization events will be charged at the following rates.

Fusion Machine	Crew Mobilization	Equipment Mobilization
T-500/618	\$300	\$100

TAXES: The Purchase Price does not include any sales or similar taxes, which are the Buyer's responsibility (see Section 3 of Terms and Conditions of Sale).

This Proposal is subject to the Terms and Conditions at <http://www.aegion.com/-/media/Aegion2017/Files/Terms/UGS-Terms-Conditions.pdf>, which form an integral part of this Proposal. Such Terms and Conditions will govern any transaction resulting from this Proposal. Any contract resulting from this Proposal is made subject to prior acceptance by UGS at its offices in Poway, California. All orders are subject to prior credit approval.

Buyer's signature indicates acceptance of the UGS Order Summary and Terms and Conditions.

Buyer's Authorized Signature _____

Date _____

Print Name & Title _____

Print Company Name _____

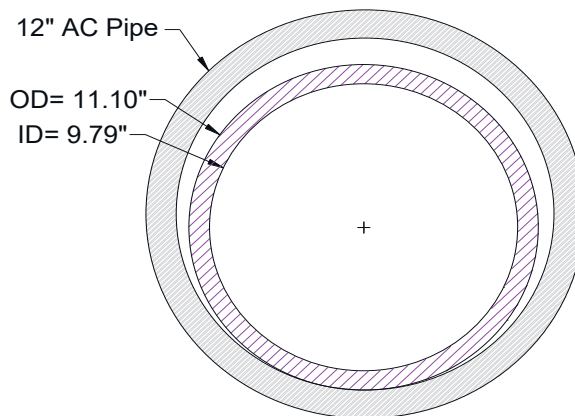
Tax Exempt (must provide Tax Exempt Certificate with order)

Taxable

State Registered Wholesaler

Pipe Technical Data Sheet:

	10" DR 18 FPVC®
Pipe Material	FPVC®
Total Pipe Length (LF)	495
Nominal Diameter (in)	10
Dimension Ratio	DR 18
Series	DIPS
Pressure Rating (PSIG)	235
Safety Factor	2.0
Outside Diameter (in)	11.10
Inside Diameter (in)	9.79
Cross Sectional Flow Area (in ²)	75.3
Bend Radius (LF)	231
Tensile Strength (PSIG)	7,000
Safe Pulling Force (lbs)	56,800
Safe Pulling Stress (PSIG)	2,800
Relaxation Period (hrs)	0
Hydrostatic Design Basis (PSIG)	4,000
Critical Buckling Pressure (PSIG)	191
Connection to Host Pipe	Standard Mechanical Joint
Material Weight (lbs/ft)	13.2
Total Pipe Weight (lbs)	6,524
Water Disinfectant Induced Oxidation	High Resistance
Hydrocarbon Permeation	High Resistance



10" DR 18 FPVC®
Sliplining in 12" AC Host Pipe

Product and Installation Guide for Fusible PVC® Pipe

Recommended handling and installation practices for Fusible PVC® pipe are straightforward and well within current construction practice in terms of required equipment, appurtenances, procedures, and labor skillset. For operators and installers accustomed to working with PVC pipe, Fusible PVC® pipe will only require adjustment to the longer lengths of pipe (including both delivered and assembled pipe) and the proper way to handle and install the product. For operators and installers accustomed to working with high density polyethylene (HDPE) pipe, Fusible PVC® pipe is joined in a similar method, however, the requirements for handling, installing, and connecting the pipe will be different.

UGS has developed a Product and Installation Guide, which covers the following topics:

- Shipping and Receiving
- Thermal Butt Fusion
- Fusible PVC® Pipe Connections
- Testing and Disinfection
- Tapping Fusible PVC® Pipe
- Pulling Parameters
- Cutting Fusible PVC® Pipe
- Horizontal Directional Drilling
- Sliplining
- Pipe Bursting
- Direct Bury
- Special Considerations

Proper handling and installation of Fusible PVC® pipe in accordance with the Product and Installation Guide will preserve your warranty protection.

UGS will provide a copy of the Product and Installation Guide upon the acceptance of your order in accordance with the terms of the Proposal. In the meantime, contact your UGS representative if you have any questions or concerns regarding the proper handling and use of Fusible PVC® pipe products.

APPENDIX “B”

Caltrans Encroachment Permit

(Permit to be issued via addendum)

APPENDIX “C”

Utility Shutdown/Connection Request E-28



**UTILITY SHUTDOWN/
CONNECTION REQUEST
E-28**

Public Works
Construction Management & Inspection
1635 Faraday Ave
760-602-2780
www.carlsbadca.gov

DATE OF CONNECTION _____ LOCATION OF WORK _____

CONTRACTORS NAME _____ TEL NO. _____

NAME OF REP. AT SITE _____ TITLE _____

SIGNATURE _____ DATE _____

TYPE OF CONNECTION

SEWER _____ WATER _____ RECYCLED _____ WET TAP _____ SHUT DOWN _____

LENGTH OF SHUT DOWN _____ FROM _____ TO _____ TOTAL HOURS _____

SERVICES EFFECTED _____

MATERIAL/EQUIPMENT TO BE USED _____

PLEASE READ BELOW

1. Request must include a **DETAILED SKETCH** showing proposed construction. (See other side for details.)
2. Submission of this request shall be a minimum of two weeks prior to desired shutdown/connection date.
3. If the weather or a situation develops where the time of shutdown is not feasible, a new shutdown time shall be resubmitted to the district for approval.
4. Temporary water supply shall be only from an approved and accepted CMWD line.
5. No CMWD valves shall be operated except under direction of CMWD representative.
6. There shall be **NO SHUTDOWNS MONDAYS, FRIDAYS, WEEKENDS OR HOLIDAYS.**
7. The contractor shall have his representative, listed above, on the site of construction during the entire duration of the shutdown and will have authority to act in the company's behalf.

**CONSTRUCTION MANAGEMENT AND INSPECTION
1635 FARADAY AVE
CARLSBAD, CALIFORNIA 92008
TEL. NO. (760) 602-2780**

CITY INSPECTOR _____

DATE: _____

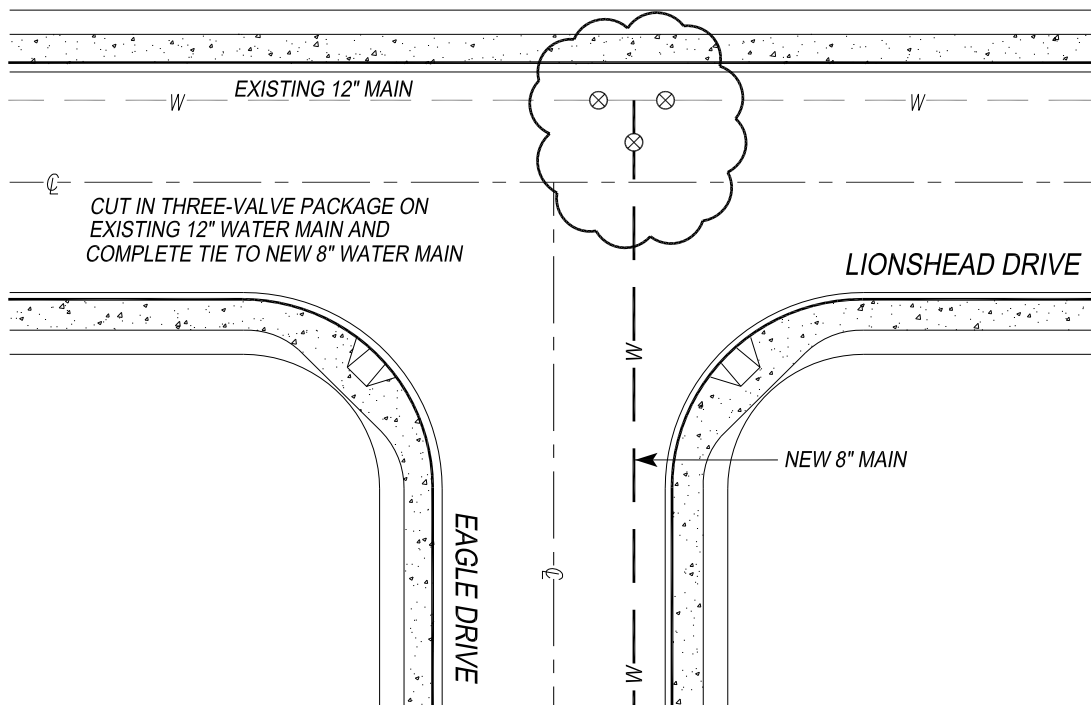
DISTRICT APPROVAL SIGNATURE

PUBLIC WORKS MANAGER, UTILITY OPERATIONS

DATE: _____

CONTRACTOR INSTRUCTIONS – PLEASE READ BEFORE SUBMITTING

1. Request shall not be approved unless a **DETAILED SKETCH IS ATTACHED** showing proposed construction. (See example below.)
2. Utility shutdown/connection request shall be submitted to Construction Management & Inspections **two weeks** before anticipated connection date.
3. Scheduling: Prior to start of work, there shall be a **MINIMUM OF TWO WEEKS NOTICE GIVEN TO DISTRICT.**
4. Connection shall not be permitted unless **BACTERIOLOGICAL TEST RESULTS** are attached (required for all potable use lines).
5. If the weather or a situation develops where the time of shutdown is not feasible, a new shutdown time shall be resubmitted to the District for approval.
6. Temporary water supply shall be only from an approved and accepted CMWD line.
7. **NO CMWD VALVES** shall be operated except under the direction of CMWD Representative.
8. There shall be **NO SHUTDOWNS MONDAYS, FRIDAYS, WEEKENDS OR HOLIDAYS.**
9. The contractor shall have his representative (listed on the front) on the site of construction during the entire duration of the shutdown and will have authority to act in the company's behalf.
10. If the contractor has preferred connection date, please provide with submittal.
11. The City reserves the right to change the schedule.

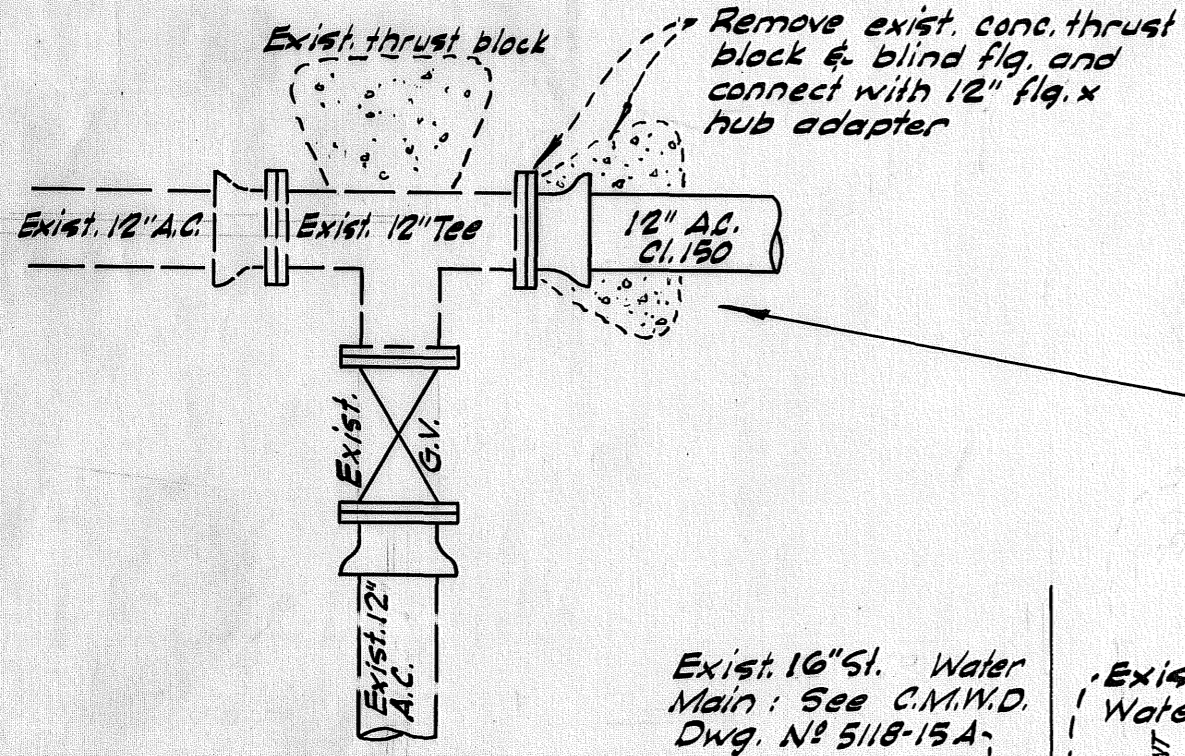
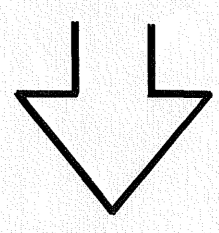


APPENDIX “D”

Record Drawings

23 of 30

61-5547



CONNECTION DETAIL
Scale: 3/8"=1'-0"

BEGIN CONSTR.
1+10: Remove exist. plug assembly and connect to exist. 12" See Detail, Left.

Exist. 16" S.I. Water Main: See C.M.W.D. Dwg. No. 5118-15-A.

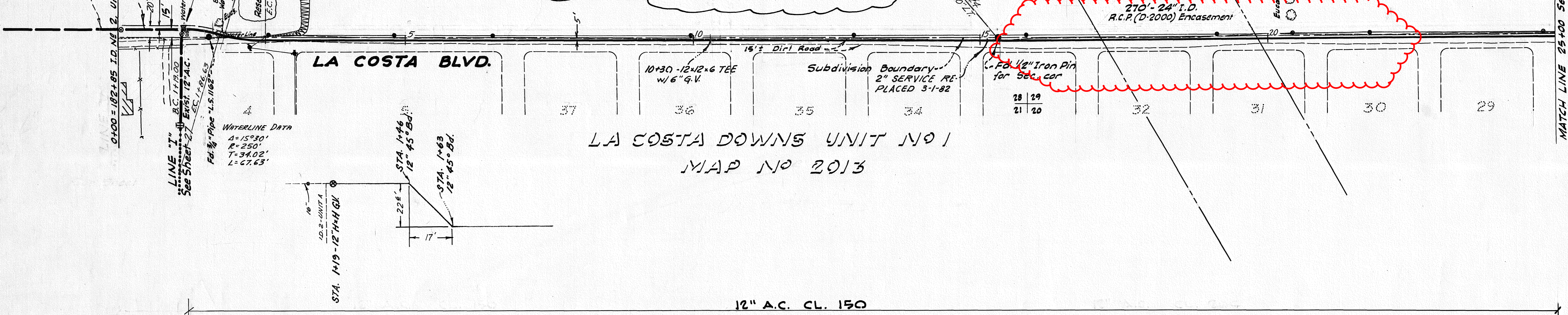
Exist. 12" A.C. Water Main

WATERLINE DATA:
Δ=15°30'
R=250'
T=34.02'
L=67.63'

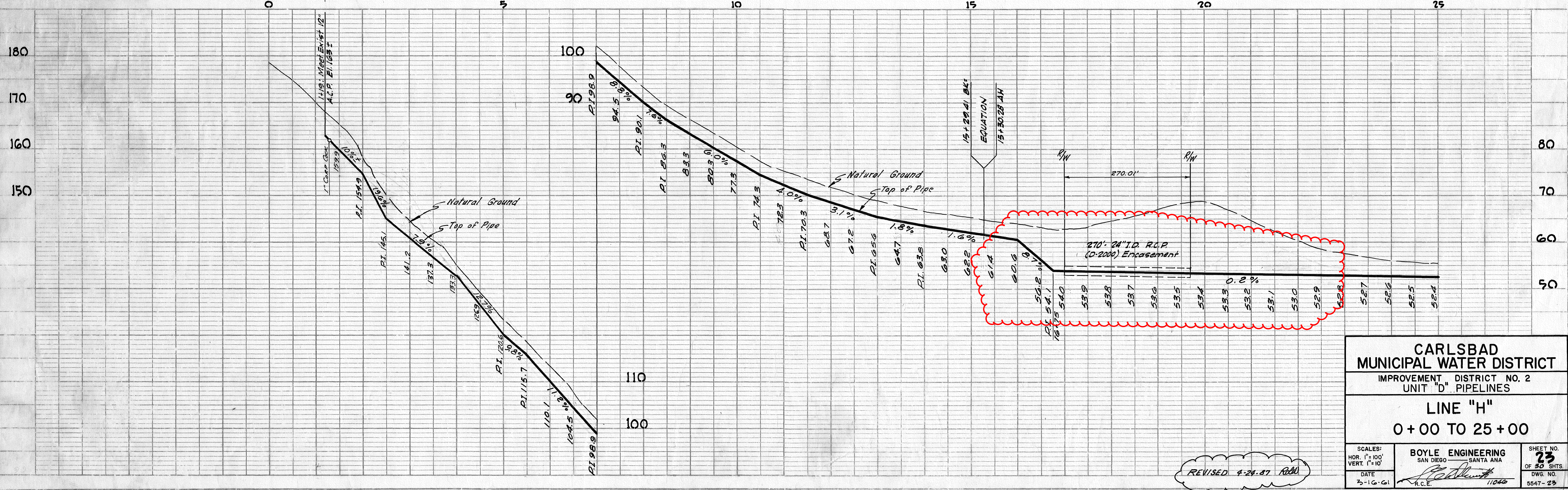
BEWARE!! BURIED TELEPHONE CABLE 3' NORTH OF SECTION LINE.

Varies
R/W of Proposed State
Highway Freeway
U.S. 101
XI-5D-2-A

NOTE: Open cut may be used in placing encasement



LA COSTA DOWNS UNIT NO 1
MAP NO 2013



CARLSBAD MUNICIPAL WATER DISTRICT		
IMPROVEMENT DISTRICT NO. 2 UNIT "D" PIPELINES		
LINE "H" 0+00 TO 25+00		
SCALES: HOR. 1"=100' VERT. 1"=10' DATE: 3-1-01 R.C.E.	BOYLE ENGINEERING SAN DIEGO - SANTA ANA R.C.E.	SHEET NO. 23 OF 30 SHTS. DWG. NO. 5547-23

REVISED 4-28-07 RBB

IDZ

TRANS. D3

TRANS

DATE	
BY	
CHECKED	
DESIGNED	
IN CHARGE	
NO.	

DATE	
BY	
CHECKED	
DESIGNED	
IN CHARGE	
NO.	

CARLSBAD TRACT NO. 72-2.2

MAP NO. 7476

SHEET 7 OF 7 SHEETS

SEE SHEET 6

341

SEE SHEET 4

SEE SHEET 5

5' PUBLIC UTILITY & TREE PLANTING EASEMENT DEDICATED HEREON.

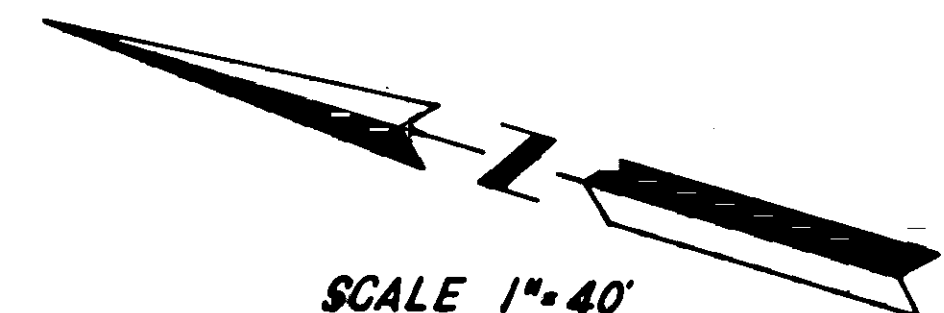
7' PUBLIC UTILITY & TREE PLANTING EASEMENT DEDICATED HEREON.

5' PUBLIC UTILITY & TREE PLANTING EASEMENT DEDICATED HEREON.

5' PUBLIC UTILITY & TREE PLANTING EASEMENT DEDICATED HEREON.

20' EASEMENT TO TELEPHONE & CABLE COMPANY FOR REVERSION TO MAP AGE, MAP NO. 7202.

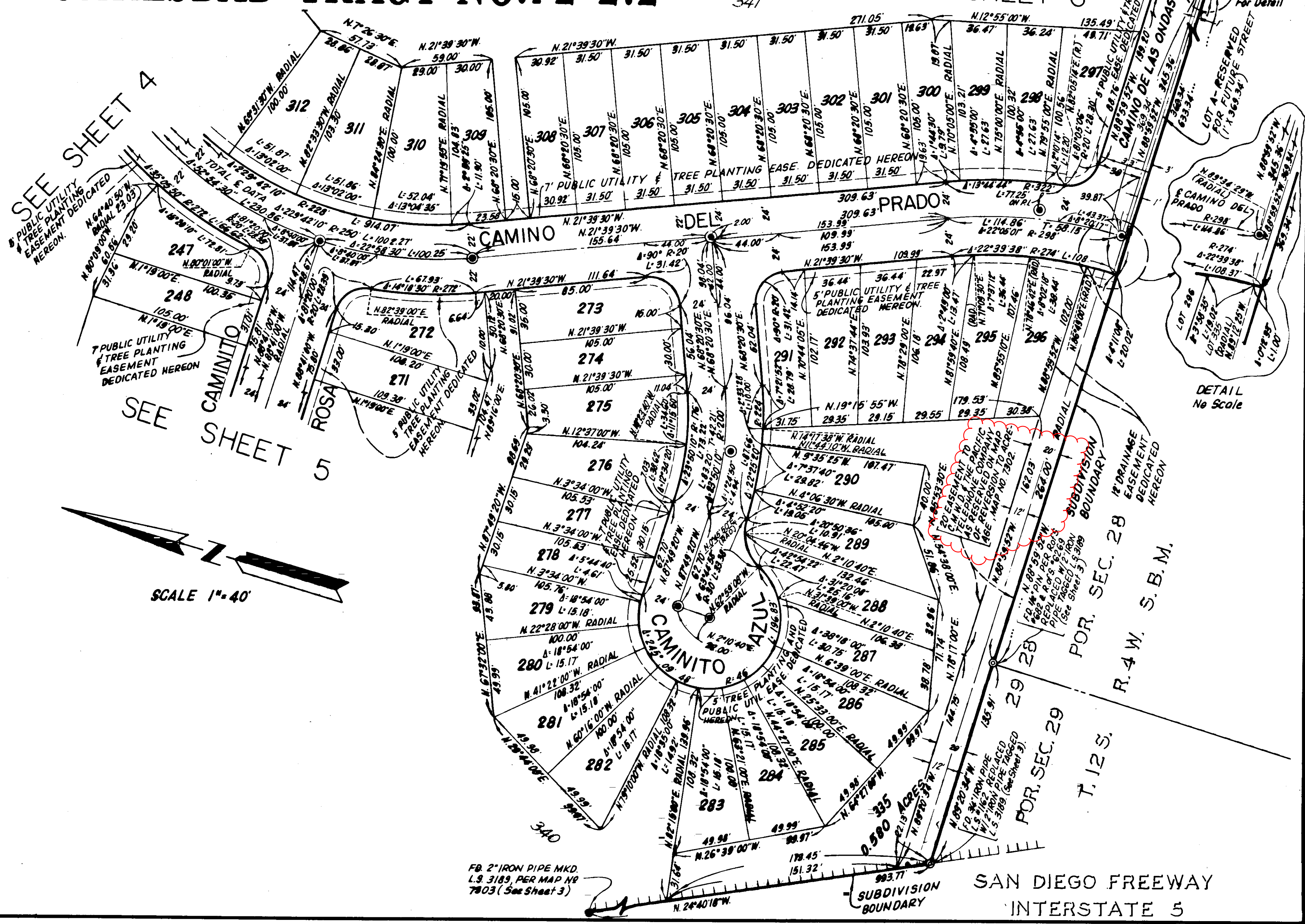
12' DRAINAGE EASEMENT DEDICATED HEREON.



FB. 2" IRON PIPE MKD. L.S. 3189, PER MAP NO. 7803 (See Sheet 3)

DETAIL No Scale

See Sht. 6 For Detail



SAN DIEGO FREEWAY INTERSTATE 5

APPENDIX “E”

City of Carlsbad SWPPP Template

STORM WATER COMPLIANCE FORM TIER 1 CONSTRUCTION SWPPP E-29

CB _____
SW _____ - _____

STORM WATER POLLUTION PREVENTION NOTES

- ALL NECESSARY EQUIPMENT AND MATERIALS SHALL BE AVAILABLE ON SITE TO FACILITATE RAPID INSTALLATION OF EROSION AND SEDIMENT CONTROL BMPs WHEN RAIN IS EMINENT.
- THE OWNER/CONTRACTOR SHALL RESTORE ALL EROSION CONTROL DEVICES TO WORKING ORDER TO THE SATISFACTION OF THE CITY INSPECTOR AFTER EACH RUN-OFF PRODUCING RAINFALL.
- THE OWNER/CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL MEASURES AS MAY BE REQUIRED BY THE CITY INSPECTOR DUE TO INCOMPLETE GRADING OPERATIONS OR UNFORESEEN CIRCUMSTANCES WHICH MAY ARISE.
- ALL REMOVABLE PROTECTIVE DEVICES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE FIVE (5) DAY RAIN PROBABILITY FORECAST EXCEEDS FORTY PERCENT (40%). SILT AND OTHER DEBRIS SHALL BE REMOVED AFTER EACH RAINFALL.
- ALL GRAVEL BAGS SHALL CONTAIN 3/4 INCH MINIMUM AGGREGATE.
- ADEQUATE EROSION AND SEDIMENT CONTROL AND PERIMETER PROTECTION BEST MANAGEMENT PRACTICE MEASURES MUST BE INSTALLED AND MAINTAINED.
- THE CITY INSPECTOR SHALL HAVE THE AUTHORITY TO ALTER THIS PLAN DURING OR BEFORE CONSTRUCTION AS NEEDED TO ENSURE COMPLIANCE WITH CITY STORM WATER QUALITY REGULATIONS.

BEST MANAGEMENT PRACTICES (BMP) SELECTION TABLE

Best Management Practice* (BMP) Description →	Erosion Control BMPs				Sediment Control BMPs								Tracking Control BMPs		Non-Storm Water Management BMPs				Waste Management and Materials Pollution Control BMPs							
	Geotextiles & Mats	Wood Mulching	Earth Dikes and Drainage Swales	Slope Drains	Silt Fence	Sediment Trap	Check Dam	Fiber Rolls	Gravel Bag Berm	Street Sweeping and Vacuuming	Sandbag Barrier	Storm Drain Inlet Protection	Stabilized Construction Ingress/Egress	Stabilized Construction Roadway	Water Conservation Practices	Paving and Grinding Operations	Potable Water/Irrigation	Vehicle and Equipment Cleaning	Material Delivery and Storage	Material Use	Stockpile Management	Spill Prevention and Control	Solid Waste Management	Hazardous Waste Management	Concrete Waste Management	
CASQA Designation →	EC-7	EC-8	EC-9	EC-11	SE-1	SE-3	SE-4	SE-5	SE-6	SE-7	SE-8	SE-10	TR-1	TR-2	NS-1	NS-3	NS-7	NS-8	WM-1	WM-2	WM-3	WM-4	WM-5	WM-6	WM-8	
Construction Activity																										
Grading/Soil Disturbance																										
Trenching/Excavation																										
Stockpiling																										
Drilling/Boring																										
Concrete/Asphalt Sawcutting																										
Concrete Flatwork																										
Paving																										
Conduit/Pipe Installation																										
Stucco/Mortar Work																										
Waste Disposal																										
Staging/Lay Down Area																										
Equipment Maintenance and Fueling																										
Hazardous Substance Use/Storage																										
Dewatering																										
Site Access Across Dirt																										
Other (list):																										

Instructions:

- Check the box to the left of all applicable construction activity (first column) expected to occur during construction.
- Located along the top of the BMP Table is a list of BMP's with it's corresponding California Stormwater Quality Association (CASQA) designation number. Choose one or more BMPs you intend to use during construction from the list. Check the box where the chosen activity row intersects with the BMP column.
- Refer to the CASQA construction handbook for information and details of the chosen BMPs and how to apply them to the project.

OWNER'S CERTIFICATE:

I UNDERSTAND AND ACKNOWLEDGE THAT I MUST: (1) IMPLEMENT BEST MANAGEMENT PRACTICES (BMPs) DURING CONSTRUCTION ACTIVITIES TO THE MAXIMUM EXTENT PRACTICABLE TO AVOID THE MOBILIZATION OF POLLUTANTS SUCH AS SEDIMENT AND TO AVOID THE EXPOSURE OF STORM WATER TO CONSTRUCTION RELATED POLLUTANTS; AND (2) ADHERE TO, AND AT ALL TIMES, COMPLY WITH THIS CITY APPROVED TIER 1 CONSTRUCTION SWPPP THROUGHOUT THE DURATION OF THE CONSTRUCTION ACTIVITIES UNTIL THE CONSTRUCTION WORK IS COMPLETE AND APPROVED BY THE CITY OF CARLSBAD.

OWNER(S)/OWNER'S AGENT NAME (PRINT)

OWNER(S)/OWNER'S AGENT NAME (SIGNATURE)

DATE

SHOW THE LOCATIONS OF ALL CHOSEN BMPs ABOVE ON THE PROJECTS SITE PLAN/EROSION CONTROL PLAN. SEE THE REVERSE SIDE OF THIS SHEET FOR A SAMPLE EROSION CONTROL PLAN.

PROJECT INFORMATION

Site Address: _____

Assessor's Parcel Number: _____

Emergency Contact:

Name: _____

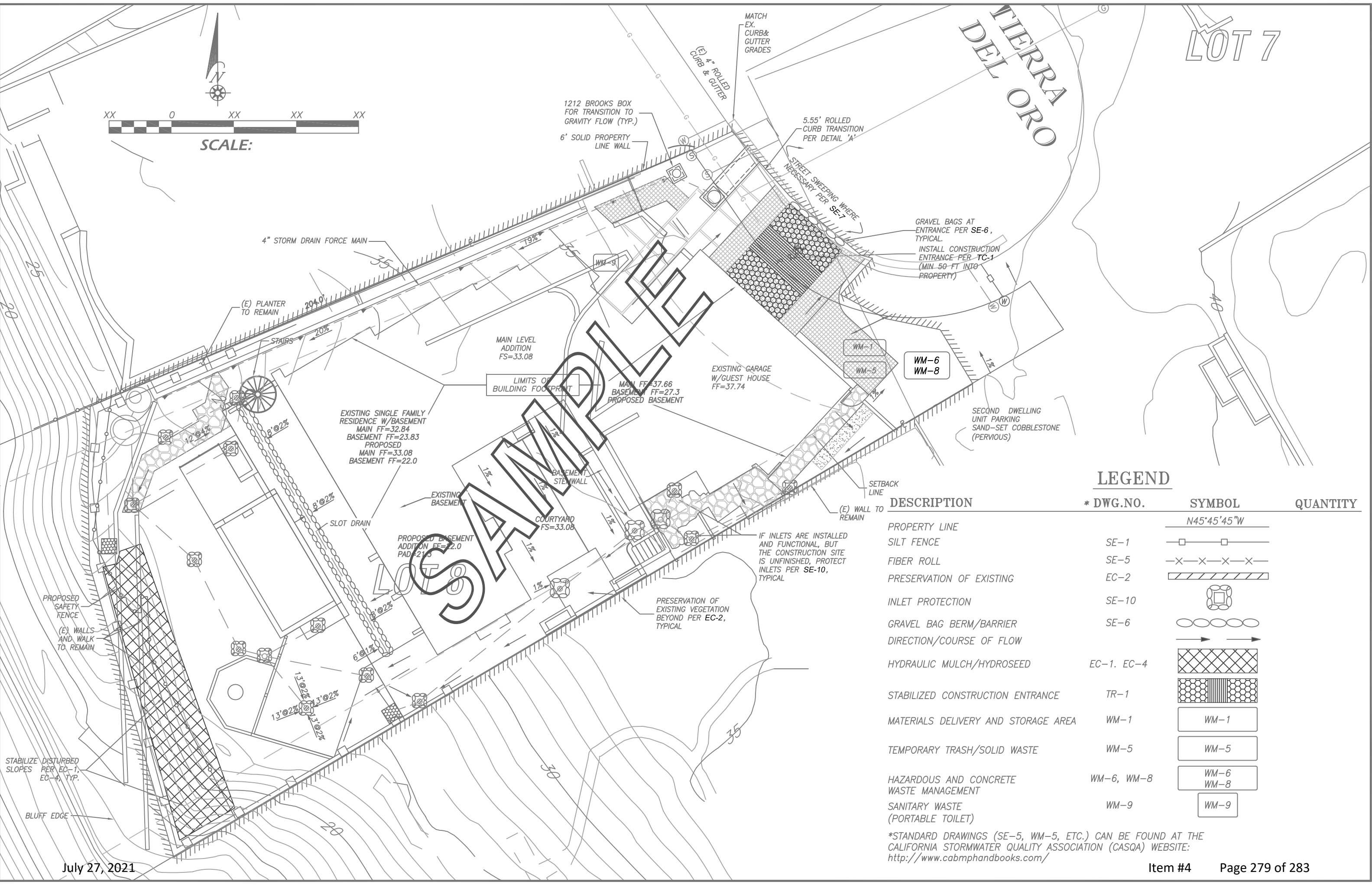
24 Hour Phone: _____

Construction Threat to Storm Water Quality (Check Box)

MEDIUM

LOW

TIERRA DEL ORO



LEGEND

DESCRIPTION	* DWG.NO.	SYMBOL	QUANTITY
PROPERTY LINE		N45°45'45"W	
SILT FENCE	SE-1	[Symbol]	
FIBER ROLL	SE-5	[Symbol]	
PRESERVATION OF EXISTING	EC-2	[Symbol]	
INLET PROTECTION	SE-10	[Symbol]	
GRAVEL BAG BERM/BARRIER	SE-6	[Symbol]	
DIRECTION/COURSE OF FLOW		[Symbol]	
HYDRAULIC MULCH/HYDROSEED	EC-1, EC-4	[Symbol]	
STABILIZED CONSTRUCTION ENTRANCE	TR-1	[Symbol]	
MATERIALS DELIVERY AND STORAGE AREA	WM-1	[Symbol]	
TEMPORARY TRASH/SOLID WASTE	WM-5	[Symbol]	
HAZARDOUS AND CONCRETE WASTE MANAGEMENT	WM-6, WM-8	[Symbol]	
SANITARY WASTE (PORTABLE TOILET)	WM-9	[Symbol]	

*STANDARD DRAWINGS (SE-5, WM-5, ETC.) CAN BE FOUND AT THE CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) WEBSITE: <http://www.cabmphandbooks.com/>

CONSTRUCTION PLANS

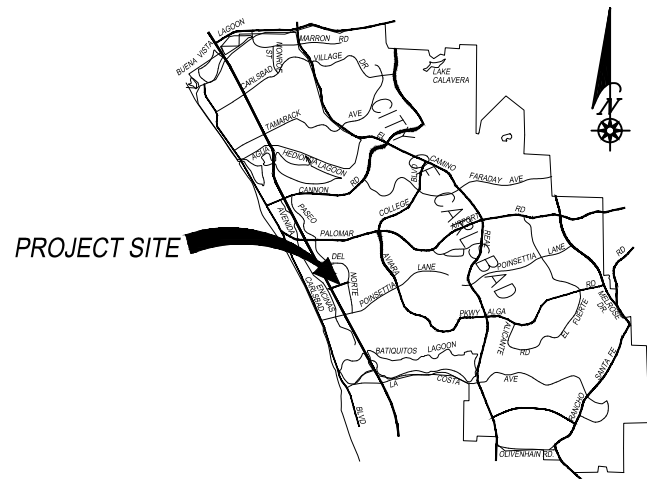
FOR

ALTAMIRA WATER MAIN RELOCATION

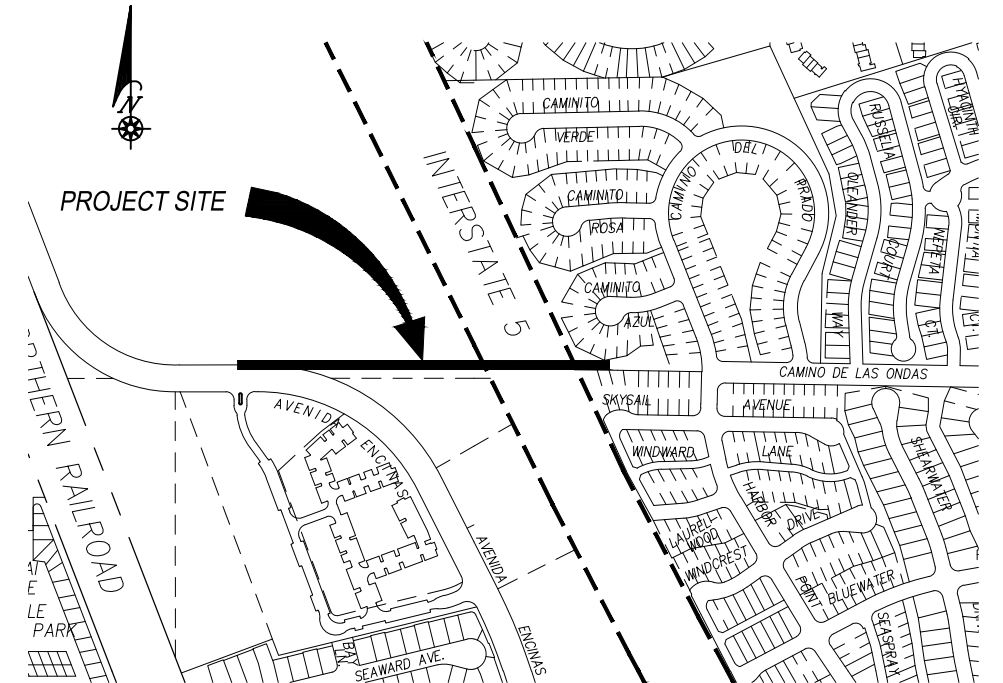
PROJECT NO. 3904-F

Carlsbad

Municipal Water District



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

CARLSBAD, CALIFORNIA

BOARD OF DIRECTORS

- MATT HALL - MAYOR
- PRIYA BHAT-PATEL - BOARD MEMBER
- KEITH BLACKBURN - BOARD MEMBER
- CORI SCHUMACHER - BOARD MEMBER
- TERESA ACOSTA- BOARD MEMBER

SCOTT CHADWICK
CITY MANAGER

JUNE 2021

SHEET INDEX

1. TITLE SHEET, VICINITY MAP AND LOCATION MAP
2. SITE PLAN, CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS
3. PLAN AND PROFILE
4. PLAN AND PROFILE

REFERENCE DRAWINGS

REFERENCE	DRAWING	DESCRIPTION	SOURCE
1	W-18	THRUST ANCHOR FOR WATER MAIN REDUCER - 4 THROUGH 16 INCH	CMWD
2	W-6	2" BLOW-OFF / MANUAL AIR RELEASE ASSEMBLIES	CMWD
3	DS-5	CONCRETE PIPE COLLAR	CSD

DATUM REFERENCE

HORIZONTAL: NAD83 ZONE VI
EPOCH 1991.35
VERTICAL: NAVD88



UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
July 27, 2021

"AS BUILT"		
RCE _____	EXP. _____	DATE _____
REVIEWED BY: _____		
INSPECTOR _____	DATE _____	

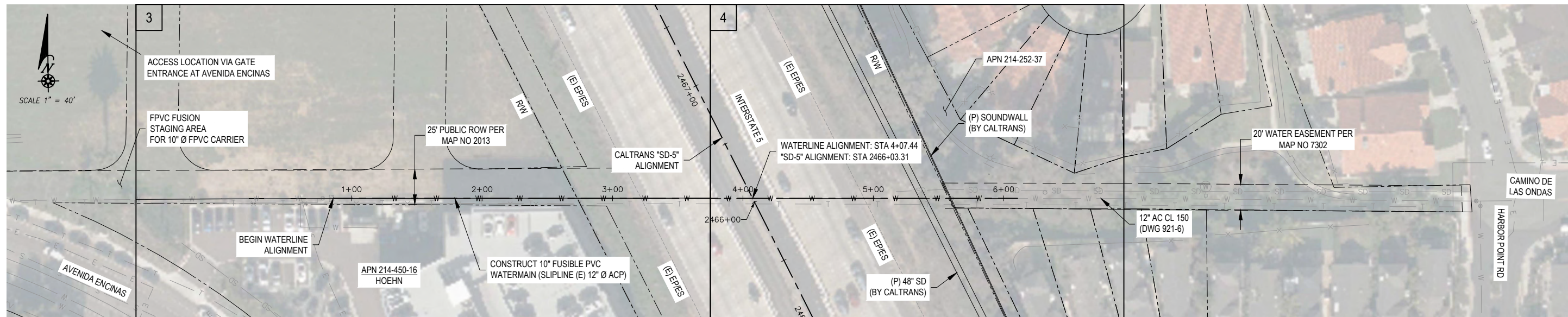


DATE	INITIAL	REVISION DESCRIPTION	DATE	INITIAL	DATE	INITIAL

SHEET 1	CITY OF CARLSBAD UTILITIES DEPARTMENT	SHEETS 4
IMPROVEMENT PLAN FOR: TITLE SHEET, VICINITY MAP AND LOCATION MAP ALTAMIRA WATER MAIN RELOCATION		
ACCEPTED BY: <i>DAVE PADILLA</i>	6/22/2021	
DISTRICT ENGINEER RCE 55974	EXP. 12/31/22	DATE _____
DWN BY: NI	PROJECT NO. 3904-F	DRAWING NO. 532-2
CHKD BY: DP	Page 280 of 283	tem #4



FILE SPEC: Q:\Public Works\PW Common\Capital Improvement Program Projects\3904 Misc Pipeline Replacement\3904-F Water Main Relocation - Caltrans\Design\CAD\0601421_Design.dwg
PLOT DATE: Jun 21, 2021 - 10:55am



GENERAL NOTES

- THIS PLAN SUPERSEDES ALL OTHER PLANS PREVIOUSLY APPROVED BY THE CITY OF CARLSBAD REGARDING IMPROVEMENTS SHOWN ON THIS SET OF PLANS.
- APPROVAL OF THIS PLAN DOES NOT LESSEN OR WAIVE ANY PORTION OF THE CARLSBAD MUNICIPAL CODE, RESOLUTION OF CONDITIONAL APPROVAL, CITY STANDARDS OR OTHER ADDITIONAL DOCUMENTS LISTED HEREON AS THEY MAY PERTAIN TO THIS PROJECT. THE ENGINEER IN RESPONSIBLE CHARGE SHALL REVISE THESE PLANS WHEN NON-COMFORMANCE IS DISCOVERED.
- CITY APPROVAL OF PLANS DOES NOT RELIEVE THE DEVELOPER OR ENGINEER-OF-WORK FROM RESPONSIBILITY FOR THE CORRECTION OF ERRORS AND OMISSIONS DISCOVERED DURING CONSTRUCTION. ALL PLAN REVISIONS SHALL BE PROMPTLY SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
- A RIGHT-OF-WAY PERMIT FROM THE CITY ENGINEER WILL BE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT OF WAY. PRIOR TO PERMIT ISSUANCE, A CERTIFICATE OF INSURANCE MUST BE FILED NAMING THE CITY OF CARLSBAD AS AN ADDITIONAL INSURED ON THE PERMITTEE'S POLICY IN THE MINIMUM AMOUNT OF \$1,000,000.00 FOR EACH OCCURRENCE OF LIABILITY. THE INSURANCE COMPANY WRITING THE POLICY MUST HAVE A RATING OF "A-" OR BETTER AND A SIZE CATEGORY OF CLASS VII OR BETTER AS ESTABLISHED BY "BEST'S" KEY RATING GUIDE.
- NO WORK SHALL BE COMMENCED UNTIL ALL PERMITS HAVE BEEN OBTAINED FROM THE CITY AND OTHER APPROPRIATE AGENCIES.
- REVISION OF THESE PLANS MAY BE REQUIRED IF THE PROPOSED IMPROVEMENTS ARE NOT CONSTRUCTED PRIOR TO THE DEADLINE DATE OF THE IMPROVEMENT AGREEMENT.
- NO REVISIONS WILL BE MADE TO THESE PLANS WITHOUT THE WRITTEN APPROVAL OF THE CITY ENGINEER, NOTED WITHIN THE REVISION BLOCK, ON THE APPROPRIATE SHEET OF THE PLANS AND TITLE SHEET.
- ORIGINAL DRAWINGS SHALL BECOME THE PROPERTY OF THE CITY UPON BEING SIGNED BY THE CITY ENGINEER.
- THE ORIGINAL DRAWING SHALL BE REVISED TO REFLECT AS-BUILT CONDITIONS BY THE ENGINEER-OF-WORK PRIOR TO FINAL ACCEPTANCE OF THE WORK BY THE CITY.
- ACCESS FOR FIRE AND OTHER EMERGENCY VEHICLES SHALL BE MAINTAINED TO THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
- WHERE TRENCHES ARE WITHIN CITY EASEMENTS, A SOILS REPORT COMPRISED OF: (A) SUMMARY SHEET, (B) LABORATORY WORK SHEETS AND (C) COMPACTION CURVES, SHALL BE SUBMITTED BY A PROFESSIONAL ENGINEER OF THE STATE OF CALIFORNIA, PRINCIPALLY DOING BUSINESS IN THE FIELD OF APPLIED SOILS MECHANICS. THE SOILS REPORT WILL BE SUBMITTED TO THE CITY ENGINEERING INSPECTOR WITHIN TWO WORKING DAYS OF COMPLETION OF FIELD TESTS. THE WRITTEN FIELD COMPACTION REPORT(S) SHALL BE IMMEDIATELY SUBMITTED TO THE CITY ENGINEERING INSPECTOR UPON COMPLETION OF THE FIELD TESTS.
- A PRECONSTRUCTION MEETING SHALL BE HELD AT THE SITE PRIOR TO THE BEGINNING OF WORK AND SHALL BE ATTENDED BY ALL REPRESENTATIVES RESPONSIBLE FOR CONSTRUCTION, INSPECTION, SUPERVISION, TESTING AND ALL OTHER ASPECTS OF THE WORK. THE CONTRACTOR SHALL SCHEDULE THE MEETING BY CALLING THE INSPECTION LINE AT (760) 438-3891 AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING CONSTRUCTION. APPROVED DRAWINGS MUST BE AVAILABLE PRIOR TO SCHEDULING.
- ALL INSPECTION REQUESTS OTHER THAN FOR PRECONSTRUCTION MEETING WILL BE MADE BY CALLING THE ENGINEERING 24-HOUR INSPECTION REQUEST LINE AT (760) 438-3891. INSPECTION REQUESTS MUST BE RECEIVED PRIOR TO 2:00 P.M. ON THE DAY BEFORE THE INSPECTION IS NEEDED. INSPECTIONS WILL BE MADE THE NEXT WORK DAY UNLESS YOU REQUEST OTHERWISE. REQUESTS MADE AFTER 2:00 P.M. WILL BE SCHEDULED FOR TWO FULL WORK DAYS LATER.
- THE OWNER AND/OR APPLICANT THROUGH THE DEVELOPER AND/OR CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
- THE CONTRACTOR SHALL CONFORM TO LABOR CODE SECTION 6705 BY SUBMITTING A DETAIL PLAN TO THE CITY ENGINEER AND/OR CONCERNED AGENCY SHOWING THE DESIGN OF SHORING, BRACING SLOPE OR OTHER PROVISIONS TO BE MADE OF WORKER PROTECTION FROM THE HAZARD OF CAVING GROUND DURING THE EXCAVATION OF SUCH TRENCH OR TRENCHES OR DURING THE PIPE INSTALLATION THEREIN. THIS PLAN MUST BE PREPARED FOR ALL TRENCHES FIVE FEET (5') OR MORE IN DEPTH AND APPROVED BY THE CITY ENGINEER AND/OR CONCERNED AGENCY PRIOR TO EXCAVATION IF THE PLAN VARIES FROM THE SHORING SYSTEM STANDARDS ESTABLISHED BY THE CONSTRUCTION SAFETY ORDERS, TITLE 8 CALIFORNIA ADMINISTRATIVE CODE. THE PLAN SHALL BE PREPARED BY A REGISTERED ENGINEER AT THE CONTRACTOR'S EXPENSE. A COPY OF THE OSHA EXCAVATION PERMIT MUST BE SUBMITTED TO THE INSPECTOR PRIOR TO EXCAVATION.
- IF ANY ARCHAEOLOGICAL RESOURCES ARE DISCOVERED WITHIN ANY WORK ZONE DURING CONSTRUCTION, OPERATIONS WILL CEASE IMMEDIATELY, AND THE PERMITTEE WILL NOTIFY THE CITY ENGINEER. OPERATIONS WILL NOT RESTART UNTIL THE PERMITTEE HAS RECEIVED WRITTEN AUTHORITY FROM THE CITY ENGINEER TO DO SO.
- ALL OPERATIONS CONDUCTED ON THE SITE OR ADJACENT THERETO, INCLUDING WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR OPERATION OF TRUCKS, EARTHMOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED GRADING EQUIPMENT SHALL BE LIMITED TO THE PERIOD BETWEEN 7:00 A.M. AND 6:00 P.M. EACH DAY, MONDAY THRU FRIDAY AND NO EARTHMOVING OR GRADING OPERATIONS SHALL BE CONDUCTED ON WEEKENDS OR HOLIDAYS. (A LIST OF CITY HOLIDAYS IS AVAILABLE AT THE ENGINEERING DEPARTMENT COUNTER.)
- ALL OFF-SITE HAUL ROUTES SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY ENGINEER FOR APPROVAL TWO FULL WORKING DAYS PRIOR TO BEGINNING OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEBRIS OR DAMAGE OCCURRING ALONG THE HAUL ROUTE OR ADJACENT STREETS AS A RESULT OF THE GRADING OPERATION.
- NO BLASTING SHALL BE COMMENCED WITHOUT A CITY ENGINEER APPROVED BLASTING PROGRAM AND BLASTING PERMIT.
- THE EXISTENCE AND LOCATION OF UTILITY STRUCTURES AND FACILITIES SHOWN ON THE CONSTRUCTION PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. ATTENTION IS CALLED TO THE POSSIBLE EXISTENCE OF OTHER UTILITY FACILITIES OR STRUCTURES NOT SHOWN OR IN A LOCATION DIFFERENT FROM THAT SHOWN ON THE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN ON THE PLANS AND ANY OTHER EXISTING FACILITIES OR STRUCTURES NOT SHOWN.
- THE CONTRACTOR SHALL VERIFY (BY POT-HOLING) THE LOCATION OF ALL EXISTING FACILITIES (ABOVEGROUND AND UNDERGROUND) WITHIN THE PROJECT SITE SUFFICIENTLY AHEAD OF THE CONSTRUCTION TO PERMIT THE REVISIONS OF THE CONSTRUCTION PLANS IF IT IS FOUND THAT THE ACTUAL LOCATIONS ARE IN CONFLICT WITH THE PROPOSED WORK.
- THE CONTRACTOR SHALL NOTIFY AFFECTED UTILITY COMPANIES (SEE BELOW) AT LEAST TWO FULL WORKING DAYS PRIOR TO STARTING CONSTRUCTION NEAR THEIR FACILITIES AND SHALL COORDINATE WORK WITH A COMPANY REPRESENTATIVE.

UNDERGROUND SERVICE ALERT	(800)422-4133
SDG&E	(800)411-7343
AT&T	(800)892-0123
TIME WARNER CABLE	(760)438-7741
COX COMMUNICATIONS	(619)262-1122
CITY OF CARLSBAD (STREETS AND STORM DRAIN)	(760)434-2980
*CITY OF CARLSBAD (SEWER, WATER & RECLAIMED WATER)	(760)438-2722

*AS APPROPRIATE
- IN ACCORDANCE WITH THE CITY STORM WATER STANDARDS ALL STORM DRAIN INLETS CONSTRUCTED BY THIS PLAN SHALL INCLUDE "STENCILS" BE ADDED TO PROHIBIT WASTE DISCHARGE DOWNSTREAM. STENCILS SHALL BE ADDED TO THE SATISFACTION OF THE CITY ENGINEER.
- ALL SURVEY MONUMENTS AND POINTS THAT ARE DISTURBED BY THIS WORK SHALL BE REESTABLISHED, PERPETUATED, AND DOCUMENTED PER THE PROFESSIONAL LAND SURVEYORS ACT.
- TWO (2) SETS OF SURVEY (CUT) SHEETS SHALL BE PROVIDED TO THE CITY ENGINEERING INSPECTOR.
- SEE DRAWING SHEET NOTES ON SHEET 1, "TITLE SHEET" OF THIS DRAWING SET.
- EXISTING SITE CONDITIONS MAY DIFFER FROM THE PLANS AT THE TIME OF CONSTRUCTION. CONTRACTOR SHALL CONDUCT A SITE VISIT TO FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO BID SUBMITTAL.

WATER NOTES

- WATER & RECYCLED WATER MAIN AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "CITY OF CARLSBAD ENGINEERING STANDARDS" (LATEST EDITION) VOLUMES 2 & 3.
- BEFORE ANY CONNECTION OR SHUT DOWN OF VALVES ON EXISTING C.M.W.D. LINES, A PERMIT SHALL BE OBTAINED FROM THE C.M.W.D. OFFICE AND MUST BE SIGNED AND APPROVED BY THE CITY OF CARLSBAD'S DEPUTY CITY ENGINEER AND THE UTILITY OPERATIONS' PUBLIC WORKS MANAGER.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF CARLSBAD ENGINEERING INSPECTION DEPARTMENT 48 HOURS PRIOR TO STARTING WORK SO THAT INSPECTION MAY BE PROVIDED - TELEPHONE NO. (760)438-3891.
- NO TREES OR STRUCTURES SHALL BE ALLOWED IN THE WATER LINE EASEMENT, ALL EXISTING TREES AND STRUCTURES SHALL BE REMOVED PRIOR TO COMMENCEMENT OF WORK - ANY EXCEPTIONS SHALL REQUIRE WRITTEN PERMISSION FROM THE DISTRICT ENGINEER.

SITE PLAN AND SHEET INDEX

SCALE: 1" = 40'

- ALL BURIED COPPER PIPING AND APPURTENANCES SHALL BE PROTECTED BY MEANS OF CATHODIC PROTECTION UNLESS OTHERWISE APPROVED BY THE DISTRICT ENGINEER.
- ALL WATER METER BOXES SHALL BE 17" X 30" X 12" POLYMER CONCRETE AS MANUFACTURED BY ARMORCAST OR EQUAL.
- THE TOP OF WATER METER BOXES SHALL BE FLUSH WITH THE FINISHED SURFACE GRADE.
- CONSTRUCTION OF WATER MAINS AND RECYCLED WATER MAINS SHALL ADHERE TO THE "CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS" PUBLISHED BY THE STATE OF CALIFORNIA'S DEPARTMENT OF HEALTH SERVICES.
- AXIAL DEFLECTION AT THE PIPE JOINTS IS NOT ALLOWED. THE USE OF A HIGH-DEFLECTION COUPLING AT A PIPE JOINT MAY BE PERMITTED BY THE INSPECTOR ON A CASE BY CASE BASIS NOT TO EXCEED 4 DEGREES TOTAL DEFLECTION PER COUPLING (2 DEGREES/EACH GASKET).
- BEFORE CONSTRUCTION BEGINS IN ANY PUBLIC RIGHT OF WAY, A CITY RIGHT OF WAY PERMIT SHALL BE REQUIRED.
- NO CUTTING OF ASBESTOS CEMENT PIPE (ACP) IS PERMITTED. CONTRACTOR SHALL REMOVE ACP TO NEAREST COUPLING AND INSTALL ACP X PVC ADAPTORS AND THE NECESSARY PVC SIZE AND CLASS PIPE.
- PRIOR TO BACKFILL, INSTALL TRACER WIRE ON TOP OF PIPE AND SECURE IN PLACE WITH 2-INCH WIDE PLASTIC ADHESIVE TAPE AT MAXIMUM 10-FOOT INTERVALS. WIRE TO ENTER VALVE BOX BY MEANS OF DRILLED HOLE IN VALVE WELL CASING JUST BELOW 4TBX. WIRE IS NOT TO INTERFERE WITH VALVE NUT OPERATION. RUN TRACER WIRE CONTINUOUSLY ALONG PIPE AND TERMINATE IN ADJACENT VALVE BOXES FOR BURIED ASSEMBLIES OR BURIED VALVES. WHERE BURIED SPLICES OCCUR, USE AN ELECTRICAL EPOXY RESIN SUCH AS SCOTCHCAST, OR APPROVED EQUAL. PROVIDE 24 INCHES OF COILED WIRE AT ACCESS POINTS FOR ATTACHMENTS OF PIPE LOCATING EQUIPMENT. EACH INSTALLED RUN OF PIPE SHALL BE CAPABLE OF BEING LOCATED USING THE TRACER WIRE. PROTECT WIRE INSULATION FROM DAMAGE DURING INSTALLATION AND BACKFILLING. WIRE INSULATION THAT IS BROKEN, CUT, OR DAMAGED SHALL BE REPLACED.
- TRACER WIRE SHALL BE AWG NO. 8 STRANDED COPPER WIRE WITH HIGH MOLECULAR WEIGHT POLYETHYLENE (HMW/PE) INSULATION SPECIFICALLY DESIGNED FOR DIRECT BURIAL IN CORROSIVE SOIL OR WATER. POLYETHYLENE INSULATION SHALL CONFORM TO ASTM D 1248, TYPE 1, CLASS C. WIRES WITH CUT OR DAMAGED INSULATION ARE NOT ACCEPTABLE AND REPLACEMENT OF THE ENTIRE WIRE WHICH HAS BEEN DAMAGED WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

ABBREVIATIONS

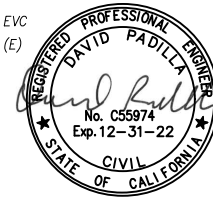
DESCRIPTION	ABBREVIATION
AIR VACUUM ASSEMBLY	AVA
APPROXIMATELY	APPROX
ASBESTOS CEMENT	AC
ASSESSOR'S PARCEL NUMBER	APN
BLOW OFF	BO
BEGIN VERTICAL CURVE	BVC
CARLSBAD MUNICIPAL WATER DISTRICT	CMWD
CITY OF CARLSBAD STANDARD DRAWING	CSD
DUCTILE IRON	DI
EDGE OF PAVEMENT/SHOULDER	EP/ES
EDGE OF TRAVELED WAY	ETW
END VERTICAL CURVE	EVC
EXISTING	(E)

ABBREVIATIONS CONT.

DESCRIPTION	ABBREVIATION
FUSIBLE PVC	FPVC
HIGH DENSITY POLYETHYLENE	HDPE
INVERT ELEVATION	IE
LINEAL FEET	LF
MANUAL AIR RELEASE ASSEMBLY	MAR
NOT TO SCALE	N.T.S.
PLAIN END	PE
PROPOSED	(P)
PROTECT IN PLACE	PIP
PROPERTY LINE	PL
PUSH ON	PO
POLYVINYL CHLORIDE	PVC
REINFORCED CONCRETE PIPE	RCP
RADIUS	R
REDUCER	RED
RESTRAINED FLANGED COUPLING ADAPTER	RFCA
REMOVE AND REPLACE	RR
RIGHT OF WAY	R/W
SAN DIEGO REGIONAL STANDARD DRAWING	SDRSD
STORM DRAIN	SD
TOP OF CARRIER PIPE	TOP
THRUST BLOCK	TB
TYPICAL	TYP
ULTIMATE	ULT
WATER SERVICE	W
WATER GATE VALVE	GV

LEGEND

DESCRIPTION	SYMBOL
NEW PVC CARRIER/CASING	W
EXIST. WATERLINE	W
EXIST. SANITARY SEWER	S
EXIST. STORM DRAIN	SD
EXIST. TELECOMMUNICATIONS	T
EXIST. ELECTRIC	E
EXIST. GAS	G
EXIST. CABLE	CATV
EXIST. FENCELINE	X-X
EXIST. WALL	□
EXIST. EP/ES	---
EXIST. EASEMENT BOUNDARY	- - - -
EXIST. R/W & PL	- · - · -
WATER GATE VALVE	⊗
BLOW-OFF ASSEMBLY	⊙
MANUAL AIR RELEASE ASSEMBLY	■
AIR VACUUM ASSEMBLY	●
WATER SERVICE	—(W)
EXIST. TREE	○

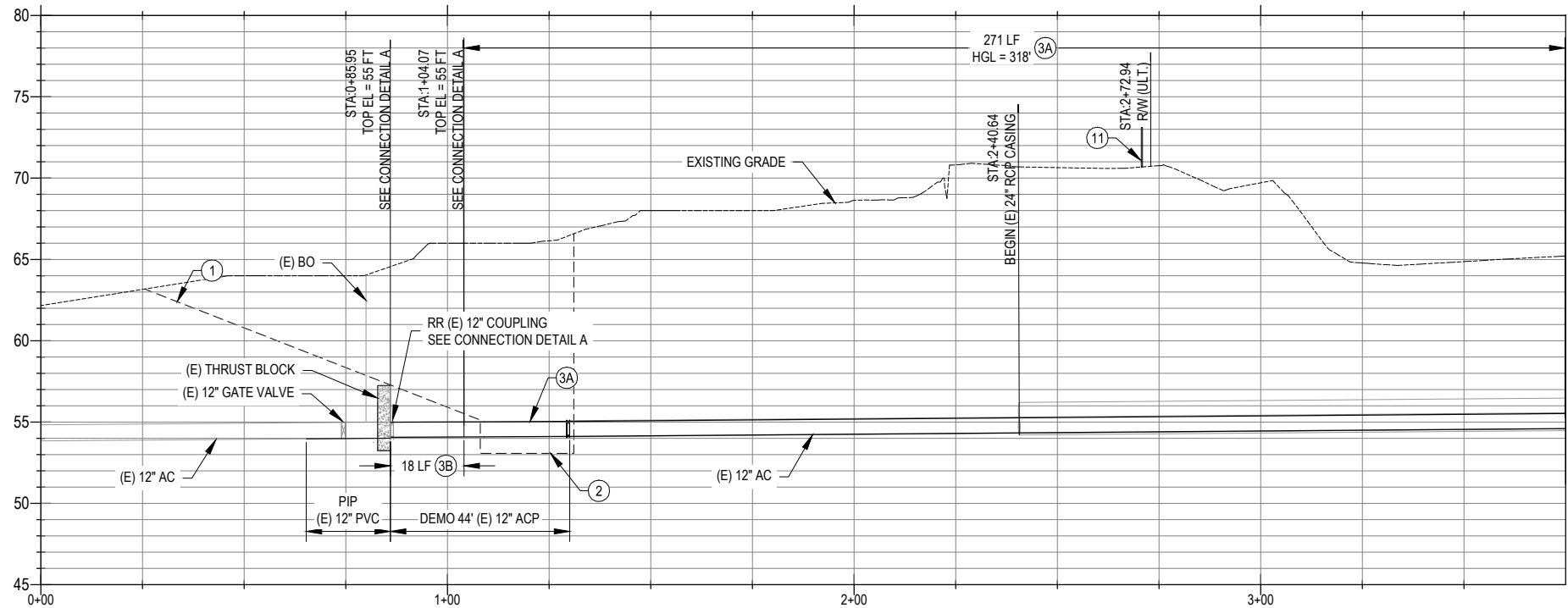


DATE	INITIAL	DATE	INITIAL	DATE	INITIAL
ENGINEER OF WORK		OTHER APPROVAL	CITY APPROVAL		

REVISION	DESCRIPTION

SHEET	CITY OF CARLSBAD	SHEETS
2	UTILITIES DEPARTMENT	4
IMPROVEMENT PLAN FOR:		
SITE PLAN, CONSTRUCTION NOTES		
LEGEND AND ABBREVIATIONS		
ALTAMIRA WATER MAIN RELOCATION		
ACCEPTED BY: DAVID PADILLA	6/22/2021	
DISTRICT ENGINEER: RCE	55974 EXP. 12/31/22	DATE
DWN BY: NI	PROJECT NO. 3904F	DRAWING NO. 532-2
CHKD BY: DP		
DATE: Jun 21, 2021		

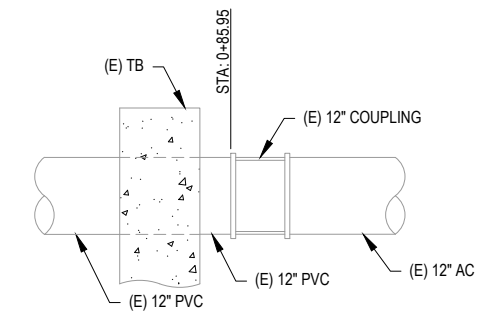
July 27, 2021



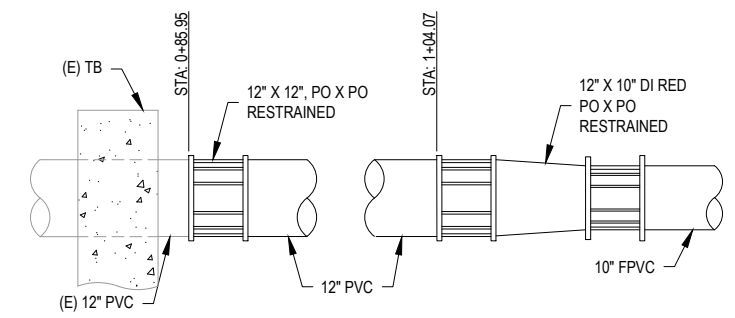
PROFILE STA: 0+00 TO 3+75
SCALE: HORIZ: 1" = 20' VERT.: 1" = 5'

CONSTRUCTION NOTES

- ① TAIL DITCH TEMPORARY EXCAVATION (CURVED, 350 FT RADIUS)
- ② INSERTION PIT TEMPORARY EXCAVATION
- ③A CONSTRUCT 10" FPVC, AWWA C900 DR 18 (SLIPLINE)
- ③B CONSTRUCT 12" PVC, AWWA C900 DR 18
- ④ CONSTRUCT 16" HDPE, AWWA C906 DR 17 (CASING)
- ⑤ DEMOLISH (E) 12" ACP
- ⑥ DEMOLISH (E) 24" RCP CASING
- ⑦ INSTALL 3" ELASTOMERIC BEARING PAD
- ⑧ CONSTRUCT CONCRETE COLLAR MODIFIED CSD DS-5, 450-C-2000 CONCRETE
- ⑨ INSTALL 16" MECHANICAL COUPLING OR BUTT FUSION JOINT
- ⑩ SLURRY FILL AND ABANDON (E) 12" ACP
- ⑪ INSTALL CARSONITE CLM 72011808 PIPELINE MARKER POST

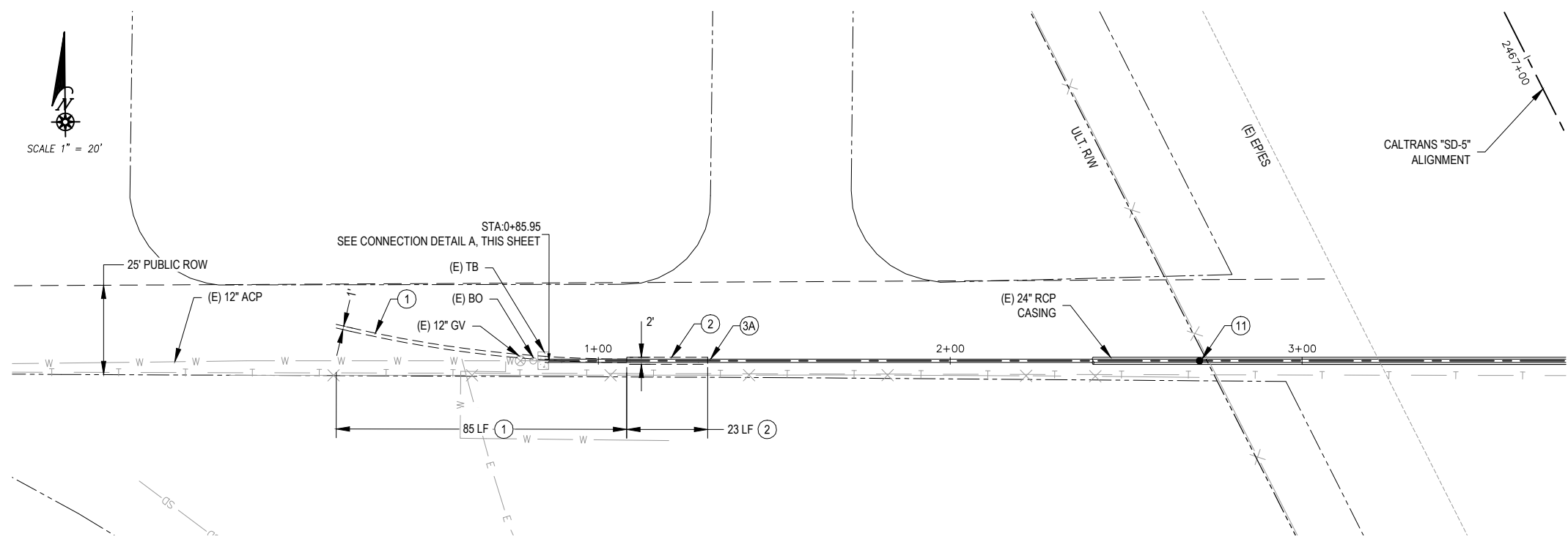


EXISTING



PROPOSED

A CONNECTION DETAIL
STA: 0+85.95, 1+04.07 SCALE: N.T.S.



PLAN STA: 0+00 TO 3+75
SCALE: 1" = 20'



ORIGINAL DRAWING SCALE
0 1/2" 1"

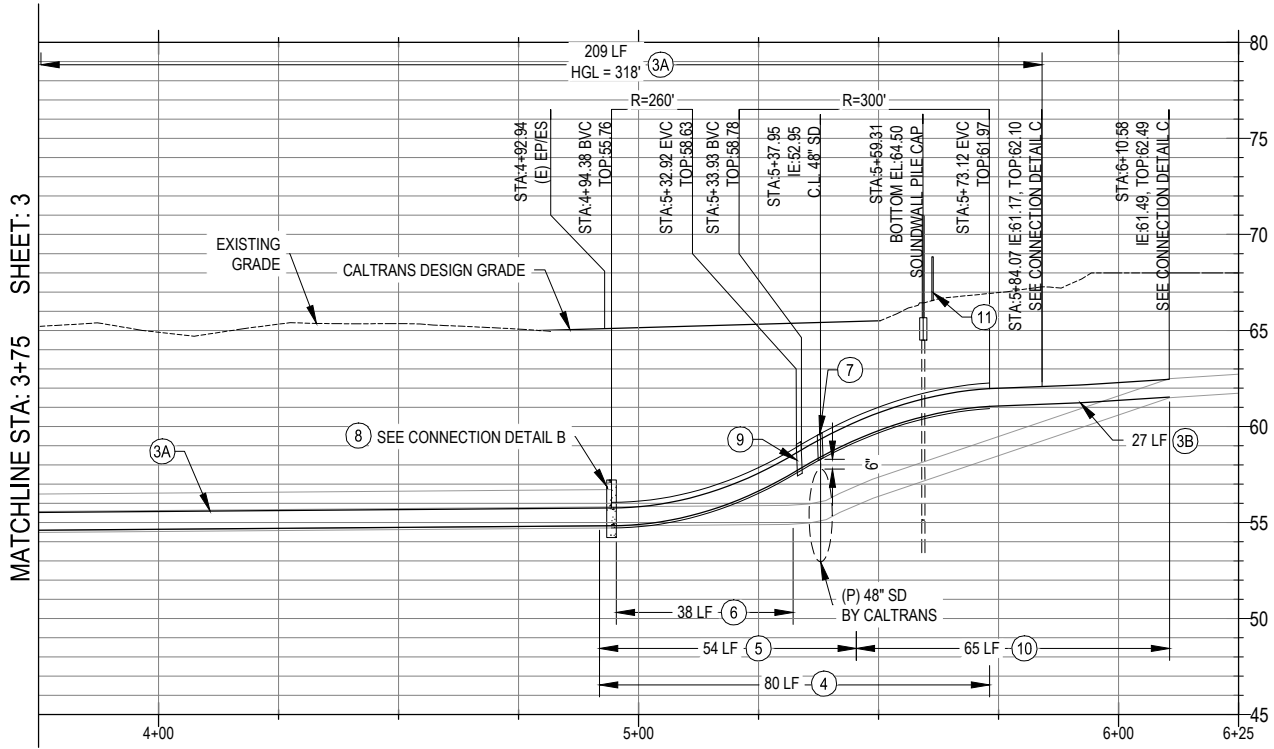
DATE	INITIAL	REVISION DESCRIPTION	DATE	INITIAL	DATE	INITIAL

"AS BUILT"	
RCE _____	DATE _____
REVIEWED BY: _____	
INSPECTOR _____	DATE _____
SHEET 3	CITY OF CARLSBAD UTILITIES DEPARTMENT SHEETS 4
IMPROVEMENT PLAN FOR: PLAN AND PROFILE ALTAMIRA WATER MAIN RELOCATION	
ACCEPTED BY: <i>David Padilla</i>	DATE: 6/22/2021
DISTRICT ENGINEER RCE 55974 EXP. 12/31/22	
DWN BY: NI	PROJECT NO. 3904 F
CHKD BY: DP	DRAWING NO. 532-2
tem #4	Page 282 of 283

July 27, 2021

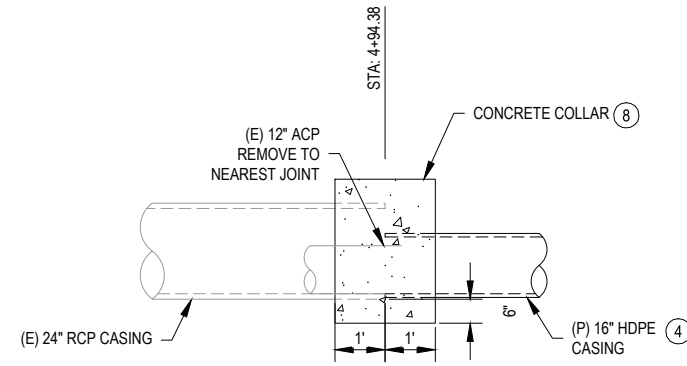
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PLOT DATE: Jun 21, 2021 10:56am

FILE SPEC: 0:\Public Works\PW Common\Capital Improvement Program Projects\3904 Misc Pipeline Replacement\3904-F Water Main Relocation - Caltrans\Design\CAD\0601421_Design.dwg
PLOT DATE: Jun 21, 2021 10:57am

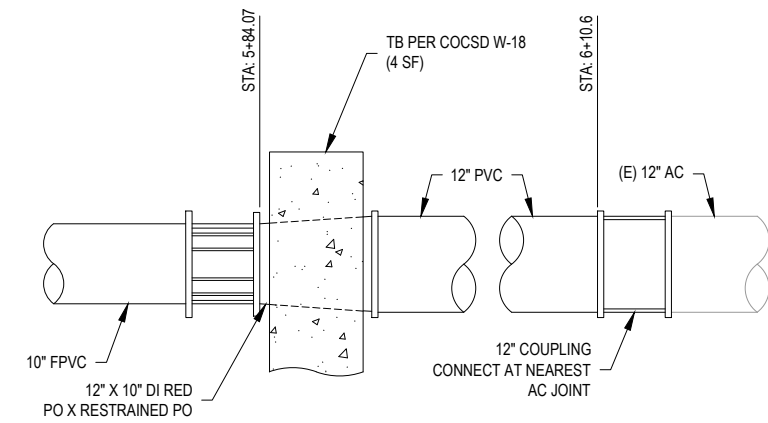
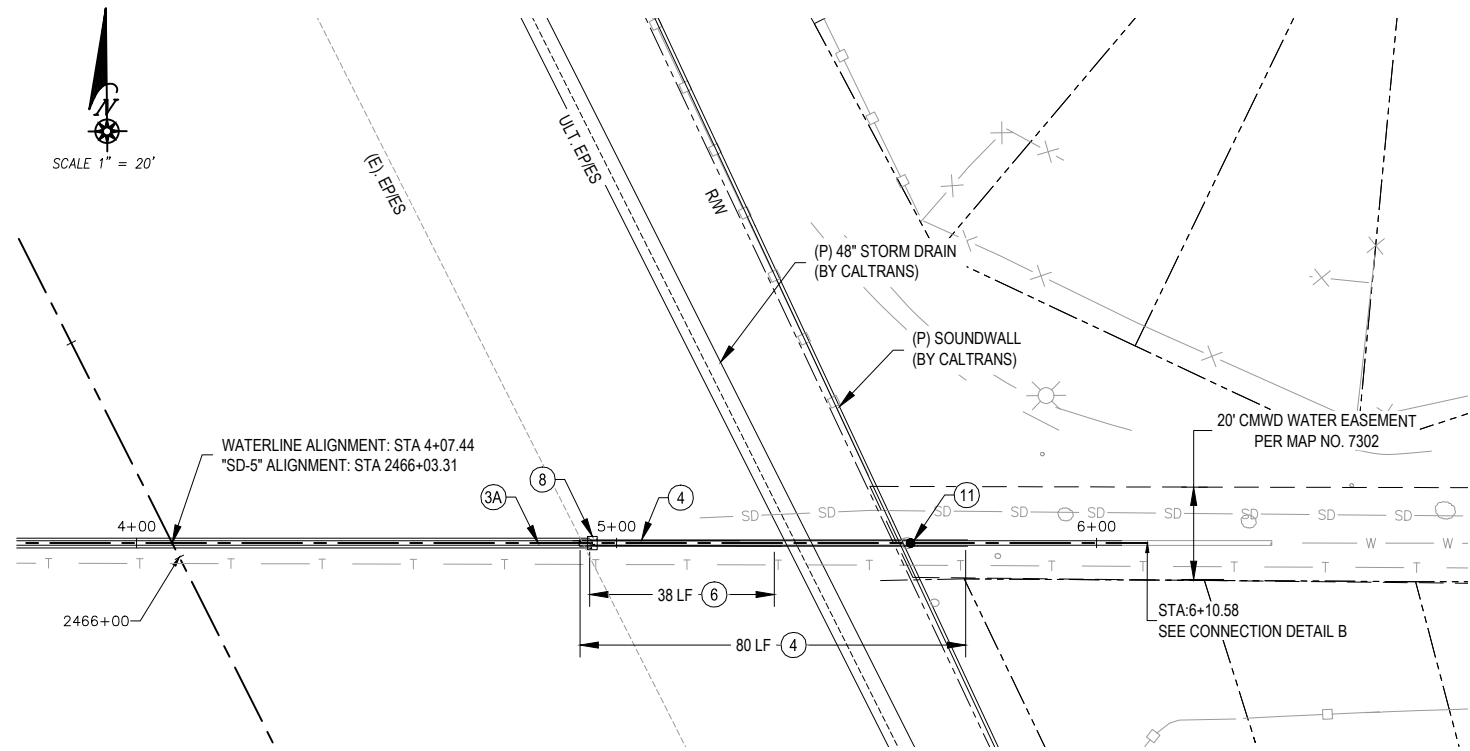


CONSTRUCTION NOTES

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- ⑪ INSTALL CARSONITE CLM 72011808 PIPELINE MARKER POST



NOTE:
SEE CSD DS-5 FOR REINFORCEMENT, NOT SHOWN IN THIS DETAIL

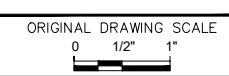


"AS BUILT"

RCE _____ EXP. _____ DATE _____

REVIEWED BY: _____

INSPECTOR _____ DATE _____



DATE	INITIAL	REVISION DESCRIPTION	DATE	INITIAL	DATE	INITIAL

SHEET 4 CITY OF CARLSBAD UTILITIES DEPARTMENT SHEETS 4

IMPROVEMENT PLAN FOR:
PLAN AND PROFILE

ALTAMIRA WATER MAIN RELOCATION

ACCEPTED BY: *David Padilla* 6/22/2021
DISTRICT ENGINEER RCE 55974 EXP. 12/31/22 DATE

DWN BY: NI PROJECT NO. 3904-F DRAWING NO. 532-2
CHKD BY: DP tem #4 Page 283 of 283

July 27, 2021