

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529**

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PROJECT PLANS

**SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT**

**NOTICE AND INSTRUCTIONS
TO BIDDERS**

FOR

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529**

**SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
NOTICE TO BIDDERS**

Sealed proposals will be received at the office of the County Clerk, 1055 Monterey Street, Room D-120, San Luis Obispo, California 93408 until 3:00 P.M. on Monday, _____, 20__, which bids will then be opened and declared at 3:15 o'clock P.M. on the above mentioned date at a public meeting at 1055 Monterey Street, Room D-120, by the County Clerk, for the following Public Works Project:

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529**

Any bid received at the Office of the Clerk of the Board of Supervisors of the County of San Luis Obispo after 3:00 P.M. on the date specified above shall not be considered, and shall be returned to the bidder unopened.

NON-MANDATORY PRE-BID MEETING: Bidders may attend one of two non-mandatory pre-bid meetings in order to assess existing site conditions. The site is a secure facility and no other site visits will be allowed outside of the pre-bid meetings.

Two non-mandatory pre-bid meetings will be held, on Wednesday, December 10, 2014 at 9:00 am and Wednesday, December 17, 2014 at 9:00 am at the following location:

Nacimiento Water Project Intake Pump Station
North side of Nacimiento Lake Dam
10707 Nacimiento Lake Drive
Northwest of Paso Robles, CA

Directions to the pre-bid meeting location from Paso Robles, CA are as follows:

1. Northbound or southbound Highway 101 to Paso Robles
2. EXIT at Highway 46 East, Exit 231
3. Turn west on SLO County Hwy G14 / 24th Street towards Nacimiento Lake
4. 24th St becomes SLO County Hwy-G14/Nacimiento Lake Dr.
5. At Chimney Rock Road, approximately 8.5 miles west of Highway 101, turn right to stay on Nacimiento Lake Dr/SLO County Hwy-G14
6. Continue on Nacimiento Lake Dr/SLO County Hwy-G14 approximately 7.9 miles to NWP Intake Pump Station, on West side of Nacimiento Lake Drive

The non-mandatory pre-bid meeting will include a brief discussion of construction issues and contract requirements as well as a tour of the project site and is for the Bidder's information only. For additional information regarding the meeting, please contact Michael Boyce at (805) 781-5264.

Bids are required for the entire work described herein.

An official bound copy of a reduced size set of the Project Plans, the Agreement, the Special Provisions, and blank forms suitable for use in bidding on said work may be obtained from the Department of Public Works, Room 207, County Government Center, San Luis Obispo, CA 93408 and may be purchased therefrom for \$ _____, (tax included), per bound copy, said purchase cost not to be refunded. Such documents must be purchased from the Department of Public Works in order to be recognized as an official planholder. No bid will be considered which is not on the forms herein provided. A full size set of the Project Plans and cross sections, if available, are charged separately at the department's current rates and will be provided only upon request.

Pursuant to the provisions of Section 1773 of the California Labor Code, the Board of Supervisors of the County of San Luis Obispo has obtained from the Director of the California Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work for the locality in which the work is to be performed for each needed craft, classification, or type of workman. Copies of said prevailing rate of per diem wages are on file in the Office of the Clerk of the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District (District) and available at the California Department of Industrial Relations' web site address at: www.dir.ca.gov/DLSR/PWD.

Bidders are advised that any contractor who is awarded a public works project and intends to use a craft or classification not shown on the general prevailing wage determination may be required to pay the wage rate of that craft or classification most closely related to it as shown in the general determinations effective at the time of the call for bids.

Travel and Subsistence Payments shall be in accordance with Section 1773.1 of the Labor Code. Wage rates for holiday and overtime work shall be in accordance with Section 1773 of the Labor Code. Attention is directed to the provisions in Sections 1777.5, 1777.6, and 1777.7 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor. Attention is directed to the provisions in Section 1776 of the Labor Code concerning payroll records.

Attention is directed to the provisions in Sections 1810 – 1815 of the Labor Code concerning work hours.

Attention is directed to the provisions of Section 2-1.02, "Required Listing of Proposed Subcontractors," of the Special Provisions regarding the requirement that proposed subcontractors be listed in the bidder's proposal. A "DESIGNATION OF SUBCONTRACTORS" form for listing subcontractors, as required, is included in the section titled "Bid Proposal and Forms" of the Contract Documents. This form must be completed and submitted with bidder's bid proposal.

All bonds and endorsements thereto to be submitted pursuant to this contract shall be written by a company authorized to do surety business in the State of California.

Each bid must be accompanied by a form of bidder's security, namely cash, certified check, cashier's check, or bidder's bond, in the amount of ten percent (10%) of the total of the bid.

All addenda issued before the time in which to submit bids expires shall form a part of the Contract Documents which are the subject of the bid. Any such addendum issued before the time in which to submit bids expires shall be e-mailed to each planholder on the County's official planholder list, at

the e-mail address provided to the County at the time bid documents were purchased from the Department of Public Works. An informational electronic copy of such addenda will also be posted to the County's website for the Bidder's convenience at the following web address:

http://www.slocounty.ca.gov/PW/Design_Division/Projects_Out_To_Bid.htm

All bidders are required to acknowledge and confirm receipt of each and every addendum in their bid proposal.

Within five (5) calendar days, not including Saturdays, Sundays, and legal holidays, after receipt of notice that the contract has been awarded, the successful bidder, shall execute a written contract with the District in the form prescribed herein.

At the time of execution of the contract, the successful bidder shall submit the certificates of insurance stipulated in Article 7 of the Agreement, and, in addition thereto, shall furnish a "Performance Bond" in the sum of one hundred percent (100%) of the contract bid to guarantee the performance of the contract, and a "Payment Bond" in the sum of one hundred percent (100%) of the contract bid. The bond forms are included in the section titled "Agreement" of the Contract Documents.

Attention is directed to the provisions of Section 5-1.07, "Measurement and Payment," of the Special Provisions permitting the substitution of equivalent securities for any moneys withheld to ensure performance of this contract. Said Section 5-1.07 is incorporated by reference in this invitation for bid as if fully set forth at length.

The Board of Supervisors reserves the right to reject any or all bids, and to waive discrepancies, irregularities, informalities or any other errors in the bids or bidding, if to do so seems to best serve the public interest. The right of Board of Supervisors to waive errors applies even if the Contract Documents state that a discrepancy, irregularity, informality or other error makes a bid nonresponsive, so long as the error does not constitute a material error.

The successful bidder must be licensed to perform the work in accordance with the laws of the State of California. Accordingly, the successful bidder shall possess a Class A general engineering contractor's license at the time this contract is awarded. In the alternative, the successful bidder shall possess a specialty contractor's license that permits the successful bidder to perform with his or her own organization contract work amounting to not less than 30% of the original total contract price and to subcontract the remaining work in accordance with Section 5-1.055, "Subcontracting," of the Amendments to the Standard Specifications. Failure of the bidder to be properly and adequately licensed shall constitute a failure to execute the contract and shall result in the forfeiture of the bidder's security.

Bidders must satisfy themselves by personal examination of the location of the proposed work and by such other means as they prefer as to the actual conditions and requirements of the work, and shall not at any time after submission of the bid dispute, complain, or assert that there was any misunderstanding in regard to the nature or amount of work to be done.

By order of the Board of Supervisors of the San Luis Obispo Flood Control and Water Conservation District made this _____ day of _____, 20__.

County Clerk and Ex-officio Clerk
of the Board of Supervisors

By _____
Deputy Clerk

BID PROTESTS AND OTHER CHALLENGES
TO AWARDS OF CONSTRUCTION CONTRACTS

Bid protests and any other challenges to the award of this construction contract must comply with the requirements described in the "Rules Governing Bid Protests and Other Challenges to Awards of Construction Contracts" ("Rules"), a copy of which is attached to this contract. In addition to the requirements described in the Rules, any bid protest must be submitted in writing to the Department of Public Works, Room 207, County Government Center, 976 Osos Street, San Luis Obispo, CA 93408; Attention: Design Engineer.

SPECIAL INSTRUCTIONS TO BIDDERS

All bidder Requests for Information must be submitted no later than 4 days prior to the bid opening date. Requests submitted after said date may not be considered. Bidders should submit Requests for Information to the County during the bid period at the following website:

http://www.slocounty.ca.gov/PW/Design_Division/Projects_Out_To_Bid.htm

Attention is directed to Section 3-1.03, “Execution of Contract,” of the Special Provisions regarding the documents to be submitted by the Contractor with the executed contract, bonds and insurance, and the time period to submit the listed items to the District after the bidder has received the contract for execution.

Attention is directed to Section 4-1.03, “Contract Submittals,” of the Special Provisions regarding the time period to submit the listed items upon receipt of the fully executed contract.

Attention is directed to Section 2-1.03, “Experience and Qualifications Certification,” of the Special Provisions regarding the requirement that bidders submit the “CERTIFICATION OF BIDDER’S EXPERIENCE” form, included in Section titled “Bid Proposal and Forms of the Contract Documents.

**SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT**

BID PROPOSAL AND FORMS

FOR

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529**

BID PROPOSAL

TO: THE BOARD OF SUPERVISORS OF THE SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, STATE OF CALIFORNIA:

Pursuant to and in compliance with your Notice to Bidders, the undersigned, as bidder, declares that the only person or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm or corporation; that he/she is 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 he/she will comply with such provisions before commencing the performance of the work of this contract; that he/she has carefully examined the location of the proposed work, the annexed proposed form of contract, and he/she proposes, and agrees if this proposal is accepted, that he/she will contract with the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other equipment needed, and to do all of the work and furnish all the materials specified in the contract, in the manner and the time therein prescribed, and according to the requirements of the Department of Public Works and Transportation as therein set forth, and that he/she will take in full payment therefor the following unit prices, to-wit:

SEE NEXT PAGE FOR BID PROPOSAL FORM

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529
BID PROPOSAL**

BASE BID

ITEM NO.	CODE NO.	DESCRIPTION OF ITEM	ESTIMATED QUANTITY	UNIT	BID UNIT PRICE	BID PRICE
1		Mobilization / Demobilization	1	LS	\$50,000	\$50,000
2		Sheeting, Shoring and Bracing	1	LS	LUMP SUM	
3		Furnish & Install HDPE Carrier Pipe	1800	LF		
4		Western Connection	1	LS	LUMP SUM	
5		Eastern Connection	1	LS	LUMP SUM	
6		All Other Work	1	LS	LUMP SUM	
TOTAL BASE BID						

Bidder's Name: _____

Bidder represents that he/she has hereinabove set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose. In the case of unit basis items, the amount set forth under the "Total" column is the extension of the unit price bid on the basis of the approximate quantity for the item.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, provided, however, if the amount set forth as a unit price is ambiguous, unintelligible, or uncertain for any cause, or is omitted, or is the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

Proposals in which the prices are mathematically or materially unbalanced may be rejected. A bid is mathematically unbalanced if the bid is structured on the basis of nominal prices for some work and inflated prices for other work; that is, each element of the bid must carry its proportionate share of the total cost of the work plus profits. A bid is materially unbalanced if there is reasonable doubt that award to the bidder submitting the mathematically unbalanced bid will result in the lowest ultimate cost to the County.

Bidder shall execute and submit with their proposal, each of the following:

- BIDDERS INFORMATION LIST
- DESIGNATION OF SUBCONTRACTORS
- BIDDER'S NON-COLLUSION DECLARATION (STATE FORM)
- CERTIFICATION OF BIDDER'S EXPERIENCE
- BIDDER'S BOND

Bidder declares that he/she has read, and agrees to, the Special Provisions, including, without limitation, the provisions of Sections 1, 2, 3, 4, and 5 thereof.

Bidder shall list the name and address of each subcontractor to whom the bidder proposes to directly subcontract portions of the work as required by the provisions in Section 2-1.02, "Required Listing of Proposed Subcontractors," of these Special Provisions. The list of subcontractors shall also set forth the portion of work that will be done by each subcontractor listed. The "DESIGNATION OF SUBCONTRACTORS" form for listing the subcontractors is included in the section titled "Bid Proposal and Forms" of the Contract Documents.

Accompanying this bid proposal is a bidder's bond, cash, cashier's check, or a certified check, payable to the San Luis Obispo County Flood Control and Water Conservation District, for the sum of _____ Dollars (\$ _____), said amount being at least ten percent (10%) of the total of the bid. The proceeds thereof shall become the property of the San Luis Obispo County Flood Control and Water Conservation District if the proposal is withdrawn after the time fixed in the Notice to Bidders for the opening of bids, or if, in case this bid is accepted by said Board of Supervisors and such bidder has received notice that the contract has been awarded to him/her, the undersigned shall fail within five (5) calendar days, not including Saturdays, Sundays, and legal holidays, thereafter to execute a contract with the District and furnish the certificates of

insurance and Payment and Performance bonds required by the Contract Documents. Otherwise, said guarantee, except a bidder's bond, will be returned to the undersigned.

This bid proposal may be withdrawn, in writing, prior to the time fixed in the Notice to Bidders for the opening of bids. It is understood and agreed that this bid proposal will not be withdrawn after the time fixed in the Notice to Bidders for the opening of bids. Bidders further agree that the failure of the District to open bids for this project exactly at the time fixed in said Notice shall not extend the time within which bids may be withdrawn.

The undersigned bidder will sign and deliver to the San Luis Obispo County Flood Control and Water Conservation District the written contract, together with the certificates of insurance and bonds described in the Notice to Bidders, within five (5) calendar days, not including Saturday, Sundays, and legal holidays, after the undersigned has received notice that the contract has been awarded to him/her.

The undersigned, as bidder, declares that he/she is aware of the provisions of Section 3700 of the California 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 will comply with such provisions before commencing the performance of the work of this contract.

The bidder's execution of the signature portion of this bid proposal shall also constitute an endorsement and execution of those certifications, questionnaires, and assurances which are a part of this proposal.

ADDENDA: The undersigned acknowledges and confirms the receipt of the following Addenda:

<u>Addenda Number</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____

and agrees that said addenda are covered in the bid proposal and shall form a part of the Contract Documents.

If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a partnership, state true name of firm, also names of all individual co-partners composing firm; if bidder or other interested person is an individual, state first and last names in full.

Bidder warrants and represents that he/she is licensed in accordance with an Act providing for the registration of Contractors, License No. _____, Class _____, License Expiration Date _____. (Note: The successful bidder must possess the license classification specified in the Notice to Bidders upon award of this contract.)

Name of Bidder _____

Signature of Bidder _____

Printed Name and Title _____

Business Address _____

Telephone Number _____

Date _____

NOTICE.If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contract in behalf of the corporation; if bidder is a partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts in behalf of the partnership; and if the bidder is an individual, his or her signature shall be placed above. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a Power of Attorney must be on file with the District prior to opening of bids or submitted with the bid; otherwise, the bid will be disregarded as irregular and unauthorized.

RETURN THIS FORM WITH YOUR BID PROPOSAL

BIDDERS INFORMATION LIST

All bidders/proposers are required to provide the following information for all DBE and non-DBE contractors, who provided a proposal, bid, quote, or were contacted by the proposed prime contractor. This information is required from the proposed prime contractor and shall be submitted with their bid proposal. The Department of Public Works will use this information to maintain and update a "Bidder's List" to assist in the overall annual Disadvantaged Business Enterprise (DBE) availability goal setting process required for Federal-aid projects. This information is also being made available to other local agencies for the same purpose. *To the extent permitted by law, all information submitted will be held in strict confidence and will not be shared without your consent except as noted above.*

Contractor: Prime Contractor Subcontractor Supplier Other: _____

Firm Name: _____ Phone: _____

Business Address: _____ Fax: _____

License No. _____
and Classification _____ Years in Business: _____

Contact Person: _____

Is the firm currently certified as a DBE by Caltrans? No Yes Cert. Number: _____

Gross Annual Receipts for last year:

- less than \$1 million less than \$5 million less than \$10 million
 less than \$15 million more than \$15 million

Type of work/ services/ materials provided for this job:

- Contractor Supplier Manufacturer Trucking Broker
 Other (describe): _____

Contractor Specialty for this job:

- Roadway Construction (including signing, paving, and concrete) (237310)
 Roadway Painting/Striping (237310)
 Highway Lighting & Signal Installation (238210)
 Bridge Construction (237310)
 Tunnel Construction (237990)
 Water, Sewer, & Pipeline Construction (237110)
 Power & Communication Transmission Line (including conduit construction) (237130)
 Landscaping (561730)
 Irrigation (237110)
 Other Heavy Construction (including parks, reclamation, reservoir, water & sewer treatment facilities) (237990)
 Masonry (including retaining walls and foundations) (238140)
 Concrete Retaining Walls (238110)
 Building Construction (236210/236220)
 Other (describe): _____

- Copy sheet as needed
- None of the information requested on this form is material to the County's determination of which Bidder's Bid is the lowest responsive bid.

RETURN THIS FORM WITH YOUR BID PROPOSAL

DESIGNATION OF SUBCONTRACTORS FORM

In compliance with the provisions of Sections 4100-4113 of the Public Contract Code of the State of California, and any amendments thereto, the undersigned bidder sets forth the following:

- a. The name and location of the place of business of each subcontractor who will perform work or labor, or render service to the undersigned Prime Contractor in or about the construction of the work or improvement, 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 one percent of the undersigned Prime Contractor's total bid or in the case of bids for the construction of streets and highways, including bridges, in excess of one-half of one percent or ten thousand dollars (\$10,000), whichever is greater.*
- 1. The portion of the work which will be done by each such subcontractor. Only one subcontractor shall be listed for each such portion. If the subcontractor is not performing all of the work under the bid item number(s) listed for that subcontractor, the bidder shall set forth the portion of the work relating to said bid item number(s) that will be done by the subcontractor.

Bid Schedule Item No.	Description of Portion of Work (if applicable)	Subcontractor	License No.	Address	Percent of Total Bid Price

FC-14

By: _____
 (Bidder's Signature/Printed Name and Title/Company Name)

*NOTE: When there is a failure to list a subcontractor, as required, the law provides that the Contractor agrees to do the work with his or her own forces. In such case, bidder must be authorized to perform said work. Any bid not complying with the provisions hereof may be rejected.

RETURN THIS FORM WITH YOUR BID PROPOSAL

BIDDER'S NON-COLLUSION DECLARATION (STATE FORM)

Bidder hereby states, under penalty of perjury, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that 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, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that 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, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

(Name of Company)

By: _____

Printed Name

Title

Date: _____

RETURN THIS FORM WITH YOUR BID PROPOSAL

CERTIFICATION OF BIDDER'S EXPERIENCE

This form shall be completed, signed by bidder, and submitted with bidder's bid. Failure to complete, sign, and submit with bidder's bid may result in bidder's bid being rejected.

The undersigned bidder certifies that it is, at the time of bidding, and shall be, throughout the period of the contract, licensed in the State of California, to do the type of work contemplated in the Contract Documents. Bidder further certifies that it is skilled and regularly engaged in the general class and type of work called for in the Contract Documents. Any bidder not so licensed shall be subject to all legal penalties imposed by law, including, but not limited to, any appropriate disciplinary action by the Contractor's State License Board.

The bidder represents that it is competent, knowledgeable, and has special skills of the nature, extent, and inherent conditions of the work to be performed. Bidder further acknowledges that there may be certain peculiar and inherent conditions existent in the construction of the particular facilities which may create, during the construction program, unusual or peculiar unsafe conditions hazardous to persons and property. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the construction work with respect to such hazards.

Bidder shall fully and completely enter the required information for each entry listed on the experience form below. Attach additional sheets as necessary. Print or type each response.

I. INSTALLER EXPERIENCE

As noted in Section 02312 "Installation of HDPE Carrier Pipe," Paragraph 1.01, "HDPE Carrier Pipe Installation Experience."

1. Contractor Experience. The contractor performing the HDPE carrier pipe installation shall have successfully completed at least five (5) pipeline installations over the last five (5) years using the horizontal directional drilling (HDD) construction method. Each HDD pipeline installation shall be 24-inch minimum diameter pipe with an HDD length of not less than 1,500 feet. For purposes of demonstrating experience, carrier pipe materials must have included steel, ductile iron, fusible PVC and/or HDPE. At least one project shall have involved the HDD installation of HDPE carrier pipe. At least one installation shall have involved HDD pulling forces of greater than 150,000 pounds.
2. Experience Information Provided. The experience record shall include names of projects; project owners; and names of contacts including basic contact information. For each HDD pipeline installation, provide carrier pipe material, diameter, and HDD segment length(s). If HDD work was performed as a subcontractor, the record shall include name of general contractor, name of contact, and essential contact information. Work completed by a subcontractor shall not be included as experience of any contractor or company that had hired the subcontractor.

Bidder shall list such projects below:

Installation No. 1

Project Name: _____
General Description of Work: _____
Owner: _____
Owner's Rep. & Phone No.: _____
Prime Name & License No.: _____
Prime's Rep. & Phone No.: _____
HDD Superintendent Name: _____
Carrier Pipe Material &
Diameter: _____
HDD Segment Length &
approximate HDD Pulling Force: _____

Installation No. 2

Project Name: _____
General Description of Work: _____
Owner: _____
Owner's Rep. & Phone No.: _____
Prime Name & License No.: _____
Prime's Rep. & Phone No.: _____
HDD Superintendent Name: _____
Carrier Pipe Material &
Diameter: _____
HDD Segment Length &
approximate HDD Pulling Force: _____

Installation No. 3

Project Name: _____
General Description of Work: _____
Owner: _____
Owner's Rep. & Phone No.: _____
Prime Name & License No.: _____
Prime's Rep. & Phone No.: _____
HDD Superintendent Name: _____
Carrier Pipe Material &
Diameter: _____
HDD Segment Length &
approximate HDD Pulling Force: _____

Attach additional sheets with project information if necessary.

Bidder shall list such projects below:

Installation No. 4

Project Name: _____
General Description of Work: _____
Owner: _____
Owner's Rep. & Phone No.: _____
Prime Name & License No.: _____
Prime's Rep. & Phone No.: _____
HDD Superintendent Name: _____
Carrier Pipe Material &
Diameter: _____
HDD Segment Length &
approximate HDD Pulling Force: _____

Installation No. 5

Project Name: _____
General Description of Work: _____
Owner: _____
Owner's Rep. & Phone No.: _____
Prime Name & License No.: _____
Prime's Rep. & Phone No.: _____
HDD Superintendent Name: _____
Carrier Pipe Material &
Diameter: _____
HDD Segment Length &
approximate HDD Pulling Force: _____

Installation No. 6

Project Name: _____
General Description of Work: _____
Owner: _____
Owner's Rep. & Phone No.: _____
Prime Name & License No.: _____
Prime's Rep. & Phone No.: _____
HDD Superintendent Name: _____
Carrier Pipe Material &
Diameter: _____
HDD Segment Length &
approximate HDD Pulling Force: _____

Attach additional sheets with project information if necessary.

I DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA, AND DO PERSONALLY CERTIFY AND ATTEST THAT: I HAVE THOROUGHLY REVIEWED THE ATTACHED CONTRACTOR QUALIFICATION QUESTIONNAIRE AND ATTACHMENTS, IF ANY, AND KNOW ITS CONTENTS, AND SAID CONTRACTOR QUALIFICATION QUESTIONNAIRE AND ATTACHMENTS, IF ANY, ARE TRUTHFUL, COMPLETE AND ACCURATE; AND THAT DISTRICT MAY REASONABLY RELY UPON THE CONTENTS AS BEING COMPLETE AND ACCURATE; AND, FURTHER, THAT I AM FAMILIAR WITH CALIFORNIA PENAL CODE SECTION 72 AND CALIFORNIA GOVERNMENT CODE SECTION 12650, ET SEQ, PERTAINING TO FALSE CLAIMS, AND FURTHER KNOW AND UNDERSTAND THAT SUBMISSION OR CERTIFICATION OF A FALSE CLAIM MAY LEAD TO FINES, IMPRISONMENT AND/OR OTHER SEVERE LEGAL CONSEQUENCES.

Executed on the date indicated below, at the location indicated below.

Date _____

Name of Bidder _____

Signature of Bidder _____

Printed Name and Title _____

Business Address _____

Telephone Number _____

RETURN THIS FORM WITH YOUR BID PROPOSAL

BIDDER'S BOND

KNOW ALL BY THESE PRESENTS:

That we, _____

as Principal, and _____

as Surety, are held and firmly bound unto the San Luis Obispo County Flood Control and Water Conservation District, State of California (hereinafter called "District") in the penal sum of Ten Percent (10%) of the total aggregate amount of the bid of the Principal above named, submitted by said Principal to the District for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability of the Surety hereunder exceed the sum of _____

_____ (\$_____).

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas a bid to District for certain construction specifically described as follows, for which bids are to be opened on _____, 20____, has been submitted by Principal to District for:

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529**

NOW, THEREFORE, if the aforesaid Principal shall not withdraw said bid after the time fixed in the Notice to Bidders for the opening of the same, and shall within five (5) calendar days, not including Saturdays, Sundays, and legal holidays, after receipt of written notice that the contract has been awarded to him/her, enter into a written contract with District, in the prescribed form, in accordance with the bid as accepted, and file with the District the certificates of insurance as stipulated in Article 7 of the Agreement and the two bonds, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; otherwise, it shall remain in full force and effect, and the penal sum guaranteed by this bond shall be forfeited to the District.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of said contract or to the work to be performed thereunder or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

In the event suit is brought upon said bond by District and judgment is recovered, the Surety shall pay all costs incurred by District in such suit, including a reasonable attorney's fee to be fixed by the court. Death of the Principal shall not relieve Surety of its obligations hereunder.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____ day
of _____, 20____.

_____ (Seal)

_____ (Seal)

_____ (Seal)

Principal

_____ (Seal)

_____ (Seal)

_____ (Seal)

Surety

Address

NOTE:

Signatures of those executing for Surety must be properly acknowledged.

**SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT**

CONTRACT AGREEMENT

FOR

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529**

**SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT**

AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20_____, between the San Luis Obispo County Flood Control and Water Conservation District, a political subdivision and County of the State of California, party of the first part, hereinafter called "District" and _____ the party of the second part, hereinafter called "Contractor".

WITNESSETH, that for and in consideration of the mutual covenants and agreements hereinafter contained, the parties hereto agree as follows:

ARTICLE 1 – WORK

That the Contractor will, at its own proper cost and expense, do all the work and furnish all the equipment and materials necessary to construct and complete in good and workmanlike manner to the satisfaction of the Board of Supervisors of said District, for

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529**

all in strict accordance with the Contract Documents, including without limitation, the Project Plans, the Standard Specifications of the State of California, Department of Transportation, dated May 2006 (hereinafter called, "Standard Specifications"), the Standard Plans of the State of California, Department of Transportation, dated May 2006 (hereinafter called, "Standard Plans"), and the Special Provisions therefor, on file in the Department of Public Works and Transportation and the Office of the Clerk of the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District, State of California.

ARTICLE 2 – CONTRACT

This Agreement, together with the Notice and Instructions to Bidders, Bid Proposal and Forms, Standard Specifications, Standard Plans, the Special Provisions, including without limitation the Project Plans incorporated therein, and all addenda thereto, form the contract, and said documents by this reference become as fully a part of this Agreement as if set forth in full and are herein sometimes referred to as "Contract" or as "Contract Documents". The terms set forth below, when utilized in said documents, shall mean as follows:

PUBLIC WORKS DIRECTOR: Means the Director of Public Works and Transportation (hereinafter, also the Department of Public Works) of the County of San Luis Obispo, State of California, acting either directly or through properly authorized agent(s), acting within the scope of the particular duties delegated to them, including registered engineers employed by the Department of Public Works and Transportation.

COUNTY CLERK: Means the Clerk of the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District, State of California.

ARTICLE 3 – CONTRACT TIMES

The Contractor shall begin work within ten (10) calendar days, not including Saturdays, Sundays, or legal holidays, from the date of receipt of the District’s Notice to Contractor to Proceed, and the work to be accomplished under this contract shall be completed within the time limit provided in Section 4, “Prosecution and Progress of the Work”, of the Special Provisions. Attention is directed to the provisions of said Section 4, “Prosecution and Progress of the Work”, of the Special Provisions for the amount of liquidated damages.

ARTICLE 4 – CONTRACT PRICE

The total Contract price is the amount of the Contractor’s bid as set forth in the award of the Contract approved by the District’s Board of Supervisors. The Contractor will receive and accept and the District will pay the prices specified in the attached Bid Proposal, which is incorporated herein by reference, as full compensation for furnishing all labor, materials, and equipment for doing all the work contemplated and embraced in this Agreement. To the extent permitted by law, the Contractor assumes during the progress of the work and before its acceptance, any and all loss or damage arising out of the nature of the work aforesaid or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the District; and assumes any and all expenses incurred by or in consequence of the suspension or discontinuance of work, for well and faithfully completing the work, and the whole thereof, in the manner and to the requirements of the Plans, Special Provisions, Standard Specifications, Standard Plans, and the Public Works Director.

ARTICLE 5 – SUBCONTRACTING

The Contractor's attention is directed to the provisions of Section 2-1.02, “Required Listing of Proposed Subcontractors,” of the Special Provisions and the requirements contained therein.

Additionally, the Contractor's attention is directed to the provisions of the “Subletting and Subcontracting Fair Practices Act” set forth in Sections 4100-4114 of the Public Contract Code.

ARTICLE 6

The Contractor agrees that the Public Works Director shall decide as to the meaning of the Standard Specifications, Standard Plans, and Special Provisions for the work, including without limitation the Project Plans incorporated therein, where the same may be found to be obscure or in dispute and the decision shall be final. The Public Works Director shall have the right to correct any errors or omissions therein when such corrections are necessary to the proper fulfillment of the intention of the Special Provisions, Standard Specifications and Standard Plans; the action of such corrections is to take effect from the time said Public Works Director gives notice thereof to the Contractor.

ARTICLE 7 - INSURANCE REQUIREMENTS

Contractor, at its sole cost, shall purchase and maintain the insurance policies set forth below on all of its operations under this Agreement. All of the insurance companies providing insurance for

Contractor shall have, and provide evidence of, an A.M. Best & Co. rating of A:VII or above, unless exception is granted by Risk Manager. Further, all policies shall be maintained for the full term of this Agreement and related warranty period if applicable.

7.01 SCOPE AND LIMITS OF REQUIRED INSURANCE POLICIES

A. COMMERCIAL GENERAL LIABILITY

Policy shall include coverage at least as broad as set forth in Insurance Services Office Commercial General Liability Coverage (CG 00 01) with policy limits of not less than \$2 million dollars combined single limit per occurrence. Policy shall be endorsed with the following specific language or contain equivalent language in the policy:

- i.) The County of San Luis Obispo, its officers, officials, employees, and volunteers are named as an additional insured for all liability arising out of the operations by or on behalf of the named insured in the performance of this Agreement. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance as least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10 and CG 20 37 (if a later edition is used).
- ii.) The insurance provided herein shall be considered primary coverage to the County of San Luis Obispo with respect to any insurance or self insured retention maintained by the County. Further, the County's insurance shall be considered excess insurance only and shall not be called upon to contribute to this insurance.
- iii.) The policy shall not be cancelled or materially changed without first giving thirty days prior written notice to the County of San Luis Obispo, Department of Public Works.

B. BUSINESS AUTOMOBILE POLICY

Policy shall include coverage at least as broad as set forth in the liability section of Insurance Services Office Business Auto Coverage (CA 00 01) with policy limits of no less than \$1 million dollars combined single limit for each occurrence. Said insurance shall include coverage for owned, non-owned, and hired vehicles. Policy shall be endorsed with the following specific language or contain equivalent language in the policy:

- i.) The County of San Luis Obispo, its officers, officials, employees, and volunteers are named as an additional insured for all liability arising out of the operations by or on behalf of the named insured in the performance of this Agreement.
- ii.) The policy shall not be cancelled or materially changed without first giving thirty days prior written notice to the County of San Luis Obispo, Department of Public Works.

C. WORKERS' COMPENSATION / EMPLOYERS' LIABILITY INSURANCE

- i. Workers' Compensation: policy shall provide statutory limits as required by State of California. Policy shall be endorsed with the following specific language or contain equivalent language in the policy:
 - a. Contractor and its insurer shall waive all rights of subrogation against the County, its officers and employees for workers' compensation losses arising out of this Agreement.
 - b. The policy shall not be cancelled or materially changed without first giving thirty days prior written notice to the County of San Luis Obispo, Department of Public Works.
- ii. Employer's Liability: policy shall provide \$1 million dollars per accident for bodily injury or disease.

If the Contractor maintains higher limits than the minimum shown above, the County requires and shall be entitled to coverage for the higher limits maintained by the Contractor.

7.02 DEDUCTIBLES AND SELF-INSURANCE RETENTIONS

All deductibles and/or self-insured retentions which apply to the insurance policies required herein will be declared in writing and approved by the County prior to commencement of this Agreement.

7.03 DOCUMENTATION

Prior to commencement of work and annually thereafter for the term of this Agreement, Contractor will provide to the County of San Luis Obispo, Department of Public Works, Room 207, County Government Center, CA 93408, Attention Design Engineer, Contract No. 300529, properly executed certificates of insurance clearly evidencing the coverage, limits, and endorsements specified in this Agreement. Further, at the County's request, the Contractor shall provide certified copies of the insurance policies within thirty days of request.

Failure of the County to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of the County to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

7.04 ABSENCE OF INSURANCE COVERAGE

County may direct Contractor to immediately cease all activities with respect to this Agreement if it determines that Contractor fails to carry, in full force and effect, all insurance policies with coverage levels at or above the limits specified in this Agreement. Any delays or expense caused due to stopping of work and change of insurance shall be considered Contractor's delay and expense.

7.05 SPECIAL RISKS OR CIRCUMSTANCES

The County reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

ARTICLE 8 – INDEMNIFICATION

Contractor shall defend, indemnify, and hold harmless the County, its officers, employees, and volunteers from all claims, demands, damages, costs, expenses, judgments, attorney fees, liabilities, or other losses (hereafter, collectively “claims”) that may be asserted by any person or entity, and that arise out of or relate in any way to any acts or omissions relating to the performance of any duty, obligation, or work hereunder. The obligation to indemnify shall be effective and shall extend to all such claims, in their entirety, even when such claims arise from the comparative negligence of the County, its officers or employees. However, this indemnity will not extend to any claims arising out of the sole negligence or willful misconduct of the County, its officers or employees.

The preceding paragraph applies to any theory of recovery relating to said act or omission by the Contractor, or its agents, employees, or other independent contractors directly responsible to Contractor, including, but not limited to the following:

1. Violation of statute.
2. Professional malpractice.
3. Willful, intentional or other wrongful acts, or failures to act.
4. Negligence or recklessness.
5. Furnishing of defective or dangerous products.
6. Broad Form Property Damage (Including Completed Operations).
7. Premises Liability.
8. Strict Liability.
9. Inverse condemnation.
10. Violation of civil rights
11. Violation of any federal or state statute, regulation, or ruling resulting in a determination by the Internal Revenue Service, California Franchise Tax Board, or any other California entity responsible for collecting payroll taxes, when the Contractor is not an independent contractor.

Nothing contained in the foregoing indemnity provisions shall be construed to require the Contractor to indemnify the County, against any responsibility or liability in contravention of Civil Code 2782.

It is the intent of the parties to provide the County the fullest indemnification, defense, and “hold harmless” rights allowed under the law. If any word(s) contained herein are deemed by a court to be

in contravention of applicable law, said word(s) shall be severed from this contract and the remaining language shall be given full force and effect.

All of the preceding indemnification rights granted the County above shall survive any termination of this agreement.

ARTICLE 9 – FINAL PAYMENT

It is mutually agreed between the parties hereto, that no certificate given or payments made under this contract, except the final payment, shall be evidence of the performance of this contract, either wholly or in part, against any claim of the Contractor. Final payment for the work performed under this contract shall not be made until the lapse of thirty-five (35) calendar days after the notice of completion of said work has been filed for record and no payment shall be construed to be an acceptance of any defective work or improper materials. The Contractor further agrees that acceptance by the Contractor of the final payment due under this contract, and the adjustment and payment of his/her bill rendered for any work done in accordance with any amendments of this Contract, shall be and shall operate as a release to the San Luis Obispo County Flood Control and Water Conservation District from any and all claims or liabilities on account of work performed under this Contract except claims or liabilities for which written notice of claim or protest has been filed with the Public Works Director. Besides guarantees required elsewhere, the Contractor shall and does hereby guarantee all workmanship and material for a period of one year from and after both the date of acceptance of the work and the recordation of the notice of completion by the District and shall repair or replace any or all work and material, together with any other portions of the work which may be displaced in so doing, that in the opinion of the District is or becomes defective during the period of said guarantee without expense whatsoever to the District.

ARTICLE 10 – CONTRACTOR’S REPRESENTATIONS

The Contractor hereby declares that he/she has read the Contract Documents pertaining to the work to be accomplished hereunder, has carefully examined the plans and detail drawings of the work to be performed and fully understands the intent and meaning of the same.

It is further stipulated and agreed that the Contractor shall keep himself/herself fully informed of all laws, ordinances, and regulations which do or may affect the conduct of the work, the materials used therein or persons engaged or employed thereupon and all such orders of bodies and tribunals having any jurisdiction over the same. If it be found that the Special Provisions or Standard Specifications for the work conflict with any such law, ordinance or regulation the Contractor shall immediately report same to the Public Works Director in writing. The Contractor shall at all times observe and comply with and shall cause all his/her agents, employees, and independent contractors hired by the Contractor to observe and comply with all such existing and future laws, ordinances, regulations, or decrees.

ARTICLE 11 – APPRENTICES

Attention is directed to the provisions in Sections 1777.5, 1777.6, and 1777.7 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor.

The Contractor and any subcontractor shall comply with the requirements of Sections 1777.5, 1777.6, and 1777.7 of the Labor Code in the employment of apprentices.

To insure compliance and complete understanding of the law relating to apprentices, and specifically the required ratio thereunder, each contractor or subcontractor should, where some question exists, contact the Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, California, or one of its branch offices prior to commencement of work on this contract. Responsibility for compliance with said Labor Code Sections lies with the prime contractor.

ARTICLE 12 – PAYROLL RECORDS

Attention is directed to the provisions in Section 1776 of the Labor Code concerning Contractor and subcontractor payroll records.

The Contractor and any subcontractor shall comply with the requirements of Section 1776 of the Labor Code.

ARTICLE 13 – EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this contract, Contractor agrees to comply with all of the Equal Employment Opportunity provisions of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR Chapter 60), including the following:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoffs or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Department of Public Works setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
3. The Contractor will send to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Department of Public Works, advising the said labor union or worker's representative of the Contractor's commitments under this Article 14 and shall post copies of the Notice in conspicuous places available to employees and applicants for employment.
4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations (41 CFR, Part 60) and relevant orders of the Secretary of Labor.
5. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the District and the

Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be cancelled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.
7. The Contractor will include the provisions of this Article in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Public Works Director or the Secretary of Labor may direct as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that in the event a contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 14 - SAFETY

All work conducted by the Contractor and/or subcontractors in the execution of this contract shall be in accordance with current CAL OSHA requirements. Full compensation for compliance with the provisions of this Article shall be considered as included in the other items of work and no additional compensation will be allowed therefor.

ARTICLE 15 – BONDS

Contractor agrees that the Payment Bond and Performance Bond attached to this Agreement are for reference purposes only, and shall not be considered a part of this Agreement or any other Contract Document. Contractor further agrees that said bonds are separate obligations of the Contractor and its surety, and that any attorney's fee provision contained in any payment bond or performance bond shall not apply to any legal action between Contractor and County to enforce any provision of the Contract Documents.

ARTICLE 16 – ATTORNEYS FEES

No provisions of the Contract Documents provide either the Contractor or the County the right to be awarded any attorney's fees and/or costs under Civil Code section 1717 in any legal action brought by either party to enforce any provision of the Contract Documents against the other party. The parties agree that any references to attorney's fees in language describing indemnification obligations do not constitute a contractual provision that would provide either the Contractor or the County the right to be awarded any attorney's fees and/or costs under Civil Code section 1717 in any legal action brought by either party to enforce any provision of the Contract Documents against the other party. Any other language in the Contract Documents providing for a recovery of attorney's fees shall be

strictly construed as not including the recovery of any attorney's fees incurred by either Contractor or County in any legal action brought by either party to enforce any provision of the Contract Documents against the other party.

The parties agree that the Contract Documents contain no provisions that would allow either the Contractor or the County to be awarded attorney's fees and/or costs under Civil Code section 1717. Nothing in this Article affects any right by Contractor or County to recover attorney's fees or costs by operation of any law other than Civil Code section 1717.

In the event of any conflict between language in this Article and any other language in the Contract Documents, the language in this Article shall prevail.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands the year and date first above written, being authorized thereto.

SAN LUIS OBISPO COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT

CONTRACTOR

By: _____
Chairperson of the Board of Supervisors

By: _____

Date: _____

Date: _____

ATTEST:
CLERK OF THE BOARD OF
SUPERVISORS

Printed Name and Title
(If Contractor is a corporation, a partnership,
or a joint venture, attach evidence of
authority to sign)

By: _____
Deputy Clerk

By: _____

Date: _____

(Printed Name and Title)

APPROVAL RECOMMENDED

Date: _____

By: David Flynn
Director of Public Works

Address for giving notices:

Date: 11/19/14

APPROVED AS TO FORM AND
LEGAL EFFECT:

RITA L. NEAL
County Counsel

By: Rita L. Neal

Date: 11/19/14

PERFORMANCE BOND

KNOW ALL BY THESE PRESENTS: That

WHEREAS, the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District, State of California, has awarded to _____

(hereinafter designated as "Principal") a contract for _____

_____ ; and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract;

NOW, THEREFORE, we, the Principal and _____, as Surety, are held and firmly bound unto the San Luis Obispo County Flood and Water Conservation District, (hereinafter called "District"), in the penal sum of _____ (\$ _____), lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above bounded Principal, his or its 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 said contract and any alteration thereof made as therein provided, on his/her or 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 District, its officers, agents, and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force virtue and effect.

And the said Surety, for value received, hereby 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 thereunder or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or additions to the terms of the contract or to the work or to the specifications.

In the event suit is brought upon this bond by District and judgment is recovered, Surety shall pay all costs incurred by District in such suit, including a reasonable attorney's fee to be fixed by the Court.

Death of the Principal shall not relieve Surety of its obligations hereunder.

IN WITNESS WHEREOF, one identical counterpart of this instrument, which shall for all purposes be deemed an original thereof, has been duly executed by Principal and Surety above named, on the

_____ day of _____, 20_____.

_____ (Seal)

_____ (Seal)

_____ (Seal)

Principal

_____ (Seal)

_____ (Seal)

_____ (Seal)

Surety

_____ Address

NOTE:

Signatures of those executing for Surety must be properly acknowledged.

PAYMENT BOND

KNOW ALL BY THESE PRESENTS:

WHEREAS, the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District, State of California, and _____
_____ (hereinafter designated as "Principal") have
entered into an agreement for _____

which said Agreement, and all of the Contract Documents attached to or forming a part of said Agreement, are hereby referred to and made a part hereof; and

WHEREAS, pursuant to law, the Principal is required before entering upon the performance of the Work, to file a good and sufficient bond with the body by whom the contract is awarded, to secure claims to which reference is made in Sections 3247 through 3252, inclusive, of the Civil Code of California, and Sections 3181, 3110, 3111 and 3112 of the Civil Code of California,

NOW, THEREFORE, said Principal and the undersigned _____

as corporate surety, are held and firmly bound unto the San Luis Obispo County Flood Control and Water Conservation District, and unto all laborers, materialmen, and other persons referred to in said statutes in the sum of _____

(\$_____), lawful money of the United States for the payment of which sum well and truly made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally by these presents.

The condition of this obligation is such that if the said Principal, his/her or its heirs, executors, administrators, successors or assigns, or subcontractors, shall fail to pay any of the persons named in Civil Code Section 3181, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal and his/her subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to such work and labor, that the surety herein will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, the said surety will pay a reasonable attorney's fee to be fixed by the court.

This bond shall inure to the benefit of any of the persons named in Civil Code Section 3181 as to give a right of action to such persons or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force, virtue, and effect.

And the said Surety, for value received, hereby 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 thereunder or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or additions to the terms of the contract or to the work or to the specifications.

Death of the Principal shall not relieve Surety of its obligations hereunder.

IN WITNESS WHEREOF one identical counterpart of this instrument, which shall for all purposes be deemed an original thereof, has been duly executed by the Principal and Surety above named, on the _____ day of _____, 20____.

_____ (Seal)

_____ (Seal)

_____ (Seal)

Principal

_____ (Seal)

_____ (Seal)

_____ (Seal)

Surety

_____ Address

NOTE:
Signatures of those executing for Surety must be properly acknowledged.

**SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT**

SPECIAL PROVISIONS

FOR

**NACIMIENTO WATER PROJECT
NACIMIENTO RIVER CROSSING PIPE REPAIR
NORTHWEST OF PASO ROBLES, CA
CONTRACT NO. 300529**

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CONTRACT NO. 300529

The Special Provisions contained herein have been prepared by or under the direction of the following registered engineer(s):

PREPARED BY:


PROJECT ENGINEER
(Sections 1, 2, 3, 4, 5, 10-1)



DATE 11/19/14


DESIGN ENGINEER



DATE 11/19/14

RECOMMENDED FOR APPROVAL AND ADVERTISING BY:


DEPUTY PUBLIC WORKS DIRECTOR

DATE 11/19/14

APPROVED BY:


PUBLIC WORKS DIRECTOR

DATE 11/19/14

The Special Provisions contained herein have been prepared by or under the direction of the following registered Engineer(s):



Exp 03-31-16

ENGINEER
(For Section 10-1, 10-2, and 10-3)

11/18/14

DATE

SECTION 1. SPECIFICATIONS AND PLANS

1-1.01 SPECIFICATIONS AND PLANS

The work embraced herein shall be done in accordance with the Standard Specifications of the State of California, Department of Transportation, dated May 2006 (hereinafter called, "Standard Specifications"), the Standard Plans of the State of California, Department of Transportation, dated May 2006 (hereinafter called, "Standard Plans"), insofar as they may apply and in accordance with these Contract Documents. Wherever State Agencies, Departments, or Officers are referred to in the above mentioned Standard Specifications and Standard Plans, the comparable County of San Luis Obispo Agency, Department, or Officer having jurisdiction shall be meant thereby for the purpose of these Contract Documents.

The District hereby elects under Public Contract Code § 20396 to have said applicable provisions of the Standard Specifications and Standard Plans referenced above, including those provisions modified by these Special Provisions, governed by the State Contract Act to the extent, and only to the extent, one or both of the following conditions is satisfied: (1) the applicable provisions of the Standard Specifications or Standard Plans expressly refer to the State Contract Act; or (2) the District would lack the authority to implement the applicable provisions of the Standard Specifications or Standard Plans absent the District's election to have the District's implementation of the provisions governed by the State Contract Act.

No amendment by the Department of Transportation to the Standard Specifications shall apply to these Contract Documents unless the amendment is expressly set forth in these Special Provisions.

In case of conflict between the Standard Specifications and the contract Special Provisions herein, the Special Provisions shall take precedence over such conflicting portions.

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SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS

2-1.01 PROPOSAL REQUIREMENTS AND CONDITIONS

Attention is directed to the provisions in Section 2, “Proposal Requirements and Conditions,” of the Standard Specifications and these Special Provisions for the requirements and conditions which the bidder must observe in preparation and the submission of their bid.

The bidder's bond shall conform to the bond form in the section titled “Bid Proposal and Forms” of the Contract Documents and shall be properly filled out and executed. The bidder’s bond form included in the Contract Documents may be used.

The following provisions for Section 2, “Proposal Requirements and Conditions,” of the Standard Specifications are hereby modified as set forth hereafter.

Section 2-1.03, “Examination of Plans, Specifications, Contract, and Site of Work,” of the Standard Specifications is hereby amended by modifying the first sentence of the 5th paragraph to read: “Inspection of such records may be made at the Department of Public Works and Transportation of the County of San Luis Obispo.”

Section 2-1.05, “Proposal Forms” of the Standard Specifications, is hereby amended by substituting the words, “General and Special Provisions” for the words, “Proposal and Contract” in the first sentence of the 2nd paragraph and by substituting the words, “Notice to Bidders” for the words, “Notice to Contractors” in the first sentence of the 3rd paragraph. The 4th paragraph is hereby amended to read: “Proposal forms shall be obtained from the Department of Public Works and Transportation, County Government Center, San Luis Obispo, CA. 93408.” The 5th paragraph is hereby deleted.

Section 2-1.07, “Proposal Guaranty” of the Standard Specifications, is hereby amended by substituting the words, “made payable to the San Luis Obispo County Flood Control and Water Conservation District” for the words, “made payable to the Director of Transportation” in the first paragraph. The 2nd paragraph is hereby amended by adding the following sentence, “The provisions of the Public Contract Code § 10181 are applicable to this contract.” The first sentence of the last paragraph is hereby amended by substituting the words, “General and Special Provisions” for the words, “Proposal and Contract”. The last sentence of the last paragraph is hereby deleted.

Section 2-1.08, “Withdrawal of Proposals” of the Standard Specifications, is hereby amended by substituting the words, “Office of the Clerk of the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District” for the words, “Office Engineer, Division of Construction” in the first sentence. The last sentence is hereby amended by

modifying it to read: “Any bid received at the Office of the Clerk of the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District after the date and time specified in the Notice to Bidders shall not be considered and shall be returned to the bidder unopened nor may any bid be withdrawn after the time fixed in the public notice for the opening of bids.”

Section 2-1.105, “Previous Disqualification, Removal or Other Prevention of Bidding”, of the Standard Specifications, is hereby amended by deleting the first paragraph.

Section 2-1.108, “Compliance with Orders of the National Labor Relations Board”, of the Standard Specifications, is hereby amended by modifying the last paragraph to read: “The statement required by said Section 10232 is included in the section titled “Bid Proposal and Forms” of the Contract Documents.”

Section 2-1.11, “Ineligibility to Contract”, of the Standard Specifications is hereby amended by modifying the last paragraph to read: “A form for the statement required by Section 10285.1 is included in the section titled “Bid Proposal and Forms” of the Contract Documents.”

2-1.02 REQUIRED LISTING OF PROPOSED SUBCONTRACTORS

The designated subcontractors listed in the bidder's proposal shall list therein the name and address of all subcontractors to whom the bidder proposes to subcontract portions of the work in an amount in excess of 1/2 of one percent of the total bid, or in the case of bids for the construction of streets and highways, including bridges, in excess of 1/2 of the one percent or \$10,000, whichever is greater, in accordance with the Subletting and Subcontracting Fair Practices Act commencing with Section 4100 of the Public Contract Code. The bidder’s attention is invited to other provisions of said Act related to the imposition of penalties for a failure to observe its provisions by using unauthorized subcontractors or by making unauthorized substitutions.

The “DESIGNATION OF SUBCONTRACTORS” form for the designation of subcontractors, as required herein, is included in the section titled “Bid Proposal and Forms” of the Contract Documents and shall be completely filled out, signed by the bidder, and submitted with the bid proposal.

2-1.03 EXPERIENCE CERTIFICATION

The County of San Luis Obispo has determined that the bidder must submit evidence that the prime or subcontractor engaged in the installation of the reinforced polypropylene lining has the minimum experience described in Section 02312 “Installation of HDPE Carrier Pipe,” Paragraph 1.01, “HDPE Carrier Pipe Installation Experience.”

Bidders shall submit the “CERTIFICATION OF BIDDER’S EXPERIENCE” form included in the section titled “Bid Proposal and Forms” of the Contract Documents with the bid proposal.

Failure to complete, sign and submit the “CERTIFICATION OF BIDDER’S EXPERIENCE” form with the bid may result in the bid being rejected as nonresponsive.

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SECTION 3. AWARD AND EXECUTION OF CONTRACT

3-1.01 AWARD OF CONTRACT

Attention is directed to the provisions of Section 3, “Award and Execution of Contract,” of the Standard Specifications and these Special Provisions for the requirements and conditions concerning award and execution of the contract.

The award of contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with all of the requirements prescribed. Such award, if made, will be made within 45 calendar days after the opening of proposals.

If the lowest responsible bidder refuses or fails to execute the contract, the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District may award the contract to the second lowest responsible bidder. Such award, if made, will be made within 75 calendar days after the opening of proposals. If the second lowest responsible bidder refuses or fails to execute the contract, the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District may award the contract to the third lowest responsible bidder. Such award, if made, will be made within 105 calendar days after the opening of proposals. The periods of time specified above within which the award of contract may be made shall be subject to extension for such further period as may be agreed upon in writing between the San Luis Obispo County Flood Control and Water Conservation District and the bidder concerned.

3-1.02 CONTRACT BONDS

The successful bidder shall furnish two (2) bonds:

1. The Payment bond to secure the claim payments of laborers, workers, mechanics, or materialmen providing goods, labor, or services under the contract. This bond shall be equal to one hundred percent (100%) of the total contract bid.
2. The Performance bond to guarantee the faithful performance of the contract. This bond shall be equal to one hundred percent (100%) of the total contract bid.

Forms for the two (2) required bonds are included in the section titled “Bid Proposal and Forms” of the Contract Documents.

Surety on said bonds must agree that death of the Contractor shall not relieve the surety of its obligation hereunder. The said surety, for the value received, must stipulate and agree that all alterations, extension of time, extra and additional work, and other changes authorized by these Specifications or any part of the contract may be made without securing consent of the surety on the contract bonds, and such actions shall not in any way affect the obligations of the surety on the bonds.

Attention is directed to the provisions in Section 6-1.075, "Guarantee," of the Amendments to the Standard Specifications.

3-1.03 EXECUTION OF CONTRACT

The contract shall be signed by the successful bidder and returned, together with the contract bonds, copy of insurance policies, and Certificates of Insurance, with documents to verify any self insurance coverage within five (5) calendar days, not including Saturdays, Sundays, and legal holidays, after the bidder has received the contract for execution.

The contract shall not be deemed executed by the successful bidder unless all of the above documents are received by the District with the signed contract within said time period. The bidder's security may be forfeited for failure to execute the contract within the time specified.

The following documents shall be submitted along with the Contractor's submission of the executed contract, bonds and insurance to the District:

- Submittals for HDPE Pipe (Section 02634) – drawings and data
- Water Pollution Control Program (Section 10.1-03).
- Schedule of Values (Section 01025).
- Initial CPM Construction Schedule (Section 01310).
- Experience Record/Resume for HDD Superintendent (Section 02312)

SECTION 4. PROSECUTION AND PROGRESS OF THE WORK

4-1.01 GENERAL

Attention is directed to the provisions in Section 8, “Prosecution and Progress,” of the Standard Specifications and these Special Provisions.

The Contractor shall not begin work in advance of receiving the District’s “Notice to Proceed.”

The Contractor shall begin work upon receipt of the District’s Notice to Proceed (“NTP”), and the work to be accomplished under this contract shall be completed within the time limits provided below for completion of Substantial Completion, and Final Completion.

1. Substantial Completion shall be attained within 42 working days after receipt of the NTP
2. Final Completion shall be attained within 65 working days after receipt of the NTP

For the purposes of this Contract Substantial Completion and Final Completion are defined as follows:

Substantial Completion—The time at which the Work has progressed to the point where, in the opinion of Engineer: (1) the Work is sufficiently complete, in accordance with the contract documents, so that the Work can be utilized for the purposes for which it is intended; (2) all systems included in the Work are operational, as designed, installed and tested through initial operation, as described in Section 10-1-01 “Order of Work” of these special provisions.

Final Completion – The time at which the Contractor has, in the opinion of Engineer, completed all of its obligations under the contract documents.”

4-1.02A LIQUIDATED DAMAGES

Attention is directed to Section 8-1.07, “Liquidated Damages,” of the Standard Specifications and these Special Provisions.

It is agreed by the parties to the contract that in the case all the work called for under the contract in all parts and requirements is not finished or completed within the number of working days as set forth in these Special Provisions, damage will be sustained by the San Luis Obispo County Flood Control and Water Conservation District, and that it is and will be impractical and extremely difficult to ascertain and determine the actual damage which the District will sustain in the event of and by reason of such delay; and it is therefore agreed that the Contractor will pay to the San Luis Obispo County Flood Control and Water Conservation District in accordance with the following:

1. \$5,000 per day for failure to achieve Substantial Completion in the allotted number of working days after receipt of the NTP.

2. \$2,000 per day for failure to achieve Final Completion in the allotted number of working days after receipt of the NTP.

The Contractor agrees to pay said liquidated damages herein provided for, and further agrees that the District may deduct the amount thereof from any moneys due or that may become due the Contractor under the contract.

The language in Sections 10253 through 10260 of the Public Contract Code are incorporated herein by reference as though fully set forth herein (with the word “Director” therein construed to mean the Public Works Director); provided, however, that prequalification of bidders shall not be required, and any references in said sections to prequalification of bidders are hereby deleted.

4-1.02B INCENTIVE PROVISION

If the Contractor completes the work associated with a specified milestone as evidenced by an early completion certificate jointly executed by the Engineer and the Contractor, then the District will allow additional payment for such early completion specified as follows:

1. \$5,000 per working day for achievement of Substantial Completion in advance of the expiration of the allotted number of working days after receipt of the NTP, with a maximum limit of \$50,000.
2. \$0 per day for achievement of Final Completion in advance of the expiration of the allotted number of working days after receipt of the NTP.

Payment of the incentive will be authorized on the final payment request following the execution of the early completion certificate executed jointly by the Contractor and the Engineer, and submitted with the final payment request.

4-1.03 CONTRACT SUBMITTALS

The Contractor shall submit the following to the Engineer within five (5) calendar days, not including Saturdays, Sundays, and legal holidays, of the Contractor’s receipt of the Notice to Proceed and fully executed contract:

- Submittals for trench excavation and detailed plan showing the design and installation of all excavation support systems (Section 02202).
- Recycling Plan
- Identity of Project Safety Officer

The Contractor shall allow five (5) days, not including Saturdays, Sundays, and legal holidays, for the Engineer’s review. The Contractor shall revise and resubmit the submittal within three (3) days, not including Saturdays, Sundays, and legal holidays, of receipt of the Engineer’s comments. No claim will be allowed for damages or extensions of time because of delays in work resulting from rejection of the submittals or from revisions and resubmittal of the

submittals. The number of working days within which the Contractor must complete the work under this contract shall be reduced by 1 working day for each day the Contractor fails to submit or resubmit the required submittal to the Engineer within the prescribed time allowances.

The Engineer's review and approval shall not waive any contract requirements and shall not relieve the Contractor from complying with Federal, State, and local laws, regulations, and requirements. No claim will be allowed for damages or extensions of time because of delays in work resulting from any documents submitted by Contractor to any federal, state, or local agency that are determined by such agency to be incomplete or not in compliance with any applicable laws, regulations, or requirements.

4-1.04 MANDATORY PRE-CONSTRUCTION CONFERENCE

After to the issuance of the "Notice to Proceed" and prior to commencement of field construction, a mandatory pre-construction conference will be held at the office of the Construction Engineer for the purpose of discussing with the Contractor the scope of work, contract drawings, specifications, existing conditions, materials to be ordered, equipment to be used, and all essential matters pertaining to the prosecution and the satisfactory completion of the project as required. The Contractor's representatives at this conference shall include major superintendents and shall include major subcontractors' representatives. So long as the District provides the Contractor at least 5 calendar days advance notice of the date and time of said conference. The number of working days within which the Contractor must complete the work under this contract shall be reduced by 1 working day for each day said conference is delayed by the Contractor's failure to attend the conference with the appropriate representatives.

A written record of attendance and items discussed will be made by the Engineer and a copy of the record kept in the Engineer's files. If for any reason a pre-construction conference is not held the Engineer will notify the Contractor in writing.

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SECTION 5. GENERAL AND MISCELLANEOUS

5-1.01 DEFINITIONS AND TERMS

Attention is directed to the provisions in Section 1, “Definitions and Terms,” of the Standard Specifications with the modifications as set forth hereafter.

Section 1-1.13, “Department,” of the Standard Specifications is hereby amended to read: “The San Luis Obispo County Flood Control and Water Conservation District acting by and through its Department of Public Works and Transportation of the County of San Luis Obispo as the ex officio Public Works Department of the District.”

Section 1-1.15, “Director,” of the Standard Specifications is hereby amended to read: “The Director of the Department of Public Works and Transportation of the County of San Luis Obispo as the ex officio Public Works Director of the District.”

Section 1-1.18, “Engineer,” of the Standard Specifications is hereby amended to read: “Any duly authorized representative either employed by or contracting with the San Luis Obispo County Flood Control and Water Conservation District acting within the scope of the particular duties delegated to them.”

Section 1-1.19, “Engineer’s Estimate,” of the Standard Specifications is hereby amended to read: “The contract bid form indicating the approximate quantities of work to be performed as contained in the Bid Proposal.”

Section 1-1.26, “Liquidated Damages,” of the Standard Specifications is hereby amended to read: “The amount prescribed in Section 4, “Prosecution and Progress of the Work,” of the Special Provisions pursuant to Government Code Section 53069.85 to be paid to the District, or to be deducted from any payments due, or to become due, the Contractor for each day’s delay in completing the whole or any specified portion of work beyond the time allowed in the Contract Documents.”

Section 1-1.39, “State,” of the Standard Specifications is hereby amended to read: “The State of California and its political subdivision, the San Luis Obispo County Flood Control and Water Conservation District.”

Section 1-1.40, “State Contract Act,” of the Standard Specifications is hereby amended to read: “Only those sections or provisions of Chapter 1 of Part 2 of Division 2 of the Public Contract Code (Section 10100 et seq.) which are specifically incorporated into this contract are applicable to this contract. All other sections and provisions of Chapter 1 of Part 2 of Division 2 of the Public Contract Code are not applicable to this contract and do not constitute a part hereof.”

5-1.02 SCOPE OF WORK

Attention is directed to the provisions in Section 4, "Scope of Work," of the Standard Specifications with the modifications as set forth hereafter.

Section 4-1.03B(1), "Increases of More Than 25 Percent," of the Standard Specifications is amended by adding the following sentence to the last paragraph: "Additionally, such written request by the Contractor shall be accompanied by adequate, detailed data to support actual costs incurred."

Section 4-1.03B(2), "Decreases of More Than 25 Percent," of the Standard Specifications is hereby amended by modifying the first sentence of the first paragraph to read: "Should the total pay quantity of any item of work required under the contract be less than 75 percent of the Engineer's Estimate therefor, the Engineer may reserve the right to make no adjustment in the corresponding unit price for that item if he/she so elects, except that an adjustment in compensation pursuant to this Section will be made if requested in writing by the Contractor. Additionally, such written request by the Contractor shall be accompanied by adequate, detailed data to support actual costs incurred."

Section 4-1.03D, "Extra Work," of the Standard Specifications is hereby amended by adding the following sentences to the 2nd paragraph: "All extra work shall be reported daily by the Contractor upon forms furnished by the Engineer, signed by both parties at the conclusion of each workday. Said daily extra work reports shall thereafter be considered the true record of the extra work performed and shall become the basis of payment therefor."

5-1.03 CONTROL OF WORK

The Engineer will not have control over, be in charge of, nor be responsible for construction means, methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the work, since these are solely Contractor's responsibility, unless otherwise required by the Contract Documents.

Attention is directed to Section 5, "Control of Work," of the Standard Specifications with the modifications as set forth hereafter.

Section 5-1.07, "Lines and Grades," of the Standard Specifications is hereby amended to read: "Stakes or marks will be set by the Engineer as the Engineer determines to be necessary to establish the lines and grades required for the completion of the work specified in these specifications, on the plans, and in the Special Provisions.

When the Contractor requests stakes or marks to be set, the Contractor shall notify the Engineer of the request in writing no less than three (3) working days in advance of starting operations that require their use. The Contractor shall also submit to the Engineer for acceptance, a tentative schedule of all anticipated staking requests for the initial thirty (30) working days of the contract. The

Engineer shall determine if the staking request schedule is reasonable before recognizing any requests for stakes or marks to be set. Said schedule shall correlate with any order of work specified in the Contract Special Provisions. If any vegetation needs to be cleared or grubbed, as determined by the Engineer, before stakes or marks can be set, then the Contractor shall clear the obstructing vegetation for the proper placement of stakes or marks. The Engineer and the Contractor shall agree on the extent of vegetation removal necessary to prepare the work site for the setting of stakes or marks. Vegetation removal for the preparation of the work site for the setting of stakes or marks shall be considered as included in the various items of work involved and no additional compensation will be allowed therefor. The Contractor will not be entitled to any compensation for any perceived delay, nor entitled to an extension of time for any perceived delay without due cause for the period between when the work site is deemed cleared by the Engineer and when the stakes or marks are set for use by the Contractor.

Stakes and marks set by the Engineer shall be carefully preserved by the Contractor. In case the stakes and marks are destroyed or damaged, the stakes and marks will be replaced or restored at the Engineer's earliest convenience. The Contractor will be charged \$875.00 for each stake or mark replaced or restored which in the judgment of the Engineer had been carelessly or willfully destroyed or damaged by the Contractor's operations. This charge will be deducted from any moneys due or to become due the Contractor.”

Section 5-1.116, “Differing Site Conditions,” of the Amendments to the Standard Specifications is hereby amended by including the following language from Section 7104 of the Public Contract Code: “7104. Any public works contract of a local public entity which involves digging trenches or other excavations that extend deeper than four feet below the surface shall contain a clause which provides the following: (a) That the contractor shall promptly, and before the following conditions are disturbed, notify the public entity, in writing, of any: (1) Material that the 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. (2) Subsurface or latent physical conditions at the site differing from those indicated. (3) 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. (b) That the public entity 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 the contractor's cost of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in the contract. (c) That, in the event that a dispute arises between the public entity and the 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, the 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. The 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.”

5-1.04 PREVAILING WAGE

Attention is directed to the provisions in Section 7-1.01A(2), “Prevailing Wage,” of the Standard Specifications and these Special Provisions.

Pursuant to the provisions of Section 1773 of the California Labor Code, the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District has obtained from the Director of the California Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work for the locality in which the work is to be performed for each needed craft, classification, or type of workman. Copies of said prevailing rate of per diem wages are on file in the Office of the Clerk of the Board of Supervisors and available at the California Department of Industrial Relations’ web site at:

www.dir.ca.gov/DLSR/PWD.

The wage rates determined by the Director of Industrial Relations refer to expiration dates. Prevailing wage determinations with a single asterisk after the expiration date are in effect on the date of advertisement for bids and are good for the life of the contract. Prevailing wage determinations with double asterisks after the expiration date indicate that the wage rate to be paid for work performed after this date has been determined. If work is to extend past this date, the new rate shall be paid and incorporated in the contract. The Contractor shall contact the Department of Industrial Relations as indicated in the wage rate determinations to obtain predetermined wage changes.

Pursuant to Section 1773.2 of the Labor Code, a copy of said general prevailing rates shall be posted by the Contractor in a prominent place at the site of the work.

Additionally, the Director of Industrial Relations has reserved the right to issue corrected wage determinations for certain crafts contained in the prevailing wage determinations applicable to this contract. These corrected prevailing wage rates shall apply to this contract in the same manner as if they had been published in the prevailing wage determinations applicable to this contract. These revisions to the general prevailing wage rates are on file at the Office of the Clerk of the Board of Supervisors and available at the California Department of Industrial Relations’ web site at:

www.dir.ca.gov/DLSR/PWD.

Additionally, changes in general prevailing wage determinations which conform to Labor Code Section 1773.6 and Title 8 California Code of Regulations Section 16204 shall apply to the contract when issued by the Director of Industrial

Relations at least ten (10) calendar days prior to the date of the Notice to Bidders for the project. Changes, if any, to the general prevailing wage rate will be on file at the Office of the Clerk of the Board of Supervisors and available at the California Department of Industrial Relations' web site at:

www.dir.ca.gov/DLSR/PWD.

5-1.05 PRESERVATION OF PROPERTY

Attention is directed to the provisions in Section 7-1.11, "Preservation of Property," of the Standard Specifications is hereby amended by adding the following to the end of the second paragraph: "Pursuant to Section 8771(b) of the California Business and Professions Code, existing survey monuments that control the location of subdivisions, tracts, boundaries, roads, streets, or highways, or provide survey control that are within or adjacent to the Contractor's operations, shall be located and referenced by or under the direction of a licensed land surveyor or registered civil engineer prior to the time when any streets, highways, other rights-of-way, or easements are improved, constructed, reconstructed, maintained, resurfaced, or relocated. In the event that any existing survey monument is disturbed in any way by the Contractor's operations as determined by a licensed land surveyor or registered civil engineer, they shall be reset accordingly and a corner record shall be filed with the county surveyor prior to the recording of a certificate of completion for the project. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in locating existing survey monuments by or under the direction of a licensed land surveyor or registered civil engineer, resetting any disturbed survey monument and filing a corner record, shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor."

5-1.06 PROGRESS SCHEDULE

Progress schedules will be required for this contract and shall conform to the provisions in Section 8-1.04, "Progress Schedules," of the Standard Specifications.

The Contractor shall submit to the Engineer a practicable progress schedule in conformance with the provisions in Section 4-1.03, "Contract Submittals," of these Special Provisions, and within 5 working days of the Engineer's written request at any other time.

5-1.07 MEASUREMENT AND PAYMENT

Attention is directed to the provisions in Section 9, "Measurement and Payment," of the Standard Specifications with the modifications as set forth hereafter.

The 13th paragraph of Section 9-1.01, "Measurement of Quantities," of the Standard Specifications shall be amended to read as follows: "Whenever pay quantities of materials are determined by weighing, the scales shall be operated

by a weighmaster licensed in accordance with provisions of the California Business and Professions Code, Division 5, Chapter 7. The contractor shall furnish a Public Weighmaster's certificate, or a private Weighmaster's certificate (load slip) with each load and a Daily Record of Platform Scale Weights. The Weighmaster's certificates shall be numbered consecutively to correspond with the Daily Record of Platform Scale Weights. The Daily Record of Platform Scale Weights shall be prepared using a form supplied by the District and shall be delivered to the Engineer at the end of each day. Contractor shall provide the District sufficient advance notice so as to enable a representative of the District to be present to witness the Weighing and check the Daily Record of Platform Scale Weights."

Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications is hereby amended by adding the following: "Additionally, the written notice of potential claim shall be submitted on Caltrans form CEM-6201 and shall be certified with reference to the California False Claims Act, Government Code Sections 12650-12655. The notice shall set forth the reasons for which the Contractor believes additional compensation will or may be due and the nature of the costs involved. Unless the amount of the potential claim has been stated in the written notice, the Contractor shall within 15 working days of submitting said notice, furnish an estimate of the cost of the affected work and impacts, if any, on project completion. Said estimate of costs may be changed or updated by the Contractor when conditions have changed. When the affected work is completed, the Contractor shall submit substantiation of actual costs. Failure to do so shall be sufficient cause for denial of any claim subsequently filed on the basis of said notice of potential claim.

Should the Contractor, in conjunction with or subsequent to the assertion of a potential claim, request inspection and copying of documents or records in the possession of the District that pertain to the potential claim, the Contractor shall make its records of the project, as deemed by the District to be pertinent to the potential claim, available to the District for inspection and copying."

Section 9-1.05, "Stop Notices," of the Standard Specifications is hereby amended by adding the following statement: "Stop notice information may be obtained from the Department of Public Works and Transportation."

Section 9-1.06, "Partial Payments," of the Standard Specifications is hereby amended by modifying the third paragraph to read: "In accordance with PUBLIC CONTRACT CODE SECTION 7201, the retention proceeds withheld from payment shall not exceed 5 percent of the payment."

Section 9-1.06, "Partial Payments," of the Standard Specifications is hereby amended by adding the following statement: "The Contractor will be required to certify each progress pay estimate. The certification will include the following Contractor Verification: Contractor has carefully reviewed this entire document and hereby attests that the quantities and amounts stated herein accurately represent the total work that has been performed, and materials that have been

provided, under this Contract, and that all such work and materials are in compliance with the Contract Documents."

Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications is hereby amended to read: "Attention is directed to Section 9-1.06, "Partial Payments," of the Standard Specifications, to these Special Provisions and in particular to the retention provisions therein.

Upon the Contractor's request, the District will make payment to the Contractor of funds withheld to ensure performance of this contract if the Contractor, in accordance with Public Contract Code Section 22300, deposits in escrow with the District, or with a state or federally chartered bank in California securities equivalent to the amount withheld. Securities eligible for investment under this section shall include bank or savings and loan certificates of deposit, the securities enumerated in Government Code Section 16430, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the District. Upon satisfactory completion of the contract, the securities shall be returned to the Contractor. Alternatively, the Contractor may request that the District make payment of retention earned directly to the escrow agent as provided in subdivision (b) of Section 22300 of the Public Contract Code.

Each of the following conditions shall apply to the deposit of securities into escrow:

- (a) The Contractor shall bear the expense of the District and the escrow agent (either the County or the bank) in connection with the escrow deposit made.
- (b) Securities or certificates of deposit to be placed in escrow shall be of a value at least equivalent to the amounts of retention to be paid to the Contractor pursuant to this section.
- (c) The value of any securities placed in escrow shall be based upon the market value of such securities as of the date the securities are deposited in escrow, and not upon the face value of the securities. Such securities shall be valued by the District, whose decision on valuation of the securities shall be final.
- (d) The escrow agreement shall provide that the escrow agent must convert the securities deposited therein for cash, in whole or in part, to meet the defaults by the Contractor upon a unilateral demand for such conversion by the Public Works Director, and further that any amount so demanded shall be paid to the District upon said unilateral demand for payment.
- (e) The Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.
- (f) The Contractor shall enter into an escrow agreement satisfactory to the District, which agreement shall be substantially similar to the form set forth in Public Contract Code Section 22300. The Contractor shall obtain the

written consent of the surety to such agreement. The Public Works Director is authorized to sign such escrow agreements on behalf of the District.

Section 9-1.07B, "Final Payments and Claims," of the Standard Specifications is hereby amended by deleting the introductory phrase "After acceptance by the Director," and inserting in its place the phrase: "After the Engineer makes a formal recommendation to the Director that the Public Works Department initiates the internal procedures that would allow the Board to accept the work at a future Board meeting,"

5-1.08 DETERMINATION OF DISPUTES

Public Contract Code Sections 10240 through 10245.4 shall not be applicable to this contract. Section 9-1.10, "Arbitration," of the Standard Specifications is hereby deleted. All disputes and claims arising under or by virtue of this contract shall be directed to and be determined by the Public Works Director. The Public Works Director's determination of disputes and claims pursuant to these Special Provisions shall constitute the decision of the District.

The parties agree that to the extent Article 1.5 of the Public Contract Code (Public Contract Code Section 20104 et seq) is applicable to any claims made under this contract, nothing in Article 1.5 excuses Contractor's compliance with the claim procedures set forth in the Standard Specifications (as amended by these Contract Documents). Nothing in Article 1.5 extends the time limit or supercedes the notice requirements set forth in the Standard Specifications (as amended by these Contract Documents). The parties mutually agree that all information required of the Contractor under said Standard Specifications (as amended by these Contract Documents) is hereby incorporated into the requirements of Article 1.5.

Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3 of Division 2 of the Public Contract Code provides as follows:

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 nonbinding 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 this 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) of 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.

5-1.09 AUDIT OF RECORDS

The Contractor shall maintain and make available for examination and audit by the State Auditor General and/or duly authorized representatives of the State, District, or Federal Governments, all books, papers, accounting records, and other documents pertaining to the cost and performance of this contract.

The Contractor shall retain said books, papers, accounting records, and other documents for a period of three years after the date of final payment under this contract (Government Code Section 8546.7).

5-1.10 CONTRACTOR'S REPORTS

The Contractor shall complete a daily report indicating location worked, total manpower per construction trade for each task, major equipment on site, each subcontractor's manpower and equipment, weather conditions, and other related information involved in the performance of the work. The daily report shall be completed on forms furnished by the Engineer and shall be submitted to the Engineer at the conclusion of each workday. The report shall comment on the daily progress and status of the work within each major component of the work.

5-1.11 REMOVAL OF ASBESTOS AND HAZARDOUS SUBSTANCES

When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor reasonably believes to be asbestos or a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe. The Contractor shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In conformance with Section 25914.1 of the Health and Safety Code, removal of asbestos or hazardous substances including exploratory work to identify and determine the extent of the asbestos or hazardous substance will be performed by separate contract.

If delay of work in the area delays the current controlling operation, the delay will be considered a right of way delay and the Contractor will be compensated for the delay in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

5-1.12 SUBCONTRACTING

No subcontract releases the Contractor from the contract or relieves the Contractor of their responsibility for a subcontractor's work.

If the Contractor violates Public Contract Code §4100 et seq., the District may exercise the remedies provided under Public Contract Code §4100. The District may refer the violation to the Contractors State License Board as provided under Public Contract Code §4111.

The Contractor shall perform work equaling at least 30 percent of the value of the original total bid with the Contractor's own employees and equipment, owned or rented, with or without operators.

Each subcontract shall comply with the contract.

Each subcontractor shall have an active and valid State contractor's license with a classification appropriate for the work to be performed (Business and Professions Code, §7000 et seq.).

The Contractor shall submit copies of subcontracts upon request by the Engineer.

The Contractor shall submit a Subcontracting Request form prior to commencement of that portion of the work.

The Contractor shall not use a debarred subcontractor. Pursuant to the provisions in Section 1777.1 of the Labor Code, the Labor Commissioner publishes and distributes a list of contractors ineligible to perform work as a subcontractor on a public works project. This list of debarred contractors is available from the Department of Industrial Relations web site at:

<http://www.dir.ca.gov/DLSE/Debar.html>.

Upon request by the Engineer, the Contractor shall immediately remove and not again use a subcontractor who fails to prosecute the work satisfactorily.

5-1.13 CONSTRUCTION SUBMITTALS

Construction project submittals, including shop drawings and manufacturer's product specifications, shall be supplied for all material, equipment items, and for other items of work required by its contract documents. The Contractor shall supply 5 copies of manufacturer's scaled, dimensioned shop drawings complete with all information required to describe the item and demonstrate compliance with contract drawings and these specifications. Submittals will only be accepted from the Contractor (not sub-contractor or material supplier). Neither fabrication

nor onsite preparation shall be started before receipt of written review from the County.

Each submittal shall be sequentially numbered, dated, and appropriately titled with the specification number and description.

The Contractor's responsibility for errors, omissions, and deviations from the requirements of the contract documents in submittals is not relieved by the County's review. The Contractor shall be responsible for confirming and correlating all quantities and dimensions, the compatibility of different components, selecting fabrication processes and techniques of construction, coordinating its work with that of other trades or other contractors at the site, and performing its work in a safe and satisfactory manner. The County will require 10 working days for submittal review. No claim will be allowed for damages or extensions of time because of delays in work resulting from rejection of material or from revisions and resubmittal of shop drawings, project data, or samples.

Resubmittals will be reviewed and returned in the same review period as the original submittals. It is considered reasonable that the Contractor shall make a complete and acceptable submittal by the second submission. The Engineer reserves that right to withhold monies due to the Contractor to cover additional costs of any review beyond the second submittal. Full compensation for preparing submittals and shop drawings, as required, shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

5-1.14 LEGAL ADDRESS OF THE CONTRACTOR

Both the address given in the proposal and the Contractor's office in the vicinity of the work are hereby designated as places to either of which drawings, letters, notices, or other articles or communications to the Contractor may be mailed, transmitted electronically, or delivered. The mailing, electronic transmission, or delivery at either of these places shall be deemed sufficient notice thereof upon the Contractor.

Nothing herein contained shall be deemed to preclude the service of any drawing, letter, notice, article, or communication to, or upon, the Contractor or Contractor's representative personally. The address named in the proposal may be changed at any time by written notice from the Contractor to the Engineer.

5-1.15 WEEKLY PROGRESS MEETINGS

Weekly meetings shall be held at the project site to review the progress of the work and to discuss any problems which may have occurred. Meeting shall include the Engineer, inspectors, and the Contractor's foreman. The Contractor shall provide an updated schedule at the weekly meeting.

Full compensation for preparing updated schedules and attending the progress meetings, as required, shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

5-1.16 GOVERNMENT CODE CLAIM REQUIREMENTS

Nothing in these Contract Documents shall excuse a Contractor from fully complying with the requirements of Part 3 of division 3.6 of Title 1 of the Government Code (commencing with section 900). Said requirements must be complied with before filing any claim in any court of law, and are in addition to the other claims procedures set forth in the Contract Documents shall be considered a substitute or alternative procedure for complying with the requirements of Part 3 of Division 3.6 of Title 1 of the Government Code (commencing with section 900.)

5-1.17 SURFACE MINING AND RECLAMATION ACT

Imported borrow or aggregate material must come from a surface mine permitted under the Surface Mining and Reclamation Act of 1975 (SMARA), Pub Res Code § 2710, et seq., or from an exempt site.

The Department of Conservation, Office of Mine Reclamation maintains a list of permitted mine sites. For the list of permitted sites, go to:

http://www.conservation.ca.gov/omr/ab_3098_list

If Contractor obtains import borrow or aggregate material from a surface mine not on this list, Contractor shall submit written proof the mine is exempt from SMARA to the Engineer.

5-1.18 SUPPLEMENTAL WORK PAYMENTS

Certain extra work to be performed on this project may have been designated in the bid proposal as a contract item of work. For bidding purposes, the Contractor shall deem the amount set forth in the "Total Amount" column for the designated item as the maximum amount allotted for said item of extra work.

The County reserves the right to increase, decrease or entirely eliminate any supplemental work item in this contract without penalty. Notwithstanding any other provision to the contrary (including but not limited to section 4-1.03B(3) of the Standard Specifications), the Contractor has no right to receive any payment(s) for Supplemental Work that is decreased or entirely eliminated by the County.

5-1.19 SOLID WASTE MANAGEMENT

The Contractor shall recycle at least 50% of the construction and demolition waste generated by the project.

The following is a list of IWMA-Certified Recycling Facilities:

C&D Recycling Facility at Cold Canyon Landfill	805-549-8332
C&D Recycling Facility at Chicago Grade Landfill	805-466-2985
North SLO County Recycling	805-434-0043
API (roll-off/debris box company)	805-928-8689
R&R (a roll-off/debris box company)	805-929-8000
Recycling Facility at the Paso Robles Landfill	805-238-2028
Santa Maria Transfer Station	805-922-9255
Bedford Enterprises/SMART	805-922-4977

The Contractor shall complete and sign the “RECYCLING PLAN” form in conformance with the provisions in Section 4-1.03, “Contract Submittals,” of these Special Provisions. This form must be submitted and approved prior to commencement of construction activities.

This form must show how at least 50% of the project construction and demolition waste will be recycled.

The Contractor shall maintain receipts or other documentation for any facility or site that received waste from the project.

The Contractor shall submit a complete and accurate “DISPOSAL REPORT” form with original receipts and supporting documentation. This form must be submitted and approved prior to receiving the Notice of Completion.

If the Contractor fails to submit the required information showing the 50% recycling goal was met, the District could impose a penalty equal to 2 percent of the total contract amount.

Full compensation for complying with these requirements shall be considered as included in the prices paid for the various items of work generating such construction and demolition waste and no additional compensation will be allowed therefor.

The following are copies of the “RECYCLING PLAN” and “DISPOSAL REPORT” forms:

RECYCLING PLAN FOR DISTRICT PROJECTS

SECTION 1. PROJECT INFORMATION					
Contract Title		Contractor Name			
		Contractor Phone		Contractor Fax	
Contract Number		Street Address			
Total Contract Amount		City, State, Zip			
Print Name and Title			Signature		Date
SECTION 2. RECYCLING PLAN					
Before Construction (estimated tons)					
		Landfill	Recycling Facility		Reuse
Materials		(Tons)	(Tons)	Location	(Tons) Location
Cleared Vegetation					
Asphalt Concrete					
Concrete					
Metals (including spent equipment)					
Lumber					
Drywall					
Mixed Recyclables					
Trash					
Totals					
% Diversion					
Official Use Only					
Recycling Plan Approved <input type="checkbox"/>			Recycling Plan Denied <input type="checkbox"/>		
Information Required:					
Print Name and Title			Signature		Date

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DISPOSAL REPORT FOR DISTRICT PROJECTS

SECTION 1. PROJECT INFORMATION					
Contract Title	Contractor Name				
	Contractor Phone	Contractor Fax			
Contract Number	Street Address				
Total Contract Amount	City, State, Zip				
Contractor Certification: I certify under penalty of perjury that the information provided in this form is complete and accurate.					
Print Name and Title	Signature			Date	
SECTION 2. DISPOSAL REPORT					
	After Construction (actual tons)				
Materials	Landfill	Recycling Facility		Reuse	
	(Tons)	(Tons)	Location	(Tons)	Location
Cleared Vegetation					
Asphalt Concrete					
Concrete					
Metals (including spent equipment)					
Lumber					
Drywall					
Mixed Recyclables					
Trash					
Totals					
% Diversion					
I have reviewed and approved the information submitted in this report for completeness					
Resident Engineer's Name:	Signature:			Date:	
Official Use Only					
Disposal Report Approved <input type="checkbox"/>			Disposal Report Denied <input type="checkbox"/>		
Information Required					
Print Name and Title	Signature			Date	

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SECTION 6. (BLANK)

SECTION 7. (BLANK)

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SECTION 9. DESCRIPTION OF WORK

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SECTION 9. DESCRIPTION OF WORK

The work for this project involves the installation of HDPE carrier pipe inside of the existing steel pipe casing at the existing Nacimiento River Crossing located on Camp Roberts in San Luis Obispo County, California, including: furnishing and field-joining of high density polyethylene (HDPE) pressure pipe; installing the HDPE pipe inside of the existing steel casing using horizontal directional drilling (HDD) equipment and construction means and methods; removing, modifying and reinstalling existing steel pipe and steel pipe specials; field hydrostatic pressure testing of the HDPE carrier pipe; trench excavation, excavation support and trench protection, and placing and compacting pipe zone and trench zone backfill materials; protecting existing facilities; furnishing temporary utilities; complying with environmental controls and requirements; other appurtenant work; and all such other items or detail work not mentioned herein that are required by the Drawings, the Standard Specifications, Standard Plans, or these Special Provisions.

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SECTION 10. CONSTRUCTION DETAILS

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SECTION 10. CONSTRUCTION DETAILS

SECTION 10-1. GENERAL

10-1.01 Order of Work: Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these Special Provisions. Full compensation for conforming to these requirements will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

Contractor shall begin work within one (1) working day of the date of receipt of the Notice to Proceed.

Contractor shall complete all work within the timeframe specified in Section 4, "Prosecution and Progress of the Work."

Contractor's attention is directed to items and/or materials of construction that may have long lead times, and shall insure that adequate time is provided for review and approval of all submittals and for ordering all materials required for the performance of the Work under this Contract.

As a minimum, the following documents shall be submitted along with the Contractor's submission of the executed contract, bonds and insurance to the District:

- **Submittals for HDPE Pipe (Section 02634) – drawings and data, sufficient information to allow for early ordering of pipe materials.**
- **Water Pollution Control Program (Section 10.1-03).**
- **Schedule of Values (Section 01025).**
- **Initial CPM Construction Schedule (Section 01310).**
- **Experience record of superintendent assigned to direct HDPE carrier pipe installation (Section 02312).**

In addition, the following documents shall be submitted within five (5) days of the Notice to Proceed:

- **Submittals for trench excavation and detailed plan showing the design and installation of all excavation support systems (Section 02202).**

Contractor shall coordinate with Engineer as to the actual order of work planned to facilitate construction and that order shall be reflected in the progress schedule required elsewhere in these Special Provisions.

Weather Conditions

Seasonal weather conditions shall be considered in Contractor's planning and scheduling of work that may be influenced by high or low ambient temperatures or precipitation to ensure the completion of the Work within the specified timeframe. No time extensions will be granted for the Contractor's failure to plan its work and work activities taking into account such weather conditions for the location of the Work and for the period of time in which the Work is to be accomplished.

Ready-for-Final-Testing-and-Startup Milestone

When the project construction is completed to achieve the Ready-for-Final-Testing-and-Startup milestone as described below, the District will declare the project as "Ready-for-Final-Testing-and-Startup." The Ready-for-Final-Testing-and-Startup milestone is a predecessor to Substantial Completion.

Within one (1) working day after "Ready for Final-Testing-and-Startup" milestone is met, the District will fill the Nacimiento Water Project pipelines, pressurize the system, and then operate the system for 5 days (the "startup procedure"), conveying water from the Intake Pump Station to the various NWP turnouts. The purpose of startup procedure is two-fold:

1. Flush the NWP pipeline, tanks and turnouts in preparation for returning the pipeline system back into service; and
2. Inspect the exposed Work for proper installation and evidence of pipeline joint leakage.

Ready-for-Final-Testing-and-Startup Completion Definition

To achieve the Ready-for-Final-Testing-and-Startup milestone, the Contractor's completion of work shall be as follows:

- Pipeline Connections. All pipeline connections and tie rods shown on the Drawings at western and eastern ends shall have been installed and tested, including the repair of all pipe coatings (internal and external). **Exception:** Do not install wax tape wrap at pipe connections and tie rods until after leakage inspection is performed.
- Pipe Bedding, Pipe Zone Embedment and Trench Zone Backfill: Pipe embedment by CLSM shall have been placed and set and trench zone backfill placed and compacted to the limits shown on the Drawings.
- AR/AV Assembly at Western Connection. As a minimum, the pipe elbow and gate valves shall have been installed, supported on a temporary basis, and locked in the closed position.
- The fiber optic system components (conduit, cable, pullbox) shall have been checked and verified that no damage has occurred as a result of the Contractor's operations and that the fiber optic system is fully operational.

Ready-for- Final-Testing-and-Startup Inspection

When the Contractor believes all work necessary to achieve the Ready-for- Final-Testing-and-Startup milestone is complete or near completion, Contractor shall request that the Engineer perform a preliminary inspection of the Work to generate a punchlist of remaining items of work. The purpose of this inspection will be to determine the state of completion of the project. The preliminary inspection shall be requested by the Contractor at least 48 hours in advance of inspection.

After all Ready-for-Final-Testing-and-Startup punchlist items have been completed by the Contractor, Contractor shall request a second inspection by the Engineer. Engineer will perform the second inspection to determine completion of the project work. If the Engineer determines that the Ready-for-Final-Testing-and-Startup milestone has been met, Engineer will notify Contractor in writing and the District will commence initial operation.

Startup Procedure

During the startup procedure, Contractor retains full responsibility for the care and maintenance of all of the Work and shall retain full responsibility for satisfactory completion of the Work.

Substantial Completion

Subject to the other defined requirements for Substantial Completion set forth in Section 4-1.01 of these Special Provisions, Substantial Completion shall occur on completion of the Final Testing and Startup, provided that the pipeline connections at each western and eastern connection are shown to meet the Contract requirements by inspection performed during startup procedure.

It is permissible for the following items of Work to be completed following Substantial Completion but prior to the preliminary inspection for final payment:

- Wax tape wrap of pipe connections and tie rods.
- Placement and compaction of pipe bedding, pipe zone embedment and trench zone backfill at remaining western and eastern connection areas not previously completed; and removal of remaining excavation shoring and bracing,
- Installation of all remaining piping and valves as shown on the Drawings, including but not limited to AR/AV, air valve enclosure, and casing vent(s).
- Final cleanup as specified in Section 10-1.09, "Final Site Cleanup."
- All other remaining items of work, as specified in Section 10-1.07, "Contract Closeout."

10-1.02 Environmental Mitigation Measures: The Contractor's work shall be in compliance with all conditions and mitigation measures identified in the attached Environmental Permit Summary Form. Specifically, Contractor shall be responsible for performing work in accordance with those conditions and measures labeled as "Contractor" or "Both" in the Responsibility column of the Environmental Permit Summary Form. It shall be the Contractor's responsibility to read and understand the conditions and mitigation measures identified in the Environmental Permit Summary Form.

Full compensation for conforming to these requirements will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

10-1.03 Water Pollution Control: Water Pollution Control includes Water Pollution Control Program (WPCP), Construction Site Management and temporary and permanent water pollution control measures. The Contractor shall perform water pollution control work in conformance with the requirements in the State Department's "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual" (Preparation Manual) and its addenda in effect on the day the Notice to Proceed is dated. The Preparation Manual and other references are available from the Caltrans' Construction Storm Water and Water Pollution Control web site at:

<http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm>

Water Pollution Control Program (WPCP): The Water Pollution Control Program (WPCP) shall conform to the requirements of Section 7-1.01G,"Water Pollution," of the State Standard Specifications and these Special Provisions. The work includes preparing a WPCP, obtaining WPCP acceptance, amending the WPCP, and reporting on water pollution control practices at the job site. **No onsite work shall begin until the WPCP is accepted by the Engineer.**

Definitions and Abbreviations

BMPs: Best Management Practices are water pollution control practices.

BMP Manual: The Department's Construction Site Best Management Practices (BMP) Manual.

Dewatering Guide: The Department's Field Guide to Construction Site Dewatering.

Minor spills: Small quantities of oil, gasoline, paint, or other material that are small enough to be controlled by a first responder upon discovery of the spill.

Preparation Manual: The Department's Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual.

Semi-significant spills: Spills that can be controlled by a first responder with help from other personnel.

Significant or hazardous spills: Spills that cannot be controlled by construction personnel.

QSD: Qualified SWPPP Developer.

QSP: Qualified SWPPP Practitioner.

SWPPP: Storm Water Pollution and Prevention Plan.

WPC: Water Pollution Control.

WPCM: Water Pollution Control Manager.

WPCP: Water Pollution Control Program.

General Requirements

The WPCP shall include water pollution control practices:

1. For storm water and non-storm water from areas outside of the job site related to construction activities for this contract such as:

- Staging areas.
- Storage yards.
- Access roads.

2. For activities or mobile operations related to contractor NPDES permits.

3. Construction support facilities:

- Staging areas.
- Storage yards for equipment and materials.
- Mobile operations.
- Crushing plants for rock and aggregate.
- Other facilities installed for your convenience such as haul roads.

The WPCP shall include a schedule that:

1. Describes when work activities will be performed that could cause the discharge of pollutants in storm water.
2. Describes water pollution control practices associated with each construction phase.
3. Water pollution control practices are added by your discretion.

WPCP amendments require review and acceptance by the Engineer.

The Contractor may request, or the Engineer may order, changes to the water pollution control work. Changes may include addition of new water pollution control practice. Additional water pollution control work not already provided for in the Plans or these Special Provisions is change order work.

The Contractor shall retain a printed copy of the WPCP at the job site.

Water Pollution Control Manager

The Contractor shall assign and designate in writing one Water Pollution Control Manager (WPCM) to implement the WPCP. Contractor may assign a different QSP to prepare the WPCP.

The WPC Manager must comply with the Permit (Order No. 2009-0009-DWQ, NPDES No. CAS000002) for a QSP by having at least one of the following qualifications:

1. Certified Erosion, Sediment and Storm Water Inspector (CESSWI)[™] registered through Enviro Cert International, Inc.
2. Certified Inspector of Sediment and Erosion Control (CISEC) registered through CISEC, Inc.
3. Qualifications described in the Permit (Order No. 2009-009-DWQ, NPDES No. CAS000002) for a QSD.
4. Department approved storm water management training described in the Department's "Construction Storm Water and Water Pollution Control" web site.

At the job site, the Water Pollution Control Manager must:

1. Be responsible for water pollution control work.
2. Be the primary contact for water pollution control work.
3. Oversee the maintenance of water pollution control practices.
4. Oversee and enforce hazardous waste management practices.
5. Have the authority to mobilize crews to make immediate repairs to water pollution control practices.
6. Ensure that all employees have current water pollution control training.
7. Implement the accepted WPCP and amend the WPCP when required.

Water Pollution Control Manager must oversee:

1. Inspections of water pollution control practices identified in the WPCP.
2. Inspections for visual monitoring.

Training

Provide storm water training for:

1. Project managers.
2. Supervisory personnel.
3. Employees involved with water pollution control work.

Train all employees, including subcontractor's employees, in the following:

1. Water pollution control rules and regulations.
2. Implementation and maintenance for:
 - 2.1. Temporary Soil Stabilization.
 - 2.2. Temporary Sediment Control.
 - 2.3. Tracking Control.
 - 2.4. Wind Erosion Control.
 - 2.5. Material pollution prevention and control.
 - 2.6. Waste management.
 - 2.7. Non-storm water management.

2.8. Identifying and handling hazardous substances.

2.9. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances.

Employees must receive initial water pollution control training before working on the job.

Conduct weekly training meetings covering:

1. WPC BMP deficiencies and corrective actions.
2. BMPs that are required for work activities during the week.
3. Spill prevention and control.
4. Material delivery, storage, use, and disposal.
5. Waste management.
6. Non-storm water management procedures.

Implementation Requirements

Monitor the National Weather Service Forecast Office on a daily basis. For forecasts, go to:

<http://www.srh.noaa.gov/forecast>

Whenever the Contractor or the Engineer identifies a deficiency in the implementation of the accepted WPCP:

1. Correct the deficiency immediately, unless the Engineer authorizes an agreed date for correction.
2. Correct the deficiency before precipitation occurs.

If Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation, the District may correct the deficiency and deduct the cost of correcting the deficiency from payment.

If Contractor fails to comply with "Water Pollution Control" of these Special Provisions, the Engineer will order a suspension of work until the project complies with the requirements of "Water Pollution Control" of these Special Provisions.

The Contractor's responsibility for WPCP implementation shall continue throughout any temporary suspension of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications.

Install water pollution control practices within 15 days or before predicted precipitation, whichever occurs first.

If actions for Contractor's convenience disturb one or more acres, Contractor must pay all costs and be responsible for all delays associated with complying with Order No. 2009-0009-DWQ, NPDES General Permit No. CAS000002) issued by the SWRCB for "Storm Water Discharges Associated with Construction and Land Disturbance Activities." The General Permit is available at:

<http://www.waterboards.ca.gov/>

Inspection

The WPCM must oversee inspections for practices identified in the WPCP:

1. Before a forecasted storm.
2. After precipitation that causes site runoff.
3. At 24-hour intervals during extended precipitation.
4. On a predetermined schedule, a minimum of once a week.

The WPCM must oversee daily inspections of:

1. Storage areas for hazardous materials and wastes.
2. Hazardous waste disposal and transporting activities.
3. Hazardous material delivery and storage activities.
4. WPC practices specified under "Construction Site Management" of these Special Provisions.

The WPCM must use the Storm Water Site Inspection Report provided in the Preparation Manual.

The Water Pollution Control Manager must prepare BMP status reports that include the following:

1. Location and quantity of installed water pollution control practices.
2. Location and quantity of disturbed soil for the active or inactive areas.

Within 24 hours of finishing the weekly inspection, the Water Pollution Control Manager must submit:

1. Copy of the completed site inspection report.
2. Copy of the BMP status report.

Reporting Requirements

If the following occur, notify the Engineer within 6 hours:

1. Discharges into receiving waters or drainage systems causing or potentially causing pollution.
2. The job receives a written notice or order from a regulatory agency.

No later than 48 hours after the conclusion of a storm event resulting in a discharge, a non-stormwater discharge, or receiving the notice or order, submit:

1. Date, time, location, and nature of the activity, type of discharge and quantity, and the cause of the notice or order.
2. Water pollution control practices used before the discharge, or before receiving the notice or order.
3. Description of water pollution control practices and corrective actions taken to manage the discharge or cause of the notice.

Full compensation for conforming to these requirements will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

10-1.04

Construction Site Management: Contractor shall be responsible for controlling potential sources of water pollution before they come in contact with storm water systems or water courses. The Contractor shall control material pollution and manage waste and non-storm water existing at the construction by implementing effective handling, storage, use, and disposal practices.

Spill Prevention and Control: Contractor shall implement spill and leak prevention procedures when chemicals or hazardous substances are stored. Contractor shall keep material or waste storage areas clean, well organized, and equipped with enough cleanup supplies for the material being stored. Spills of petroleum products; substances listed under CFR Title 40, Parts 110, 117, and 302; and sanitary and septic waste shall be contained as soon as is safe. Contractor shall prevent spills from entering storm water runoff before and during cleanup.

Minor Spills:

Clean up minor spills using the following procedures:

1. Contain the spread of the spill.
2. Recover the spilled material by absorption.
3. Clean the contaminated area.
4. Dispose of the contaminated material promptly and properly.

Semi-Significant Spills:

Clean up semi-significant spills immediately by the following procedures:

1. Contain the spread of the spill.
2. Recover the spilled material using absorption whenever a spill occurs on a paved surface or an impermeable surface.
3. Contain the spill with an earthen dike and dig up the contaminated soil for disposal whenever a spill occurs on soil.
4. If the spill occurs during precipitation, cover the spill with plastic or other material to prevent contaminated runoff.
5. Dispose of the contaminated material promptly and properly.

Significant or Hazardous Spills:

Immediately notify qualified personnel of significant or hazardous spills. Do not let construction personnel attempt to clean up the spill until qualified staff have arrived. Do the following:

1. Notify the Engineer and follow up with a written report.
2. Obtain the services of a spills contractor or hazardous material team immediately.
3. Notify the local emergency response team by dialing 911 and county officials at the emergency phone numbers kept at the job site.
4. Notify the Governor's Office of Emergency Services Warning Center at (805) 852-7550.
5. Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities under CFR Title 40, Parts 110, 119, and 302.
6. Notify other agencies as appropriate, including:
 - 6.1. Fire Department
 - 6.2. Public Works Department
 - 6.3. Coast Guard
 - 6.4. Highway Patrol
 - 6.5. County Sheriff Department
 - 6.6. Department of Toxic Substances
 - 6.7. California Division of Oil and Gas
 - 6.8. Cal OSHA
 - 6.9. Regional Water Resources Control Board

Report minor, semi-significant, and significant spills to the WPC Manager. The WPC Manager shall notify the Engineer immediately. The WPC Manager must oversee and enforce proper spill prevention and control measures.

Material Management: Material shall be delivered, used, and stored for this contract in a manner that minimizes or eliminates discharge of material into the air, storm drain systems, or watercourses. Employees trained in emergency spill cleanup procedures shall be present when hazardous materials or chemicals are unloaded. The Contractor shall supply the Material Safety Data Sheets to the Engineer for material used or stored and shall keep an accurate inventory of material delivered and stored at the construction site.

Stockpile Management: Contractor shall reduce or eliminate potential water pollution from stockpiled material, including soil, paving material and pressure treated wood. Stockpiles shall be located at least 50 feet from drainage inlets and 100 feet from waterways. Active and inactive stockpiles shall be covered with soil stabilization measures, plastic sheeting or geosynthetic fabric and surrounded with a linear sediment barrier.

Solid Waste Management: Contractor shall not allow litter or debris to accumulate anywhere on the construction site, including storm drain grates, trash racks, and ditch lines. The Contractor shall pick up and remove trash and debris from the construction site at least once a week. Trash receptacles shall be provided and used in the Contractor's yard, field trailers, and locations where workers gather for lunch and breaks. Contractor shall furnish enough closed-lid, watertight dumpsters to contain any solid waste generated by work activities.

Hazardous Waste Management: Contractor shall implement hazardous waste management practices when waste is generated on the construction site. The Contractor shall dispose of hazardous waste within 90 days of being generated. Hazardous waste shall be disposed of by a licensed hazardous waste transporter using uniform hazardous waste manifest forms and taken to a Class I Disposal Site. A copy of the manifest shall be provided to the Engineer. Nothing in these special provisions shall relieve the Contractor of the responsibility for compliance with Federal, State, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.

Concrete Waste Management: The Contractor shall implement practices to prevent the discharge of Portland cement concrete, AC, or HMA waste into storm drain systems or watercourses. At a minimum, Contractor shall construct and maintain temporary concrete washout facilities. Portland cement concrete, AC, or HMA waste shall be collected and disposed of where concrete material is used, where AC is demolished and where concrete trucks are cleaned at the construction site.

Sanitary and Septic Waste: Do not bury or discharge wastewater from sanitary or septic systems within County right-of-way. The WPC Manager must inspect sanitary or septic waste storage and monitor disposal procedures at least weekly. Place sanitary facilities at least 50 feet from drainage inlets and 100 feet away from watercourses and flow lines.

Vehicle Equipment Cleaning: Contractor shall limit vehicle and equipment cleaning or washing on the construction site to that necessary to control vehicle tracking or hazardous waste. Vehicles and equipment shall not be cleaned on the construction site with soap, solvents, or steam until the Engineer has been notified. The resulting waste shall be contained and recycled, or disposed of appropriately. The Contractor shall not use diesel to clean vehicles or equipment, and shall minimize the use of solvents.

Vehicle and Equipment Fueling and Maintenance: Contractor shall fuel or perform maintenance on vehicles and equipment off the construction site whenever practical. When fueling or maintenance must be done at the construction site, the Contractor shall designate a site, or sites, and obtain approval from the Engineer before using. The fueling or maintenance site shall be protected from storm water, shall be on level ground, and shall be located at least 50 feet from drainage inlets or 100 feet from watercourses.

Material and Equipment Used Over Water: Place drip pans and absorbent pads under vehicles or equipment used over water. Keep an adequate supply of spill cleanup material with the vehicle or equipment. Do not allow demolished material to enter storm water systems or watercourses. The WPC Manager must inspect demolition sites within 50 feet of storm water systems or watercourses daily.

Temporary Construction Entrance: Contractor shall construct a temporary construction entrance or take whatever means necessary to prevent tracking of mud onto existing roads and shall keep roads free of debris. If sweeping is needed, Contractor shall do so using hand or mechanical methods.

Dewatering: Dewatering shall conform to the requirements specified in Section 02202, "Trenching and Backfilling," of Section 10-3, "Technical Specifications", of these Special Provisions. The WPCM shall inspect dewatering activities on a daily basis.

Dust Control: Dust control shall conform to Section 10, "Dust Control," of the Standard Specifications.

Full compensation for conforming to these requirements will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

10-1.05 **Working Hours:** Except as otherwise specified, work shall be performed during normal work-week – 7:00 a.m. to 7:00 p.m., Monday through Friday, excluding County Holidays. Work shall not be performed at any time other than the normal work-week without obtaining written approval from the Engineer at least 4 (four) calendar days in advance. All non-emergency work activities shall be confined to daylight hours.

Exception: Work activities associated with the field-joining of HDPE pipe; the field hydrostatic pressure testing; the HDPE pipe installation; and the completion of western and eastern connections may be performed 24 hours per day, 7 days per week, at Contractor's option, with prior written permission of the Engineer at least 4 (four) calendar days in advance.

10-1.06 **Protection of Existing Facilities:** All underground power and communications facilities, pipelines, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered shall remain continuously in service during performance of the Work, unless other arrangements satisfactory to the Engineer are made with the owner of said facility. The Contractor shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

All structures, road improvements, bridges, walls, agricultural areas, agricultural equipment, private improvements, and other equipment and material within the vicinity of the project site shall be protected at all times from the Contractor's operations at the Contractor's expense. Any damage to property caused by the Contractor's operations shall be repaired by the Contractor at the Contractor's expense.

Access to the project site will be over public and private roads. Contractor shall exercise care in the use of such roads and shall be responsible to repair at own expense any damage thereto caused by Contractor's operations. Such repair shall be to the satisfaction of the District or agency having jurisdiction over the road.

10-1.07

Contract Closeout: When the Contractor believes all work is complete or near completion, Contractor shall request that the Engineer perform a preliminary inspection of the Work to generate a punchlist of remaining items of work. The purpose of this inspection will be to determine the state of completion of the project. The preliminary inspection shall be requested by the Contractor at least 48 hours in advance of inspection.

After all punchlist items have been completed by the Contractor and final cleanup and site restoration has been performed, Contractor shall request a final inspection by the Engineer. Engineer will perform the final inspection to determine completion of the project work.

The Contractor, prior to requesting final payment, shall obtain and submit the following items to the Engineer:

- One complete set of full-size marked-up record drawings and specifications (Section 10-1.08), and as-built drawings for HDPE carrier pipe (Section 02312).
- "Release of Liens" from all subcontractors, materialmen, fabricators, Suppliers, and labor suppliers.
- Recycling Plan Disposal Report.
- All keys to permanent gates and locks.
- All manufacturers' guarantees and warranties.
- All mill certifications and test data.
- Final completed punchlist.
- Final project pay estimate.

Full compensation for conforming to these requirements will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

10-1.08

Record Drawings and Specifications: The Contractor shall keep at the project site a copy of the drawings and specifications, including addenda and change orders, to which the Engineer shall have access at all times.

The Contractor shall maintain one (1) set of specifications and full size plans and mark thereon any deviation from plan dimensions, elevations, or orientations, and all changes from addenda, change orders, and clarifications.

The Contractor shall submit the record drawings in good condition to the Engineer upon completion of Contract work as a condition of acceptance of the Work. Marked prints shall be updated at least weekly during construction operations and shall be available to the Engineer for review.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

10-1.09

Final Site Cleanup: Prior to final demobilization from the worksite, Contractor shall remove from the vicinity of the completed work and adjacent property and streets, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. All parts of the work shall be left in a neat and presentable condition. All disturbed areas and surfaces shall be returned to their original condition unless otherwise shown on the plans or specified in these Special Provisions.

END OF SECTION

SECTION 10. CONSTRUCTION DETAILS

SECTION 10-2. GENERAL REQUIREMENTS

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Section 01025

MEASUREMENT AND PAYMENT

1. SCOPE. Methods and procedures for measurement and payment for items of Work under this Contract shall be in accordance with the requirements specified in Section 5-1.07, "Measurement and Payment," and as specified herein.

2. GENERAL. Payment for the various items of the Bid Proposal Form, as further specified herein, shall include full compensation to be received by the Contractor for furnishing all tools, equipment, plant, transportation, supplies, and manufactured articles, and for all required labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the Work all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with environmental protection and mitigation requirements and permits and with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).

No separate payment will be made for any item that is not specifically set forth in the Bid Proposal Form, and all costs therefor shall be included in the prices named in the Bid Proposal Form for the various appurtenant items of work. Payment for each Bid Item shall include overhead and profit.

No separate payment will be made for any of the requirements of the Special Provisions, nor for any of the work specified in Section 10-2, "General Requirements".

Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.

3. ESTIMATED QUANTITIES. The estimated quantities given in the Bid Proposal Form for items bid on a unit price basis are approximate and are given only for a basis for comparison of bids. District does not expressly, nor by implication, warrant that the actual amount of work will correspond to the estimated quantities. The District reserves the right to increase or decrease the amount of work performed under unit price Bid Items, or to omit such work altogether. No adjustments to the Contract unit prices will be made, nor will any claim for loss of anticipated profit be allowed on account of any such increase, decrease, or omission except as provided for in Section 5, "General and Miscellaneous" of these Special Provisions. Payment for unit price Bid Items will

be made at the Contract unit prices stated in the Contractor's Bid measured in accordance with the specified methods of measurement as stated in this Section.

4. UNIT PRICE ITEMS. The quantity of work to be paid for under any item for which a unit price is fixed in the Description of Bid Items shall be the actual amount of units of work satisfactorily completed in accordance with the Contract Documents, and as directed by the District. No payment will be made for work done outside of the prescribed or ordered limits.

Material paid for by weight shall be weighed on sealed scales certified by and regularly inspected by the applicable California State Weights and Measures Department.

When material is to be measured and paid for on a volume basis and it is impractical to determine the volume by the specified method of measurement, or when requested by Contractor in writing and approved by the Engineer in writing, the material will be weighed in accordance with the requirements specified for weight measurement. Such weights will be converted to volume measurement for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by Engineer and shall be agreed to by Contractor before such method of measurement of pay quantities will be adopted.

When metering devices are required in the Specifications or are used to measure the quantity of liquids used in the Work, the metering devices shall be inspected, tested, and certified by the applicable California State Weights and Measures Department within the past year.

Full compensation for all expense involved in conforming to the requirements for measuring and weighing materials shall be considered as included in the unit prices paid for the materials being measured or weighed and no additional compensation will be allowed therefor.

5. SCHEDULE OF VALUES. Contractor shall prepare a schedule of the estimated values of each of the various major parts of the project and the total of all parts that shall equal the Contract Price. Said schedule shall be on AIA Form G703 or similar form and shall be subject to District's approval. The Engineer will use the Schedule of Values for verifying the amount of each progress payment.

Contractor shall submit the Schedule of Values to the Engineer within the timeframe specified in Section 10-1.01, "Order of Work." Provide a breakdown of the Contract Price consistent with the itemized cost-loaded CPM Construction specified in Section 01310, "Construction Scheduling" and in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the contract specifications table of contents. Provide several line items for principal subcontract amounts, where appropriate.

Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

6. DESCRIPTION OF BID ITEMS.

6.1 General

Bid Items 1 through 6 are presented to indicate major categories of the Work for purposes of comparative bid analyses. Bid Item 2 is presented to comply with the California Labor Code relating to the price for sheeting, shoring, and bracing of excavations. Bid items are not intended to be exclusive descriptions of work categories and the Contractor shall determine and include in its pricing all materials, labor, and equipment necessary to complete each Bid Item as shown and specified.

6.2 Bid Item No. 1 - Mobilization / Demobilization

Mobilization / Demobilization shall conform to the provisions in Section 11, "Mobilization," of the Standard Specifications and these Special Provisions.

Bid Item No. 1 is a lump sum bid item, with a stipulated amount of \$50,000, that includes obtaining all permits, insurance, bonds and other documents; moving equipment onto the site and setting up field offices as applicable; establishing utilities; furnishing and erecting temporary construction facilities; submitting the complete shop drawing schedule and receiving the Engineer's acceptance; completion and approval of a Water Pollution Control Program (WPCP); and submittal and approval of a finalized CPM Construction Schedule per Section 01310, "Construction Scheduling," and a Schedule of Values as specified herein; all as required for the proper performance and completion of the Work. Demobilization shall include removing of all equipment and facilities, and final site cleanup.

75% of Bid Item No. 1 will be paid for mobilization and 25% of Bid item No. 1 will be paid for demobilization.

The Contractor's attention is directed to the condition that no payment for mobilization, or any part thereof, will be approved for payment nor paid for under the Contract until all mobilization items listed above are completed as specified.

6.3 Bid Item No. 2 - Sheeting, Shoring and Bracing

Bid Item No. 2 is a lump sum bid item that includes the additional cost of planning, designing and providing all sheeting, shoring and bracing in connection with the Work including but not limited to that required by Sections 6700-6708 of the California Labor Code.

6.4 Bid Item No. 3 – Furnish & Install HDPE Carrier Pipe

Bid Item No. 3 is a unit price bid item, measured in feet, that includes all work required for the furnishing, installing and testing of the HDPE carrier pipe inside of the existing steel pipe casing at the existing Nacimiento River Crossing, as shown on the Drawings and as specified in Sections 02312, 02634 and 02704, including but not limited to, all associated general conditions, Special Provisions and general requirements; furnishing and field-joining of high density polyethylene (HDPE) pressure pipe; installing the HDPE pipe inside of the existing steel casing using horizontal directional drilling (HDD) equipment and construction means and methods; field hydrostatic pressure testing of the HDPE carrier pipe; and appurtenant work.

The length of HDPE carrier pipe installed will be taken as the linear distance measured along the pipe between the flanged connections of HDPE-to-steel pipe located at each end as shown on the Drawings.

6.5 Bid Item No. 4 – Western Connection

Bid Item No. 4 is a lump sum bid item that includes all work associated with making the western connection between the existing Nacimiento Water Project pipeline and the new HDPE carrier pipe, as shown on the Drawings and as specified herein, excluding the work specified for Bid item No. 2, including but not limited to, all associated general conditions, Special Provisions and general requirements; trench excavation; taking field measurements; removing existing steel pipe sections, air valve piping and air valve assemblies as shown on the Drawings; shipping pipe sections to the shop; making shop modifications to the existing steel pipe including adding pipe length as-needed; shipping the modified steel pipe sections back to the field for installation; making connections and installing joint restraints; placing and compacting pipe zone and trench zone backfill materials; re-installing air valve piping and air valve assemblies; protecting existing facilities; and making field modifications to existing steel pipe casing, such as the installation of flanges and vents.

6.6 Bid Item No. 5 – Eastern Connection

Bid Item No. 5 is a lump sum bid item that includes all work associated with making the eastern connection between the existing Nacimiento Water Project pipeline and the new HDPE carrier pipe, as shown on the Drawings and as specified herein, and excluding the work specified for Bid item No. 2, including but not limited to, all associated general conditions, Special Provisions and general requirements; trench excavation; taking field measurements; removing existing steel pipe sections as shown on the Drawings and shipping sections to the shop; making shop modifications to the existing steel pipe including adding pipe length as-needed; shipping the modified steel pipe sections back to the field for installation; making connections and installing joint restraints; placing and compacting pipe zone and trench zone backfill materials; protecting existing facilities; and making field modifications to existing steel pipe casing, such as the installation of flanges and vents.

6.7 Bid Item No. 6 – All Other Work

Bid Item No. 6 is a lump sum bid item that includes all other Work required by the Contract Documents for the project except as otherwise paid for under the other Bid Items listed above.

End of Section

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Section 01040

SITE ACCESS AND EASEMENT AND RIGHT-OF-WAY REQUIREMENTS

1. GENERAL

Approvals and agreements from various agencies, public and private, and from property owners, are required for the use of lands necessary for the execution of the Work under this Contract.

Except as otherwise specified, the District will furnish, as indicated in the Contract Documents, the lands upon which the work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of the Contractor.

The Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment, provided that the Contractor shall not enter upon nor use any property not under the control of the District until a written temporary construction easement agreement has been executed by the Contractor and the property owner, and a copy of said easement furnished to the Engineer prior to said use; and, neither the District nor the Engineer will be liable for any claims or damages resulting from the Contractor's unauthorized trespass or use of any such properties. The Contractor shall provide the Engineer with a signed release from the property owner confirming that the lands have been satisfactorily restored upon completion of construction.

In order to assure compliance with environmental mitigation requirements, any additional lands proposed for the Contractor's use relative to this Contract shall be reviewed and approved by the affected property owner and the Engineer prior to their use.

2. SITE ACCESS, WORK AREA LIMITS AND NOTIFICATION REQUIREMENTS.

Work area limits that include permanent and temporary easements are designated on the Drawings.

Vehicle traffic shall be restricted to established public roads and designated access roads within the work area. The District may approve Contractor use of existing private roadways outside the District's easements and right-of-ways, where the District has such rights. In order to assure compliance with environmental mitigation requirements, any use of private roadways or land shall be reviewed and approved in advance by the affected property owner and the Engineer.

2.1 Camp Roberts – General

Camp Roberts (Camp) is a Federal military installation. Security levels at the Camp may change (increase or decrease) due to actions taken by the Department of Homeland Security in response to the Current National Threat Level (CNTL). An unexpected increase in the CNTL and corresponding Camp security levels & procedures could result in increased security measures at Camp entry points.

Contractor is required to abide by Camp regulations in connection with safety and entering the Camp grounds. Details of coordination with the Camp staff during construction will be discussed at the pre-construction conference.

Entry into Camp Roberts is regulated by Camp staff. Requirements include possession of a valid driver's license and evidence of vehicle insurance coverage.

Speed Limit. Unless otherwise posted at a lower speed, speed limits on Camp Roberts are 25 mph and are strictly enforced. Individuals receiving speed violations are required to address these in the Federal Court located in Salinas, California.

2.2 Camp Roberts – Access to Site

Contractor's access to the site via Camp Roberts shall be as follows:

- a. Main Gate. The Main Gate located at the Camp Roberts off ramp from Highway 101 will be available to Contractor to access the site from the east. Coordinate with Camp for access requirements.
- b. West Property Line. Access to the Camp from the west is available from Lake Nacimiento Drive and shall be coordinated with Engineer. Contractor shall maintain a secure, lockable gate at the western Camp property line at all times.
 - The access road that leads to the toe of the dam shall remain open at all times for MCWRA and property owner access.

2.3 NWP Intake Pump Station - General

The District will make available to Contractor, for temporary staging and storage, the parking lot area at the Intake Pump Station, located inside of the District's security fence. Coordinate with the Engineer for use of the site.

3. CONTRACTOR'S STORAGE AREA FOR HAZARDOUS MATERIALS

As applicable, the Contractor shall construct and use a separate storage area for hazardous materials used in constructing the Work. The Contractor shall clearly mark these areas in the field.

For the purpose of this paragraph, hazardous materials to be stored in the separate area are all products labeled with any of the following terms: Warning, Caution, Poisonous, Toxic, Flammable, Corrosive, Reactive, or Explosive. In addition, whether or not so labeled, the following materials shall be stored in the separate area: diesel fuel, gasoline, new and used motor oil, hydraulic fluid, cement, paints and paint thinners, two-part epoxy coatings, sealants, asphaltic products, glues, solvents, wood preservatives, sand blast materials, and spill absorbent.

The Contractor shall develop and submit to the Engineer a plan for storing and disposing of the materials above.

The separate storage area shall meet all the requirements of all authorities having jurisdiction over the storage of hazardous materials. Such authorities are: Cal-OSHA, AQMD, California Department of Fish and Game, Regional Water Quality Control Board, and County of San Luis Obispo Environmental Health Services.

All hazardous materials which are delivered in containers shall be stored in original containers until use. Hazardous materials which are delivered in bulk shall be stored in containers which meet the requirements of authorities having jurisdiction.

End of Section

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Section 01060

PERMIT REQUIREMENTS

1. GENERAL

Permits, approvals and agreements from various agencies, public and private, and from property owners, are required for execution of the Work under this Contract. For purposes of this section, “permits” is defined to include all of the permit approvals and agreements referenced.

Sometimes these permits require fees to be paid by the Contractor and sometimes these permits impose construction conditions. Some of these permits have been obtained by the District, and some shall have to be obtained by the Contractor as specified. The Contractor shall include in its overall bid the cost of obtaining any necessary permits and the preparation of any plans required by these permits not obtained by the District, including application fees and any other costs; and the cost of complying with all of the conditions set by all of the required permits. For permits that the District obtains, the District will directly pay the permitting agencies and companies for application fees, permit renewal fees, and inspection fees, unless otherwise specified herein.

Information provided in this section does not relieve the Contractor of responsibility to determine and verify the extent of the permits and approvals required to complete the Work under this Contract, or the Contractor of its responsibility to obtain other permits and approvals which are the responsibility of the Contractor and not included in this Section.

1.1 INDEX OF PERMITS AND APPROVALS. The following permits are included herein:

Paragraph Description

1.2.1 State of California Department of Industrial Relations Occupational Safety and Health Administration (Cal/OSHA) – Construction Activities Permit

1.2 SUMMARY OF PERMITS AND APPROVALS.

1.2.1 State of California Department of Industrial Relations Occupational Safety and Health Administration (Cal/OSHA) – Construction Activities Permit

The Contractor shall obtain a Construction Activity Permit from Cal/OSHA for excavations and pipeline trenches greater than five (5) feet deep into which construction personnel will enter. A sample permit application form is attached. To obtain the permit, the Contractor shall schedule and attend a safety permit conference with the nearest Cal/OSHA District office. At the conference, the Contractor shall provide enough project details that Cal/OSHA can make a determination that the work will be performed safely. For more information, refer to <http://www.dir.ca.gov/dosh/Permits.html>

The Contractor shall provide the following to Cal/OSHA, with a copy to the Engineer:

- Permit Application Form
- Activity Notification Form
- Copy of Contractor's IIP Program
- Copy of Contractor's Code of Safe Practices

End of Section

PERMIT APPLICATION FORM

Buildings/Structures, Scaffolding/Falsework, Demolition, Trenches/Excavations

Section 6500, 6501 and 6502 of the California Labor Code require that certain activities, which by their nature involve substantial risk of injury, may not be performed without a permit issued by DOSH. The Labor Code requires that the applicant supply, and that the Division review, information necessary to evaluate the safety of the workplace subject to permit requirements. A permit will not be issued until evidence has been demonstrated that the place of employment will be safe and healthful.

Employer: _____	Employers' Rep.: _____
Address: _____	Title & Phone No.: _____
_____	State Contractor's License No.: _____
Phone: _____	Fax: _____

<p>Check Applicable Items: Applicant is:</p> <p>_____ Project Administrator</p> <p>_____ Speciality Contractor</p> <p>_____ Type _____</p>	<p style="text-align: center;">Applicant refers to contractor or knowledgeable representative in a position of authority and responsibility for the activity covered by this permit.</p>
--	--

Type of Permit Sought:	
_____ Annual Permit _____ Project Permit _____ Temporary Permit (Plan Check Only)	_____ Multiple Project, (if projects covered are similar in all important aspects, work is performed by the same employer and information concerning each project is provided)
For:	
_____ Construction of: _____ Building	_____ Structure
_____ Scaffolding, Falsework and/or Vertical Shoring	
_____ Demolition of: _____ Building	_____ Structure
_____ Trench and/or Excavation	

Any permit based on this application is issued with the understanding that the applicant has knowledge of occupational safety and health orders applicable to the project(s) described in the application and attachments and that the applicant and supervising personnel will take special care to ensure compliance with safety orders reviewed with the applicant by the Division in the application process.

Issuance of the permit is also conditioned upon the following:

- 1) Upon initiation of any new project not described in the application the holder of an Annual Permit will provide the Division with a completed Activity Notification Form for Holders of Annual Permits describing the new project prior to the start of work preferably at least one week in advance of the start-up date.
- 2) The applicant has implemented a written Injury and Illness Prevention Program and Code of Safe Practices which meet the requirements of 8 CCR Sections 1509 & 3203.
- 3) The Division will be notified of significant changes in information provided with the application if such changes might affect the safety of the activity.
- 4) The applicant for a Trench and/or Excavation Permit shall designate a **competent person** in accordance with the requirements of 8 CCR 1504, 1541 and 1541.1. for each Trench and/or Excavation project.

5) The applicant understands that under the permit program DOSH schedules routine inspections by authorized personnel for the purpose of verifying that holders of Annual or Activity Permits are meeting their obligation to provide a safe work place for their employees. The Division reserves the right to revoke or suspend a permit if it is unable to promptly verify compliance with the terms and conditions of the permit and its issuance.

6) The applicant understands that failure to comply with any of the above listed conditions for obtaining a permit could result in denial, suspension, or the revocation of the permit. Employers may appeal these actions to the Director of the Department of Industrial Relations (California Labor Code Section 6500 at, Seq, and 8 CCR 341)

Is the applicant conducting any activities to be covered by this Permit Application Form, as a partnership or joint venture with any other persons or corporations conducting activities requiring permits?

Yes _____ No _____ If yes, give details _____

Have any permits for any project to be covered by this permit application previously been applied for or obtained? Yes _____ No _____ If yes, when _____

from what district office _____

in whose name _____

<p>DIVISION USE ONLY</p> <p>Fee _____</p> <p>Paid _____</p> <p>Approved _____</p> <p>Conference _____</p> <p>Other _____</p>	<p>I hereby certify that to the best of my knowledge all information and assertions made on the Permit Application and/or Activity Notification Form are true and correct and that I/the applicant have knowledge of and will comply with the foregoing.</p> <p>Signature: _____</p> <p>Title: _____</p> <p>Date: _____</p>
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PROJECT ACTIVITY FORM

Buildings/Structures, Scaffolding/Falsework, Demolition, Trenches/Excavations

Company Name: _____	Field Phone: _____
Annual Permit Number: _____	Office Phone: _____
Specific Activity Location: _____	Number of Employees: _____
Nearest Major Cross Street: _____	Starting Date: _____
City: _____	Anticipated Completion Date: _____
County: _____	High Voltage Lines in Proximity? No _____ Yes _____
INSTRUCTIONS: The appropriate item(s) must be completed and signed by a person knowledgeable about the project for each activity covered by a permit. Please fill in or check off the blanks where appropriate.	
Construction: Building _____ Structure _____ Type: Steel Frame _____ Tiered _____ Concrete _____	
Tilt-up _____ Wood Frame _____ Curtain Wall _____ Precast _____ Slip Form _____ Depth _____ Height _____	
Description: _____	
(See 8 CCR 1709-30: Appendix A Plate A-2a & b)	
Scaffolding: Height _____ Metal _____ Wood _____ Wood over 60 Feet _____ Metal over 125 Feet _____	
Metal > 125 Feet or Wood >60 Feet requires design by California Registered Civil Engineer & Plans at Site.(See 8 CCR 1644(c)(7))	
Description: _____	
Falsework/Vertical Shoring: Maximum Height _____ Maximum Span _____ Material _____	
Description: _____	
(See 8 CCR 1717)	
Demolition Of: Building _____ Structure _____ Height _____ No. of Stories _____ Type: Steel Frame _____	
Wood Frame _____ Concrete _____ Demolition Ball _____ Clam _____ Explosives _____	
Loader/Tractors _____ Other _____	
(See 8 CCR 1734 - 37)	
Trenches/Excavations: Depth Range(Min/Max) * _____ Width Range(Min/Max) _____ Total Length _____	
Ground Protection Method: Shoring _____ Sloping _____ Trench Shield _____ Professional Engineer _____	
Underground Services Alert(USA) Number _____ (NORTH 1-800-642-2444/SOUTH 1-800-422-4133)	
Soil Analysis to be done? Yes _____ No _____ If No, You Must Slope 1.5 to 1.	
Description: _____	

• Ground protection methods for excavations deeper than 20 feet must be designed by a Registered Professional Engineer. See 8 CCR 1541.1, Appendix F.	

Section 01300

SUBMITTALS

1. GENERAL.

Where the Contractor is required by these Specifications to make submittals, they shall be made as specified herein.

For the convenience of the Engineer and Contractor, Contractor's submittals for the Project shall be made through transmission of electronic files by email (or through District's or Contractor's FTP site for files exceeding 10 MB).

Submittals will only be accepted from the Contractor (not subcontractor or material supplier).

Contractor shall prepare and submit, and receive review by Engineer as specified herein, with such promptness as to cause no delay in its own work or in that of any subcontractor or supplier.

1.01. Electronic Files and Signatures. Electronic files shall be scanned in or converted to (.pdf) file format using Adobe Acrobat Version 9.0 or higher. AutoCad drawing files shall also be in (.pdf) file format.

Each submittal shall be converted to a PDF document (PDF file) and provided to Engineer for review. Drawings or other graphics converted to .PDF format shall be incorporated into the single PDF document. Pages that must be viewed in landscape format shall be rotated to the appropriate position for easy reading on screen.

The Engineer and the Contractor will make use of certificates for electronic signatures to process all submittals and RFIs. The electronic signatures and their certificates will be developed using the Adobe Acrobat Digital Signature plug-ins. Only designated Contractor personnel will be able to sign the submittal transmittal sheet and the RFIs form.

2. SHOP DRAWINGS AND ENGINEERING DATA.

2.01. General. Shop Drawings and engineering data (submittals) covering all equipment and all fabricated components and building materials which will become a permanent part of the Work under this Contract shall be submitted to Engineer for review. Submittals shall verify compliance with the Contract Documents, and shall include drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and the operation of component

materials and devices; the external connections, anchorages, and supports required; the performance characteristics; and dimensions needed for installation and correlation with other materials and equipment. When an item consists of components from several sources, Contractor's initial submittal shall be complete including all components.

All submittals, regardless of origin, shall be stamped with the approval of Contractor and identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each submittal shall indicate the intended use of the item in the Work. When catalog pages are submitted, applicable items shall be clearly identified and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data. Each submittal shall be sequentially numbered, dated, and appropriately titled with the specification number and description.

Contractor shall be solely responsible for the completeness of each submittal. Contractor's stamp of approval is a representation to Engineer that Contractor accepts sole responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, and that Contractor has reviewed and coordinated each submittal with the requirements of the Work and the Contract Documents.

All deviations from the Contract Documents shall be identified as deviations on each submittal and shall be tabulated in Contractor's letter of transmittal. Such submittals shall, as pertinent to the deviation, indicate essential details of all changes proposed by Contractor.

2.02. Review of Submittals by Engineer. Unless noted otherwise, the Engineer will require 5 working days for submittal review. No claim will be allowed for damages or extensions of time because of delays in work resulting from rejection of material or from revisions and resubmittal of shop drawings, project data, or samples.

Engineer's review will be to determine if the equipment and materials proposed by the Contractor are in general conformity with the requirements of the Contract Documents. The review is not intended to be a complete check of quantities, dimensions, fabrication details, materials, etc. indicated on the shop drawings, and does not extend to the Contractor's means and methods. Engineer's review shall not relieve Contractor of sole responsibility for errors, omissions, or deviations in the drawings and data, nor of Contractor's sole responsibility for compliance with the Contract Documents.

Engineer will return submittal review comments to Contractor via electronic files.

- a. No Exceptions Noted (NEN): The Engineer's review found no deviations from the Contract Documents.
- b. Exceptions Noted (EN): The Engineer's review found no major deviations from the Contract Documents; only minor discrepancies or deficiencies are noted. Corrected copies are not required; however, when the item for which the submittal was prepared is furnished, it shall be in compliance with the Engineer's comments. If the Contractor, Supplier, or manufacturer takes exception to any comments, they shall submit corrected or supplemental data to further explain the reasons for any deviations from the Contract Documents.
- c. Returned for Correction (RFC): The Engineer's review revealed major discrepancies or deficiencies, so that corrected data shall be submitted to determine compliance with the Contract Documents.
- d. Record Copy (RC): This status is assigned for submittal data which the Engineer determines to be general or supplemental to information being reviewed, such as test reports, manufacturer's or supplier's letters included with submittal data, unmarked catalog data, etc.
- e. Not Acceptable (NA): In the Engineer's opinion, the item submitted for review does not meet the requirements of the Contract Documents. Submittals from a new source shall be submitted.
- f. Returned Without Review (RWOR): This status is assigned to items such as design calculations or items pertaining to the Contractor's means and methods of construction.
- g. Not Applicable (N/App.): This status is assigned to items that do not apply to the project or the submitted specification section.

When the drawings and data are returned marked "NOT ACCEPTABLE" or "RETURNED FOR CORRECTION", the corrections shall be made as noted thereon and as instructed by Engineer. When the drawings and data are returned marked "EXCEPTIONS NOTED", "NO EXCEPTIONS NOTED", or "RECORD COPY", no additional copies need be furnished unless specifically requested by Engineer.

2.03. Resubmittal of Drawings and Data. Contractor shall accept full responsibility for the completeness of each resubmittal. Contractor shall verify that all corrected data and additional information previously requested by the Engineer are provided on the resubmittal.

When corrected copies are resubmitted, Contractor shall direct specific attention to all revisions in writing and shall list separately any revisions made other than those called for by Engineer on previous submittals. Requirements specified for initial submittals shall also apply to resubmittals. Resubmittals shall bear the number of the first submittal followed by a letter (A, B, etc.).

When resubmittals are needed, resubmittals shall be made within 30 days of the date on the letter returning the material to be modified or corrected, unless within 14 days Contractor submits an acceptable request for an extension of time, listing the reasons why the resubmittal cannot be completed within the stipulated time.

Resubmittals will be reviewed and returned in the same review period as the original submittals. It is considered reasonable that the Contractor shall make a complete and acceptable submittal by the second submission. The Engineer reserves that right to withhold monies due to the Contractor to cover additional costs of any review beyond the second submittal. Full compensation for preparing submittals and shop drawings, as required, shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

End of Section

Section 01310

CONSTRUCTION SCHEDULING

1. GENERAL. The scheduling of the Work under the Contract shall be performed by the Contractor in accordance with the requirements of this Section. The development of the schedule, the cost loading of the schedule, monthly payment requisitions and project status reporting requirements of the Contract shall employ computerized Critical Path Method (CPM) scheduling. The cost-loaded CPM schedule and all reports shall be prepared using the latest version of Primavera P6 software.

In addition to the scheduling aspect, the CPM Construction Schedule shall be cost-loaded and used in conjunction with the schedule of values / applications for payment, and to develop a cash drawdown schedule that presents an estimate of expected billings over time.

Contractor hereby agrees that in the process of preparing its baseline schedule and monthly updates, it will consult with all key subcontractors and suppliers to assure concurrence with the feasibility and achievability of Contractor's planned start dates, sequencing, durations, and completion dates.

Progress schedules shall conform to the provisions of Section 5-1.06, "Progress Schedule," and as specified herein.

2. QUALIFICATIONS. The Contractor shall employ the services of a qualified Scheduler with not less than five (5) years of experience that can demonstrate competence in the use of CPM scheduling through the submission of a fully compliant CPM Construction Schedule with the initial CPM submission. In the event the Contractor fails to so demonstrate competence in the CPM scheduling, the Contractor shall nominate another qualified Scheduler until accepted by the Engineer. The Scheduler shall have verifiable training and credentials in preparing and maintaining a computerized CPM Construction Schedule using Primavera software as specified herein.

3. CPM STANDARDS.

3.01. Definitions:

CPM, as required by this Section, shall comply with the standards outlined in the Associated General Contractors' publication, "Construction Planning and Scheduling, Second Edition," unless specifically changed by this Section.

CPM Construction Schedule: The Contractor's CPM Construction Schedule shall include a graphic time scaled logic network, computerized tabular reports and cost loading as described below. To be acceptable, the schedule must demonstrate the following:

- A logical succession of work from start to finish. This logical succession, when accepted, is the Contractor's work plan. The individual activities are to be designated as early start/early finish solely to accommodate the Primavera software.
- Clear definition of each activity including a cost loading. The assigned dollar value (cost loading) of each activity shall cumulatively equal the contract price.
- Proper interfacing of related activities including submittals, major material and equipment deliveries, procurement, required permits and other constraints such as equipment or manpower/crew availability. Submittal dates must include review periods and permit schedules must include agency review and issue dates. The narrative shall explain the rationale for all constraints, lags, and unusual relationships.
- Agreement with the interim milestones, schedule coordination requirements, and completion dates indicated in the Contract Documents.

CPM Graphic Logic Network. The CPM graphic logic network or diagram shall be in the form of a time-scaled diagram of the customary precedence diagram and may be divided into a number of separate pages with suitable notation relating the interface points among the pages. Individual pages shall not exceed 34-inch by 44-inch. Notation on each activity line shall include activity descriptions, total float, start/finish dates, and durations as a minimum.

All construction activities and procurement shall be indicated in a time-scaled format, and a calendar shall be shown on all sheets along the entire sheet length. Each activity shall be plotted so the beginning and completion dates of said activity can be determined graphically by comparison with the calendar scale. A legend shall be included clearly distinguishing between critical and non-critical path activities and progress to date.

Duration: The duration indicated for each activity shall be in units of whole working days and shall represent the single best time considering the scope of the Work and resources planned for the activity including time for holidays and inclement weather. The calendar for the network shall be in calendar days. Except for certain non-labor activities, such as curing concrete or delivering materials, activity durations shall not exceed 14 days, be less than one day, nor exceed \$50,000 in value unless otherwise accepted by the Engineer.

Content: All schedule activities shall be grouped and coded according to the systems defined in the Contractor's Schedule of Values. Within each system, schedule items shall have a one-to-one relationship to the breakdown of activities provided by the Contractor for each system included in the Schedule of Values. Administrative submittals and related activities that are shown on the schedule, but are otherwise not related to a specific system, may be exempted from this requirement at the Engineer's sole discretion.

Computerized Tabular Reports: Reports shall include the following for each activity depicted in the schedule.

- Activity ID
- Activity Description
- Duration (original and remaining)
- Early Start Date
- Early Finish Date
- Late Start Date
- Late Finish Date
- Total Float
- Percent Complete
- Activity Cost
- Actual Start Date
- Actual Finish Date
- Preceding and Succeeding Event Numbers
- Activity Constraints

Project Information: Each report shall be prefaced with the following summary data.

- Project Name
- Contractor
- Type of Tabulation (Initial or Updated)
- Project Duration
- Project Scheduled Completion Date
- Projected Completion Date
- Data Date / Run Date

Acceptance: Engineer will review schedule submittals. If, in the opinion of Engineer, the schedule (1) does not accurately reflect Contractor's actual or anticipated progress or work plan or, (2) cannot be used to effectively evaluate Contractor's progress or, (3) is not in compliance with this article and other parts of the Contract Documents, it will be returned to Contractor for corrections or clarification. Contractor shall make the necessary corrections and resubmit or shall respond in detail to Engineer's comments and request that the submittal be accepted without modification. Failure by Contractor to provide corrections or clarifications to schedule submittals as directed by Engineer shall constitute reason to withhold approval of any Progress Payment Request.

Engineer's review of schedule submittals shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has, in writing, called Engineer's attention to each such variation at the time of submission and Engineer has given written approval of each such variation; nor shall any approval by Engineer relieve Contractor from responsibility for compliance with any provision of the Contract Documents, except as specifically approved with respect to such variation.

4. INITIAL CPM CONSTRUCTION SCHEDULE SUBMITTAL.

The Contractor shall submit the Initial CPM Construction Schedule in accordance with the timeframes specified in Section 10-1.01, "Order of Work." The Initial CPM Construction Schedule shall include the following:

- A CPM timescaled logic network.
- Computerized Tabular Reports in the following formats:
 1. Activity sort by activity ID, organized by facility or area.
 2. Activity sort by early start, organized by facility or area.
 3. Activity sort by float, organized by facility or area.
- Predecessor/successor listing.
- Activity code dictionary.
- Basis of schedule narrative describing the logic and reasoning of the schedule.

- Breakdown of specific cost amount for each component of multi-component activities in the CPM Schedule in spreadsheet format (using Microsoft Excel) showing component unit quantities as well as costs. Such breakdown, when accepted by the Engineer, shall constitute the Schedule of Values for the Project per Section 01025, "Measurement and Payment."

Engineer will review the schedule submittals within 5 working days and state acceptance or rejection of the proposed CPM Construction Schedule. The schedule will be discussed at the Pre-Construction Conference.

Submit a CPM Construction Schedule update, as required below, every month along with the Application for Payment.

5. CHANGE OF CONTRACT TIMES. If a change of Contract Times is made, the approved change shall be reflected in the next schedule update by the Contractor as an integrated fragment for the changed work item(s).

6. SCHEDULE UPDATES. The CPM Construction Schedule shall be updated to reflect the as-built conditions of the Work and to accurately forecast the status of incomplete activities. Progress reports shall be given at each weekly progress meeting, stating actual percent earned versus percent planned. CPM Construction Schedule updates shall be submitted to the Engineer with each payment request (but no less frequent than monthly). Updates shall include approved changes in the Work and shall accurately depict the current status and sequence of all activities, including identification of critical path activities.

The updated CPM Construction Schedule shall be submitted in the form, sequence, and number of copies requested for the initial schedule.

7. NOT USED.

8. CPM CONSTRUCTION SCHEDULE REVISIONS. The District or Engineer may direct and, if so directed, the Contractor shall propose, revisions to the CPM Construction Schedule upon occurrence of any of the following instances:

- The actual physical progress of the Work falls more than five percent (5%) behind the accepted CPM Construction Schedule, as demonstrated by comparison to the accepted monthly CPM Construction Schedule updates or as determined by the Engineer if a current accepted CPM Construction Schedule does not exist.

- The District considers milestone or completion dates to be in jeopardy because of “activities behind schedule”. “Activities behind schedule” are all activities that have not or cannot be started or completed by the dates shown in the CPM Construction Schedule, regardless of the existence of positive float on the activity.
- A Change Order has been issued that changes, adds, or deletes scheduled activities or affects the time for completion of scheduled activities.

When the instances requiring revision to the CPM Construction Schedule occur, the Contractor shall submit the proposed revised CPM Construction Schedule within ten (10) days after receiving direction from the Engineer to provide such Schedule. No additional payment will be made to the Contractor for preparation and submittal of proposed revised CPM Construction Schedules. However, if the Engineer accepts the proposed revised CPM Construction Schedule, it shall replace and supersede all previous CPM Construction Schedules and substitute for the next monthly CPM Construction Schedule update that would otherwise be required.

Revisions to the CPM Construction Schedule shall comply with all of the same requirements applicable to the original schedule.

9. SCHEDULE RECOVERY. If a revised CPM Construction Schedule accepted by the Engineer requires the Contractor to employ additional manpower, equipment, hours of work or work shifts, or to accelerate procurement of materials or equipment, or any combination thereof, as schedule recovery measures to meet Contract milestones, the Contractor shall implement such schedule recovery measures without additional charge to the District.

10. TIME IMPACT ANALYSIS REQUIREMENT. When delays are experienced by the Contractor and a time extension is requested, the Contractor shall submit to the Engineer, within fifteen (15) days of the delay, a written Time Impact Analysis illustrating the influence of all changes or all delays on the current Project completion date. The time impact analysis shall be constructed on an As-Built Schedule Analysis approach. The As-Built Schedule that is created will incorporate all actual start and finish dates, actual durations of activities, and actual sequences of construction (referred to as the As-Built Logic) current as of the time the Time Impact Analysis is performed. This Time Impact Analysis shall incorporate all delays (including District, Contractor and third party delays without exception) in the time frame that they actually occurred with actual logic ties. The As-Built Schedule data shall be obtained from the most recent approved monthly schedule update. The As-Built Schedule shall be created as an early start schedule with the actual start and finish dates coinciding with the early start and finish dates from the most recent approved monthly schedule update. The

As-Built Schedule shall show the original activity durations equal to the actual duration and the actual logic driving all activities. This As-Built Schedule will be validated by the Engineer. All requests for time extension shall be based upon an analysis of this As-Built Schedule. The critical path will be established and all District-caused delays on the critical path will be identified. The time extension will be based solely upon the cumulative duration of all District and third party caused delays which are on the critical path. Any time extensions to the project's Interim Milestone Dates, if any, shall be non-compensable time extensions only.

Each Time Impact Analysis shall demonstrate the estimated time impact based on the events of delay, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest approved update of the project schedule, in effect at the time the change or delay was encountered.

11. BASIS OF SCHEDULE NARRATIVES. Contractor shall furnish a basis of schedule narrative to the Engineer with each Application for Payment. If the Work falls behind schedule, submit additional narrative at such intervals as the Engineer may request.

Each narrative shall include a summary of progress for the month, description of any current and anticipated delaying factors, a variance analysis for varying activities, impacts on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to the Engineer, must be substantiated with satisfactory evidence.

Each narrative shall include a list of the activities completed during the preceding month and a list of the activities started during the month but not yet completed. Each narrative shall clearly identify critical path activities and non-critical path activities.

12. FLOAT. Total Float is the number of days by which a part of the Work in the CPM Construction Schedule may be delayed from its early start and finish dates without necessarily extending the Contract Times. The difference in time between the Project's scheduled early completion date, as submitted, and the required Contract completion date shall be considered as float, slack time, or contingency. Float, slack time, or contingency within the schedule, and total float within the overall schedule, is not for the exclusive use of either the District or the Contractor, but is jointly owned by both parties and is a resource available to and shared by both parties as needed to meet Contract milestones and the Contract completion date.

The Contractor shall not sequester shared float through such strategies as extending activity duration estimates to consume available float, using preferential logic, using extensive crew/resource sequencing, etc. Since float time within the schedule is jointly owned, no time extensions will be granted nor delay damages paid until a delay occurs which extends the work beyond each Milestone completion date. Since float time within the construction schedule is jointly owned, it is acknowledged that District-caused delays on the project may be offset by District-caused time savings (i.e. critical path submittals returned in less time than allowed by the Contract, approval of substitution requests which result in a savings of time to the Contractor, etc.). In such an event, the Contractor shall not be entitled to receive a time extension or delay damages until all District-caused time savings are exceeded and the Contract completion date is also exceeded.

End of Section

Section 01400

QUALITY CONTROL

1. TESTING SERVICES. Testing services shall be provided by Contractor as specified herein. All tests to determine compliance with the Contract Documents shall be performed by an independent testing laboratory hired by Contractor and acceptable to Engineer. The testing laboratory shall be staffed with experienced technicians, properly equipped and fully qualified to perform the tests in accordance with the specified standards.

1.01. Contractor's Independent Testing Laboratory.

Prior to the start of work, Contractor shall submit the following information for its independent testing laboratory in accordance with Section 01300, "Submittals":

- Name, address and phone number of independent testing laboratory, and names of registered engineers and certified technicians assigned to the work.

Qualifications and duties of Contractor's independent testing laboratory shall be as follows:

- Laboratory shall be authorized to operate in the State of California.
- Testing equipment shall be calibrated and qualified, at intervals of not more than 3 years, in accordance with the procedures of the applicable national authority as evidence of competence to perform the required tests.
- Cooperate with Engineer and Contractor.
- Provide qualified personnel.
- Perform specified inspections, sampling and testing of materials, equipment and methods of construction.
- Comply with specified standards.
- Ascertain compliance of workmanship, materials and mixes with requirements of Contract Documents.
- Promptly notify the Engineer and Contractor of observed irregularities or deficiencies of work or products.

1.02. Testing Services Provided by Contractor. All tests or materials furnished by the Contractor shall be made in accordance with the commonly recognized standards of national technical organizations, and such special methods and tests as prescribed in the Specifications.

Unless otherwise specified, Contractor's independent testing laboratory shall provide all testing services in connection with the following:

- Earthwork materials testing, and laboratory soil compaction testing.
- Moisture content and in-place field density (soils compaction) tests on trench subgrade, and pipe embedment and trench backfill materials.
- CLSM strength compression tests.
- Pipeline pressure testing.
- Other tests that are specified in the Technical Specifications.
- All other tests and engineering data required for Engineer's review of materials and equipment proposed to be used in the Work.

Contractor shall obtain Engineer's acceptance of the testing firm before having services performed, and shall pay all costs for these testing services.

1.03. Test Reports. The Contractor's independent testing laboratory shall promptly submit the written report of each test and inspection as specified for submittals in Section 01300. Each report shall include the following information as applicable:

- Date issued.
- Project title and number.
- Testing laboratory name, address and telephone number.
- Name and signature of responsible laboratory person.
- Identification of product and specification section.
- Location of sample or test in the Project.
- Date and time of sampling or inspection and date of test.
- Record of temperature and weather conditions.
- Type of inspection or test.
- Results of tests and statement of compliance with or deviation from requirements of the Contract Documents.
- Interpretation of test results, when required by Specifications.

End of Section

Section 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1. OFFICES AT SITE OF WORK. During the performance of this Contract, Contractor shall maintain a suitable office near the Project site which shall be the headquarters of its representative authorized to receive drawings, instructions, or other communication or articles. Any communication given to the said representative or delivered at Contractor's office at the project site area in the representative's absence shall be deemed to have been delivered to Contractor.

Copies of the Drawings, Specifications, and other Contract Documents shall be kept at Contractor's office at the site and available for use at all times.

As specified in Section 01040, Contractor may make use of the District's Intake Pump Station parking lot area, including for establishing a project office, subject to the Engineer's approval.

The location of weekly meetings and communications protocols will be as mutually agreed between Contractor and Engineer.

2. CONSTRUCTION WATER SUPPLY. The Contractor shall be responsible for developing its own construction water supply for performing the Work. It is anticipated that Contractor will arrange to purchase water from a local water owner or provider and transport the construction water to the site by truck. Contractor can elect to set-up temporary water storage facilities at the site at its option. When construction is completed, all temporary water facilities shall be removed.

Contractor **will not be permitted** to withdraw raw water from the Nacimientto River.

3. DISCHARGE OF CONSTRUCTION WATER. Contractor is advised that discharge of construction water within the site area **is not permitted**. Contractor shall provide for the collection, transport and disposal of construction water and water collected from dewatering operations at authorized locations as shown on the Drawings.

4. ELECTRICAL POWER. All electrical power for heating, lighting, and operation of Contractor's equipment in connection with the Work to be performed under this Contract shall be provided by Contractor.

- Contractor is advised there is no temporary power available at any locations near the project site.
- Contractor's electrical power supply is anticipated to consist of several temporary portable generators and associated fuel supply.
- When construction is completed, all temporary electrical power facilities shall be removed.

All portable internal combustion engines and other portable equipment used during construction activities and rated at 50 HP or above shall possess a California statewide portable equipment registration (issued by the California Air Resources Board). If any such portable equipment does not possess said registration, Contractor shall acquire a Permit to Operate for the unregistered equipment from the San Luis Obispo County Air Pollution Control District ("APCD"). For more information, contact the APCD at (805) 781-5912.

Contractor shall make connections to the temporary power sources and shall extend temporary service lines to the required areas. Temporary wiring shall conform to Article 305 of the NEC.

5. TELEPHONE SERVICE. Contractor is advised that cell phone service at the site may not be available.

6. SANITARY FACILITIES. Contractor shall furnish temporary sanitary facilities at the site, as provided herein, for the needs of all construction workers and others performing work or furnishing services on the Project.

Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period. If toilets of the chemically treated type are used, at least one toilet shall be furnished for each 20 persons. Contractor shall enforce the use of such sanitary facilities by all personnel at the site.

7. FENCES AND GATES. All existing fences and gates affected by the Work shall be maintained by Contractor until completion of the Work. Fences and gates which interfere with construction operations shall not be relocated or dismantled until written permission is obtained from the owner of the fence or gate, and the period the fence or gate may be left relocated or dismantled has been agreed upon.

New fencing shall be provided at the project site, as follows:

- As a minimum, install temporary fencing (Type ESA) around each excavated pit area, western and eastern sides, at the end of each daily shift.

Fabric for Type ESA fence shall be high visibility, machine produced, orange colored mesh manufactured from polypropylene or polyethylene. High visibility fabric may be made of recycled materials. Materials shall not contain biodegradable filler materials that can degrade the physical or chemical characteristics of the finished fabric. High visibility fabric shall be fully stabilized ultraviolet resistant and a minimum of four feet (48 inches) in width with a maximum mesh opening of 2" x 2". High visibility fabric shall be furnished in one continuous width and shall not be spliced to conform to the specified width dimension.

Steel posts shall have a "U," "T," "L," or other cross sectional shape that resists failure from lateral loads. Steel posts shall have a minimum weight of 0.75 pounds per linear foot and a minimum length of 5.25 feet. One end of the steel post shall be pointed and the other end shall have a high visibility colored top.

- In addition, furnish and install all temporary fencing and/or barricades at locations such as excavated areas as required to comply with Cal/OSHA safety requirements.

Unless otherwise directed by the Engineer, gates shall be kept closed and locked at all times when not in use. On completion of the Work, Contractor shall restore all fences and gates to their original location and pre-construction condition.

8. DAMAGE TO EXISTING PROPERTY. Contractor will be held responsible for any damage to existing structures, work, materials, or equipment because of its operations and shall repair or replace any damaged structures, work, materials, or equipment to the satisfaction of the Engineer and at no additional cost to the District.

Contractor shall protect all existing structures and property from damage and shall provide bracing, shoring, or other work necessary for such protection.

Contractor shall be responsible for all damage to streets, roads, curbs, sidewalks, highways, shoulders, ditches, embankments, culverts, bridges, or other public or private property, which may be caused by transporting equipment, materials, or workers to or from the Work. Contractor shall make satisfactory and acceptable arrangements with the agency having jurisdiction over the damaged property concerning its repair or replacement.

9. TRAFFIC AND ROADWAY CONTROLS. Contractor shall minimize damage to roadways including haul routes. The Contractor shall be responsible for repairing damage to the roadways caused by construction activities or, as determined by the agency having jurisdiction over the roadway, for reimbursing the agency having jurisdiction on the roadways for damage caused by

construction operations. The Contractor shall be responsible for damage directly attributable to its and its subcontractor's activities and shall be responsible for repairs to return the roadways to the pre-project condition. The Engineer will periodically monitor the roadway condition and will notify the Contractor of damages and repairs that need to be implemented. All repairs shall be performed at the Contractor's expense.

Construction may cause increased traffic from transporting construction materials to the project site area and traffic delays caused by construction at or adjacent to a roadway. Contractor shall plan the transportation of materials and crews to limit traffic during peak hours. The Engineer may direct the Contractor to rearrange transportation to and from the project site area to minimize increased traffic. If transportation does need to be rearranged, such rearrangement will be at the Contractor's expense. The Contractor shall perform construction activities at roadways and at access road entrances and exits to the public roadways in such a manner to eliminate substantial traffic delays and traffic delays or detours that would last more than one week at any location. The Engineer will notify the Contractor in the event that traffic delays have or are anticipated to exceed an acceptable level or duration. In such cases, the Contractor shall, at the Contractor's expense, rearrange the work activities to reduce the delays caused by the performance of the Work.

10. TREE AND PLANT PROTECTION. All trees and other vegetation which must be removed to perform the Work shall be removed and disposed of by Contractor, subject to the approval of the Engineer; however, no trees or cultured plants shall be unnecessarily removed unless their removal is indicated on the Drawings.

Contractor shall take extra measures to protect trees specified, designated, or directed by the Engineer to be protected, by installing temporary fencing, erecting barricades, trimming to prevent damage from construction equipment, and installing pipe and other Work by means of hand excavation. Such trees shall not be endangered by stockpiling excavated material or storing equipment against their trunks.

All trimming, repair, and replacement of trees and plants shall be performed by qualified nurserymen or horticulturists.

11. SECURITY. The Contractor shall, at all times, be responsible for security of its plant, construction materials, tools and equipment. Materials and equipment shall be stored so as to ensure the preservation of their quality and fitness for the work. The Contractor shall be responsible for all damages that occur in connection with the care and protection of all materials and equipment supplied by the Contractor, until completion and final acceptance of the project work by the Engineer.

Contractor shall be responsible for protection of the site and all Work against vandals and other unauthorized persons.

Security measures may include temporary perimeter security fencing, barricades, lighting, and other measures as required for protecting the site as directed by the Engineer.

12. ACCESS ROADS. Contractor shall utilize existing roads to access various parts of the project site area as required to complete the Work. Contractor's use of such roads is subject to the requirements and permissions specified in Section 01040, "Site Access and Easement and Right-of-Way Requirements."

13. PARKING. Contractor shall provide and maintain suitable parking areas for the use of all workers and others performing work or furnishing services in connection with the Work. Avoid parking personal vehicles where they may interfere with public or private traffic, Engineer's operations, or construction activities.

14. NOISE CONTROL. Contractor shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound-muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work.

15. DUST CONTROL, EROSION CONTROL, POLLUTION CONTROL, AND TEMPORARY DRAINAGE PROVISIONS. Refer to the requirements specified in Section 10-1.03, "Water Pollution Control," and Section 10-1.04, "Construction Site Management."

End of Section

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SECTION 10. CONSTRUCTION DETAILS

SECTION 10-3. TECHNICAL SECTIONS

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Section 02202

TRENCHING AND BACKFILLING

PART 1 - GENERAL

1-1. SCOPE. This section covers earthwork requirements for pipeline, utility and conduit installation including trench excavation; handling, storing, transporting, and disposing of all excess excavated material; excavation support and trench protection; preparation and stabilization of subgrades; pipe and conduit bedding; placing and compacting pipe zone and trench zone backfill materials; dewatering; surfacing and grading; and other appurtenant work.

1-1.01. Removal of Existing Trench Support. Currently, the existing western and eastern ends of the steel pipe casing are exposed by excavations that are supported by trench shoring devices owned by others. The District has arranged to maintain the trench shoring in-place until Contractor has taken field measurements of the existing steel pipeline. Subsequently, Contractor shall remove the existing trench shoring devices and stockpile them onsite for removal by others. Contractor shall install its own trench shoring devices as part of its excavation in these areas.

1-2. GENERAL. With reference to the terms and conditions of the construction standards for excavations set forth in OSHA "Safety and Health Regulations for Construction", Chapter XVII of Title 29, CFR, Part 1926, Contractor shall employ a competent person and, when necessary based on the regulations, a registered professional engineer, to act upon all pertinent matters of the work of this Section.

1-3. SUBMITTALS. Submit the following in accordance with the requirements specified in Section 01300, "Submittals."

- Detailed information and test results regarding all earthwork materials required for use on the project. Testing shall be performed by Contractor's certified testing laboratory. Submit lab testing results, which shall include:

Materials tests indicating type of each material and composition, source, gradation, Atterberg limits, classification, durability, and hardness; two gradation tests for each material.

Laboratory soil compaction testing for each material type.

Results of field testing (Paragraph 3-5).

- Submit Certificates of Compliance for imported materials. The certificates shall name the sources of materials, test results, and other special requirements. The Contractor shall not change sources during the job unless another certificate is prepared, submitted, and approved.
- Submit a detailed plan showing the design and installation of all excavation support systems.
- Submit proposed procedures for placement and compaction of pipeline bedding, pipe zone backfill and trench zone backfill materials.
- Submit drawings showing any proposed clearing and grubbing limits, as applicable.

1-4. BASIS FOR PAYMENT. Not Used.

1-5. LABORATORY TESTS. As specified in Section 01400, "Quality Control," all tests required for preliminary review of materials shall be made by an acceptable certified testing laboratory at the expense of the Contractor. Required materials tests by Contractor are specified in this section.

Field testing requirements are specified in Section 01400 and herein.

1-6. LABORATORY COMPACTION TEST METHODS. The following standard testing methods shall be used in determining maximum dry densities for earthwork materials used as follows:

For free-draining earthwork materials that may contain up to 10 percent, by weight, of soil particles passing a No. 200 sieve: ASTM D4253.

For earthwork materials that contain 10 percent or more, by weight, soil particles passing a No. 200 sieve: ASTM D1557.

As used for the work of this project, "percent compaction," "percent relative compaction" or "percent maximum density" shall be taken as follows:

For materials subject to the requirements of ASTM D4253, percent compaction or percent relative compaction refers to the ratio of field-measured in-place dry density of the material to its maximum index density determined in the laboratory using ASTM D4253.

For materials subject to the requirements of ASTM D1557, percent maximum density refers to the ratio of field-measured in-place dry density of the material to the dry density at optimum moisture content (maximum density) determined in the laboratory using ASTM D1557.

1-7. DEWATERING. All permanent improvements shall be constructed in areas free from water. The Contractor shall construct and maintain all permanent or temporary slopes, dikes, levees, drainage ditches, and sumps necessary for removal of water from work areas. The Contractor shall design, furnish, install, maintain, and operate all necessary pumping and other dewatering equipment required for dewatering the various work areas and for maintaining the foundation and other work areas free from water from any and all sources whatsoever. Dewatering shall be accomplished by methods that will ensure a dry excavation and preserve the final lines and grades of the bottoms of excavations.

Dewatering of trenches and other excavations shall be considered as incidental to the construction of the Work and all costs thereof shall be included in the prices provided in the Bid Proposal Form.

The dewatering shall be accomplished in a manner that will maintain stability of all excavated slopes and bottoms of excavations, and will permit all construction operations to be performed in dry, stable conditions. Dewatering of excavations shall be performed to the extent required to permit placement of compacted fill materials in the dry and to prevent sloughing of the excavation side slopes.

Requirements for the Contractor's disposal of water generated by dewatering operations are specified in Section 01500, "Construction Facilities and Temporary Controls."

PART 2 - PRODUCTS

2-1. MATERIALS.

2-1.01. Sand. Sand shall be free from clay or organic material, and shall be of such size that 90 percent to 100 percent will pass a No. 4 sieve and not more than 5 percent will pass a No. 200 sieve.

2-1.02. Crushed Rock. Crushed rock for uses as shown on the Drawings shall be an imported material that consists of durable rock and gravel that is free from slaking or decomposition under the action of alternate wetting and drying, and free of hazardous or deleterious materials/substances. Crushed rock shall meet the following gradation requirements:

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
1 inch	100
3/4 inch	90 – 100
No. 4	0 – 10
No. 200	0 – 2

Crushed rock shall have a durability index of not less than 40 as determined by California Test Method 229 and a sand equivalent value of not less than 75 as determined by ASTM Test Method D2419.

2-1.03. Pea Gravel. Pea gravel shall be washed, free-flowing, and free of hazardous or deleterious materials/substances. Pea gravel shall meet the following gradation requirements:

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
1/2 inch	90 – 100
3/8 inch	40 – 70
No. 4	0 – 15
No. 8	0 – 5

2-1.04. Aggregate Base. Aggregate base shall be in accordance with the requirements specified for Class 2 Aggregate Base, Section 26 of the Caltrans Standard Specifications.

2-1.05. Native Materials. To the maximum extent available, use of native materials obtained from trench excavations for trench backfill will be allowed provided the material is demonstrated by Contractor to be “suitable.” “Suitable” materials are those which can be placed and compacted to meet the specified requirements.

Additional material to make up any deficiencies in suitable materials shall be provided from Contractor’s off-site source. No borrow pits shall be opened on the site.

Whatever the source, material used for fill and trench backfill shall also have the following properties or characteristics:

- Less than 30 percent of the material shall be retained on the ¾-inch sieve.
- No less than 15 percent of the material shall pass the No. 200 sieve.

- All material placed in trenches as backfill shall be free from rocks and stones greater than 1-inch in size, unbroken clods of soil greater than 1-inch in size, brush, stumps, logs, roots, debris, and other organic, hazardous and deleterious materials/substances.
- Materials can be placed and compacted to meet the specified requirements and will not cause damage to any elements of the Work.

2-1.06. Controlled Low Strength Material (CLSM). Fills at certain locations shall be made by using controlled low strength material (CLSM), where shown on the Drawings, meeting the requirements specified for "Slurry Cement Backfill" in Section 19 of the Standard Specifications.

2-1.07. Water for Compaction and Other Uses. Water shall be free of organic materials and shall have a pH of 7.0 to 9.0, a maximum chloride concentration of 500 mg/L, and a maximum sulfate concentration of 500 mg/L. Requirements for construction water needed for earthwork and other uses are specified in Section 01500, "Construction Facilities and Temporary Controls."

PART 3 - EXECUTION

3-1. CLEARING. All clearing shall be performed as necessary for access, stringing of pipeline materials, and construction of appurtenant works. Except as otherwise specified or shown to be protected, trees, shrubs, vegetation, grasses, etc. within the limits of the Work shall be sufficiently cleared and disposed of to allow construction of the work. Remove and dispose of trees, snags, stumps, shrubs, brush, limbs, sticks, branches, and other vegetative growth. Remove rocks, tiles, and lumps of concrete. Remove all evidence of their presence from the surface. Remove and dispose of trash piles, rubbish, and fencing.

Protect structures and piping above and belowground, trees, shrubs, and vegetative growth and fencing which are not designated for removal.

3-2. TRENCH EXCAVATION. Trench excavations shall provide adequate working space and clearances for the work to be performed therein and for the placement and compaction of pipe bedding, pipe zone, and trench zone materials. Excavation and trenching work shall include the removal and subsequent handling of all materials excavated or otherwise removed in performance of the work, regardless of the type, character, composition, or condition thereof.

3-2.01. Blasting. Blasting or other use of explosives for excavation will not be permitted.

3-2.02. Excavation Support. Except where banks are cut back on a stable slope, excavations for pipeline, utility and conduit trenches, and for jacking and receiving shafts/pits for pipejacking operations, shall be supported in accordance with the requirements specified in 29CFR1926, Subpart P – Excavations, Cal/OSHA requirements, and the General Conditions, to prevent caving, sliding and settlement.

Excavation support systems shall be designed by a professional Civil or Structural Engineer who is retained by the Contractor and is registered in the State of California. In all areas, excavation support systems shall be designed to support earth pressures, unrelieved hydrostatic pressures, utility loads, equipment, applicable traffic loads, and other surcharge loads in such manner as will allow safe construction and will prevent damage to adjacent structures (including existing pipelines and utilities) and injury to workers and the public. Design support system to maintain the stability of the excavation against sliding or bottom heave. In addition, the installation of excavation support systems shall not cause a disruption to public convenience or access.

Excavation support systems shall be furnished and installed as necessary to limit the extent of excavations and trenches for deeper structures and pipelines and to protect adjacent structures and facilities from damage due to excavation and subsequent construction. Contractor shall assume complete responsibility for, and install adequate protection systems for prevention of damage to existing facilities.

Contractor shall maintain excavation support systems as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed work.

Trench support systems may be removed if the pipe strength is sufficient to carry trench loads based on trench width to the back of the support system. Trench support systems shall not be pulled after backfilling. Where the trench support system is left in place, it shall not be braced against the pipe, but shall be supported in a manner which will preclude concentrated loads or horizontal thrusts on the pipe. Cross braces installed above the pipe may be removed after pipe zone backfill placement and compaction has been completed. Trench support systems shall be removed unless otherwise permitted by the District. The trench support system shall not be removed, if in the opinion of the District, removal of the support system will cause settlement or damage to the facility it is protecting. If left in place, the support system shall be cut off 12 inches below finished grade. The design of the support system shall be such as to permit complete removal while maintaining safety and stability at all times.

3-2.03. Trench Subgrade Stabilization. Subgrades for pipe and conduit trench bottoms shall be firm, dense, and thoroughly compacted and consolidated; shall be free from mud, muck and standing water; and shall be sufficiently stable to remain firm and intact under the feet of the workers.

After the required excavation has been completed, the District will inspect the exposed subgrade to determine the need for any additional excavation. Additional excavation shall be performed in all areas within the influence of the pipeline where unacceptable materials exist at the exposed subgrade. Overexcavation shall include removal of all such unacceptable material extending to the entire width of the trench to the depth required.

Subgrades which are otherwise solid, but which become unstable or mucky on top due to construction operations, shall be reinforced with crushed rock contained within a geotextile fabric envelope. The finished elevation of stabilized subgrades shall be at or below the subgrade elevations required for the pipeline installation elevations indicated on the Drawings.

3-2.04. Minimum Trench Widths. Trench widths in the pipe zone shall be as shown on the Drawings. If no widths are shown, the minimum width shall be 18 inches greater than the pipe outside diameter. Specified minimum sidewall clearances are not minimum average clearances but are minimum clear distances required from the pipe wall to the inside of the trench excavation support system.

The minimum trench width used for pipeline installation shall be appropriate for the type of pipe bedding and pipe zone backfill material used, as well as the method of compaction selected by the Contractor and approved by the District.

Trench width at the top of the trench is not limited except where needed to protect adjacent structures and facilities from damage due to excavation and subsequent construction.

Excavating trench banks on slopes to reduce earth load to prevent sliding and caving shall be used only in areas where the increased trench width will not interfere with surface features or encroach on easement or right-of-way limits.

3-2.05. Mechanical Excavation. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to trees, buildings, culverts, or other existing property, utilities, or structures above or below ground. In all such locations, hand-excavating methods shall be used.

Mechanical equipment used for trench excavation shall be of a type, design, and construction, and shall be so operated, that the rough trench excavation bottom elevation can be controlled, and that trench alignment is such that pipe, when

accurately laid to specified alignment, will be centered in the trench with adequate sidewall clearance. Undercutting the trench sidewall to obtain sidewall clearance will not be permitted.

In the case of overexcavation of the trench width or depth, whether intended or accidental, Contractor shall replace the overexcavated areas with the material that is specified or shown for "pipe bedding".

3-3. PIPE BEDDING and PIPE ZONE BACKFILL. Materials for pipe bedding and pipe zone backfill shall be as shown on the Drawings. Requirements for compaction shall be as specified below.

3-3.01. Placement and Compaction. Pipe bedding material shall be spread and the surface graded to provide a uniform and continuous support beneath the pipe at all points. Sufficient pipe zone backfill material shall be deposited and compacted under and around each side of the pipe to hold the pipe in proper position and alignment during subsequent backfill operations.

Backfill material shall be deposited and compacted uniformly and simultaneously on each side of the pipe to prevent lateral displacement.

Pipe zone backfill material shall be compacted to the top of the pipe in all areas. Each lift of pipe zone backfill material shall be compacted with mechanical equipment during placement to ensure that all spaces beneath the pipe are filled. Material shall be placed in maximum lift thicknesses of 6 inches, and each lift of material shall be compacted using a vibratory plate compactor.

Compaction requirements for pipe bedding and pipe zone backfill materials shall be as specified herein:

- For free-draining earthwork materials that may contain up to 10 percent, by weight, of soil particles passing a No. 200 sieve per ASTM D4253, the material shall be placed and compacted to 90 percent relative compaction.

3-4. TRENCH ZONE BACKFILL. Materials for trench zone backfill and requirements for compaction shall be as follows:

- Unless otherwise specified or shown, trench zone backfill materials shall be sand, aggregate base, or suitable native material derived from trench excavations and processed for re-use as specified herein.

Compacted backfill will be required for the full depth of the trench above the pipe zone. Except as otherwise shown on the Drawings, minimum compaction requirements shall be 90 percent relative compaction.

The upper portion of the trench shall be constructed to conform to the pre-construction condition.

3-5. FIELD TESTING. As specified in Section 01400, "Quality Control," all in-place field density and moisture content tests shall be made by Contractor's independent testing laboratory. Contractor shall provide access to the materials and work area and shall assist the laboratory as needed in obtaining representative samples.

3-5.01. Required Field Tests. Frequency of field tests shall be as listed below. Additional tests may be performed by Contractor at its option as necessary for job conditions to verify compliance with specification requirements.

- a. Moisture content and in-place density tests of trench subgrade, two locations at each connection pit – for both west and east sites.
- b. Moisture content and in-place density tests of pipe zone and trench zone backfill materials, 2 lifts at each connection pit, for both west and east sites.
- c. Testing of CLSM: Three sets of compressive strength test cylinders for CLSM placed, tested in accordance with ASTM C39 at 7 days and 28 days.

3-6. DRAINAGE MAINTENANCE. Backfilling shall be performed so that water will not accumulate in unfilled or partially filled trenches. All material deposited in roadway ditches or other watercourses crossed by the line of trench shall be removed immediately after backfilling is completed, and the original section, grades, and contours of ditches or watercourses shall be restored. Surface drainage shall not be obstructed longer than necessary.

3-7. FINAL GRADING. All areas which are to be graded shall be brought to grade at the indicated elevations, slopes, and contours. All cuts, fills, embankments, and other areas which have been disturbed or damaged by construction operations shall be surfaced with topsoil to a depth of at least 4 inches. Topsoil shall be of a quality at least equal to the existing topsoil in adjacent areas, free from hazardous and deleterious materials/substances, trash, stones, and debris, and well suited to support plant growth.

3-8. DISPOSAL OF EXCESS EXCAVATED MATERIALS.

All excess excavated materials shall be disposed of away from the site. The Contractor shall make its own arrangements for offsite disposal of excess excavated earthwork materials / soils in accordance with all applicable laws and regulations.

End of Section

Section 02312

INSTALLATION OF HDPE CARRIER PIPE

PART 1 – GENERAL

1-1. DESCRIPTION. This Section includes requirements for installation of the HDPE carrier pipe inside of the existing steel casing at the Nacimiento River crossing. Installation of the HDPE carrier pipe shall utilize specialized equipment and means and methods typically used for installation of pipelines using horizontal directional drilling (HDD) construction methods. The existing steel casing pipe at the Nacimiento River crossing was previously installed using HDD construction methods.

Requirements for the HDPE pipe material and accessories are specified in Section 02634. Requirements for trenching and backfilling are specified in Section 02202. Requirements for pressure and leakage testing are specified in Section 02704.

1-1.01. HDPE Carrier Pipe Installation Experience. The Work of this Section shall be performed by a California-licensed contractor (Class A or C-34) that has extensive experience with installation of pipelines using horizontal directional drilling (HDD) construction methods and operation of specialized HDD equipment. The HDD construction experience is required because the existing steel casing pipe was constructed by the HDD construction method and the HDPE carrier pipe to be installed shall follow the same vertical and horizontal alignment as the existing steel casing pipe.

- The contractor performing the HDPE carrier pipe installation shall have successfully completed at least five (5) pipeline installations over the last five (5) years using the HDD construction method. Each HDD pipeline installation shall be 24-inch minimum diameter pipe with an HDD length of not less than 1,500 feet. For purposes of demonstrating experience, carrier pipe materials may have included steel, ductile iron, fusible PVC and/or HDPE. At least one project shall have involved the HDD installation of HDPE carrier pipe. At least one project shall have involved HDD pulling forces of greater than 150,000 pounds.
- The Contractor shall assign a superintendent to direct the HDPE carrier pipe installation that is experienced in HDD construction and has successfully completed at least five (5) pipeline installations using HDD equipment and construction methods similar to that required for this project.

- The contractor's experience record indicating all projects demonstrating the required experience shall be submitted with the Bid. The experience record shall include names of projects; project owners; and names of contacts including basic contact information. For each HDD pipeline installation, provide carrier pipe material and diameter; and HDD segment length(s). If HDD work was performed as a subcontractor, the record shall include name of general (Prime) contractor, name of contact, and essential contact information.
- The superintendent's experience record / resume shall be submitted as specified in Section 10-1.01, "Order of Work."
- Work completed by a subcontractor shall not be included as experience.

1-1.02. Pulling Rig Capacity. The pulling equipment used for the Work shall be of sufficient capacity to successfully complete the HDPE carrier pipe installation. The pulling rig equipment shall be capable of achieving a minimum pullback capacity of 340,000 lbs.

1-2. SCOPE OF WORK. The HDPE carrier pipe installation shall be performed in accordance with the requirements specified herein and as shown on the Drawings.

1-2.01. General HDPE Pipe Installation Sequence

The HDPE carrier pipe shall be installed inside of the existing steel pipe, referred to herein as the steel casing pipe, which was previously installed by HDD. For this project, the first phase consists of cleaning the steel casing pipe. The second phase consists of placing the pulling steel rods inside of the steel casing pipe. The third phase consists of pulling the HDPE carrier pipe entirely through the steel casing pipe and making preparations for the end connections.

1-2.02. Cleaning the Steel Casing Pipe.

The Contractor shall clean the steel casing pipe by performing swabbing and mandrel testing by operating from the pulling rig. Sediment and debris inside the steel casing pipe shall be removed and disposed of.

1-2.03. Placing the Pulling Steel Rods.

The pulling steel rods shall be placed into the steel casing pipe and advanced to the opposite end by the pulling rig in order to provide a means by which to pull the HDPE carrier pipe into the steel casing pipe. The pulling steel rods shall be fitting with a head device that allows for rod placement without causing damage to the steel casing pipe.

1-2.04. HDPE Carrier Pipe Pullback.

The HDPE carrier pipe sections shall have been joined together and the single pipe string moved into position for a single pullback. The pulling rig shall be used to pull the HDPE carrier pipe into position from one side of the crossing to the other. As the HDPE carrier pipe is pulled into the steel casing pipe, a slight elongation due to the nature of the pipe material and change in ambient temperature may occur; the Contractor should allow a minimum 12-hour relaxation period for the HDPE carrier pipe to adjust to its normal state prior to performing the post-pullback pressure test.

1-3. PROJECT CONDITIONS.

1-3.01. Steel Casing Pipe Information.

The existing steel casing pipe is as indicated on the Drawings. As described in Paragraph 1-1.01 of Section 02202, "Trenching and Backfilling," the entry and exit inspection pits have been partially constructed to expose the existing steel casing pipe and are provided to the Contractor in an "as is" condition.

The steel casing pipe dimensions shown on the Drawings are nominal dimensions. In 2014, the District completed a limited program of internal pipe measurements at approximately fifty (50) locations along the length of the steel casing pipe, with measurements taken at 12:00, 1:30, 3:00 and 4:30 positions.

The minimum pipe inside diameter was found to be 29.51 inches in the 12:00 o'clock position. At the same location, the pipe ID at the 3:00 o'clock position was 29.85 inches.

1-4. PROTECTION OF EXISTING UTILITIES. The Contractor shall locate all utilities and structures prior to start of excavation to entry or exit pits; refer to the requirements specified in Section 10-1.06, "Protection of Existing Facilities."

Pursuant to Government Code Section 4216 - 4216.9, the Contractor shall notify the appropriate regional notification center of all excavations as required under Government Code Sections 4216 - 4216.9. The Contractor shall contact Underground Service Alert at 1-800-642-2444 for the location of subsurface installations. Contractor shall furnish to the Engineer written documentation of its contact(s) with Underground Service Alert (and any other regional notification center within five (5) days after such contact(s).

Existing fiber optic pull boxes, conduits, and cable; NWP pipeline; utility lines; structures; and corrosion monitoring station(s) indicated on the Drawings shall remain in service at all times and shall be protected by the Contractor from any damage as a result of its operations. Where utility lines or structures not shown on the Drawings are encountered, the Contractor shall report them to the

Engineer before proceeding with the Work. The Contractor shall bear the cost of repair or replacement of any utility lines or structures which are broken or damaged by its operations.

1-5. PULLBACK OPERATIONS – GENERAL REQUIREMENTS. The Contractor shall have full responsibility for determining and defining its HDPE carrier pipe installation and pullback operations, subject to the following general requirements:

- The HDPE carrier pipe material has a limitation on the maximum pulling force that it can withstand. Consult with the pipe manufacturer to determine the maximum allowable safe pulling force including a suitable factor of safety.
- Theoretical pullback force calculations. Based on its planned means and methods, methods of pipe support and rigging, construction conditions and other factors involved, Contractor shall determine the maximum anticipated HDPE carrier pipe pulling forces and ensure that the anticipated forces are less than the maximum allowable safe pulling force. Calculations shall clearly state when carrier pipe is filled with water. Incremental filling of the carrier pipe shall be permitted.
- Pulling steel rod insertion and pullback entrance and exit angles shall match the vertical and horizontal alignment of the existing steel casing pipe.
- The HDPE carrier pipe shall have a maximum outside diameter as shown on the Drawings. The HDPE carrier pipe shall have a minimum wall thickness and strength to withstand pullback operation and installation loads as a result of the installation method, procedure, equipment, and practices used by the Contractor. The carrier pipe shall be manufactured and fused in accordance with the requirements specified in Section 02634.

1-6. NOT USED.

1-7. DEFINITIONS

- HDPE Carrier Pipe. The HDPE pipe which conveys raw water and is installed inside of the existing steel casing pipe.
- Steel Casing Pipe. The existing steel pipe previously installed at the Nacimiento River crossing by HDD methods, used to support the ground, and into which the HDPE carrier pipe is installed.
- Entry Pit. General location where the pulling rig is located and the pull steel rods enter the steel casing pipe.
- Exit Pit. General location of the HDPE carrier pipe before it enters the steel casing pipe during pullback.

- Pulling Rig – Equipment used to install the HDPE carrier pipe inside of the existing steel casing pipe. In this project the pulling rig will need to pull the carrier pipe through the existing steel casing pipe that had previously been installed using the horizontal directional drilling (HDD) construction method. The pulling rig shall operate within the predetermined path defined by the existing steel casing pipe.
- Pulling Steel Rods – The pulling steel rods are used to pull the carrier pipe through the existing steel casing pipe to the pulling rig from the end of the steel casing pipe opposite the pulling rig.
- Pulling Steel Rods Head – Tool or device placed on the advancing end of the pulling steel rods to protect the existing steel casing pipe from damage, during the advancement through, or the pullback from, the opposite end of the existing steel casing pipe. A pullback swivel shall be placed between the head and the carrier pipe to limit torsion transmitted during the pullback operation.
- Pullback. The operational sequence where the HDPE carrier pipe is pulled into and through the steel casing pipe.
- Slurry. A fluid consisting of water, bentonite, and polymers, used to lubricate the steel pipe casing in a closed loop system for the pullback of the HDPE carrier pipe. Slurry is a fluid designed with specific engineering properties which may include density, viscosity, and gel strength. The fluid can be used at Contractor's option as a lubricant to reduce friction.
- Slurry Separation. A process where solids are separated from the circulating slurry.
- Swab. An operational sequence where the steel casing pipe is cleared by the passing of a specially-sized tool. This step is typically performed just before the pullback. This operation typically has the operational forces exerted towards the pulling rig.

1-8. SAFETY, CODES, AND REGULATIONS

The Contractor shall carry out its operations in strict accordance with the equipment manufacturer's safety requirements. It is the Contractor's responsibility to ensure that personnel protective equipment necessary for the various working conditions is available and utilized by all of its staff and subcontractors.

All Work covered by this section shall be performed in accordance with the applicable Federal and State codes and laws which pertain to such Work and supplemental regulations which are contained in these specifications. In case of conflict between these specifications and any federal or state codes or laws, the most stringent shall govern. Such codes and laws include, but are not limited to, the following:

- The “General Construction Safety Orders” and “Trench Construction Safety Orders” of the State of California, Dept. of Industrial Relations, Div. of Occupational Health and Safety.
- Confined space entry requirements of the State of California and the Federal Government.
- Other applicable laws, codes, and regulations.

1-9. QUALITY CONTROL. The Contractor shall be responsible for quality control for the duration of the project.

The Contractor shall maintain a complete set of project records, including daily activity log.

The Contractor shall ensure all equipment and components are appropriately sized for the work to be performed.

1-10. SUBMITTALS. Submit the following items in accordance with the requirements specified in Section 01300, “Submittals.” The submittals of this Section shall be prepared by the contractor performing the HDPE carrier pipe installation.

1-10.01. Site Staging and Use of Site.

- A site plan drawing showing locations of equipment placement and planned use of the entry/exit pits and staging areas.
- Entry and exit pit construction, addressing requirements specified in Section 02202.
- Methods of maintaining and protecting the jobsite.

1-10.02. HDPE Carrier Pipe Installation Procedures.

- Description of steel casing pipe cleaning procedures.
- A detailed description of the HDPE carrier pipe installation procedure including but not limited to: set-up of pulling equipment and method of installation / pullback plan.
- Theoretical pullback force calculations.
- Drawing showing methods for supporting HDPE carrier pipe during pullback, locations of cranes, pipe supports, etc.

- Description of accessories planned for use, such as pulling head, and swabbing and mandrel devices.
- Description of means for protecting HDPE carrier pipe and steel casing pipe from damage due to pullback operations.

1-10.03. Pulling Rig Equipment.

- Description of pulling rig equipment and components, and manufacturer's pre-printed specification sheet or letter demonstrating pulling rig meets minimum pullback capacity requirements.
- Description of equipment thrust and pullback system details, including capacity, and method of control to prevent the maximum allowable safe pulling force from being exceeded.
- Description of methods used to protect the existing NWP pipeline against damage from excessive loading due to the weight of the pulling rig placed over the top of the pipe.

1-10.04. Other.

- Details of slurry system component, slurry separation methods, materials, and operating pressures, if used in the Work. Material safety data sheets for all slurry fluids and additives for acceptance prior to material being brought on site. Details on removal and disposal of slurry fluids.
- Sample daily log and pullback operations log demonstrating required information will be collected.

1-10.05. Contingency Plans. Prior to mobilizing for pullback operations, a list of materials and equipment maintained on site for each contingency plan developed for the condition when:

- Pulling steel rods or HDPE carrier pipe are unable to be advanced or retrieved with pulling rig.
- The pulling forces start to move up rapidly and reasonable concern exists for completing construction.
- A swivel or pulling head breaks during HDPE carrier pipe installation.
- Slurry fluid spills occur on dry land.

1-10.06. Documentation During and After Construction.

Daily Logs: A copy of the log shall be submitted to the District at the end of each shift. These documents shall include but not be limited to:

- Start and finish time of each section of pull steel rod advancement, swabbing, and pipe pullback.
- Work progress shall be recorded on a daily basis. Include starting and finish times for each crew shift each day
- Details of any unusual conditions or events.
- Position of pulling head in relation to steel casing pipe.
- Slurry operating pressure and planned pressure (if applicable).
- Maximum forces exerted on the HDPE carrier pipe.

1-10.07. Inspection and Test Reports. Submit the following:

- Datalog of field fusion joints (Section 02634).
- Pressure test plan to be completed before commencement of HDPE carrier pipe pullback (Section 02704).
- Passing pressure test results before commencing HDPE carrier pipe pullback and upon completion of HDPE carrier pipe pullback (Section 02704).

1-10.08. As-Built Information. The Contractor shall submit:

- As-built drawings demonstrating carrier pipe is installed within design parameters.

1-10.09. Experience Record. Submit experience record / resume for superintendent demonstrating experience specified in Paragraph 1-1.01 of this Section.

PART 2 - PRODUCTS

2-1. MATERIALS

2-1.01. Supply and Disposal of Construction Water. The Contractor shall be responsible for obtaining, transporting, and storing water required for performing the Work. Construction water supply requirements and requirements for the offsite disposal of construction water are specified in Section 01500, "Construction Facilities and Temporary Controls."

Disposal of slurry, if used, shall be at an offsite location in accordance with all applicable laws and regulations.

2-1.02. HDPE Carrier Pipe. Furnish the HDPE carrier pipe in accordance with the requirements specified in Section 02634. Furnish sufficient lengths of pipe to account for field assembly, thermal effects, and for making connections after pullback.

In addition, Contractor shall purchase and have available onsite two (2) additional 50-foot long sections of HDPE pipe to be treated as "spare pipe". The sections of spare pipe will be paid for by District under Bid Item No. 6 – All Other Work (See Section 01025, "Measurement and Payment."). The purpose of the spare pipe is to ensure sufficient length of pipe is available onsite to complete the Work. Contractor shall deliver the spare pipe to the District at the site and store it in a secure location. If the Contractor needs to make use of any portion of the spare pipe it shall confer with the Engineer.

2-2. HDD EQUIPMENT.

The HDD equipment used for the HDPE carrier pipe installation shall be sized by the Contractor for the anticipated project conditions, subject to the minimum capacity requirements specified herein; specifically, the pulling rig and pulling steel rods.

Slurry equipment, if used, shall be selected and sized for the anticipated project conditions.

Equipment shall be maintained and operated consistent with manufacturer's written recommendations, Cal/OSHA requirements, and any permit requirements.

PART 3 - EXECUTION

3-1. MOBILIZATION AND SITE PREPARATION

The Contractor shall mobilize all necessary personnel, equipment and materials for performing the Work. Working and staging areas, easements, and planned locations for positioning of equipment and pipe are shown on the Drawings.

3-1.01. Pulling Rig Side of Crossing.

The pulling rig side of the crossing shall contain the pulling rig; pulling steel rod storage; water pumps; slurry mixing tank, pumps, and separation equipment (if used); entrance point slurry containment pit; and additional tank storage as required. Runoff shall be prevented from discharging into the surrounding area.

3-1.02. Pipe Side of Crossing.

The pipe side of the crossing shall contain an exit point slurry containment pit, additional tank storage as required, and HDPE carrier pipe. Runoff shall be prevented from discharging into the surrounding area.

3-1.03. Direction of Pullback.

For easement acquisition purposes, the District has elected for the HDPE carrier pipe to be installed at the crossing by pulling from the east side, as shown on the Drawings. The Contractor shall review and confirm this method of installation is acceptable.

3-2. INSTALLATION OF HDPE CARRIER PIPE

3-2.01. Steel Casing Pipe Alignment and Profile.

The as-built plan and profile for the existing steel casing pipe is shown on the Drawings.

3-2.02. HDPE Carrier Pipe Pre-Assembly and Inspection.

Prior to pullback, the Contractor shall pre-assemble and pressure test the HDPE carrier pipe as shown on the Drawings and as specified in Sections 02634 and 02704. All Work shall be performed by qualified personnel in a manner consistent with the approved submittals.

The Contractor and Engineer shall perform a visual inspection of the assembled carrier pipe prior to pullback. Any segment of the pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than five percent (5%) of the wall thickness shall not be used and shall be removed from the site.

The Contractor shall provide all temporary fittings, thrust restraint, pressure testing heads and work necessary to complete the above ground testing of the pre-assembled HDPE carrier pipe.

All tests shall be 100 percent passing for all required inspections before commencing pullback. All repairs to the pipeline and conduits shall be in accordance with manufacturer's written instructions with qualified personnel.

All costs for inspection shall be included in the Contract Price.

3-2.03. HDPE Carrier Pipe Supports and Lifting.

The Contractor shall provide suitable and adequate supports and rollers along the laydown space to support the pipe during carrier pipe assembly and installation. The carrier pipe shall not be subjected to abrasion.

The HDPE carrier pipe shall be lifted using fabric slings with sufficient strength and width to safely pick up the pipe without strap failure and without causing scrapes or cuts to damage the pipe. Lifting with cable or chain shall not be permitted. Lifting one end of the pipe and dragging the pipe into position shall not be permitted. The pipe shall at all times, including during installation, be protected from impact and abrasion. Pipe shall be stored on supports, blocking, or rollers at all times in a manner to prevent damage.

3-2.04. Insertion of Pulling Steel Rods.

The pulling steel rods shall be fitting with a head device that allows for rod placement without causing damage to the steel casing pipe.

The position of the pulling steel rod head shall be monitored by the Contractor in such a way as to know the location of the head during pulling steel rod placement and carrier pipe pullback. This information is needed in case implementation of a contingency plan is required.

3-2.05. Pullback.

Prior to pullback, the Contractor may fill the steel casing pipe with water and/or slurry as a means to reduce friction and therefore reduce the required pulling force during construction. If the HDPE pulling end is left open, then water and/or slurry will also fill the inside of the HDPE carrier pipe during pullback.

Pullback operation shall be non-stop until the carrier pipe has been pulled into the steel casing pipe with sufficient length of pipe extending beyond the ends of the casing for temperature, stress relaxation, connection to the existing steel pipeline, and gouge inspection purposes.

At completion of pullback, but prior to post-pullback pressure testing, if Contractor has utilized a slurry as a part of the pullback operation, Contractor shall flush the inside of the HDPE pipe to remove the slurry, leaving the pipe filled with clean water only. In accordance with the requirements specified in Section 10-1.04, "Construction Site Management," the Contractor shall be responsible for the provision, storage and disposal of all fluids and spoils.

If only water is used during pullback (i.e., no slurry used), then the HDPE pipe flushing step can be omitted.

3-2.06. Post-Pullback Testing and Inspection.

After pullback, and HDPE pipe flushing as applicable for slurry, the Contractor shall pressure test the HDPE carrier pipe as shown on the Drawings and as specified in Sections 02634 and 02704.

3-3. REQUIREMENTS FOR END CONNECTIONS

The HDPE carrier pipe shall be interconnected with the existing steel pipeline at each side of the crossing. Details and requirements for making the interconnections are shown on the Drawings.

3-3.01. Final Flushing. After the Contractor completes the end connections and the project is ready-for-final-testing-and-startup as specified, the District will operate the Nacimiento Water Project for five (5) calendar days to flush the system; refer to Section 10-1.01, "Order of Work."

3-4. ENVIRONMENTAL REQUIREMENTS

Environmental mitigation measures shall be as specified in Section 10-1.02, "Environmental Mitigation Measures." The Contractor's work shall be in compliance with all conditions and mitigation measures required.

The ends of all pipe shall be closed at the end of each daily shift.

In accordance with the requirements specified in Section 10-1.04, "Construction Site Management," the Contractor shall be responsible for the storage and disposal of all fluids and spoils.

The Contractor shall provide sanitation and garbage facilities on both sides of the crossing. Waste shall be collected and transported offsite for disposal. Food-related trash shall be removed daily.

End of Section

Section 02634

HIGH DENSITY POLYETHYLENE (HDPE) CARRIER PIPE

PART 1 - GENERAL

1-1. SCOPE. This Section covers requirements for furnishing high density polyethylene (HDPE) pressure pipe to be installed at the Nacimiento River crossing. HDPE pressure pipe shall be furnished and installed complete with all fittings, jointing materials, anchors, blocking, encasement, and other necessary appurtenances.

Pipeline pressure and leakage tests and cleaning are covered in Section 02704. Pipe trenching, bedding, and backfill for open cut construction are covered in Section 02202. HDPE carrier pipe installation is covered in Section 02312.

1-2. GOVERNING STANDARD. Except as modified or supplemented herein, all HDPE pressure pipe and fittings shall be PE4710 and conform to the applicable requirements of ASTM F714 and ANSI/AWWA C906.

1-3. SUBMITTALS.

1-3.01. Drawings and Data. Drawings and data shall be submitted in accordance with Section 01300, "Submittals". Drawings and data shall include, but shall not be limited to, the following:

- Detailed pipe physical and material parameters.
- Detailed material storage and handling requirements.
- Details of joints and required joining methods.
- Gasket material.
- Backing ring and hardware.
- Pipe length.
- Affidavit of Compliance (ANSI/AWWA C906 Sec. 6.3).
- Certification of Compliance (ASTM F714, Sec. 8.1).
- Quality Assurance Testing (ANSI/AWWA C906 Sec. 5).
- Certification of pipe manufacturer's field representative.
- Details of field joint fusion equipment and butt fusion jointing procedures.
- Product data for manufactured items specified, such as flex restraints.
- Pipe manufacturer's published criteria for visual inspection of field fusion joints.

Written certification that field fusion joints have been made in accordance with the pipe manufacturer's published instructions.

Data logging of fusion parameters at each fused joint. Hardcopy printouts shall be submitted to the Engineer at the end of each day during pipe fusion work.

1-4. QUALITY ASSURANCE.

1-4.01. Pipe Manufacturer's Field Representative. The pipe manufacturer shall provide the services of an experienced, competent, and authorized representative to visit the site of the Work to advise and consult with Contractor during joining and installation of the pipe. The pipe manufacturer's field representative shall have extensive experience in the field quality control of HDPE pipe assembly and be certified by the pipe manufacturer to approve HDPE field fusion joints.

The pipe manufacturer's field representative shall be responsible for overseeing the field inspection of field fusion joints and for preparing the data logging reports required to be submitted as specified herein.

The pipe manufacturer's field representative shall not directly supervise Contractor's personnel, and Contractor shall remain responsible for the pipeline work.

1-4.02. Workmanship and Testing. The manufacturer shall take adequate measures in the checking of incoming materials and in the production of pipe to ensure compliance with the requirements of these Specifications. The following tests relative to qualification of compounds and manufacturing processes and for quality assurance shall be conducted not less frequently than at the indicated intervals. Higher frequencies of these tests and additional tests shall be conducted, if necessary, and as determined by the manufacturer's quality-control program, to ensure compliance with the requirements of this Specifications and ASTM F714.

- All incoming lots of raw polyethylene materials shall be sampled and tested for melt-flow index and density. The testing results shall fall within the limits established between the material supplier and piping manufacturer.
- Each length of pipe surface shall be visually checked inside and outside for defects. The presence of these defects shall be cause to reject the pipe.
- Dimensions and tolerances shall be measured once per hour or once per length of pipe, whichever is less frequent.

- Bend-back test shall be performed at the beginning of each production run and at every 5,000 feet of pipe for each pipe size. The specimens tested shall be representative of the entire inside surface of the pipe. The elongation-at-break test may be substituted for this test.
- Ring-tensile strength test shall be performed at least once per production run, at 2,500 feet and at every 5,000 feet thereafter. The quick burst test may be substituted for this test.
- Carbon black content shall be determined for each individual lot of pre-compounded black PE material.
- A five-second pressure test shall be performed at least once per production run. The elevated-temperature sustained-pressure test may be substituted for this test. In lieu of performing the five-second pressure test for fittings at four-times rated pressure as specified in ASTM D1598, the pressure may be reduced to two-times rated pressure with all other test requirements remaining the same. Tested fittings will not be allowed to be installed under this Contract.
- Melt-flow index test shall be run on samples from the pipe at least once per Working Day.
- Density test shall be run on samples from the pipe once per calendar day, or once per lot of pre-compounded black PE material, whichever is less.
- Each fitting shall be visually checked inside and outside for defects and the presence of defects shall be cause to reject the fitting. Should defects be found on the pipe and the manufacturer feels that such defects do not affect the structural integrity or longevity of the pipe, the manufacturer must, in writing, explain the nature of the defects and provide positive witnessed test results which demonstrate that the integrity of the pipeline has not been compromised. It is the Contractor's responsibility to ensure that the proper documentation is submitted. The Engineer will be the sole determiner as to whether the documentation submitted is satisfactory and the pipe acceptable.
- Reworked materials shall meet all the requirements of ASTM F714. In no case such materials shall exceed 5% of total pipe materials for this project. Recycled materials will not be allowed in manufacture of HDPE pipe.

1-5. STORAGE AND HANDLING. Pipe, fittings, and accessories shall be handled in a manner that will ensure installation in sound, undamaged condition. Pipe shall not be stored uncovered in direct sunlight. All handling and storage shall be conducted in accordance with pipe manufacturer's requirements.

PART 2 - PRODUCTS

2-1. PERFORMANCE AND DESIGN REQUIREMENTS.

2-1.01. Pipe Dimensions. Pipe dimensions shall be as specified in the materials paragraph.

2-2. MATERIALS.

Dimensions – HDD section	26-inch outside diameter ASTM F714, DR 9, IPS sizing system.
Pressure Class	250 psi rated working pressure with minimum factor of safety at operating temperature of 2.0.
Polyethylene Pipe Material	PE 4710 resin. Manufactured by ISCO-Pipe, JM Eagle, Performance Pipe, or approved equal.
Pipe Fittings	Fabricated to ASTM F714; PE 4710 resin. Pressure capacity and wall thickness shall be same as pipe. Manufactured by Industrial Pipe Fittings, ISCO-Pipe, JM Eagle, Performance Pipe, Specified Fittings, or approved equal.
Joints	Thermal butt fusion joints, ASTM D3261, in strict compliance with pipe manufacturer’s recommendations using approved jointing equipment.
Flange Adapter and Backing Ring	PE 4710 resin flange adapter, with backing ring made of epoxy-coated ductile iron or epoxy-coated fabricated steel, rated for the full pressure capacity of the pipe. Flange Adapter and Stub End for connection to steel pipe and corresponding backing ring shall be manufactured by Industrial Pipe Fittings, ISCO-Pipe, JM Eagle, Performance Pipe, Specified Fittings, or approved equal.

Electrofusion Flex Restraint Device	EF Flex Restraint Device as manufactured by ISCO-Pipe; or equal. Each flex restraint device shall be rated for and capable of transferring the minimum axial thrust capacity specified on the Drawings.
IPS Fittings Wall Anchor (Force Transfer / Restraint Fitting)	IPS Fittings Wall Anchor (Force Transfer / Restraint Fitting) as manufactured by ISCO-Pipe; or equal. Fitting shall be 26" OD DR9, manufactured from PE 4710 resin and shall be rated for minimum 250 psi working pressure.
Flange Bolting	
Material	ANSI/AWWA C207, galvanized.
Type	Bolt and nut; bolt-stud and two nuts permitted for 1 inch and larger.
Bolts and Bolt-Studs	
Length	Such that ends project 1/4 to 1/2 inch beyond surface of nuts.
Ends	Chamfered or rounded.
Threading	ANSI/ASME B1.1, coarse thread series, Class 2A fit. Bolt-studs may be threaded full length.
Bolt Head Dimensions	ANSI B18.2.1; regular pattern for square, heavy pattern for hexagonal.
Nuts	Hexagonal.
Dimensions	ANSI/ASME B18.2.2, heavy, semi-finished pattern.
Threading	ANSI/ASME B1.1, coarse thread series, Class 2B fit.
Washers	ASTM F436, galvanized
Flange Gaskets	ANSI/AWWA C207, 1/8" thick, full face type. Gaskets for potable water service shall be certified as suitable for the test pressures specified, and for chlorinated and chloraminated potable water; a certificate of gasket suitability shall be submitted.

PART 3 - EXECUTION

3-1. INSPECTION. The Contractor and Engineer shall perform a visual inspection of HDPE pipe and fittings for damage, cracks and other defects immediately upon delivery, with special attention to pipe ends. Any piece of pipe or fitting with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than five percent (5%) of the wall thickness shall not be used and shall be removed from the site.

3-2. INSTALLATION. Refer to requirements specified in Section 02312, "Installation of HDPE Carrier Pipe."

3-2.01. Cutting Pipe. Cutting shall be in accordance with the pipe manufacturer's recommendations. Cuts shall be smooth, straight, and at right angle to the pipe axis. After cutting, the end of the pipe shall be dressed to remove all roughness and sharp corners and shall be beveled in accordance with the manufacturer's instructions.

3-2.02. Field Jointing Procedures – Training and Certification. All field fusion joints shall be made by the pipe manufacturer or by employees of the Contractor who have been trained and certified by the pipe manufacturer. The pipe manufacturer shall provide hands-on training for the Contractor's employees in the proper assembly of the joints. The pipe manufacturer shall submit written certification that the Contractor's employees have satisfactorily completed all training and instruction and can perform the jointing required for this project in accordance with the pipe manufacturer's recommendations and as specified herein. The pipe manufacturer's representative shall be onsite to observe all jointing and shall provide written certification that all joints have been made in accordance with the pipe manufacturer's published instructions.

3-2.03. HDPE Pipe Field Jointing. As described in Section 02312, prior to pullback, sections of HDPE pipe shall be field-jointed into continuous lengths. All field joints shall be made by thermal butt fusion methods in strict accordance with procedures established by the pipe manufacturer using authorized equipment. Socket fusion and extrusion welding or hot gas welding will not be acceptable.

The butt fusion joining shall produce a joint with weld strength equal to or greater than the tensile strength of the pipe itself.

Additional field fusion joints are required after pullback, for connecting flanges and other accessories, as shown on the Drawings.

The fusion jointing equipment shall include a heating tool, an alignment jig to hold both pieces to be fused in movable axial alignment, a facer for simultaneously preparing the ends to be joined, a means of bringing the heated parts together with sufficient force to form a uniform bond around the entire circumference of the joint, and any other equipment required by the pipe manufacturer.

During inclement weather, a temporary shelter should be set-up around the joining operation to shield heat fusion operations from rain, frozen precipitation, and high wind conditions. Wind chill can reduce heating plate temperature or chill melted component ends before joining. If fusion joining operations cannot be protected from weather, joining shall be temporarily suspended until conditions improve.

Fusion equipment shall be equipped with a data logger.

The heating plate must be kept clean to avoid joint contamination.

The interior and exterior weld beads of the fused pipe shall be removed.

3-2.04. Inspection and Acceptance of HDPE Pipe Field Jointing. All field joints shall be visually inspected by the pipe manufacturer's field representative and the Engineer in accordance with published visual inspection criteria provided by the pipe manufacturer.

Joints that show signs of contamination, as evidenced by pipe material sticking to the heater plate, or by insufficient or excessive heating, resulting in non-continuous or excessive flash (bead) around the joint, shall be rejected. Rejected joints shall be replaced by cutting out the defective joint, resurfacing the pipe ends, and re-jointing.

In addition, the pipe manufacturer's field representative shall record data produced by the data logger, including temperature, fusion pressure and a graphic representation of the fusion cycle. The data logger information shall be submitted as part of the quality control records.

3-3. END CONNECTIONS. Details of connections for joining HDPE pipe with existing steel pipe are shown on the Drawings.

End of Section

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Section 02704

PIPELINE PRESSURE AND LEAKAGE TESTING

PART 1 - GENERAL

1-1. SCOPE. This section covers field hydrostatic pressure testing of the HDPE carrier pipe.

1-2. GENERAL. Testing of the HDPE carrier pipe shall be performed prior to pullback and after pullback. Refer to the construction sequencing requirements discussed in Section 02312 and as shown on the Drawings.

1-2.01. Supply and Disposal of Construction Water. The Contractor shall be responsible for obtaining, transporting, and storing water required for performing the Work. Construction water supply requirements and requirements for the offsite disposal of construction water are specified in Section 01500, "Construction Facilities and Temporary Controls."

1-3. SUBMITTALS.

1-3.01. HDPE Pressure Test Set-up & Procedures. Pressure test procedures shall be submitted in accordance with Section 01300, "Submittals", including the following:

- Submit proposed test procedures and details, planned test pressures, and results of testing, as specified in other sections.
- Submit pipe manufacturer's recommendations for implementing pressure tests to account for temperature effects, if any.

1-4. HDPE CARRIER PIPE PRESSURE TESTING. The hydrostatic pressure testing of HDPE carrier pipe shall be conducted in accordance with the requirements specified in ASTM F2164, including apparatus, safety, pre-test preparation, procedures for conducting field tests, pass/fail criteria, and acceptance.

1-4.01. Safety. Contractor shall identify the safety hazards associated with field testing of HDPE pipe in its Health and Safety Plan, and shall implement specific safety precautions associated with the field pressure testing of the HDPE carrier pipe. Such precautions include, but are not limited to:

- For the entire duration of the procedure, including filling, initial pressurization, time at test pressure, and depressurization, only persons conducting the test or inspecting the pipe being tested should be allowed near the section under test. These persons should be fully informed of the hazards of field pressure testing. All other persons should be kept a safe distance away.
- The pipe test section is to be supervised at all times during pressure testing.
- Take measures to ensure that all parts of the pipe section under test are restrained against movement if failure occurs. Such measures shall include supporting, bracing, anchoring, or other appropriate means.
- Leakage at a fusion joint indicates a faulty joint that may rupture completely at any time. If leakage is observed at a fusion joint, move away immediately, and depressurize the test section.

1-4.02. HDPE Pipe Pressure Test Set-Up and Test Procedures. Pressure testing set-up and test requirements shall follow the requirements and guidelines specified in ASTM F2164, Articles 8 and 9.

- The maximum test pressure shall be 1.5 times the 250 psi working pressure = 375 psi. The maximum test pressure may be adjusted to account for temperature effects if proposed by Contractor and accepted by Engineer.
- Follow procedures recommended in Article 9, for filling; temperature equalization; pressurization – initial expansion phase; test phase; pass / fail criteria; and depressurization.
- Total testing time including the time required to pressurize, stabilize, hold test pressure, and depressurize should not exceed eight (8) hours. Allow time for the District and Contractor to examine all piping being tested.

1-5 CORRECTING AND RE-TESTING. If a leak is found, it shall be repaired by and at the expense of the Contractor. Depressurize the test section and correct any faults or leaks in the test section.

In the case that any joint or other repairs are performed, Contractor shall re-perform the pressure test beginning with a new test sequence. This sequence shall be repeated until the pressure testing requirements are successfully met.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3-1. BLOCKING AND SUPPORTING. Piping shall be adequately blocked, anchored, and supported before the pipe is filled and test pressure is applied.

3-2. OTHER. As shown on the Drawings, special HDPE flange adapters are required to be installed as part of the permanent installation. At Contractor's option, these flange adapters may be attached to the HDPE pipe and used along with temporary bulkheads supplied by Contractor during the pre-pullback pressure testing. For pullback, the eastern end flange adapter shall be removed and then re-attached for the post-pullback pressure testing, if such practice is recommended by the pipe material manufacturer.

Contractor shall provide all pumping equipment, pressure gauges, and all other equipment, materials, and facilities required to perform the specified tests. All required flanges, valves, bulkheads, bracing, blocking, and other sectionalizing devices shall also be provided. All temporary sectionalizing devices shall be removed upon completion of testing. Vents shall be provided in test bulkheads where necessary to expel air from the piping to be tested.

Pressure gauges shall be accurately calibrated and shall be subject to review and acceptance by the Engineer.

A temporary pressure gauge shall be installed in the temporary bulkhead located at each end of the HDPE pipe to be tested. Scale of each gauge shall indicate approximately double the pressure at the location of the gauge.

End of Section

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Section 15060

MISCELLANEOUS PIPING AND PIPE ACCESSORIES

PART 1 - GENERAL

1-1. SCOPE. This Section covers the furnishing and installing of miscellaneous piping and pipe accessories for installations as shown on the Drawings. Piping shall be furnished complete with all fittings, flanges, jointing materials, supports, anchors, blocking, encasement, and appurtenances.

Pipe trenching, embedment, and backfill are covered in Section 02202, "Trenching and Backfilling."

1-2. SUBMITTALS. Contractor shall submit complete specifications, data, and catalog cuts or drawings in accordance with the requirements specified in Section 01300, "Submittals." Information submitted shall include:

Certification by manufacturer for each item furnished in accordance with the ANSI/AWWA Standards.

Certification of gaskets, certifying that gasket material is suitable for services intended and for pressure class required.

Lay schedule indicating the type of pipe, fitting and dimensions.

One sample of polyethylene encasement.

Product data for all manufactured products, such as flanged coupling adapters, flange insulation kits, and precast valve boxes.

Product data for proposed paint systems.

Data describing the methods, procedures and equipment to be used for proportioning, mixing, placing and curing cast-in-place concrete.

Certificates of Compliance for concrete and reinforcing steel materials to demonstrate compliance with specified standards.

Steel fabrication shop drawings for air valve enclosure, extension stem and bollards.

PART 2 – PRODUCTS

2-1. PIPE CLASS. The class of ductile iron pipe shall be as indicated in the Drawings. The specified class includes service allowance and casting allowance.

2-2. PIPE MATERIALS AND ACCESSORIES.

Pipe (Push-on or Mechanical Joint)	Ductile iron, ANSI/AWWA C151/A21.51, Table 1 or Table 3.
Pipe (Flanged)	Ductile iron, ANSI/AWWA C115/A21.15.
Flanges	Ductile iron, flat faced, solid back ANSI/AWWA C115/A21.15. Flanges shall be individually fitted and machine tightened in the shop. Pipe shall extend completely through threaded-on flanges. The pipe end and flange face shall be finish machined in a single operation. Flange faces shall be flat and perpendicular to the pipe centerline. Flanges shall be back-faced parallel to the face of flange. All flanges shall be suitable for test pressure of 1.5 times rated pressure without leakage or damage. Coordinate flange OD and bolt hole size and spacing with the flange of the valve or item to which the ductile iron pipe flange is to be connected.
Gaskets – All Joint Types	Synthetic rubber in accordance with AWWA C111; natural rubber will not be acceptable. Gaskets shall be furnished by the pipe manufacturer. Gaskets shall be rated for the pressure class required.
Bolts	ASTM A307, galvanized, chamfered or rounded ends projecting 1/4 to 1/2 inch beyond outer face of nut.
Nuts	ASTM A307, galvanized, hexagonal, ANSI/ASME B18.2.2, heavy semi finished pattern.
Washers	ASTM F436, galvanized

Fittings ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, minimum working pressure rating shown on the Drawings.

Insulated Flanges

Flanges As specified herein, except bolt holes shall be enlarged as needed to accept bolt-insulating sleeves.

Insulation Kits Pipe flange insulating kit materials shall be of the type designated by the manufacturer as suitable for appropriate service at the operating temperatures and pressures specified on the Drawings.

Flange insulating kits shall consist of a one piece full-face, insulating gasket, an insulating sleeve for each bolt, two insulating washers for each bolt, and a steel washer between each insulating washer and nut.

Insulating Gasket Insulating gasket retainers shall be full-face, Type E, NEMA G-10 epoxy glass retainers with a nitrile (Buna-N) rectangular cross section O-ring sealing. Minimum total thickness shall not be less than 1/8-inch. Dielectric strength shall be not less than 550 volts per mil, and compressive strength of not less than 50,000 psi. Use PSI Linebacker, or equal.

Insulating Sleeves Provide full length, one piece, insulating flange bolt sleeves for the appropriate bolt size. Insulating sleeves shall be NEMA G-10 epoxy glass. Dielectric strength shall be not less than 400 volts per mil.

Insulating Washers	Insulating washers shall be NEMA G-10 epoxy glass with a minimum thickness of 1/8-inch. Dielectric strength shall not be less than 550 volts per mil, and compressive strength of not less than 50,000 psi.
Shop Lining and Coating	
Cement Mortar Lining	ANSI/AWWA C104/A21.4.
Asphaltic Coating	AWWA C151 for buried pipe.
Polyethylene Encasement	Seamless, ANSI/AWWA C105/A21.5; LLDPE - 8 mil.
Flanged Coupling Adapters	
Restrained	Smith-Blair Series 911; or equal. Furnish FCA with fusion-bonded epoxy coating. FCA shall have flanges rated for 300 psi working pressure.

2-3. PRECAST VALVE BOX. G4 Traffic Valve Box 10" ID x 12" high, precast concrete by Christy Concrete Products, Inc.; Brooks; or equal. Valve box shall be high density reinforced concrete box with cast iron triangular top for heavy traffic areas. Furnish and install valve boxes with heavy-duty plastic pipe extensions as shown on the Drawings.

2-4. AIR VALVE ENCLOSURE, EXTENSION STEM, BOLLARDS AND MISC. STEEL FABRICATIONS. Fabricated from steel components as shown on the Drawings. Air valve enclosure shall be hot-dip galvanized. Extension stem shall be painted after fabrication.

Steel Pipe	ASTM A53, Type E, standard weight, Grade A or B; or ASTM A106, of equivalent thickness.
Steel Plates and Shapes	ASTM A36.
Stainless Steel Plate	ASTM A240, Type 316L.
Square and Rectangular Structural Tubing	ASTM A500, Grade B or C.
Galvanizing	ASTM A123, A153, A385.

Expansion Anchors	Hilti Kwik Bolt 3 SS316; or equal.
Paint System	Epoxy enamel – First coat; Aliphatic polyurethane – Finish coat
Epoxy enamel primer	As specified on the Drawings; or equal.
Aliphatic polyurethane	As specified on the Drawings; or equal.

2-5. CAST-IN-PLACE CONCRETE. Concrete for buried blocking, bollards, pads and miscellaneous uses shown on the Drawings shall conform to the requirements specified herein. Cement factor and total water content may be adjusted to provide the minimum compressive strength as shown on the Drawings. Concrete shall have a slump of not less than 2 inches nor more than 4 inches when placed.

All cast-in-place concrete shall be accurately formed and properly placed and finished as indicated on the Drawings and as specified herein.

Unless specifically indicated otherwise, all concrete work, including steel reinforcing, shall be in accordance with the best standard practices as set forth in the ACI Building Code, Manuals and Recommended Practices.

Cement	ASTM C150, Type II only, low alkali.
Fly Ash	ASTM C618, Class F, except loss on ignition shall not exceed 4 percent.
Fine Aggregate	Clean natural sand, ASTM C33. Artificial or manufactured sand will not be acceptable.
Coarse Aggregate	Crushed rock, washed gravel, or other inert granular material conforming to ASTM C33, except that clay and shale particles shall not exceed 1 percent.
Water	Clean and free from deleterious substances.

Admixtures

Water-Reducing	ASTM C494, Type A or D.
Air-Entraining	ASTM C260.
Superplasticizing	ASTM C494, Type F or G.

Reinforcing Steel

Bars	ASTM A615, Grade 60, deformed.
Welded Wire Fabric	ASTM A185 or A497.
Bar Supports	CRSI Class 1, plastic protected; or Class 2, stainless steel protected.

2-6. FIBER OPTIC CABLE WARNING POSTS. The cable marker warning posts shall be used to alert excavators that there is a buried cable in the area and they must call for a locate prior to excavating. These posts also enable service personnel to quickly locate cable routes whenever necessary. Cable marker posts shall meet the following criteria:

The cable warning posts shall be orange in color.

The cable warning posts shall be a minimum of 3-1/2" wide, and of tubular or triangular shape.

The cable warning posts shall be of sufficient length to allow for a minimum of 4 feet above grade when installed.

The cable warning posts shall be equipped to handle a customized 2-7/8" W x 6" customized warning decal.

The cable warning posts shall be of flexible construction and able to withstand a minimum of (5) vehicle impacts at 45 MPH.

The cable warning posts shall be UV-stable, and must not significantly fade, or become brittle when exposed to UV light for a minimum of 10 years.

Cable Warning Posts shall be William Frick & Company's 360 Post Marker, Arris PolyDome, or equal.

PART 3 - EXECUTION

3-1. INSPECTION. All piping components shall be inspected for damage and cleanliness before being installed. Any material damaged or contaminated in handling on the job shall not be used unless it is repaired and re-cleaned to the original requirements by Contractor. Such material shall be segregated from the clean material and shall be inspected and approved by Engineer before its use.

3-2. PREPARATION.

3-2.01. Field Measurement. Pipe shall be cut to measurements taken at the site, not from the Drawings. All necessary provisions shall be made in laying out piping to allow for expansion and contraction. Piping shall not obstruct openings or passageways.

3-2.02. Cleaning. The interior of all pipe and fittings shall be thoroughly cleaned of all foreign matter prior to installation. Before jointing, all joint contact surfaces shall be wire brushed if necessary, wiped clean, and kept clean until jointing is completed.

Precautions shall be taken to prevent foreign material from entering the pipe during installation. Debris, tools, clothing, or other objects shall not be placed in or allowed to enter the pipe.

3-3. PIPE INSTALLATION.

3-3.01. Cutting Pipe. Cutting shall be done in a neat manner, without damage to the pipe or the lining. Cuts shall be smooth, straight, and at right angles to the pipe axis. After cutting, the ends of the pipe shall be dressed with a file or a power grinder to remove all roughness and sharp edges. The cut ends of push-on joint pipe shall be suitably beveled.

3-3.02. Flanged Joints. When bolting flanged joints, care shall be taken to avoid restraint on the opposite end of the pipe or fitting which would prevent uniform gasket compression or would cause unnecessary stress in the flanges. One end of the flanged pipe shall be free to move in any direction while the flange bolts are being tightened. Bolts shall be tightened gradually and at a uniform rate, to ensure uniform compression of the gasket. Flange bolts shall not be so tight as to fracture or distort the flanges.

Flange bolt holes shall be oriented as follows, unless otherwise indicated on the spool drawings:

Vertical flange face: Bolt holes to straddle the vertical centerlines.

Horizontal flange face: Bolt holes to straddle plant north-south centerlines.

Pipe sealants, thread compounds, or other coatings shall not be applied to flange gaskets unless recommended by the gasket manufacturer for the specified service and approved by Engineer.

3-3.03. Flanged Coupling Adapters. Flanged coupling adapters shall be installed in accordance with the coupling manufacturer's recommendations.

3-3.04. Laying Pipe. Pipe shall be installed as specified, as indicated on the Drawings or, in the absence of detail piping arrangement, in a manner acceptable to Engineer.

Piping shall be installed without springing or forcing the pipe in a manner which would induce stresses in the pipe, valves, or connecting equipment.

Piping shall be supported during placement and installation.

All air piping shall be placed sloping upward to allow air to escape.

3-3.05. Polyethylene Encasement. Unless otherwise shown, all buried ductile iron pipe, including all straight pipe, bends, tees, adapters, closure pieces, and other fittings or specials, and all valves, shall be provided with at least one wrap of polyethylene encasement. Polyethylene tube protection shall be installed in accordance with ANSI/AWWA C105/A21.5, as modified herein. Preparation of the pipe shall include, but shall not be limited to, removal of lumps of clay, mud, cinders, etc., prior to installation.

3-3.06. Installation of Flange Insulating Kit Materials. Install the pipe flange insulating kits at the locations shown on the Drawings and in accordance with the manufacturer's recommendations. Install and test the insulating flanges in accordance with NACE Standard SP0286-2007, "Standard Recommended Practice - The Electrical Isolation of Cathodically Protected Pipelines." Particular attention shall be paid to properly aligning the flanges prior to inserting the insulating sleeves around flange bolts. Prevent moisture, soil or other foreign matter from contacting any portion of the insulating joint prior to or during installation. If moisture, soil or other foreign matter contacts any portion of the insulating joint, disassemble the entire joint, clean with a suitable solvent and - dry prior to reassembling. Follow the manufacturer's recommendations regarding the torque pattern of the bolts and the amount of torque to be used when installing the flange insulating kit. Do not use conductive grease on the flange bolts or any other flange components.

3-4. CONCRETE PLACEMENT. The Contractor shall inform the Engineer at least 24 hours in advance of the times and places at which it intends to place concrete.

Methods of conveying concrete to the point of final deposit and of placing shall prevent segregation or loss of ingredients. During and immediately after placement, concrete shall be thoroughly compacted and worked around all reinforcement and embedments and into the corners of the forms. Concrete shall be compacted by immersion type vibrators, vibrating screeds, or other suitable mechanical compaction equipment. The use of "jitterbug" tampers to compact concrete flatwork will not be permitted.

Unless otherwise specified, unformed surfaces shall be screeded and given an initial float finish as soon as the concrete has stiffened sufficiently for proper working. Any piece of coarse aggregate which is disturbed by the float or which causes a surface irregularity shall be removed and replaced with mortar. Initial floating shall produce a surface of uniform texture and appearance, with no unnecessary working of the surface.

Initial floating shall be followed by a second floating at the time of initial set. The second floating shall produce a finish of uniform texture and color and the completed finish for unformed surfaces.

3-5. MISCELLANEOUS STEEL WELDING. Welding and related operations shall conform to applicable provisions of the Structural Welding Code - Steel, AWS D1.1, of the American Welding Society. All welding shall be performed in accordance with written procedures, using only those joint details which have prequalified status when performed in accordance with AWS D1.1. All welding shall be performed by welders qualified in accordance with the American Welding Society for steel welding and American Society for Mechanical Engineers Section IX for stainless steel welding.

All welds shall be visually inspected in accordance with AWS procedures.

Welds not dimensioned on the Drawings shall be sized to develop the full strength of the least strength component of the connection.

Where structural or miscellaneous steel connections are welded, all butt and miter welds shall be continuous and, where exposed to view, shall be ground smooth. Intermittent welds shall have an effective length of at least 2 inches and shall be spaced not more than 6 inches apart.

End of Section

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Section 15062

STEEL PIPE

PART 1 - GENERAL

1-1. SCOPE. This section covers designing, detailing, fabricating, delivering and installing welded steel pipe, 6 inches in diameter and larger, together with fittings, specials, manholes, flanges, pipe supports and appurtenances, protective linings and coatings, hydrostatic shop testing, and nondestructive examination of shop welds for specials in accordance with AWWA C200 as modified herein.

1-1.01. Modifications to Existing Steel Pipe. The steel pipe work essentially involves removing existing steel pipe sections as shown on the Drawings; taking field measurements; shipping sections to the shop; making shop modifications to the existing steel pipe; and shipping the modified steel pipe sections back to the field for re-installation. Furnish additional new pipe lengths as may be needed to suit field geometry.

The work also includes making field modifications to existing steel pipe, such as the installation of flanges and vents to the existing steel casing pipe.

1-1.02. Pipeline Reference Information. The District keeps records of pipe layout, material lists, pipe data and fabrication drawings for the original construction of the Nacimiento Water Project pipeline. If requested, copies of these drawings will be made available to Contractor at time of the Notice to Proceed.

1-2. GOVERNING STANDARDS. Except as modified or supplemented herein, all steel pipe, fittings, and specials shall conform to the applicable requirements of the following standards:

<u>ANSI/AWWA Standards</u>	<u>Title</u>
C200	Steel Water Pipe 6 In. and Larger
C205	Cement-Mortar Protective Lining and Coating for Steel Water Pipe – 4 inch and Larger - Shop Applied
C206	Field Welding of Steel Water Pipe
C207	Steel Pipe Flanges for Waterworks Service – Sizes 4 In. through 144 In.

C208	Dimensions for Fabricated Steel Water Pipe Fittings
C602	Cement-Mortar Lining of Water Pipelines in Place - 4 In. and Larger
C606	Grooved And Shouldered Joints

ANSI Standard

B18.2.1	Square and Hex Bolts and Screws
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ANSI/ASME Standards

B1.1	Unified Inch Screw Threads
B18.2.2	Square and Hex Nuts
B36.10	Welded and Seamless Wrought Steel Pipe

1-3. SUBMITTALS. Contractor shall submit the following items in accordance with the requirements specified in Section 01300, "Submittals."

Submit Shop Drawings for review after taking field measurements but before fabrication, showing the layout and details of the pipeline and all specials required as shown on the Drawings. Diagrams shall show laying lengths; sequence and direction of placement; piece marks; steel pipe plate thickness; the location of steel pipe specials and fabricated bends; closure sections; nozzles and manholes. The numbers indicated on the Drawings shall correspond with those painted on the pipe. Additional information shown shall include, but not be limited to, the following:

- Pipe inside diameter after lining.
- ASTM class or grade of steel.
- Yield strength and design stress of steel.
- Total coating thickness.
- Thickness of mortar lining.
- Joint details.
- Coating materials (shop and field applied).
- Weld details.

Submit welding procedure specifications (WPS), procedure qualification records (PQR), and welder, welding operator and tack welder qualification test records for all shop and field welding in accordance with AWS D1.1, Section 5.

Submit certified copies of shop testing and inspection reports.

Submit Certificates of Compliance, obtained from the pipe fabricator, stating that all pipe, specials, flanges, coatings, and linings have been manufactured and tested in accordance with these Specifications. Certificates shall be submitted for the testing or manufacturing regardless of whether it was witnessed by the Engineer or not.

Submit Certificates of Compliance for items referenced to ASTM standards including, but not limited to, the following:

- Steel plate for fabricated or mill pipe.
- Steel weld fittings.
- Gaskets.
- Bolts, nuts and washers.

Submit a certified copy of mill test reports for each heat number of the steel used in the fabrication of the pipe. Mill test reports shall show the type of steel and the physical and chemical properties for each heat number of steel used in fabrication of the pipe.

Submit proposed field weld test procedures and test results.

1-4. FABRICATION, WELDING AND WELD INSPECTION REQUIREMENTS.

1-4.01. General. Design of details not otherwise shown, fabrication, assembly, inspection and testing of steel pipe shall be in accordance with AWWA C200. Where provisions of AWWA conflict with the provisions of the Specifications, the latter shall govern.

Field welding shall be performed in accordance with AWWA C206. Where provisions of AWWA conflict with the provisions of the Specifications, the latter shall govern.

1-4.02. Shop and Field Welding. Use only welders, welding operators, tack welders, equipment, and welding procedures qualified in accordance with the standards specified herein. Identify by name all qualified personnel.

1-4.03. Welder's qualifications. Each welder shall be qualified in accordance with AWS D1.1 and as defined in ANSI/AWWA C200. All qualifications shall be in accordance with all-position pipe tests as defined in Section 5 of AWS D1.1. Any welder shall be retested and requalified when the welder's work creates a reasonable doubt as to proficiency. Test, when required, shall be conducted at no additional expense to the District.

Submit qualification test records of the welders.

1-4.04. Examination of Shop Welds. Requirements for shop hydrostatic testing are specified in Paragraph 2-9.01 of this Section.

Welding inspectors shall be qualified and currently certified as Certified Welding Inspectors (CWI) in accordance with AWS Standard for Qualification and Certification of Welding Inspectors (QCI). Only individuals so qualified shall be authorized to perform fabrication inspection and testing. Welding inspectors shall verify that fabrication welding is performed in accordance with the requirements of the Specifications.

Personnel performing radiographic tests shall be qualified and certified according to the requirements of SNT-TC-1A.

Perform nondestructive examination of all shop welds used to fabricate specials. Nondestructive examination of the shop welds listed below shall be performed in accordance with AWWA C200 and as specified.

All welds at special sections shall be examined using radiographic testing methods. In addition, welded collar plates used for nozzle and manhole attachments shall be air leakage tested.

All shop welds not meeting the specified requirements shall be repaired and retested until the specified requirements are met, at no additional cost to the District.

1-4.05. Examination of Field Welds. Refer to Paragraph 3-7.01 of this Section.

1-5. STORAGE AND HANDLING. Pipe, fittings, specials, and appurtenances shall at all times be handled and stored in a manner that will ensure installation in sound, undamaged condition.

1-6. BASIS OF DESIGN. The internal pressures to be used for the design of welded steel pipe, pipe specials, reducers and fittings shall be as follows:

Working Pressure (no surge)	300 psi
Working Pressure (with surge)	350 psi

PART 2 - PRODUCTS

2-1. PIPE FABRICATION. Steel pipe and specials shall be fabricated in accordance with AWWA C200. Steel pipe may be either fabricated pipe or mill type. In either case, all items shall be fabricated to the sizes, dimensions, and shapes measured in the field, as indicated on the Drawings and as specified herein.

The specified size of fabricated pipe, fittings, and specials shall be the nominal diameter stated on the Drawings measured to the finished lining of the pipe.

Steel pipe and special sections shall be lined and coated as specified herein.

2-1.01. Steel Coil and Plate for Fabricated Pipe. Pipe, fittings and specials shall be fabricated from steel sheet coil or steel plate in accordance with any one of the following: ASTM A1011 Grade 36 or 40; or ASTM A1018 Grade 36 or 40.

2-1.02. Dimensions of Fittings and Specials. The dimensions of steel pipe fittings shall be in accordance with AWWA C208 unless otherwise indicated on the Drawings and as specified herein.

Except as modified herein, special sections shall conform to applicable sections of AWWA C200 and shall be fabricated as shown on the Drawings. Specials shall be fabricated from pipe that meets the requirements of this Section and has been previously hydrotested. Steel plate used for the fabrication of specials shall conform to the material specification for fabricated steel pipe or mill pipe.

2-1.03. Design of Reinforcement for Fittings and Specials. The pipe manufacturer shall design and detail all fabricated bends, fittings, branch connections, reducers, and special sections, which shall be reinforced, or the pipe wall thickness shall be increased, so that the combined stresses due to internal pressure (circumferential and longitudinal) and bending will not exceed 67 percent of the yield strength of the pipe material. Design shall be in accordance with AWWA M11, except as specified herein.

Select the type of reinforcement for fittings with outlets from the following table:

$$R = \frac{\text{ID outlet}}{\text{ID main run} \times \sin B}$$

where B = Angle between the longitudinal axis of the main run and the branch

R	Type of Reinforcement
Maximum of 0.5	Collar
Maximum of 0.7	Wrapper Plate
No limit	Crotch Plate

Whether or not indicated on the Drawings, reinforcements or additional wall thickness shall be provided as required to ensure that the combined stresses do not exceed the specified maximum.

For collar reinforcement, select an effective shoulder width "W" of a collar from the inside surface of the steel outlet to the outside edge of the collar, measured on the surface of the cylinder of the main run, such that:

$$W = (1/3 \text{ to } 1/2) \times \frac{\text{ID outlet}}{\sin B}$$

For a wrapper plate, use the above collar formula except that the wrapper is of thickness "T," its total width is (2W + ID outlet/sinB), and it extends entirely around the main pipe diameter portion of the steel fitting.

Base crotch plate design on Swanson, H.S. et al., Design of Wye Branches for Steel Pipes, summarized in AWWA Manual M11 (Fourth edition), Chapter 13.

Wall thickness of reducing sections shall be not less than the thicknesses required for the larger ends.

Hand holes may be provided at Contractor's option for convenience.

2-1.04. Markings. Clearly stencil on the inside of each pipe section, fitting, and special:

- T (for field top) of the pipe for specials and pieces other than straight pipe.
- Outside diameter, inches.
- Name of manufacturer.
- Date of manufacture.
- Piece number correlating pipe to tabulated layout schedule and line layout diagrams.

2-2. MATERIALS.

Flanged Joints

Flanges ANSI/AWWA C207, steel ring slip-on type, except where otherwise indicated on the Drawings..

Dimensions and Drilling ANSI/AWWA C207, or as indicated on the Drawings.

Blind Flanges ANSI/AWWA C207, unless otherwise indicated on the Drawings or specified; pressure ratings shall be the same as for flanges.

Gaskets ANSI/AWWA C207, 1/8" thick, full face type. Gaskets for potable water service shall be certified as suitable for the test pressures specified, and for chlorinated and chloraminated potable water; a certificate of gasket suitability shall be submitted.

Flange Bolting

Material ANSI/AWWA C207, galvanized.

Type Bolt and nut; bolt-stud and two nuts permitted for 1 inch and larger.

Bolts and Bolt-Studs

Length Such that ends project 1/4 to 1/2 inch beyond surface of nuts.

Ends Chamfered or rounded.

Threading ANSI/ASME B1.1, coarse thread series, Class 2A fit. Bolt-studs may be threaded full length.

Bolt Head Dimensions ANSI B18.2.1; regular pattern for square, heavy pattern for hexagonal.

Nuts Hexagonal.

Dimensions ANSI/ASME B18.2.2, heavy, semi-finished pattern.

Threading	ANSI/ASME B1.1, coarse thread series, Class 2B fit.
Washers	ASTM F436, galvanized
Restrained Joints	Welded lap type unless indicated otherwise on the Drawings or as specified.
Lugs or Collars	ASTM A283, Grade B or C; or ASTM A36.
Tie Bolts and Rods	ASTM A193, Grade B7.
Threading	ANSI/ASME B1.1, Class 2A fit, coarse thread series for 7/8 inch and smaller, and 8-thread series for 1 inch larger.
Ends	Chamfered or rounded.
Nuts	Hexagonal, ASTM A194, Grade 2H or better.
Threading	As specified for tie bolts, except Class 2B fit.
Dimensions	ANSI/ASME B18.2.2, heavy, semi finished pattern.
Flat Washers	Hardened steel, ASTM A325.
Small Branch Connections	
Pipe Nipples	Seamless black steel pipe, ASTM A53, Schedule 40.
Welding Fittings	
Threaded Outlets	Bonney "Thredolets", Porter "W-S Teelets", or Vogt "Weld Couplets".
Welded Outlets	Bonney "Weldolets", Porter "W-S Teelets", or Vogt "Weld Couplets".
Coatings and Linings	
Rust-Inhibitive Primer	Universal type; Ameron "Amercoat 180 Synthetic Resin Coating", Carboline "Kop-Coat 340 Gold Primer", or equal.
Rust-Preventive Compound	Houghton "Rust Veto 344", or equal.

Wax Tape Wrap	AWWA C217-95, Synthetic fiber felt saturated with microcrystalline wax, plasticizers, and corrosion inhibitors. No. 1 wax tape as manufactured by TRENTON Corporation of Ann Arbor, Michigan, or approved equal. Primer coat of "Temcoat" manufactured by TRENTON Corporation; or approved equal. "Rock Shield" type material, "Guard Wrap" as manufactured by TRENTON Corporation; or approved equal.
Cement Mortar	ANSI/AWWA C205 and C602. Add corrosion inhibitor as specified herein.
Cement	ASTM C150, Type II, low alkali.
Sand	ANSI/AWWA C205, Section 4.2.3, except sand for field-applied lining shall pass a No. 16 sieve.
Water	Water shall be free of organic materials and other impurities that might reduce the strength, durability or other quality of the cement mortar. Water shall have a pH of 7.0 to 9.0, a maximum chloride concentration of 500 mg/L (per Caltrans test method 422), and a maximum sulfate concentration of 500 mg/L (per Caltrans test method 417).
Epoxy Bonding Agent	ASTM C881, Type II, moisture insensitive and suitable for service conditions.
Latex Admixture	Euclid "Euco Flex-Con" or Sika "SikaLatex".

2-3. JOINTS. Pipe ends shall be suitable for the field joints shown on the Drawings and specified herein.

2-3.01. Pipe Ends for Butt Straps. Provide pipe ends for field fit-up of butt straps for closure joints.

2-3.02. Pipe Ends For Fitting with Flanges. Ends to be fitted with slip-on flanges shall be prepared to accommodate the flanges in accordance with the governing standards. Pipe ends shall have the longitudinal or spiral welds of the pipe cylinder ground to plate surface for a distance sufficient to receive the flange. The flange after welding shall be perpendicular to the axis of the pipe, free of warp with faces smooth and true.

2-4. SMALL BRANCH CONNECTIONS. Branch connections 2-1/2 inches and smaller shall be made with welding fittings with threaded outlets. Where the exact outlet size desired is in doubt, but is known to be less than 1 inch, a 1 inch outlet shall be provided and reducing bushings used as required.

Except as otherwise shown, branch connections sized 3 through 12 inches shall be made with pipe nipples or with welding fittings with welded outlets. Pipe nipples and welding fittings shall be welded to the pipe shell and reinforced as required to meet design and testing requirements.

Small branch connections shall be so located that they will not interfere with joints, supports, or other details, and shall be provided with caps or plugs to protect the threads during shipping and handling.

2-5. ACCESS MANWAYS. Access manways shall be provided in the locations indicated on the Drawings as directed by the Engineer. Each access manway shall consist of a reinforced, flanged outlet with a gasketed, bolted-on blind flange cover with corp stop and two handles fabricated from 3/8-inch diameter steel rod.

An access manway marker post shall be furnished and installed adjacent to each buried access manhole as indicated on the Drawings.

2-6. VENTS. Vents shall be provided at the locations and in the sizes indicated on the Drawings. Pipe used for vent piping shall be ASTM A53, Schedule 40, black steel pipe.

2-7. FLANGED JOINTS. Flange faces shall be normal to the pipe axis. Angular deflection (layback) of the flange faces shall not exceed the allowable set forth in Section 4.3 of ANSI/AWWA C207. All flanges shall be refaced after welding to the pipe, if necessary, to prevent distortion of connecting valve bodies from excessive flange bolt tightening and to prevent leakage at the joint.

Pipe lengths and dimensions and drillings of flanges shall be coordinated with the lengths and flanges for valves and other equipment to be installed in the piping. All mating flanges shall have the same diameter and drilling and shall be suitable for the pressures to which they will be subjected.

Flanges shall be of the slip-on type, except that welding-neck or slip-on flanges welded to short lengths of pipe may be used where installation of flanges in the field is permitted or required.

2-8. PROTECTIVE COATINGS AND LININGS. All steel pipe, fittings, specials, and accessories shall be lined, coated, primed and painted, or wrapped as specified herein.

2-8.01. Type of Coating and Lining. Surface preparation shall be in accordance with the coating or lining manufacturer's instructions. Types of protective coating and lining shall be as follows:

Pipe Exterior Surfaces Underground, Including those Encased in Concrete	Cement mortar, ANSI/AWWA C205, except as modified herein.
Pipe Interior Surfaces	Cement mortar - shop applied, ANSI/AWWA C205. The governing standards shall be as modified herein.

2-8.01.01. Shop-Applied Cement Mortar Lining. Cement mortar lining shall be shop applied. Except as modified herein, shop-applied mortar linings shall comply with ANSI/AWWA C205.

Minimum Thickness of Cement-Mortar Lining. The minimum lining thickness shall be as shown in Table 1 of AWWA C205.

Specials. Wire fabric reinforcement shall be used in the lining of fittings and specials in accordance with Section 4.4.5 of ANSI/AWWA C205.

Holdbacks at Joints. An uncoated holdback shall be left at each pipe end as shown on the Drawings to permit assembly and welding of the pipe joints.

2-8.01.02. Shop-Applied Cement Mortar Coating. Cement mortar coating shall be shop applied. Except as modified herein, shop-applied mortar coatings shall comply with ANSI/AWWA C205.

Minimum Thickness of Cement-Mortar Coating. The minimum coating thickness for pipe 24-inch diameter and larger shall be 1-inch. The minimum coating thickness for pipe less than 24-inch diameter shall be ¾-inch.

Holdbacks at Joints. An uncoated holdback shall be left at each pipe end as shown on the Drawings to permit assembly and welding of the pipe joints.

Storage/Handling. The pipe coating shall be protected from damage during transportation and installation of the pipe, and any damaged portions of the coating shall be restored to a condition equal to that specified herein for the

original work. Belt slings, placed so as to prevent deformation, shall be used for handling lined and coated pipe sections. In no event shall pipe be transported from the coating yard until after the exterior mortar coating has attained an age of 7 days.

2-8.01.03. Other. Except as otherwise shown on the Drawings or modified herein, other pipe surfaces at joints shall be coated as follows:

Ends of Pipe Sections	Liquid epoxy.
Machined Surfaces & Flange Faces	Rust-preventive compound.

2-9. SHOP INSPECTION AND TESTING. All materials and work shall be inspected and tested by the pipe manufacturer in accordance with ANSI/AWWA C200. All costs in connection with such inspection and testing shall be borne by the Contractor.

Copies of all test reports shall be submitted in accordance with Section 01300.

The District reserves the right to sample and test any pipe after delivery and to reject all pipe represented by any sample which fails to comply with the specified requirements.

2-9.01. Shop Hydrostatic Testing. A shop hydrostatic test shall be performed on each length of steel pipe that is modified in the shop in accordance with AWWA C200, and as specified herein. The test pressure shall be maintained for a period of sufficient length to allow thorough examination of the pipe section for defects. The test period shall be extended if requested by the District to complete visual inspection.

Defects in welds shall be repaired and all repaired sections shall be retested hydrostatically. To make repairs, the pipe shall be removed from the testing machine and areas requiring repair shall be thoroughly dried before the required repair welding is performed.

Test pressure shall be as specified in Section 5.2 of AWWA C200.

2-9.02. Shop Weld Inspections. Refer to Paragraph 1-4.04 of this Section.

PART 3 - EXECUTION

3-1. GENERAL. Notify the Engineer not less than 24 hours in advance of the time of unloading or installation of pipe and appurtenances so that arrangements of inspection of the unloading or installation of the pipe and appurtenances may be made.

3-1.01. Field Measurements. Contractor shall take field measurements to verify dimensional data associated with the existing NWP pipe at western and eastern connection areas and the steel casing pipe. Field measurements shall be used to plan, fabricate and install modifications to the existing NWP pipe and steel casing pipe as shown on the Drawings.

3-1.02. Inspection of Existing Steel Pipe Materials After Removal. Sections of the existing NWP pipe at the western and eastern connection areas are designated for cutting and removal and re-use as shown on the Drawings. Re-use of existing pipe is subject to approval of the Engineer.

When the pipe sections have been removed, Contractor and Engineer shall conduct a joint inspection of the pipe sections planned for re-use. The inspection shall be used to identify any areas of damage to the existing pipe caused as a result of its removal. Areas of pipe identified as being damaged shall not be re-used in the Work. Contractor shall replace damaged areas of pipe with new pipe fabrications as needed to make up for loss of damaged pipe sections.

3-2. CARE AND HANDLING OF PIPE. Pipe bracing for shipping and handling (shipping struts):

After completion of linings and coatings, wood struts placed at right angles to each other shall be installed at each end of the pipe, and at intermediate points if necessary. The shipping struts shall be of a size sufficient to securely brace the pipe during shipping, and handling at the site. Struts shall be installed in a manner that will prevent damage to the lining, and shall have caps conforming to the curvature of the lining.

Waterproof covers on ends of pipe shall remain in place and intact during storage of the pipe at the site of the Work; any covers which are damaged shall be repaired.

All pipe and appurtenances shall be handled in accordance with the manufacturer's recommendations and instructions and as specified herein; in case of conflict, the more stringent requirements shall apply. At least two pipe slings, equally spaced along the pipe barrel, shall be used in the handling of pipe sections 20 feet or greater in length. Care shall be exercised to prevent damage

to the pipe and coating system. Steel pipe shall only be handled with wide canvas or rubber covered slings. Bare cables, chain hooks, or metal bars shall not be allowed to come in contact with the coatings.

3-3. UNFIT OR REJECTED PIPE. All material will be inspected for defects and conformance to the Contract requirements prior to lowering into the trench. Contractor shall repair or replace any pipe section or appurtenance that has been damaged during loading, transporting, unloading, or as a result of faulty support during transport or storage.

Any pipe or appurtenance, installed or not, determined by the Engineer to not meet the requirements of the Contract Documents or otherwise found unfit shall be rejected, removed from the job site, and replaced by the Contractor without additional cost to the District.

Excessive coating or lining damage, as determined by the District, shall be a cause for rejection of the pipe or appurtenance as unfit.

3-4. PROTECTION AND CLEANING. The interior of all pipe and fittings shall be thoroughly cleaned of all foreign matter before being installed and shall be kept clean until the work has been accepted. Pipe shall not be damaged by the equipment and methods used for installation. The pipe shall be maintained in a clean condition during laying, jointing, bedding and backfilling operations.

The ends of all pipe shall be closed at the end of each daily shift, as specified in Section 10-1.02, "Environmental Mitigation Measures." The Contractor's work shall be in compliance with all conditions and mitigation measures required.

3-5. PIPELINE INSTALLATION.

3-5.01. General. All trenching, embedment, and backfilling of buried piping shall conform to the requirements specified in Section 02202, "Trenching and Backfilling"; and the details indicated on the Drawings.

Whenever pipe laying is stopped, the open end of the line shall be sealed with a watertight plug. All water in the trench shall be removed prior to removing the plug.

As specified in Section 01530, "Protection of Existing Facilities, Contractor shall locate existing utilities in advance of preparing pipe laying drawings to account for any differences between actual conditions and that shown.

3-5.02. Pipeline Field Joints. Pipeline field joints shall be made as shown on the Drawings.

3-5.02.01. Butt-Strap Welded Joints. Field trimming of pipe shall be normal to the axis of the pipe only. Employ pipeline butt-straps to unite sections of pipeline laid from opposite directions and to adjust the field length of the pipeline to meet structures, other pipelines, and points established by design stations.

Butt-straps shall include at least four hand-hole assemblies to facilitate field-applied cement mortar lining.

Center the shaped steel butt straps over the ends of the pipe sections they are to join. Weld the butt straps to the outside of the pipes with complete circumferential fillet welds equal in size to the thinnest part being joined.

Cement-mortar line butt-straps to a mortar thickness at least equal to the adjoining standard pipe sections. Clean the steel with wire brushes and apply a cement and water wash coat prior to applying the cement mortar. Where more than a 4-inch joint strip of mortar is required, place welded wire mesh reinforcement in 2-inch by 4-inch pattern of No. 13 gauge over the exposed steel. Install the mesh so that the wires on the 2-inch spacing run circumferentially around the pipe. Crimp the wires on the 4-inch spacing to support the mesh 3/8 inch from the metal pipe surface. Steel-trowel finish the interior mortar to match adjoining mortar-lined pipe sections.

Coat the exterior of closure assemblies with mortar, or pour a concrete encasement, to cover all steel by at least 1-1/2 inches. Protect exterior mortar to retard drying while curing.

3-5.02.02. Flanged Joints. Care shall be taken in bolting flanged joints to avoid restraint on the opposite end of the piece, which would prevent pressure from being evenly and uniformly applied upon the gasket. The pipe or fitting must be free to move in any direction during installation of bolts. Bolts shall be gradually tightened in a crisscross pattern, to ensure a uniform rate of gasket compression around the entire flange.

3-6. PROTECTIVE COATINGS AND LININGS.

3-6.01. Field Coating and Repair.

Field joints and repair of shop-applied exterior coatings and interior linings shall conform to the following:

For Butt-Strap Welded Joints

See Section 3-5.02.01.

For Flanged Joints

Extend cement mortar lining to ends of pipe. Apply AWWA C217 wax tape wrap to all remaining exposed flange, bolt and nut surfaces.

3-7. FIELD TESTS AND INSPECTIONS.

3-7.01. Inspection of Field Welds. Perform testing of field welds as follows:

All butt strap connections shall be tested by using a soap solution test by smearing soap solution onto the weld and applying air in the annular gap. Bubbling of the soap layer will be indicative of a defective spot that shall be corrected. Field lap welds may be inspected by magnetic particle or dye penetration methods.

The Engineer will perform visual inspections of all field welds, and any other appropriate nondestructive examination that may be needed, in order to determine compliance with the field welding requirements. Field weld test specimens shall be furnished to the Engineer for testing whenever, in the judgment of the Engineer, a satisfactory weld is not being made. Test specimens shall also be furnished when the Engineer desires. All costs for this testing will be paid by the District. Field welds will be randomly inspected and tested by an independent testing laboratory as directed by Engineer. Inform Engineer before welded joints are to be backfilled so that the joint may be inspected. Contractor shall assume all costs of exposing joints that were backfilled before inspection.

All defective welds shall be repaired and retested at no additional cost to the District until they meet the specified requirements.

End of Section

SECTION 11. AMENDMENT TO STANDARD SPECIFICATIONS

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SECTION 11. AMENDMENTS TO STANDARD SPECIFICATIONS

AMENDMENTS ISSUE DATE: 10-19-12

SECTION 5 CONTROL OF WORK

(Issued 06-01-11)

Add:

5-1.055 SUBCONTRACTING

5-1.055A General

No subcontract releases you from the contract or relieves you of your responsibility for a subcontractor's work.

If you violate Pub Cont Code § 4100 et seq., the Department may exercise the remedies provided under Pub Cont Code § 4110. The Department may refer the violation to the Contractors State License Board as provided under Pub Cont Code § 4111.

Except for a building-construction non-federal-aid contract, perform work equaling at least 30 percent of the value of the original total bid with your employees and with equipment owned or rented by you, with or without operators.

Each subcontract must comply with the contract.

The Department encourages you to include a dispute resolution process in each subcontract.

Each subcontractor must have an active and valid State contractor's license with a classification appropriate for the work to be performed (Bus & Prof Code, § 7000 et seq.).

Submit copies of subcontracts upon request.

Before subcontracted work starts, submit a Subcontracting Request form.

Do not use a debarred contractor; a current list of debarred contractors is available at the Department of Industrial Relations' Web site.

Upon request, immediately remove and not again use a subcontractor who fails to prosecute the work satisfactorily.

Replace Section 5-1.116 with:

5-1.116 DIFFERING SITE CONDITIONS (23 CFR 635.109)

5-1.116A Contractor's Notification

Promptly notify the Engineer if you find either of the following:

1. Physical conditions differing materially from either of the following:
 - 1.1. Contract documents
 - 1.2. Job site examination
2. Physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract

Include details explaining the information you relied on and the material differences you discovered.

If you fail to notify the Engineer promptly, you waive the differing site condition claim for the period between your discovery of the differing site condition and your notification to the Engineer.

If you disturb the site after discovery and before the Engineer's investigation, you waive the differing site condition claim.

5-1.116B Engineer's Investigation and Decision

Upon your notification, the Engineer investigates job site conditions and:

1. Notifies you whether to resume affected work
2. Decides whether the condition differs materially and is cause for an adjustment of time, payment, or both

You may protest the Engineer's decision.

1. Home office overhead
2. Field office overhead
3. Bond costs
4. Profit
5. Labor liability insurance
6. Other fixed or administrative costs that are not costs of labor used in the direct performance of the work

9-1.03C Materials

Material payment is full compensation for materials you furnish and use in the work. The Engineer determines the cost based on the material purchase price, including delivery charges, except:

1. A 15 percent markup is added.
2. Supplier discounts are subtracted whether you took them or not.
3. If the Engineer believes the material purchase prices are excessive, the Department pays the lowest current wholesale price for a similar material quantity.
4. If you procured the materials from a source you wholly or partially own, the determined cost is based on the lower of the:
 - 4.1. Price paid by the purchaser for similar materials from that source on Contract items
 - 4.2. Current wholesale price for those materials
5. If you do not submit a material cost record within 30 days of billing, the determined cost is based on the lowest wholesale price:
 - 5.1. During that period
 - 5.2. In the quantities used

9-1.03D Equipment Rental

9-1.03D(1) General

Equipment rental payment is full compensation for:

1. Rental equipment costs, including moving rental equipment to and from the site of work performed by change order using its own power.
2. Transport equipment costs for rental equipment that cannot be transported economically using its own power. No payment is made during transport for the transported equipment.
3. 15 percent markup.

If you want to return the equipment to a location other than its original location, the payment to move the equipment must not exceed the cost of returning the equipment to its original location. If you use the equipment for work other than work paid by force account, the transportation cost is included in the other work.

Before moving or loading the equipment, obtain authorization for the equipment rental's original location.

The Engineer determines rental costs:

1. Using rates in Labor Surcharge and Equipment Rental Rates:
 - 1.1. By classifying equipment using manufacturer's ratings and manufacturer-approved changes.
 - 1.2. Current during the work paid by force account.
 - 1.3. Regardless of equipment ownership; but the Department uses the rental document rates or minimum rental cost terms if:
 - 1.3.1. Rented from equipment business you do not own.
 - 1.3.2. The Labor Surcharge and Equipment Rental Rates hourly rate is \$10.00 per hour or less.
2. Using rates established by the Engineer for equipment not listed in Labor Surcharge and Equipment Rental Rates. You may submit cost information that helps the Engineer establish the rental rate; but the Department uses the rental document rates or minimum rental cost terms if:

- 2.1. Rented from equipment business you do not own.
- 2.2. The Engineer establishes a rate of \$10.00 per hour or less.
3. Using rates for transport equipment not exceeding the hourly rates charged by established haulers.

Equipment rental rates include the cost of:

1. Fuel
2. Oil
3. Lubrication
4. Supplies
5. Small tools that are not consumed by use
6. Necessary attachments
7. Repairs and maintenance
8. Depreciation
9. Storage
10. Insurance
11. Incidentals

The Department pays for small tools consumed by use. The Engineer determines payment for small tools consumed by use based on Contractor-submitted invoices.

9-1.03D(2) Equipment On the Job Site

For equipment on the job site at the time required to perform work paid by force account, the time paid is the time:

1. To move the equipment to the location of work paid by force account plus an equal amount of time to move the equipment to another location on the job site when the work paid by force account is completed
2. To load and unload equipment
3. Equipment is operated to perform work paid by force account and:
 - 3.1. Hourly rates are paid in 1/2-hour increments
 - 3.2. Daily rates are paid in 1/2-day increments

When rented equipment on the job site is used to perform work at force account not required by the original contract work, the Engineer may authorize rates in excess of those in Labor Surcharge and Equipment Rental Rates if:

1. You submit a request to use rented equipment
2. Equipment is not available from your owned equipment fleet or from your subcontractors
3. Rented equipment is from an independent rental company
4. Proposed equipment rental rate is reasonable
5. Engineer authorizes the equipment source and the rental rate before you use the equipment

The Department pays for fuel consumed during operation of rented equipment not included in the invoiced rental rate.

9-1.03D(3) Equipment Not On the Job Site Required for Original Contract Work

For equipment not on the job site at the time required to perform work paid by force account and required for original Contract work, the time paid is the time the equipment is operated to perform work paid by force account and the time to move the equipment to a location on the job site when the work paid by force account is completed.

The minimum total time paid is:

1. 1 day if daily rates are paid
2. 8 hours if hourly rates are paid

If daily rates are recorded, equipment:

1. Stop all work within a 60-foot radius of the discovery
2. Protect the discovery area
3. Notify the Engineer

The Department investigates. Do not move archaeological resources or take them from the job site. Do not resume work within the discovery area until authorized.

If, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of an archaeological find, or investigation or recovery of archeological materials, you will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays."

If ordered, furnish resources to assist in the investigation or recovery of archaeological resources. This work will be paid for as extra work as specified in Section 4-1.03D, "Extra Work."

14-2.03 ARCHAEOLOGICAL MONITORING AREA

Section 14-2.03 applies if an AMA is described in the Contract.

The Department assigns an archaeological monitor to monitor job site activities within the AMA. Do not work within the AMA unless the archeological monitor is present.

The Engineer and the Department archaeological monitor conduct an AMA location field review with you at least 5 business days before start of work. The Department marks the exact boundaries of the AMA on the ground.

If temporary fence (Type ESA) or other enclosure for an AMA is described in the Contract, install temporary fence (Type ESA) or other enclosure to define the boundaries of the AMA during the AMA location field review.

At least 5 business days before starting work within an AMA, submit a schedule of days and hours to be worked for the Engineer's approval. If you require changes in the schedule, submit an update for the Engineer's approval at least 5 business days before any changed work day.

If archaeological resources are discovered within an AMA, comply with Section 14-2.02, "Archaeological Resources."

14-2.04 HISTORIC STRUCTURES

Reserved

14-3 COMMUNITY IMPACTS AND ENVIRONMENTAL JUSTICE

Reserved

14-4 NATIVE AMERICAN CONCERNS

Reserved

14-5 AESTHETICS

Reserved

14-6 BIOLOGICAL RESOURCES

14-6.01 GENERAL

Reserved

14-6.02 BIRD PROTECTION

Protect migratory and nongame birds, their occupied nests, and their eggs.

The Department anticipates nesting or attempted nesting from February 15 to September 1.

The federal Migratory Bird Treaty Act, 16 USC § 703–711, and 50 CFR Pt 10 and Fish & Game Code §§ 3503, 3513, and 3800 protect migratory and nongame birds, their occupied nests, and their eggs.

The federal Endangered Species Act of 1973, 16 USC §§ 1531 and 1543, and the California Endangered Species Act, Fish & Game Code §§ 2050–2115.5, prohibit the take of listed species and protect occupied and unoccupied nests of threatened and endangered bird species.

The Bald and Golden Eagle Protection Act, 16 USC § 668, prohibits the destruction of bald and golden eagles and their occupied and unoccupied nests.

If migratory or nongame bird nests are discovered that may be adversely affected by construction activities or an injured or killed bird is found, immediately:

1. Stop all work within a 100-foot radius of the discovery.

2. Notify the Engineer.

The Department investigates. Do not resume work within the specified radius of the discovery until authorized.

When ordered, use exclusion devices, take nesting prevention measures, remove and dispose of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or perform any combination of these. This work will be paid for as extra work as specified in Section 4-1.03D, "Extra Work."

Prevent nest materials from falling into waterways.

Bird protection that causes a delay to the controlling activity is a condition unfavorable to the suitable prosecution of work as specified in Section 8-1.05, "Temporary Suspension of Work."

14-7 PALEONTOLOGICAL RESOURCES

If paleontological resources are discovered at the job site, do not disturb the material and immediately:

1. Stop all work within a 60-foot radius of the discovery
2. Protect the area
3. Notify the Engineer

The Department investigates and modifies the dimensions of the protected area if necessary. Do not move paleontological resources or take them from the job site. Do not resume work within the specified radius of the discovery until authorized.

14-8 NOISE AND VIBRATION

14-8.01 GENERAL

Reserved

14-8.02 NOISE CONTROL

Do not exceed 86 dBA LMax at 50 feet from the job site activities from 9 p.m. to 6 a.m.

Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.

14-9 AIR QUALITY

14-9.01 AIR POLLUTION CONTROL

Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including air pollution control rules, regulations, ordinances, and statutes provided in Govt Code § 11017 (Pub Cont Code § 10231).

Do not burn material to be disposed of.

14-9.02 DUST CONTROL

Prevent and alleviate dust by applying water, dust palliative, or both under Section 14-9.01.

Apply water under Section 17, "Watering."

Apply dust palliative under Section 18, "Dust Palliative."

If ordered, apply water, dust palliative, or both to control dust caused by public traffic. This work will be paid for as extra work as specified in Section 4-1.03D, "Extra Work."

14-10 SOLID WASTE DISPOSAL AND RECYCLING

14-10.01 SOLID WASTE DISPOSAL AND RECYCLING

Submit an annual Solid Waste Disposal and Recycling Report between January 1 and 15 for each year work is performed under the Contract at any time during the previous calendar year. Show the types and amounts of project-generated solid waste taken to or diverted from landfills or reused on the project from January 1 through December 31 of the previous calendar year.

Submit a final annual Solid Waste Disposal and Recycling Report within 5 business days after Contract acceptance. Show the types and amounts of project-generated solid waste taken to or diverted from landfills or reused on the project from January 1 to Contract acceptance.

For each failure to submit a completed form, the Department withholds \$10,000.

Condition	Maximum Shrinkage of Laboratory Cast Specimens at 28 days Drying (average of 3, %)
Paving and approach slab concrete	0.050
Bridge deck concrete	0.045

Note: Shrinkage requirement is waived for concrete that is used for precast elements.

Shrinkage tests shall be either:

- A. Performed by a laboratory accredited to perform AASHTO Designation: T 160, or
- B. Performed by a laboratory that maintains a current rating of 3 or better for the Cement and Concrete Reference Laboratory (CCRL) concrete proficiency sample program.

Laboratory cast specimens shall have a 4" x 4" cross section. Specimens shall be removed from the molds 23 ± 1 hours after mixing the concrete and placed in lime water at 73 ± 3 °F to 7 days age. A comparator reading shall be taken at 7 days age and recorded as the initial reading. Specimens then shall be stored in a humidity controlled room maintained at 73 ± 3 °F and 50 ± 4 percent relative humidity for the remainder of the test. Subsequent readings shall be taken at 7, 14, 21, and 28 days drying.

Test data verifying conformance to the shrinkage limitations shall be submitted with the mix design. Shrinkage testing data accepted by the Engineer no more than 3 years prior to the first working day of this contract will be acceptable for this entire contract, provided the data was for concrete with similar proportions and the same materials and material sources to be used on this contract. Concrete shall be considered to have similar proportions if, when compared to concrete to be used on this project, no more than 2 mix design elements are varied. Varied mix design elements shall fall within the tolerances in the following table:

Mix Design Element	Tolerance (±)
Water to cementitious material ratio	0.03
Total water content	5 %
Coarse aggregate (weight per cubic yard)	10 %
Fine aggregate (weight per cubic yard)	10 %
Supplementary cementitious material content	5 %
Admixture (as originally dosed)	25 %

Note: Admixtures must be of the same brand.

Before using concrete or in advance of revising the mix proportions, the Contractor shall submit in writing to the Engineer a copy of the mix design.

Compliance with cementitious material content requirements will be verified in conformance with procedures described in California Test 518 for cement content. For testing purposes, supplementary cementitious material (SCM) shall be considered to be cement. Batch proportions shall be adjusted as necessary to produce concrete having the specified cementitious material content.

If any concrete has a cementitious material, portland cement, or SCM content that is less than the minimum required, the concrete shall be removed. However, if the Engineer determines that the concrete is structurally adequate, the concrete may remain in place and the Contractor shall pay to the State \$0.25 for each pound of cementitious material, portland cement, or SCM that is less than the minimum required. The Department may deduct the amount from any moneys due, or that may become due, the Contractor under the contract. The deductions will not be made unless the difference between the contents required and those actually provided exceeds the batching tolerances permitted by Section 90-5, "Proportioning." No deductions will be made based on the results of California Test 518.

The requirements of the preceding paragraph shall not apply to minor concrete.

90-2 MATERIALS

90-2.01 CEMENTITIOUS MATERIALS

Unless otherwise specified, cementitious material shall be either a combination of Type II or Type V portland cement and SCM, or a blended cement. No cementitious material shall be used in the work unless it is on the Department's Pre-Qualified Products List at the time of mix design submittal. Information regarding cementitious material qualification and placement on the Department's approved list can be obtained at the Transportation Laboratory.

Cementitious materials used in cast-in-place concrete for exposed surfaces of like elements of a structure shall be from the same sources and of the same proportions.

Cementitious materials shall be protected from moisture until used. Sacked cementitious materials shall be piled to permit access for tallying, inspecting, and identifying each shipment.

Facilities shall be provided to ensure that the various cementitious materials meeting this Section 90-2.01 are kept separate from each other and from other cementitious materials. A storage silo containing a cementitious material shall be emptied before using that silo for a different cementitious material. Blended cements with a percentage of SCM differing by more than 2 percentage points are considered different cementitious materials. Sampling cementitious materials shall be in conformance with California Test 125.

The Contractor shall furnish a Certificate of Compliance for cementitious materials in conformance with the provisions in Section 6-1.07, "Certificates of Compliance." The Certificate of Compliance shall indicate the source by name and location (including country, state, and city). If cementitious material is delivered directly to the job site, the Certificate of Compliance shall be signed by the cementitious material supplier. If the cementitious material is used in ready-mixed concrete or in precast concrete products purchased as such by the Contractor, the Certificate of Compliance shall be signed by the manufacturer of the concrete or product. If blended cement is used, the Certificate of Compliance shall include a statement signed by the blended cement supplier that indicates the actual percentage, by weight, of SCM in the blend. Weight of SCM shall be by weighing device conforming to Section 9-1.01, "Measurement of Quantities," or as determined by chemical analysis.

90-2.01A Cement

Portland cement shall conform to the requirements in ASTM Designation: C 150 except the C₃S content of Type II cement shall not exceed 65 percent.

Blended cement shall conform to the requirements for Portland Blast-Furnace Slag Cement, Type IS (MS) or Portland-Pozzolan Cement, Type IP (MS) in AASHTO Designation: M 240, except that the maximum limits on the pozzolan content shall not apply. Blended cement shall be comprised of Type II or Type V cement and SCM produced by intergrinding portland cement clinker and granulated blast furnace slag, ground granulated blast furnace slag (GGBFS), or pozzolan; by blending portland cement and either GGBFS or finely divided pozzolan; or by a combination of intergrinding and blending.

In addition, Type II portland cement and Type V portland cement shall conform to the following requirements:

- A. The cement shall not contain more than 0.60-percent by mass of alkalis, calculated as the percentage of Na₂O plus 0.658 times the percentage of K₂O, when determined by methods as required in AASHTO Designation: T 105; and
- B. The autoclave expansion shall not exceed 0.50-percent

Type III portland cement shall be used only as specified or with the approval of the Engineer. Type III portland cement shall conform to the additional requirements listed above for Type II portland cement. The Contractor may use Type III portland cement in the manufacturing of precast concrete.

90-2.01B Supplementary Cementitious Materials

Each supplementary cementitious material shall conform to one of the following:

- A. Fly ash conforming to the requirements in AASHTO Designation: M 295, Class F, and these specifications. The available alkali, as sodium oxide equivalent, shall not exceed 1.5 percent when determined in conformance with the requirements in ASTM Designation: C 311 or the total alkali, as sodium oxide equivalent, shall not exceed 5.0 percent when determined in conformance with the requirements in AASHTO Designation: T 105.
- B. Ultra fine fly ash (UFFA) conforming to the requirements in AASHTO Designation: M 295, Class F, and the following chemical and physical requirements:

Chemical Requirements	Percent
Sulfur Trioxide (SO ₃)	1.5 max.
Loss on ignition	1.2 max.
Available Alkalies (as Na ₂ O) equivalent	1.5 max.

Physical Requirements	Percent
Particle size distribution	
Less than 3.5 microns	50
Less than 9.0 microns	90
Strength Activity Index with portland cement	
7 days	95 (minimum % of control)
28 days	110 (minimum % of control)
Expansion at 16 days when testing job materials in conformance with ASTM C 1567*	0.10 max.

* In the test mix, Type II or Type V portland cement shall be replaced with at least 12% UFFA by weight.

- C. Raw or calcined natural pozzolans conforming to the requirements in AASHTO Designation: M 295, Class N. and the following requirements and these specifications. The available alkali, as sodium oxide equivalent, shall not exceed 1.5 percent when determined in conformance with the requirements in ASTM Designation: C 311 or the total alkali, as sodium oxide equivalent, shall not exceed 5.0 percent when determined in conformance with the requirements in AASHTO Designation: T 105.
- D. Metakaolin conforming to the requirements in AASHTO Designation: M 295, Class N, and the following chemical and physical requirements:

Chemical Requirements	Percent
Silicon Dioxide (SiO ₂) + Aluminum Oxide (Al ₂ O ₃)	92.0 min.
Calcium Oxide (CaO)	1.0 max
Sulfur Trioxide (SO ₃)	1.0 max.
Loss on ignition	1.2 max.
Available Alkalies (as Na ₂ O) equivalent	1.0 max.

Physical Requirements	Percent
Particle size distribution	95
Less than 45 microns	
Strength Activity Index with portland cement	
7 days	100 (minimum % of control)
28 days	100 (minimum % of control)

- E. Ground Granulated Blast Furnace Slag (GGBFS) conforming to the requirements in AASHTO Designation: M 302, Grade 100 or Grade 120.
- F. Silica Fume conforming to the requirements of AASHTO Designation: M 307, with reduction in mortar expansion of 80 percent, minimum, using the cement from the proposed mix design.

Commingling of fly ash from different sources at uncontrolled ratios is permissible only if the following criteria are satisfied:

- A. Sources of fly ash to be commingled shall each produce fly ash that conforms to the requirements in AASHTO Designation: M 295, Class F.
- B. Testing of the commingled product is the responsibility of the fly ash supplier.
- C. Each fly ash's running average of relative density shall not differ from any other by more than 0.25 at the time of commingling.
- D. Each fly ash's running average of loss on ignition shall not differ from any other by more than one percent at the time of commingling.
- E. The final product of commingled fly ash shall conform to the requirements in AASHTO Designation: M 295, Class F.

90-2.01C Required Use Of Supplementary Cementitious Materials

General

The amount of portland cement and SCM used in portland cement concrete shall conform to the minimum cementitious material content provisions in Section 90-1.01, "Description," or Section 90-4.05, "Optional Use of Chemical Admixtures," and these specifications.

The SCM content in portland cement concrete shall conform to one of the following:

- A. Any combination of portland cement and at least one SCM, satisfying Equations (1) and (2):

Equation (1)

$$\frac{(25 \times UF) + (12 \times FA) + (10 \times FB) + (6 \times SL)}{MC} \geq X$$

Where:

UF = Silica fume, metakaolin, or UFFA, including the amount in blended cement, pounds per cubic yard.

FA = Fly ash or natural pozzolan conforming to the requirements in AASHTO Designation: M 295, Class F or N with a CaO content up to 10 percent, including the amount in blended cement, pounds per cubic yard.

FB = Fly ash or natural pozzolan conforming to the requirements in AASHTO Designation: M 295, Class F or N with a CaO content greater than 10 percent and up to 15 percent, including the amount in blended cement, pounds per cubic yard.

SL = GGBFS, including the amount in blended cement, pounds per cubic yard.

MC = Minimum amount of cementitious material specified, pounds per cubic yard.

X = 1.8 for innocuous aggregate, 3.0 for all other aggregate.

Equation (2)

$$MC - MSCM - PC \geq 0$$

Where:

MC = Minimum amount of cementitious material specified, pounds per cubic yard.

MSCM = The minimum sum of SCMs that satisfies Equation (1) above, pounds per cubic yard.

PC = The amount of portland cement, including the amount in blended cement, pounds per cubic yard.

- B. 15 percent of Class F fly ash with at least 48 ounces of LiNO₃ solution added per 100 pounds of portland cement. CaO content of the fly ash shall not exceed 15 percent.

Precast Concrete

The SCM content in precast portland cement concrete shall conform to one of the following:

- A. Any combination of portland cement and SCM, satisfying the following equation:

Equation (3)

$$\frac{(25 \times UF) + (12 \times FA) + (10 \times FB) + (6 \times SL)}{TC} \geq X$$

Where:

UF = Silica fume, metakaolin, or UFFA, including the amount in blended cement, pounds per cubic yard.

FA = Fly ash or natural pozzolan conforming to the requirements in AASHTO Designation: M 295, Class F or N with a CaO content up to 10 percent, including the amount in blended cement, pounds per cubic yard.

FB = Fly ash or natural pozzolan conforming to the requirements in AASHTO Designation: M 295, Class F or N with a CaO content greater than 10 percent and up to 15 percent, including the amount in blended cement, pounds per cubic yard.

SL = GGBFS, including the amount in blended cement, pounds per cubic yard.

- TC = Total amount of cementitious material used in the mix, pounds per cubic yard.
X = 0.0 if precast members are constructed with portland cement concrete using aggregate that is "innocuous" in conformance with the provisions in Section 90-2.02, "Aggregates."
X = 3.0 for all other aggregate.
- B. 15 percent of Class F fly ash with at least 48 ounces of LiNO₃ solution added per 100 pounds of portland cement. CaO content of the fly ash shall not exceed 15 percent.
- C. Any combination of supplementary cementitious material and portland cement may be used if the expansion of cementitious material and aggregate does not exceed 0.10 percent when tested in conformance with the requirements in ASTM C 1567. Test data shall be submitted with each mix design. Test data accepted by the Engineer no more than 3 years prior to the first working day of this contract will be acceptable for this entire contract, provided the data was for the same concrete mix and the same materials and material sources to be used on this contract.

90-2.02 AGGREGATES

To be considered innocuous, aggregate must be on the Department's approved list, "Innocuous Aggregates for use in Concrete." Information regarding aggregate qualification and placement on the Department's approved list can be obtained at the Transportation Laboratory.

Both coarse and fine aggregate must be on the approved list for the aggregate used in concrete to be considered innocuous.

Aggregates shall be free from deleterious coatings, clay balls, roots, bark, sticks, rags, and other extraneous material.

The Contractor shall provide safe and suitable facilities, including necessary splitting devices for obtaining samples of aggregates, in conformance with California Test 125.

Aggregates shall be of such character that it will be possible to produce workable concrete within the limits of water content provided in Section 90-6.06, "Amount of Water and Penetration."

Aggregates shall have not more than 10 percent loss when tested for soundness in conformance with the requirements in California Test 214. The soundness requirement for fine aggregate will be waived, provided that the durability index, D_f , of the fine aggregate is 60 or greater when tested for durability in conformance with California Test 229.

If the results of any one or more of the Cleanness Value, Sand Equivalent, or aggregate grading tests do not meet the requirements specified for "Operating Range" but all meet the "Contract Compliance" requirements, the placement of concrete shall be suspended at the completion of the current pour until tests or other information indicate that the next material to be used in the work will comply with the requirements specified for "Operating Range."

If the results of either or both the Cleanness Value and coarse aggregate grading tests do not meet the requirements specified for "Contract Compliance," the concrete that is represented by the tests shall be removed. However, if the Engineer determines that the concrete is structurally adequate, the concrete may remain in place, and the Contractor shall pay to the State \$3.50 per cubic yard for paving concrete and \$5.50 per cubic yard for all other concrete for the concrete represented by these tests and left in place. The Department may deduct the amount from any moneys due, or that may become due, the Contractor under the contract.

If the results of either or both the Sand Equivalent and fine aggregate grading tests do not meet the requirements specified for "Contract Compliance," the concrete which is represented by the tests shall be removed. However, if the Engineer determines that the concrete is structurally adequate, the concrete may remain in place, and the Contractor shall pay to the State \$3.50 per cubic yard for paving concrete and \$5.50 per cubic yard for all other concrete for the concrete represented by these tests and left in place. The Department may deduct the amount from any moneys due, or that may become due, the Contractor under the contract.

The 2 preceding paragraphs apply individually to the "Contract Compliance" requirements for coarse aggregate and fine aggregate. When both coarse aggregate and fine aggregate do not conform to the "Contract Compliance" requirements, both paragraphs shall apply. The payments specified in those paragraphs are in addition to any payments made in conformance with the provisions in Section 90-1.01, "Description."

No single Cleanness Value, Sand Equivalent, or aggregate grading test shall represent more than 300 cubic yards of concrete or one day's pour, whichever is smaller.

When the source of an aggregate is changed, the Contractor shall adjust the mix proportions and submit in writing to the Engineer a copy of the mix design before using the aggregates.

90-2.02A Coarse Aggregate

Coarse aggregate shall consist of gravel, crushed gravel, crushed rock, reclaimed aggregate, crushed air-cooled iron blast furnace slag or combinations thereof. Crushed air-cooled blast furnace slag shall not be used in reinforced or prestressed concrete.

Reclaimed aggregate is aggregate that has been recovered from plastic concrete by washing away the cementitious material. Reclaimed aggregate shall conform to all aggregate requirements.

Coarse aggregate shall conform to the following quality requirements:

Tests	California Test	Requirements
Loss in Los Angeles Rattler (after 500 revolutions)	211	45% max.
Cleanness Value		
Operating Range	227	75 min.
Contract Compliance	227	71 min.

In lieu of the above Cleanness Value requirements, a Cleanness Value "Operating Range" limit of 71, minimum, and a Cleanness Value "Contract Compliance" limit of 68, minimum, will be used to determine the acceptability of the coarse aggregate if the Contractor furnishes a Certificate of Compliance, as provided in Section 6-1.07, "Certificates of Compliance," certifying that:

- A. Coarse aggregate sampled at the completion of processing at the aggregate production plant had a Cleanness Value of not less than 82 when tested in conformance with the requirements in California Test 227; and
- B. Prequalification tests performed in conformance with the requirements in California Test 549 indicated that the aggregate would develop a relative strength of not less than 95 percent and would have a relative shrinkage not greater than 105 percent, based on concrete.

90-2.02B Fine Aggregate

Fine aggregate shall consist of natural sand, manufactured sand produced from larger aggregate or a combination thereof. Manufactured sand shall be well graded.

Fine aggregate shall conform to the following quality requirements:

Test	California Test	Requirements
Organic Impurities	213	Satisfactory ^a
Sand Equivalent:		
Operating Range	217	75, min.
Contract Compliance	217	71, min.

^a Fine aggregate developing a color darker than the reference standard color may be accepted if 95% relative mortar strength is achieved when tested in conformance with ASTM C87.

In lieu of the above Sand Equivalent requirements, a Sand Equivalent "Operating Range" limit of 71, minimum, and a Sand Equivalent "Contract Compliance" limit of 68, minimum, will be used to determine the acceptability of the fine aggregate if the Contractor furnishes a Certificate of Compliance, as provided in Section 6-1.07, "Certificates of Compliance," certifying that:

- A. Fine aggregate sampled at the completion of processing at the aggregate production plant had a Sand Equivalent value of not less than 82 when tested by California Test 217; and
- B. Prequalification tests performed in conformance with California Test 549 indicated that the aggregate would develop a relative strength of not less than 95 percent and would have a relative shrinkage not greater than 105 percent, based on concrete.

90-2.03 WATER

In conventionally reinforced concrete work, the water for curing, for washing aggregates, and for mixing shall be free from oil and shall not contain more than 1,000 parts per million of chlorides as Cl, when tested in conformance with California Test 422, nor more than 1,300 parts per million of sulfates as SO₄, when tested in

conformance with California Test 417. In prestressed concrete work, the water for curing, for washing aggregates, and for mixing shall be free from oil and shall not contain more than 650 parts per million of chlorides as Cl, when tested in conformance with California Test 422, nor more than 1,300 parts per million of sulfates as SO₄, when tested in conformance with California Test 417. In no case shall the water contain an amount of impurities that will cause either of the following results when compared to the same test using distilled or deionized water: 1) a change in the setting time of cement of more than 25 percent when tested in conformance with the requirements in ASTM Designation: C 191 or ASTM Designation: C 266 or 2) a reduction in the compressive strength of mortar at 14 days of more than 5 percent, when tested in conformance with the requirements in ASTM Designation: C 109.

In nonreinforced concrete work, the water for curing, for washing aggregates and for mixing shall be free from oil and shall not contain more than 2,000 parts per million of chlorides as Cl, when tested in conformance with California Test 422, or more than 1,500 parts per million of sulfates as SO₄, when tested in conformance with California Test 417.

In addition to the above provisions, water for curing concrete shall not contain impurities in a sufficient amount to cause discoloration of the concrete or produce etching of the surface.

Water reclaimed from mixer wash-out operations may be used in mixing concrete. The water shall not contain coloring agents or more than 300 parts per million of alkalis (Na₂O + 0.658 K₂O) as determined on the filtrate. The specific gravity of the water shall not exceed 1.03 and shall not vary more than ±0.010 during a day's operations.

90-2.04 Admixture Materials

Admixture materials shall be stored and dispensed in liquid form and conform to the following requirements:

- A. Chemical Admixtures—ASTM Designation: C 494.
- B. Air-entraining Admixtures—ASTM Designation: C 260.
- C. Lithium Nitrate shall be in an aqueous solution conforming to the following:
 - 1. Lithium Nitrate (LiNO₃) must be 30 percent +/- 0.5 percent by weight
 - 2. Sulfate (SO₄) must be less than 1000 ppm
 - 3. Chloride (Cl) must be less than 1000 ppm
 - 4. Alkalis (Na₂O + 0.658 K₂O) must be less than 1000 ppm

90-3 AGGREGATE GRADINGS

90-3.01 GENERAL

Before beginning concrete work, the Contractor shall submit in writing to the Engineer the gradation of the primary aggregate nominal sizes that the Contractor proposes to furnish. If a primary coarse aggregate or the fine aggregate is separated into 2 or more sizes, the proposed gradation shall consist of the gradation for each individual size, and the proposed proportions of each individual size, combined mathematically to indicate one proposed gradation. The proposed gradation shall meet the grading requirements shown in the table in this section, and shall show the percentage passing each of the sieve sizes used in determining the end result.

The Engineer may waive, in writing, the gradation requirements in this Section 90-3.01 and in Sections 90-3.02, "Coarse Aggregate Grading," 90-3.03, "Fine Aggregate Grading," and 90-3.04, "Combined Aggregate Gradings," if, in the Engineer's opinion, furnishing the gradation is not necessary for the type or amount of concrete work to be constructed.

Gradations proposed by the Contractor shall be within the following percentage passing limits:

Primary Aggregate Nominal Size	Sieve Size	Limits of Proposed Gradation
1-1/2" x 3/4"	1"	19 - 41
1" x No. 4	3/4"	52 - 85
1" x No. 4	3/8"	15 - 38
1/2" x No. 4	3/8"	40 - 78
3/8" x No. 8	3/8"	50 - 85
Fine Aggregate	No. 16	55 - 75
Fine Aggregate	No. 30	34 - 46
Fine Aggregate	No. 50	16 - 29

Should the Contractor change the source of supply, the Contractor shall submit in writing to the Engineer the new gradations before their intended use.

90-3.02 COARSE AGGREGATE GRADING

The grading requirements for coarse aggregates are shown in the following table for each size of coarse aggregate:

Sieve Sizes	Percentage Passing Primary Aggregate Nominal Sizes							
	1-1/2" x 3/4"		1" x No. 4		1/2" x No. 4		3/8" x No. 8	
	Operating Range	Contract Compliance	Operating Range	Contract Compliance	Operating Range	Contract Compliance	Operating Range	Contract Compliance
2"	100	100	—	—	—	—	—	—
1-1/2"	88 - 100	85 - 100	100	100	—	—	—	—
1"	X ±18	X ±25	88 - 100	86 - 100	—	—	—	—
3/4"	0 - 17	0 - 20	X ±15	X ±22	100	100	—	—
1/2"	—	—	—	—	82 - 100	80 - 100	100	100
3/8"	0 - 7	0 - 9	X ±15	X ±22	X ±15	X ±22	X ±15	X ±20
No. 4	—	—	0 - 16	0 - 18	0 - 15	0 - 18	0 - 25	0 - 28
No. 8	—	—	0 - 6	0 - 7	0 - 6	0 - 7	0 - 6	0 - 7

In the above table, the symbol X is the gradation that the Contractor proposes to furnish for the specific sieve size as provided in Section 90-3.01, "General."

Coarse aggregate for the 1-1/2 inch, maximum, combined aggregate grading as provided in Section 90-3.04, "Combined Aggregate Gradings," shall be furnished in 2 or more primary aggregate nominal sizes. Each primary aggregate nominal size may be separated into 2 sizes and stored separately, provided that the combined material conforms to the grading requirements for that particular primary aggregate nominal size.

When the one inch, maximum, combined aggregate grading as provided in Section 90-3.04, "Combined Aggregate Gradings," is to be used, the coarse aggregate may be separated into 2 sizes and stored separately, provided that the combined material shall conform to the grading requirements for the 1" x No. 4 primary aggregate nominal size.

90-3.03 FINE AGGREGATE GRADING

Fine aggregate shall be graded within the following limits:

Sieve Sizes	Percentage Passing	
	Operating Range	Contract Compliance
3/8"	100	100
No. 4	95 - 100	93 - 100
No. 8	65 - 95	61 - 99
No. 16	X ±10	X ±13
No. 30	X ±9	X ±12
No. 50	X ±6	X ±9
No. 100	2 - 12	1 - 15
No. 200	0 - 8	0 - 10

In the above table, the symbol X is the gradation that the Contractor proposes to furnish for the specific sieve size as provided in Section 90-3.01, "General."

In addition to the above required grading analysis, the distribution of the fine aggregate sizes shall be such that the difference between the total percentage passing the No. 16 sieve and the total percentage passing the No. 30 sieve shall be between 10 and 40, and the difference between the percentage passing the No. 30 and No. 50 sieves shall be between 10 and 40.

Fine aggregate may be separated into 2 or more sizes and stored separately, provided that the combined material conforms to the grading requirements specified in this Section 90-3.03.

90-3.04 COMBINED AGGREGATE GRADINGS

Combined aggregate grading limits shall be used only for the design of concrete mixes. Concrete mixes shall be designed so that aggregates are combined in proportions that shall produce a mixture within the grading limits for combined aggregates as specified herein.

The combined aggregate grading, except when otherwise specified in these specifications or the special provisions, shall be either the 1-1/2 inch, maximum grading, or the 1 inch, maximum grading, at the option of the Contractor.

Grading Limits of Combined Aggregates				
Sieve Sizes	Percentage Passing			
	1-1/2" Max.	1" Max.	1/2" Max.	3/8" Max.
2"	100	—	—	—
1-1/2"	90 - 100	100	—	—
1"	50 - 86	90 - 100	—	—
3/4"	45 - 75	55 - 100	100	—
1/2"	—	—	90 - 100	100
3/8"	38 - 55	45 - 75	55 - 86	50 - 100
No. 4	30 - 45	35 - 60	45 - 63	45 - 63
No. 8	23 - 38	27 - 45	35 - 49	35 - 49
No. 16	17 - 33	20 - 35	25 - 37	25 - 37
No. 30	10 - 22	12 - 25	15 - 25	15 - 25
No. 50	4 - 10	5 - 15	5 - 15	5 - 15
No. 100	1 - 6	1 - 8	1 - 8	1 - 8
No. 200	0 - 3	0 - 4	0 - 4	0 - 4

Changes from one grading to another shall not be made during the progress of the work unless permitted by the Engineer.

90-4 ADMIXTURES

90-4.01 GENERAL

Admixtures used in portland cement concrete shall conform to and be used in conformance with the provisions in this Section 90-4 and the special provisions. Admixtures shall be used when specified or ordered by the Engineer and may be used at the Contractor's option as provided herein.

Chemical admixtures and air-entraining admixtures containing chlorides as Cl in excess of one percent by weight of admixture, as determined by California Test 415, shall not be used.

Admixtures shall be uniform in properties throughout their use in the work. Should it be found that an admixture as furnished is not uniform in properties, its use shall be discontinued.

If more than one admixture is used, the admixtures shall be compatible with each other so that the desirable effects of all admixtures used will be realized.

Chemical admixtures shall be used in conformance with the manufacturer's written recommendations. The manufacturer's written recommendations shall include a statement that the admixtures are compatible with the types and amounts of SCMs used.

90-4.02 MATERIALS

Admixture materials shall conform to the provisions in Section 90-2.04, "Admixture Materials."

90-4.03 ADMIXTURE APPROVAL

No admixture brand shall be used in the work unless it is on the Department's current list of approved brands for the type of admixture involved. Information regarding admixture qualification and placement on the Department's list can be obtained at the Transportation Laboratory.

If the Contractor proposes to use an admixture of a brand and type on the current list of approved admixture brands, the Contractor shall furnish a Certificate of Compliance from the manufacturer, as provided in Section 6-1.07, "Certificates of Compliance," certifying that the admixture furnished is the same as that previously approved. If a previously approved admixture is not accompanied by a Certificate of Compliance, the admixture shall not be used in the work until the Engineer has had sufficient time to make the appropriate tests and has approved the admixture for use. The Engineer may take samples for testing at any time, whether or not the admixture has been accompanied by a Certificate of Compliance.

90-4.04 REQUIRED USE OF CHEMICAL ADMIXTURES

If the use of a chemical admixture is specified, the admixture shall be used at the dosage specified, except that if no dosage is specified, the admixture shall be used at the dosage normally recommended by the manufacturer of the admixture.

90-4.05 OPTIONAL USE OF CHEMICAL ADMIXTURES

The Contractor may use Type A or F, water-reducing; Type B, retarding; or Type D or G, water-reducing and retarding admixtures as described in ASTM Designation: C 494 to conserve cementitious material or to facilitate any concrete construction application subject to the following conditions:

- A. If a water-reducing admixture or a water-reducing and retarding admixture is used, the cementitious material content specified or ordered may be reduced by a maximum of 5 percent by weight, except that the resultant cementitious material content shall be not less than 505 pounds per cubic yard; and
- B. When a reduction in cementitious material content is made, the dosage of admixture used shall be no less than the dosage used in determining approval of the admixture.

The Contractor may use Type S admixtures conforming to the requirements in ASTM Designation: C 494.

Unless otherwise specified, a Type C accelerating chemical admixture conforming to the requirements in ASTM Designation: C 494, may be used in portland cement concrete. Inclusion in the mix design submitted for approval will not be required provided that the admixture is added to counteract changing conditions that contribute to delayed setting of the portland cement concrete, and the use or change in dosage of the admixture is approved in writing by the Engineer.

90-4.06 REQUIRED USE OF AIR-ENTRAINING ADMIXTURES

When air-entrainment is specified or ordered by the Engineer, the air-entraining admixture shall be used in amounts to produce a concrete having the specified air content as determined by California Test 504.

90-4.07 OPTIONAL USE OF AIR-ENTRAINING ADMIXTURES

When air-entrainment has not been specified or ordered by the Engineer, the Contractor will be permitted to use an air-entraining admixture to facilitate the use of any construction procedure or equipment provided that the average air content, as determined by California Test 504, of 3 successive tests does not exceed 4 percent, and no single test value exceeds 5.5 percent. If the Contractor elects to use an air-entraining admixture in concrete for pavement, the Contractor shall so indicate at the time the Contractor designates the source of aggregate.

90-4.08 BLANK

90-4.09 BLANK

90-4.10 PROPORTIONING AND DISPENSING LIQUID ADMIXTURES

Chemical admixtures and air-entraining admixtures shall be dispensed in liquid form. Dispensers for liquid admixtures shall have sufficient capacity to measure at one time the prescribed quantity required for each batch of concrete. Each dispenser shall include a graduated measuring unit into which liquid admixtures are measured to within ± 5 percent of the prescribed quantity for each batch. Dispensers shall be located and maintained so that the graduations can be accurately read from the point at which proportioning operations are controlled to permit a visual check of batching accuracy prior to discharge. Each measuring unit shall be clearly marked for the type and quantity of admixture.

Each liquid admixture dispensing system shall be equipped with a sampling device consisting of a valve located in a safe and readily accessible position such that a sample of the admixture may be withdrawn slowly by the Engineer.

If more than one liquid admixture is used in the concrete mix, each liquid admixture shall have a separate measuring unit and shall be dispensed by injecting equipment located in such a manner that the admixtures are not mixed at high concentrations and do not interfere with the effectiveness of each other. When air-entraining admixtures are used in conjunction with other liquid admixtures, the air-entraining admixture shall be the first to be incorporated into the mix, unless it is demonstrated that a different sequence improves performance.

When automatic proportioning devices are used, dispensers for liquid admixtures shall operate automatically with the batching control equipment. The dispensers shall be equipped with an automatic warning system in good operating condition that will provide a visible or audible signal at the point at which proportioning operations are

controlled when the quantity of admixture measured for each batch of concrete varies from the preselected dosage by more than 5 percent, or when the entire contents of the measuring unit are not emptied from the dispenser into each batch of concrete.

Unless liquid admixtures are added to premeasured water for the batch, their discharge into the batch shall be arranged to flow into the stream of water so that the admixtures are well dispersed throughout the batch, except that air-entraining admixtures may be dispensed directly into moist sand in the batching bins provided that adequate control of the air content of the concrete can be maintained.

Liquid admixtures requiring dosages greater than one-half gallon per cubic yard shall be considered to be water when determining the total amount of free water as specified in Section 90-6.06, "Amount of Water and Penetration."

90-4.11 BLANK

90-5 PROPORTIONING

90-5.01 STORAGE OF AGGREGATES

Aggregates shall be stored or stockpiled in such a manner that separation of coarse and fine particles of each size shall be avoided and the various sizes shall not become intermixed before proportioning.

Aggregates shall be stored or stockpiled and handled in a manner that prevent contamination by foreign materials. In addition, storage of aggregates at batching or mixing facilities that are erected subsequent to the award of the contract and that furnish concrete to the project shall conform to the following:

- A. Intermingling of the different sizes of aggregates shall be positively prevented. The Contractor shall take the necessary measures to prevent intermingling. The preventive measures may include, but are not necessarily limited to, physical separation of stockpiles or construction of bulkheads of adequate length and height; and
- B. Contamination of aggregates by contact with the ground shall be positively prevented. The Contractor shall take the necessary measures to prevent contamination. The preventive measures shall include, but are not necessarily limited to, placing aggregates on wooden platforms or on hardened surfaces consisting of portland cement concrete, asphalt concrete, or cement treated material.

In placing aggregates in storage or in moving the aggregates from storage to the weigh hopper of the batching plant, any method that may cause segregation, degradation, or the combining of materials of different gradings that will result in any size of aggregate at the weigh hopper failing to meet the grading requirements, shall be discontinued. Any method of handling aggregates that results in excessive breakage of particles shall be discontinued. The use of suitable devices to reduce impact of falling aggregates may be required by the Engineer.

90-5.02 PROPORTIONING DEVICES

Weighing, measuring, or metering devices used for proportioning materials shall conform to the requirements in Section 9-1.01, "Measurement of Quantities," and this Section 90-5.02. In addition, automatic weighing systems shall comply with the requirements for automatic proportioning devices in Section 90-5.03A, "Automatic Proportioning." Automatic devices shall be automatic to the extent that the only manual operation required for proportioning the aggregates, cement, and SCM for one batch of concrete is a single operation of a switch or starter.

For concrete pavement, aggregate and bulk cementitious material must be proportioned by weight by means of automatic proportioning devices.

Proportioning devices shall be tested as frequently as the Engineer may deem necessary to ensure their accuracy.

Weighing equipment shall be insulated against vibration or movement of other operating equipment in the plant. When the plant is in operation, the weight of each batch of material shall not vary from the weight designated by the Engineer by more than the tolerances specified herein.

Equipment for cumulative weighing of aggregate shall have a zero tolerance of ± 0.5 percent of the designated total batch weight of the aggregate. For systems with individual weigh hoppers for the various sizes of aggregate, the zero tolerance shall be ± 0.5 percent of the individual batch weight designated for each size of aggregate. Equipment for cumulative weighing of cement and SCM shall have a zero tolerance of ± 0.5 percent of the designated total batch weight of the cement and SCM. Equipment for weighing cement or SCM separately shall have a zero tolerance of ± 0.5 percent of their designated individual batch weights. Equipment for measuring water shall have a zero tolerance of ± 0.5 percent of its designated weight or volume.

The weight indicated for any batch of material shall not vary from the preselected scale setting by more than the following:

- A. Aggregate weighed cumulatively shall be within 1.0 percent of the designated total batch weight of the aggregate. Aggregates weighed individually shall be within 1.5 percent of their respective designated batch weights; and
- B. Cement shall be 99 to 102 percent of its designated batch weight. When weighed individually, SCM shall be 99 to 102 percent of its designated batch weight. When SCM and cement are permitted to be weighed cumulatively, cement shall be weighed first to 99 to 102 percent of its designated batch weight, and the total for cement and SCM shall be 99 to 102 percent of the sum of their designated batch weights. When a blended cement is used, the percentages of cement and SCM used for calculating batch weights shall be based on the percentage of SCM indicated in the Certificate of Compliance from the blended cement supplier; and
- C. Water shall be within 1.5 percent of its designated weight or volume.

Each scale graduation shall be approximately 0.001 of the total capacity of the scale. The capacity of scales for weighing cement, SCM, or cement plus SCM and aggregates shall not exceed that of commercially available scales having single graduations indicating a weight not exceeding the maximum permissible weight variation above, except that no scale shall be required having a capacity of less than 1,000 pounds, with one pound graduations.

90-5.03 PROPORTIONING

Proportioning shall consist of dividing the aggregates into the specified sizes, each stored in a separate bin, and combining them with cementitious material and water as provided in these specifications. Aggregates shall be proportioned by weight.

At the time of batching, aggregates shall have been dried or drained sufficiently to result in a stable moisture content such that no visible separation of water from aggregate will take place during transportation from the proportioning plant to the point of mixing. In no event shall the free moisture content of the fine aggregate at the time of batching exceed 8 percent of its saturated, surface-dry weight.

Should separate supplies of aggregate material of the same size group, but of different moisture content or specific gravity or surface characteristics affecting workability, be available at the proportioning plant, withdrawals shall be made from one supply exclusively and the materials therein completely exhausted before starting upon another.

Bulk Type IP (MS) or Type IS (MS) cement shall be weighed in an individual hopper and shall be kept separate from the aggregates until the ingredients are released for discharge into the mixer.

Bulk cement and SCM may be weighed in separate, individual weigh hoppers or may be weighed in the same weigh hopper and shall be kept separate from the aggregates until the ingredients are released for discharge into the mixer. If the cement and SCM are weighed cumulatively, the cement shall be weighed first.

If cement and SCM are weighed in separate weigh hoppers, the weigh systems for the proportioning of the aggregate, the cement, and the SCM shall be individual and distinct from all other weigh systems. Each weigh system shall be equipped with a hopper, a lever system, and an indicator to constitute an individual and independent material-weighing device. The cement and the SCM shall be discharged into the mixer simultaneously with the aggregate.

The scales and weigh hoppers for bulk weighing cement, SCM, or cement plus SCM shall be separate and distinct from the aggregate weighing equipment.

For batches of one cubic yard or more, the batching equipment shall conform to one of the following combinations:

- A. Separate boxes and separate scale and indicator for weighing each size of aggregate.
- B. Single box and scale indicator for all aggregates.
- C. Single box or separate boxes and automatic weighing mechanism for all aggregates.

In order to check the accuracy of batch weights, the gross weight and tare weight of batch trucks, truck mixers, truck agitators, and non-agitating hauling equipment shall be determined when ordered by the Engineer. The equipment shall be weighed on scales designated by the Engineer.

90-5.03A Automatic Proportioning

Automatic proportioning devices shall be authorized by the Department.

For concrete pavement, the Contractor shall install and maintain in operating condition an electronically actuated moisture meter that will indicate, on a readily visible scale, changes in the moisture content of the fine aggregate as it is batched within a sensitivity of 0.5 percent by weight of the fine aggregate.

The batching of cement, SCM, or cement plus SCM and aggregate shall be interlocked so that a new batch cannot be started until all weigh hoppers are empty, the proportioning devices are within zero tolerance, and the discharge gates are closed. The interlock shall permit no part of the batch to be discharged until all aggregate hoppers and the cement and SCM hoppers or the cement plus SCM hopper are charged with weights that are within the tolerances specified in Section 90-5.02, "Proportioning Devices."

If interlocks are required for cement and SCM charging mechanisms and cement and SCM are weighed cumulatively, their charging mechanisms shall be interlocked to prevent the introduction of SCM until the weight of cement in the cement weigh hopper is within the tolerances specified in Section 90-5.02, "Proportioning Devices."

If concrete is completely mixed in stationary mixers, the SCMs shall be weighed in a separate weigh hopper and the SCM and cement shall be introduced simultaneously into the mixer proportionately with the aggregate. If the Contractor provides certification that the stationary mixer is capable of mixing the cement, SCM, aggregates, and water uniformly before discharge, weighing the SCM cumulatively with the cement is permitted. Certification shall contain the following:

- A. Test results for 2 compressive strength test cylinders of concrete taken within the first one-third and 2 compressive strength test cylinders of concrete taken within the last one-third of the concrete discharged from a single batch from the stationary mixer. Strength tests and cylinder preparation will be in conformance with the provisions of Section 90-9, "Compressive Strength";
- B. Calculations demonstrating that the difference in the averages of 2 compressive strengths taken in the first one-third is no greater than 7.5 percent different than the averages of 2 compressive strengths taken in the last one-third of the concrete discharged from a single batch from the stationary mixer. Strength tests and cylinder preparation will be in conformance with the provisions of Section 90-9, "Compressive Strength;" and
- C. The mixer rotation speed and time of mixing before discharge that are required to produce a mix that meets the requirements above.

The discharge gate on the cement and SCM hoppers or the cement plus SCM hopper shall be designed to permit regulating the flow of cement, SCM, or cement plus SCM into the aggregate as directed by the Engineer.

If separate weigh boxes are used for each size of aggregate, the discharge gates shall permit regulating the flow of each size of aggregate as directed by the Engineer.

Material discharged from the several bins shall be controlled by gates or by mechanical conveyors. The means of withdrawal from the several bins, and of discharge from the weigh box, shall be interlocked so that not more than one bin can discharge at a time, and so that the weigh box cannot be tripped until the required quantity from each of the several bins has been deposited therein. Should a separate weigh box be used for each size of aggregate, all may be operated and discharged simultaneously.

If the discharge from the several bins is controlled by gates, each gate shall be actuated automatically so that the required weight is discharged into the weigh box, after which the gate shall automatically close and lock.

The automatic weighing system shall be designed so that all proportions required may be set on the weighing controller at the same time.

90-6 MIXING AND TRANSPORTING

90-6.01 GENERAL

Concrete shall be mixed in mechanically operated mixers, except that when permitted by the Engineer, batches not exceeding 1/3 cubic yard may be mixed by hand methods in conformance with the provisions in Section 90-6.05, "Hand-Mixing."

Equipment having components made of aluminum or magnesium alloys that would have contact with plastic concrete during mixing, transporting, or pumping of portland cement concrete shall not be used.

Concrete shall be homogeneous and thoroughly mixed, and there shall be no lumps or evidence of undispersed cementitious material.

Uniformity of concrete mixtures will be determined by differences in penetration as determined by California Test 533, or slump as determined by ASTM Designation: C 143, and by variations in the proportion of coarse aggregate as determined by California Test 529.

When the mix design specifies a penetration value, the difference in penetration, determined by comparing penetration tests on 2 samples of mixed concrete from the same batch or truck mixer load, shall not exceed 1/2 inch. When the mix design specifies a slump value, the difference in slump, determined by comparing slump tests on 2 samples of mixed concrete from the same batch or truck mixer load, shall not exceed the values given in the table below. Variation in the proportion of coarse aggregate will be determined by comparing the results of tests of 2

samples of mixed concrete from the same batch or truck mixer load and the difference between the 2 results shall not exceed 170 pounds per cubic yard of concrete.

Average Slump	Maximum Permissible Difference
Less than 4"	1"
4" to 6"	1-1/2"
Greater than 6" to 9"	2"

The Contractor shall furnish samples of the freshly mixed concrete and provide satisfactory facilities for obtaining the samples.

90-6.02 MACHINE MIXING

Concrete mixers may be of the revolving drum or the revolving blade type, and the mixing drum or blades shall be operated uniformly at the mixing speed recommended by the manufacturer. Mixers and agitators that have an accumulation of hard concrete or mortar shall not be used.

The temperature of mixed concrete, immediately before placing, shall be not less than 50 °F or more than 90 °F. Aggregates and water shall be heated or cooled as necessary to produce concrete within these temperature limits. Neither aggregates nor mixing water shall be heated to exceed 150 °F. If ice is used to cool the concrete, discharge of the mixer will not be permitted until all ice is melted.

The batch shall be so charged into the mixer that some water will enter in advance of cementitious materials and aggregates. All water shall be in the drum by the end of the first one-fourth of the specified mixing time. When concrete is delivered in a truck mixer, a portion of the mixing water may be withheld and, if allowed by the Engineer, may be added at the point of delivery as specified under Section 90-6.03, "Transporting Mixed Concrete."

Cementitious materials shall be batched and charged into the mixer by means that will not result either in loss of cementitious materials due to the effect of wind, in accumulation of cementitious materials on surfaces of conveyors or hoppers, or in other conditions that reduce or vary the required quantity of cementitious material in the concrete mixture.

Stationary mixers shall be operated with an automatic timing device. The timing device and discharge mechanism shall be interlocked so that during normal operation no part of the batch will be discharged until the specified mixing time has elapsed.

The total elapsed time between the intermingling of damp aggregates and all cementitious materials and the start of mixing shall not exceed 30 minutes.

The size of batch shall not exceed the manufacturer's guaranteed capacity.

When producing concrete for pavement or base, suitable batch counters shall be installed and maintained in good operating condition at job site batching plants and stationary mixers. The batch counters shall indicate the exact number of batches proportioned and mixed.

Concrete shall be mixed and delivered to the job site by means of one of the following combinations of operations:

- A. Mixed completely in a stationary mixer and the mixed concrete transported to the point of delivery in truck agitators or in nonagitating hauling equipment (central-mixed concrete).
- B. Mixed partially in a stationary mixer, and the mixing completed in a truck mixer (shrink-mixed concrete).
- C. Mixed completely in a truck mixer (transit-mixed concrete).

Agitators may be truck mixers operating at agitating speed or truck agitators. Each mixer and agitator shall have attached thereto in a prominent place a metal plate or plates on which is plainly marked the various uses for which the equipment is designed, the manufacturer's guaranteed capacity of the drum or container in terms of the volume of mixed concrete and the speed of rotation of the mixing drum or blades.

Truck mixers shall be equipped with electrically or mechanically actuated revolution counters by which the number of revolutions of the drum or blades may readily be verified.

When shrink-mixed concrete is furnished, concrete that has been partially mixed at a central plant shall be transferred to a truck mixer and all requirements for transit-mixed concrete shall apply. No credit in the number of revolutions at mixing speed will be allowed for partial mixing in a central plant.

90-6.03 TRANSPORTING MIXED CONCRETE

Mixed concrete may be transported to the delivery point in truck agitators or truck mixers operating at the speed designated by the manufacturer of the equipment as agitating speed, or in non-agitating hauling equipment, provided the consistency and workability of the mixed concrete upon discharge at the delivery point is suitable for adequate

placement and consolidation in place, and provided the mixed concrete after hauling to the delivery point conforms to the provisions in Section 90-6.01, "General."

Truck agitators shall be loaded not to exceed the manufacturer's guaranteed capacity and shall maintain the mixed concrete in a thoroughly mixed and uniform mass during hauling.

Bodies of nonagitating hauling equipment shall be constructed so that leakage of the concrete mix, or any part thereof, will not occur at any time.

Concrete hauled in open-top vehicles shall be protected during hauling against rain or against exposure to the sun for more than 20 minutes when the ambient temperature exceeds 75 °F.

No water in excess of that in the approved mix design shall be incorporated into the concrete. If approved by the Engineer, water withheld during batching may be added to the concrete at the delivery point in one operation before the discharge of more than 1/4 cubic yard. Equipment for supplying the water shall conform to Section 90-6.06, "Amount of Water and Penetration." When water is added at the point of delivery, the drum shall be revolved not less than 30 revolutions at mixing speed after the water is added and before discharged is commenced.

The rate of discharge of mixed concrete from a truck mixer or agitator shall be controlled by the speed of rotation of the drum in the discharge direction with the discharge gate fully open.

If a truck mixer or agitator is used for transporting concrete to the delivery point, discharge shall be completed within 1.5 hours or before 250 revolutions of the drum or blades, whichever occurs first, after the introduction of the cementitious materials to the aggregates. Under conditions contributing to quick stiffening of the concrete, or if the temperature of the concrete is 85 °F or above, the time allowed may be less than 1.5 hours. If an admixture is used to retard the set time, the temperature of the concrete shall not exceed 85 °F, the time limit shall be 2 hours, and the revolution limitation shall be 300.

If nonagitating hauling equipment is used for transporting concrete to the delivery point, discharge shall be completed within one hour after the addition of the cementitious materials to the aggregates. Under conditions contributing to quick stiffening of the concrete, or when the temperature of the concrete is 85 °F or above, the time between the introduction of cementitious materials to the aggregates and discharge shall not exceed 45 minutes.

Each load of concrete delivered at the job site shall be accompanied by a weighmaster certificate showing the mix identification number, nonrepeating load number, date and time at which the materials were batched, the total amount of water added to the load, and for transit-mixed concrete, the reading of the revolution counter at the time the truck mixer is charged with cement. This weighmaster certificate shall also show the actual scale weights (pounds) for the ingredients batched. Theoretical or target batch weights shall not be used as a substitute for actual scale weights.

Weighmaster certificates shall be provided in printed form, or if approved by the Engineer, the data may be submitted in electronic media. Electronic media shall be presented in a tab-delimited format on a CD or DVD. Captured data, for the ingredients represented by each batch shall be "line feed, carriage return" (LFCR) and "one line, separate record" with allowances for sufficient fields to satisfy the amount of data required by these specifications.

The Contractor may furnish a weighmaster certificate accompanied by a separate certificate that lists the actual batch weights or measurements for a load of concrete provided that both certificates are imprinted with the same nonrepeating load number that is unique to the contract and delivered to the jobsite with the load.

Weighmaster certificates furnished by the Contractor shall conform to the provisions in Section 9-1.01, "Measurement of Quantities."

90-6.04 TIME OR AMOUNT OF MIXING

Mixing of concrete in stationary mixers shall continue for the required mixing time after all ingredients, except water and admixture, if added with the water, are in the mixing compartment of the mixer before any part of the batch is released. Transfer time in multiple drum mixers shall not be counted as part of the required mixing time.

The required mixing time, in stationary mixers, of concrete used for concrete structures, except minor structures, shall be not less than 90 seconds or more than 5 minutes, except that when directed by the Engineer in writing, the requirements of the following paragraph shall apply.

The required mixing time in stationary mixers, except as provided in the preceding paragraph, shall be not less than 50 seconds or more than 5 minutes.

The minimum required revolutions at the mixing speed for transit-mixed concrete shall not be less than that recommended by the mixer manufacturer, but in no case shall the number of revolutions be less than that required to consistently produce concrete conforming to the provisions for uniformity in Section 90-6.01, "General."

When a high range water-reducing admixture is added to the concrete at the job site, the total number of revolutions shall not exceed 300.

90-6.05 HAND-MIXING

Hand-mixed concrete shall be made in batches of not more than 1/3 cubic yard and shall be mixed on a watertight, level platform. The proper amount of coarse aggregate shall be measured in measuring boxes and spread on the platform and the fine aggregate shall be spread on this layer, the 2 layers being not more than one foot in total depth. On this mixture shall be spread the dry cementitious materials and the whole mass turned no fewer than 2 times dry; then sufficient clean water shall be added, evenly distributed, and the whole mass again turned no fewer than 3 times, not including placing in the carriers or forms.

90-6.06 AMOUNT OF WATER AND PENETRATION

The amount of water used in concrete mixes shall be regulated so that the penetration of the concrete as determined by California Test 533 or the slump of the concrete as determined by ASTM Designation: C 143 is within the nominal values shown in the following table. When the penetration or slump of the concrete is found to exceed the nominal values listed, the mixture of subsequent batches shall be adjusted to reduce the penetration or slump to a value within the nominal range shown. Batches of concrete with a penetration or slump exceeding the maximum values listed shall not be used in the work. If Type F or Type G chemical admixtures are added to the mix, the penetration requirements shall not apply and the slump shall not exceed 9 inches after the chemical admixtures are added.

Type of Work	Nominal		Maximum	
	Penetration (inches)	Slump (inches)	Penetration (inches)	Slump (inches)
Concrete Pavement	0 - 1	—	1-1/2	—
Non-reinforced concrete facilities	0 - 1-1/2	—	2	—
Reinforced concrete structures				
Sections over 12 inches thick	0 - 1-1/2	—	2-1/2	—
Sections 12 inches thick or less	0 - 2	—	3	—
Concrete placed under water	—	6 - 8	—	9
Cast-in-place concrete piles	2-1/2 - 3-1/2	5 - 7	4	8

The amount of free water used in concrete shall not exceed 310 pounds per cubic yard, plus 20 pounds for each required 100 pounds of cementitious material in excess of 550 pounds per cubic yard.

The term free water is defined as the total water in the mixture minus the water absorbed by the aggregates in reaching a saturated surface-dry condition.

If there are adverse or difficult conditions that affect the placing of concrete, the above specified penetration and free water content limitations may be exceeded providing the Contractor is granted permission by the Engineer in writing to increase the cementitious material content per cubic yard of concrete. The increase in water and cementitious material shall be at a ratio not to exceed 30 pounds of water per added 100 pounds of cementitious material per cubic yard. Full compensation for additional cementitious material and water added under these conditions shall be considered as included in the contract price paid for the concrete work involved and no additional compensation will be allowed therefor.

The equipment for supplying water to the mixer shall be constructed and arranged so that the amount of water added can be measured accurately. Any method of discharging water into the mixer for a batch shall be accurate within 1.5 percent of the quantity of water required to be added to the mix for any position of the mixer. Tanks used to measure water shall be designed so that water cannot enter while water is being discharged into the mixer and discharge into the mixer shall be made rapidly in one operation without dribbling. All equipment shall be arranged so as to permit checking the amount of water delivered by discharging into measured containers.

90-7 CURING CONCRETE

90-7.01 METHODS OF CURING

Newly placed concrete shall be cured by the methods specified in this Section 90-7.01 and the special provisions.

90-7.01A Water Method

The concrete shall be kept continuously wet by the application of water for a minimum curing period of 7 days after the concrete has been placed.

Cotton mats, rugs, carpets, or earth or sand blankets may be used as a curing medium to retain the moisture during the curing period.

If a curing medium consisting of cotton mats, rugs, carpets, polyethylene sheeting, polyethylene sheeting on burlap, or earth or sand blankets is to be used to retain the moisture, the entire surface of the concrete shall be kept damp by applying water with a nozzle that so atomizes the flow that a mist and not a spray is formed, until the surface of the concrete is covered with the curing medium. The moisture from the nozzle shall not be applied under pressure directly upon the concrete and shall not be allowed to accumulate on the concrete in a quantity sufficient to cause a flow or wash the surface. At the expiration of the curing period, the concrete surfaces shall be cleared of all curing media.

At the option of the Contractor, a curing medium consisting of white opaque polyethylene sheeting extruded onto burlap may be used to cure concrete structures. The polyethylene sheeting shall have a minimum thickness of 4-mil, and shall be extruded onto 10-ounce burlap.

At the option of the Contractor, a curing medium consisting of polyethylene sheeting may be used to cure concrete columns. The polyethylene sheeting shall have a minimum thickness of 10-mil achieved in a single layer of material.

If the Contractor chooses to use polyethylene sheeting or polyethylene sheeting on burlap as a curing medium, these media and any joints therein shall be secured as necessary to provide moisture retention and shall be within 3 inches of the concrete at all points along the surface being cured. When these media are used, the temperature of the concrete shall be monitored during curing. If the temperature of the concrete cannot be maintained below 140° F, use of these curing media shall be disallowed.

When concrete bridge decks and flat slabs are to be cured without the use of a curing medium, the entire surface of the bridge deck or slab shall be kept damp by the application of water with an atomizing nozzle as specified above, until the concrete has set, after which the entire surface of the concrete shall be sprinkled continuously with water for a period of not less than 7 days.

90-7.01B Curing Compound Method

Surfaces of the concrete that are exposed to the air shall be sprayed uniformly with a curing compound.

Curing compounds to be used shall be as follows:

1. Pigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 2, Class B, except the resin type shall be poly-alpha-methylstyrene.
2. Pigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 2, Class B.
3. Pigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 2, Class A.
4. Nonpigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 1, Class B.
5. Nonpigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 1, Class A.
6. Nonpigmented curing compound with fugitive dye conforming to the requirements in ASTM Designation: C 309, Type 1-D, Class A.

The infrared scan for the dried vehicle from curing compound (1) shall match the infrared scan on file at the Transportation Laboratory.

The loss of water for each type of curing compound, when tested in conformance with the requirements in California Test 534, shall not be more than 0.28 pounds per square yard in 24 hours.

The curing compound to be used will be specified elsewhere in these specifications or in the special provisions.

If the use of curing compound is required or permitted elsewhere in these specifications or in the special provisions and no specific kind is specified, any of the curing compounds listed above may be used.

Curing compound shall be applied at a nominal rate of one gallon per 150 square feet, unless otherwise specified.

At any point, the application rate shall be within ± 50 square feet per gallon of the nominal rate specified, and the average application rate shall be within ± 25 square feet per gallon of the nominal rate specified when tested in conformance with the requirements in California Test 535. Runs, sags, thin areas, skips, or holidays in the applied curing compound shall be evidence that the application is not satisfactory.

Curing compounds shall be applied using power operated spray equipment. The power operated spraying equipment shall be equipped with an operational pressure gage and a means of controlling the pressure. Hand spraying of small and irregular areas that are not reasonably accessible to mechanical spraying equipment, in the opinion of the Engineer, may be permitted.

The curing compound shall be applied to the concrete following the surface finishing operation, immediately before the moisture sheen disappears from the surface, but before any drying shrinkage or craze cracks begin to appear. In the event of any drying or cracking of the surface, application of water with an atomizing nozzle as specified in Section 90-7.01A, "Water Method," shall be started immediately and shall be continued until application of the compound is resumed or started; however, the compound shall not be applied over any resulting freestanding water. Should the film of compound be damaged from any cause before the expiration of 7 days after the concrete is placed in the case of structures and 72 hours in the case of pavement, the damaged portion shall be repaired immediately with additional compound.

At the time of use, compounds containing pigments shall be in a thoroughly mixed condition with the pigment uniformly dispersed throughout the vehicle. A paddle shall be used to loosen all settled pigment from the bottom of the container, and a power driven agitator shall be used to disperse the pigment uniformly throughout the vehicle.

Agitation shall not introduce air or other foreign substance into the curing compound.

The manufacturer shall include in the curing compound the necessary additives for control of sagging, pigment settling, leveling, de-emulsification, or other requisite qualities of a satisfactory working material. Pigmented curing compounds shall be manufactured so that the pigment does not settle badly, does not cake or thicken in the container, and does not become granular or curdled. Settlement of pigment shall be a thoroughly wetted, soft, mushy mass permitting the complete and easy vertical penetration of a paddle. Settled pigment shall be easily redispersed, with minimum resistance to the sideways manual motion of the paddle across the bottom of the container, to form a smooth uniform product of the proper consistency.

Curing compounds shall remain sprayable at temperatures above 40 °F and shall not be diluted or altered after manufacture.

The curing compound shall be packaged in clean 274-gallon totes, 55-gallon barrels or 5-gallon pails shall be supplied from a suitable storage tank located at the jobsite. The containers shall comply with "Title 49, Code of Federal Regulations, Hazardous Materials Regulations." The 274-gallon totes and the 55-gallon barrels shall have removable lids and airtight fasteners. The 5-gallon pails shall be round and have standard full open head and bail. Lids with bungholes will not be permitted. Settling or separation of solids in containers, except tanks, must be completely redispersed with low speed mixing prior to use, in conformance with these specifications and the manufacturer's recommendations. Mixing shall be accomplished either manually by use of a paddle or by use of a mixing blade driven by a drill motor, at low speed. Mixing blades shall be the type used for mixing paint. On-site storage tanks shall be kept clean and free of contaminants. Each tank shall have a permanent system designed to completely redisperse settled material without introducing air or other foreign substances.

Steel containers and lids shall be lined with a coating that will prevent destructive action by the compound or chemical agents in the air space above the compound. The coating shall not come off the container or lid as skins. Containers shall be filled in a manner that will prevent skinning. Plastic containers shall not react with the compound.

Each container shall be labeled with the manufacturer's name, kind of curing compound, batch number, volume, date of manufacture, and volatile organic compound (VOC) content. The label shall also warn that the curing compound containing pigment shall be well stirred before use. Precautions concerning the handling and the application of curing compound shall be shown on the label of the curing compound containers in conformance with the Construction Safety Orders and General Industry Safety Orders of the State.

Containers of curing compound shall be labeled to indicate that the contents fully comply with the rules and regulations concerning air pollution control in the State.

When the curing compound is shipped in tanks or tank trucks, a shipping invoice shall accompany each load. The invoice shall contain the same information as that required herein for container labels.

Curing compound will be sampled by the Engineer at the source of supply, at the job site, or at both locations.

Curing compound shall be formulated so as to maintain the specified properties for a minimum of one year. The Engineer may require additional testing before use to determine compliance with these specifications if the compound has not been used within one year or whenever the Engineer has reason to believe the compound is no longer satisfactory.

Tests will be conducted in conformance with the latest ASTM test methods and methods in use by the Transportation Laboratory.

90-7.01C Waterproof Membrane Method

The exposed finished surfaces of concrete shall be sprayed with water, using a nozzle that so atomizes the flow that a mist and not a spray is formed, until the concrete has set, after which the curing membrane, shall be placed. The curing membrane shall remain in place for a period of not less than 72 hours.

Sheeting material for curing concrete shall conform to the requirements in AASHTO Designation: M 171 for white reflective materials.

The sheeting material shall be fabricated into sheets of such width as to provide a complete cover for the entire concrete surface. Joints in the sheets shall be securely cemented together in such a manner as to provide a waterproof joint. The joint seams shall have a minimum lap of 0.33 foot.

The sheets shall be securely weighted down by placing a bank of earth on the edges of the sheets or by other means satisfactory to the Engineer.

Should any portion of the sheets be broken or damaged before the expiration of 72 hours after being placed, the broken or damaged portions shall be immediately repaired with new sheets properly cemented into place.

Sections of membrane that have lost their waterproof qualities or have been damaged to such an extent as to render them unfit for curing the concrete shall not be used.

90-7.01D Forms-In-Place Method

Formed surfaces of concrete may be cured by retaining the forms in place. The forms shall remain in place for a minimum period of 7 days after the concrete has been placed, except that for members over 20 inches in least dimension the forms shall remain in place for a minimum period of 5 days.

Joints in the forms and the joints between the end of forms and concrete shall be kept moisture tight during the curing period. Cracks in the forms and cracks between the forms and the concrete shall be resealed by methods subject to the approval of the Engineer.

90-7.02 BLANK

90-7.03 CURING STRUCTURES

Newly placed concrete for cast-in-place structures, other than highway bridge decks, shall be cured by the water method, the forms-in-place method, or, as permitted herein, by the curing compound method, in conformance with the provisions in Section 90-7.01, "Methods of Curing."

The curing compound method using a pigmented curing compound may be used on concrete surfaces of construction joints, surfaces that are to be buried underground, and surfaces where only ordinary surface finish is to be applied and on which a uniform color is not required and that will not be visible from a public traveled way. If the Contractor elects to use the curing compound method on the bottom slab of box girder spans, the curing compound shall be curing compound (1).

The top surface of highway bridge decks shall be cured by both the curing compound method and the water method. The curing compound shall be curing compound (1).

Concrete surfaces of minor structures, as defined in Section 51-1.02, "Minor Structures," shall be cured by the water method, the forms-in-place method or the curing compound method.

When deemed necessary by the Engineer during periods of hot weather, water shall be applied to concrete surfaces being cured by the curing compound method or by the forms-in-place method, until the Engineer determines that a cooling effect is no longer required. Application of water for this purpose will be paid for as extra work as provided in Section 4-1.03D, "Extra Work."

90-7.04 CURING PRECAST CONCRETE MEMBERS

Precast concrete members shall be cured in conformance with any of the methods specified in Section 90-7.01, "Methods of Curing." Curing shall be provided for the minimum time specified for each method or until the concrete reaches its design strength, whichever is less. Steam curing may also be used for precast members and shall conform to the following provisions:

- A. After placement of the concrete, members shall be held for a minimum 4-hour presteaming period. If the ambient air temperature is below 50 °F, steam shall be applied during the presteaming period to hold the air surrounding the member at a temperature between 50 °F and 90 °F.
- B. To prevent moisture loss on exposed surfaces during the presteaming period, members shall be covered as soon as possible after casting or the exposed surfaces shall be kept wet by fog spray or wet blankets.
- C. Enclosures for steam curing shall allow free circulation of steam about the member and shall be constructed to contain the live steam with a minimum moisture loss. The use of tarpaulins or similar flexible covers will be permitted, provided they are kept in good repair and secured in such a manner as to prevent the loss of steam and moisture.
- D. Steam at the jets shall be at low pressure and in a saturated condition. Steam jets shall not impinge directly on the concrete, test cylinders, or forms. During application of the steam, the temperature rise within the enclosure shall not exceed 40 °F per hour. The curing temperature throughout the enclosure shall not exceed 150 °F and shall be maintained at a constant level for a sufficient time necessary to develop the

- required transfer strength. Control cylinders shall be covered to prevent moisture loss and shall be placed in a location where temperature is representative of the average temperature of the enclosure.
- E. Temperature recording devices that will provide an accurate, continuous, permanent record of the curing temperature shall be provided. A minimum of one temperature recording device per 200 feet of continuous bed length will be required for checking temperature.
 - F. Members in pretension beds shall be detensioned immediately after the termination of steam curing while the concrete and forms are still warm, or the temperature under the enclosure shall be maintained above 60 °F until the stress is transferred to the concrete.
 - G. Curing of precast concrete will be considered completed after termination of the steam curing cycle.

90-7.05 CURING PRECAST PRESTRESSED CONCRETE PILES

Newly placed concrete for precast prestressed concrete piles shall be cured in conformance with the provisions in Section 90-7.04, "Curing Precast Concrete Members," except that piles in a corrosive environment shall be cured as follows:

- A. Piles shall be either steam cured or water cured. If water curing is used, the piles shall be kept continuously wet by the application of water in conformance with the provisions in Section 90-7.01A, "Water Method."
- B. If steam curing is used, the steam curing provisions in Section 90-7.04, "Curing Precast Concrete Members," shall apply except that the piles shall be kept continuously wet for their entire length for a period of not less than 3 days, including the holding and steam curing periods.

90-7.06 CURING SLOPE PROTECTION

Concrete slope protection shall be cured in conformance with any of the methods specified in Section 90-7.01, "Methods of Curing."

Concreted-rock slope protection shall be cured in conformance with any of the methods specified in Section 90-7.01, "Methods of Curing," with a blanket of earth kept wet for 72 hours, or by sprinkling with a fine spray of water every 2 hours during the daytime for a period of 3 days.

90-7.07 CURING MISCELLANEOUS CONCRETE WORK

Exposed surfaces of curbs shall be cured by pigmented curing compounds as specified in Section 90-7.01B, "Curing Compound Method."

Concrete sidewalks, gutter depressions, island paving, curb ramps, driveways, and other miscellaneous concrete areas shall be cured in conformance with any of the methods specified in Section 90-7.01, "Methods of Curing."

Shotcrete shall be cured for at least 72 hours by spraying with water, by a moist earth blanket, or by any of the methods provided in Section 90-7.01, "Methods of Curing."

Mortar and grout shall be cured by keeping the surface damp for 3 days.

After placing, the exposed surfaces of sign structure foundations, including pedestal portions, if constructed, shall be cured for at least 72 hours by spraying with water, by a moist earth blanket, or by any of the methods provided in Section 90-7.01, "Methods of Curing."

90-8 PROTECTING CONCRETE

90-8.01 GENERAL

In addition to the provisions in Section 7-1.16, "Contractor's Responsibility for the Work and Materials," the Contractor shall protect concrete as provided in this Section 90-8. If required by the Engineer, the Contractor shall submit a written outline of the proposed methods for protecting the concrete.

The Contractor shall protect concrete from damage from any cause, which shall include, but not be limited to: rain, heat, cold, wind, Contractor's actions, and actions of others.

Concrete shall not be placed on frozen or ice-coated ground or subgrade nor on ice-coated forms, reinforcing steel, structural steel, conduits, precast members, or construction joints.

Under rainy conditions, placing of concrete shall be stopped before the quantity of surface water is sufficient to damage surface mortar or cause a flow or wash of the concrete surface, unless the Contractor provides adequate protection against damage.

Concrete that has been frozen or damaged by other causes, as determined by the Engineer, shall be removed and replaced by the Contractor at the Contractor's expense.

90-8.02 PROTECTING CONCRETE STRUCTURES

Structure concrete and shotcrete used as structure concrete shall be maintained at a temperature of not less than 45 °F for 72 hours after placing and at not less than 40 °F for an additional 4 days.

90-9 COMPRESSIVE STRENGTH

90-9.01 GENERAL

Concrete compressive strength requirements consist of a minimum strength that shall be attained before various loads or stresses are applied to the concrete and, for concrete designated by compressive strength, a minimum strength at the age of 28 days or at the age otherwise allowed in Section 90-1.01, "Description." The various strengths required are specified in these specifications or the special provisions or are shown on the plans.

The compressive strength of concrete will be determined from test cylinders that have been fabricated from concrete sampled in conformance with the requirements of California Test 539. Test cylinders will be molded and initially field cured in conformance with California Test 540. Test cylinders will be cured and tested after receipt at the testing laboratory in conformance with the requirements of California Test 521. A strength test shall consist of the average strength of 2 cylinders fabricated from material taken from a single load of concrete, except that, if any cylinder should show evidence of improper sampling, molding, or testing, that cylinder shall be discarded and the strength test shall consist of the strength of the remaining cylinder.

When concrete compressive strength is specified as a prerequisite to applying loads or stresses to a concrete structure or member, test cylinders for other than steam cured concrete will be cured in conformance with Method 1 of California Test 540. The compressive strength of concrete determined for these purposes will be evaluated on the basis of individual tests.

When concrete is designated by compressive strength rather than by cementitious material content, the concrete strength to be used as a basis for acceptance of other than steam cured concrete will be determined from cylinders cured in conformance with Method 1 of California Test 540. If the result of a single compressive strength test at the maximum age specified or allowed is below the specified strength but is 95 percent or more of the specified strength, the Contractor shall make corrective changes, subject to approval of the Engineer, in the mix proportions or in the concrete fabrication procedures, before placing additional concrete, and shall pay to the State \$10 for each in-place cubic yard of concrete represented by the deficient test. If the result of a single compressive strength test at the maximum age specified or allowed is below 95 percent of the specified strength, but is 85 percent or more of the specified strength, the Contractor shall make the corrective changes specified above, and shall pay to the State \$15 for each in-place cubic yard of concrete represented by the deficient test. In addition, such corrective changes shall be made when the compressive strength of concrete tested at 7 days indicates, in the judgment of the Engineer, that the concrete will not attain the required compressive strength at the maximum age specified or allowed. Concrete represented by a single test that indicates a compressive strength of less than 85 percent of the specified 28-day compressive strength will be rejected in conformance with the provisions in Section 6-1.04, "Defective Materials."

If the test result indicates that the compressive strength at the maximum age specified or allowed is below the specified strength, but is 85 percent or more of the specified strength, payments to the State as required above shall be made, unless the Contractor, at the Contractor's expense, obtains and submits evidence acceptable to the Engineer that the strength of the concrete placed in the work meets or exceeds the specified 28-day compressive strength. If the test result indicates a compressive strength at the maximum age specified or allowed below 85 percent, the concrete represented by that test will be rejected, unless the Contractor, at the Contractor's expense, obtains and submits evidence acceptable to the Engineer that the strength of the concrete placed in the work is at least 85 percent of the specified strength. If the evidence consists of tests made on cores taken from the work, the cores shall be obtained and tested in conformance with the requirements in ASTM Designation: C 42.

No single compressive strength test shall represent more than 320 cubic yards.

If a precast concrete member is steam cured, the compressive strength of the concrete will be determined from test cylinders that have been handled and stored in conformance with Method 3 of California Test 540. The compressive strength of steam cured concrete will be evaluated on the basis of individual tests representing specific portions of production. If the concrete is designated by 28-day compressive strength rather than by cementitious material content, the concrete shall be considered to be acceptable whenever its compressive strength reaches the specified 28-day compressive strength provided that strength is reached in not more than the maximum number of days specified or allowed after the member is cast.

When concrete has a specified 28-day compressive strength greater than 3,600 pounds per square inch or when prequalification is specified, prequalification of materials, mix proportions, mixing equipment, and procedures proposed for use will be required prior to placement of the concrete. Prequalification shall be accomplished by the submission of acceptable certified test data or trial batch reports by the Contractor. Prequalification data shall be based on the use of materials, mix proportions, mixing equipment, procedures, and size of batch proposed for use in the work.

Certified test data, in order to be acceptable, shall indicate that not less than 90 percent of at least 20 consecutive tests exceed the specified strength at the maximum number of days specified or allowed, and none of those tests are less than 95 percent of specified strength. Strength tests included in the data shall be the most recent tests made on concrete of the proposed mix design and all shall have been made within one year of the proposed use of the concrete.

Trial batch test reports, in order to be acceptable, shall indicate that the average compressive strength of 5 consecutive concrete cylinders, taken from a single batch, at not more than 28 days (or the maximum age allowed) after molding shall be at least 600 pounds per square inch greater than the specified 28-day compressive strength, and no individual cylinder shall have a strength less than the specified strength at the maximum age specified or allowed. Data contained in the report shall be from trial batches that were produced within one year of the proposed use of specified strength concrete in the project. Whenever air-entrainment is required, the air content of trial batches shall be equal to or greater than the air content specified for the concrete without reduction due to tolerances.

Tests shall be performed in conformance with either the appropriate California Test methods or the comparable ASTM test methods. Equipment employed in testing shall be in good condition and shall be properly calibrated. If the tests are performed during the life of the contract, the Engineer shall be notified sufficiently in advance of performing the tests in order to witness the test procedures.

The certified test data and trial batch test reports shall include the following information:

- A. Date of mixing.
- B. Mixing equipment and procedures used.
- C. The size of batch in cubic yards and the weight, type, and source of all ingredients used.
- D. Penetration or slump (if the concrete will be placed under water or placed in cast-in-place concrete piles) of the concrete.
- E. The air content of the concrete if an air-entraining admixture is used.
- F. The age at time of testing and strength of all concrete cylinders tested.

Certified test data and trial batch test reports shall be signed by an official of the firm that performed the tests.

When approved by the Engineer, concrete from trial batches may be used in the work at locations where concrete of a lower quality is required and the concrete will be paid for as the type of concrete required at that location.

After materials, mix proportions, mixing equipment, and procedures for concrete have been prequalified for use, additional prequalification by testing of trial batches will be required prior to making changes that, in the judgment of the Engineer, could result in a strength of concrete below that specified.

The Contractor's attention is directed to the time required to test trial batches and the Contractor shall be responsible for production of trial batches at a sufficiently early date so that the progress of the work is not delayed.

When precast concrete members are manufactured at the plant of an established manufacturer of precast concrete members, the mix proportions of the concrete shall be determined by the Contractor, and a trial batch and prequalification of the materials, mix proportions, mixing equipment, and procedures will not be required.

90-10 MINOR CONCRETE

90-10.01 GENERAL

Concrete for minor structures, slope paving, curbs, sidewalks and other concrete work, when designated as minor concrete on the plans, in the specifications, or in the contract item, shall conform to the provisions specified herein.

The Engineer, at the Engineer's discretion, will inspect and test the facilities, materials and methods for producing the concrete to ensure that minor concrete of the quality suitable for use in the work is obtained.

Before using minor concrete or in advance of revising the mix proportions, the Contractor shall submit in writing to the Engineer a copy of the mix design. When required by the following table, the Contractor shall include compressive strength test results verifying the minimum specified compressive strength:

SCM	Test Submittal Required
Fly Ash used alone	When portland cement content < 350 lbs/cy
GGBFS used alone	When portland cement content < 250 lbs/cy
Natural Pozzolan used alone	When portland cement content < 350 lbs/cy
More than 1 SCM	Always

Tests shall be performed by an ACI certified technician.

90-10.02 MATERIALS

Minor concrete shall conform to the following requirements:

90-10.02A Cementitious Material

Cementitious material shall conform to the provisions in Section 90-1.01, "Description," and 90-2, "Materials."

90-10.02B Aggregate

Aggregate shall be clean and free from deleterious coatings, clay balls, roots, and other extraneous materials.

Use of crushed concrete or reclaimed aggregate is acceptable only if the aggregate satisfies all aggregate requirements.

The Contractor shall submit to the Engineer for approval, a grading of the combined aggregate proposed for use in the minor concrete. After acceptance of the grading, aggregate furnished for minor concrete shall conform to that grading, unless a change is authorized in writing by the Engineer.

The Engineer may require the Contractor to furnish periodic test reports of the aggregate grading furnished. The maximum size of aggregate used shall be at the option of the Contractor, but in no case shall the maximum size be larger than 1-1/2-inch or smaller than 3/4 inch.

The Engineer may waive, in writing, the gradation requirements in this Section 90-10.02B, if, in the Engineer's opinion, the furnishing of the gradation is not necessary for the type or amount of concrete work to be constructed.

90-10.02C Water

Water used for washing, mixing, and curing shall be free from oil, salts, and other impurities that would discolor or etch the surface or have an adverse affect on the quality of the concrete.

90-10.02D Admixtures

The use of admixtures shall conform to the provisions in Section 90-4, "Admixtures."

90-10.03 PRODUCTION

Cementitious material, water, aggregate, and admixtures shall be stored, proportioned, mixed, transported, and discharged in conformance with recognized standards of good practice that will result in concrete that is thoroughly and uniformly mixed, that is suitable for the use intended, and that conforms to requirements specified herein. Recognized standards of good practice are outlined in various industry publications such as are issued by American Concrete Institute, AASHTO, or the Department.

The cementitious material content of minor concrete shall conform to the provisions in Section 90-1.01, "Description."

The amount of water used shall result in a consistency of concrete conforming to the provisions in Section 90-6.06, "Amount of Water and Penetration." Additional mixing water shall not be incorporated into the concrete during hauling or after arrival at the delivery point, unless allowed by the Engineer.

Discharge of ready-mixed concrete from the transporting vehicle shall be made while the concrete is still plastic and before stiffening occurs. An elapsed time of 1.5 hours (one hour in non-agitating hauling equipment), or more than 250 revolutions of the drum or blades, after the introduction of the cementitious material to the aggregates, or a temperature of concrete of more than 90 °F will be considered conditions contributing to the quick stiffening of concrete. The Contractor shall take whatever action is necessary to eliminate quick stiffening, except that the addition of water will not be permitted.

The required mixing time in stationary mixers shall be not less than 50 seconds or more than 5 minutes.

The minimum required revolutions at mixing speed for transit-mixed concrete shall be not less than that recommended by the mixer manufacturer, and shall be increased, if necessary, to produce thoroughly and uniformly mixed concrete.

When a high range water-reducing admixture is added to the concrete at the job site, the total number of revolutions shall not exceed 300.

Each load of ready-mixed concrete shall be accompanied by a weighmaster certificate that shall be delivered to the Engineer at the discharge location of the concrete, unless otherwise directed by the Engineer. The weighmaster certificate shall be clearly marked with the date and time of day when the load left the batching plant and, if hauled in truck mixers or agitators, the time the mixing cycle started.

A Certificate of Compliance conforming to the provisions in Section 6-1.07, "Certificates of Compliance," shall be furnished to the Engineer, prior to placing minor concrete from a source not previously used on the contract,

stating that minor concrete to be furnished meets contract requirements, including minimum cementitious material content specified.

90-10.04 CURING MINOR CONCRETE

Curing minor concrete shall conform to the provisions in Section 90-7, "Curing Concrete."

90-10.05 PROTECTING MINOR CONCRETE

Protecting minor concrete shall conform to the provisions in Section 90-8, "Protecting Concrete," except the concrete shall be maintained at a temperature of not less than 40 °F for 72 hours after placing.

90-10.06 MEASUREMENT AND PAYMENT

Minor concrete will be measured and paid for in conformance with the provisions specified in the various sections of these specifications covering concrete construction when minor concrete is specified in the specifications, shown on the plans, or indicated by contract item in the Engineer's Estimate.

90-11 MEASUREMENT AND PAYMENT

90-11.01 MEASUREMENT

Portland cement concrete will be measured in conformance with the provisions specified in the various sections of these specifications covering construction requiring concrete.

For concrete measured at the mixer, the volume in cubic feet shall be computed as the total weight of the batch in pounds divided by the density of the concrete in pounds per cubic foot. The total weight of the batch shall be calculated as the sum of all materials, including water, entering the batch. The density of the concrete will be determined in conformance with the requirements in California Test 518.

90-11.02 PAYMENT

Portland cement concrete will be paid for in conformance with the provisions specified in the various sections of these specifications covering construction requiring concrete.

Full compensation for furnishing and incorporating admixtures required by these specifications or the special provisions will be considered as included in the contract prices paid for the concrete involved and no additional compensation will be allowed therefor.

Should the Engineer order the Contractor to incorporate any admixtures in the concrete when their use is not required by these specifications or the special provisions, furnishing the admixtures and adding them to the concrete will be paid for as extra work as provided in Section 4-1.03D, "Extra Work."

Should the Contractor use admixtures in conformance with the provisions in Section 90-4.05, "Optional Use of Chemical Admixtures," or Section 90-4.07, "Optional Use of Air-entraining Admixtures," or should the Contractor request and obtain permission to use other admixtures for the Contractor's benefit, the Contractor shall furnish those admixtures and incorporate them into the concrete at the Contractor's expense and no additional compensation will be allowed therefor.

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SECTION 12. ENVIRONMENTAL PERMIT SUMMARY FORM

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SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

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ENVIRONMENTAL PERMIT SUMMARY FORM

Date: November 3, 2014 – *Revised November 19, 2014*

To: Michael Boyce, P.E., Project Manager

From: Eric Wier, Environmental Resource Specialist *EW*

Subject: **Environmental Review & Permit Status for the Nacimiento Pipeline Repair Project; ED14-095 (300529)**

Project description: The San Luis Obispo County Flood Control and Water Conservation District (District) will repair an approximately 1,800 foot-long section of Nacimiento water pipeline at Nacimiento River crossing on Camp Roberts by sliplining with a pipeline of a smaller diameter.

The environmental review and regulatory permit processes for the above referenced project are complete. The following is a summary of the environmental requirements for the project:

Permit	Status	Attachments?
CEQA Review	Categorical Exemption (10-31-14)	X
NEPA Review	Not applicable, no federal permits or funding	
Coastal Permit	Not applicable, not in coastal zone	
CZMA	Not applicable, no federal action	
CDFW 1601	Not applicable, no effects within CDFW jurisdiction	
USACOE 404	Not applicable, no fill in Waters of the U.S.	
NMFS ESA	Not applicable, no listed species effects	
USFWS ESA	Not applicable, no listed species effects	
RWQCB 401	Not applicable, no 404 permit required	
NPDES	Required if more than 1 acre disturbance	

Measure #	Special Environmental Conditions	Responsibility: Contractor, District or Both
1	Please notify the Environmental Programs Division if the project description changes.	District

2	Implement and maintain appropriate erosion and sedimentation control measures.	Both
3	A qualified (District-provided) biologist will conduct a pre-construction briefing for construction workers on San Joaquin kit fox biology and protection measures to be implemented.	Both
4	Include kit fox protection measures on project plans.	District
5	Require a maximum 25 mph speed limit at the project site during construction.	Both
6	Cover excavations deeper than 2 feet at the end of each working day or provide escape ramps for kit fox, and provide and secure ESA fence around excavations at the end of each work day.	Contractor
7	Inspect pipes, culverts or similar structures for kit fox before fusing, burying, capping, or moving.	Contractor
8	Remove food-related trash from project site on a daily basis. If a kit fox is discovered at any time in the project area, all construction must stop and the CDFW and USFWS contacted immediately; the appropriate federal and state permits must be obtained before the project can proceed.	Both
9	If a kit fox is discovered during the project area, construction activities will be limited to daylight hours. If work must be performed beyond daylight hours, a biological monitor shall be present.	Contractor
10	<p>The following San Luis Obispo Air Pollution Control District (SLOAPCD) standard dust reduction measures would be implemented during construction.</p> <ul style="list-style-type: none"> • Reduce the amount of disturbed area where possible. • Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 miles per hour (mph). Reclaimed (non-potable) water should be used whenever possible. • All dirt stockpile areas shall be sprayed daily as needed. • Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities. • Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast-germinating native grass seed obtained from a reputable source and irrigated with water obtained from the river via existing allocation permits until vegetation is established. • All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, weed-free straw bales, or other methods approved in advance by the SLOAPCD and the CA ARNG Environmental Directorate. • All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. • Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114. This measure has the potential to reduce emissions of particulate matter less than 10 microns (PM10) by 7–14 percent. • Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment prior to leaving unpaved 	Both

	<p>roads. This measure has the potential to reduce PM10 emissions by 40–70 percent. This measure would be conducted at least 50 feet from any drainage and at least 250 feet from vernal pool fairy shrimp habitat.</p> <ul style="list-style-type: none"> • Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible. This measure has the potential to reduce PM10 emissions by 25–60 percent. This measure would be conducted at least 50 feet from any drainage and at least 250 feet from vernal pool fairy shrimp habitat. • The Contractor shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. If directed by the Engineer and/or if Contractor’s dust control practices are unsatisfactory to the Engineer, their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SLOAPCD prior to any site disturbance. 	
11	<p>To protect vernal pool fairy shrimp, the following measures shall be implemented during construction:</p> <ul style="list-style-type: none"> • Runoff from the adjacent upland construction site shall be either retained in the defined work area or directed away from identified vernal pool habitat; • Construction exclusion fencing will be erected by the District, as applicable, to keep project vehicles, equipment and activities within the defined work area; • District shall provide a qualified biologist or equivalent professional to monitor construction activities that have the potential to affect vernal pool habitat; • Silt fencing shall be included in Contractor’s Storm Water Pollution Control Plan. Silt fencing will be erected at the limits of construction to minimize indirect effects to vernal pools. Silt fencing will be erected under the direct supervision of District’s biologist. 	Both
12	<p>To minimize potential project effects to the California condor, all construction work shall be halted by the construction monitor if the California condor is observed in the project vicinity. Construction shall be resumed only after the construction monitor has determined that the bird has moved far enough away that resuming work will not result in disturbance to the California condor.</p>	Both
13	<p>To minimize potential effects to steelhead trout due to construction at the Nacimiento River, the following shall be implemented:</p> <ul style="list-style-type: none"> • A qualified biological monitor will be on site during all underground pipeline construction activities in the vicinity of potential steelhead occurrences. The biological monitor will have the authority to halt construction when contamination is observed until the source of contamination is controlled. 	District
14	<p>The District will brief the construction staff on procedures for handling the unexpected discovery of archaeological resources prior to undertaking project activities. In the event that buried or otherwise previously unidentified archaeological remains such as chipped or ground stone, midden soil, large quantities of cans, bottles, or metal, bone, shell, building foundations, or other artifacts or building remains are identified during ground-disturbing activities, all work shall stop within 100 feet of the find until a qualified archaeologist is able to inspect it. If the find is considered to be potentially significant, the USACE, appropriate Camp Roberts environmental staff, and the District shall be notified at once and a plan developed to avoid and evaluate the find.</p>	Both

15	If human remains are encountered, the environmental officer would contact the SLO County Coroner in compliance with Section 7050.5 of the California Health and Safety Code. Procedures for treatment of human remains are also outlined in the <i>Archaeological Research Design/Treatment Plan</i> prepared for the Nacimiento Water Project.	District
16	Camp Roberts' staff will provide training to construction workers on the hazards of conducting work at Camp Roberts prior to the beginning of groundbreaking activities. If suspected ordnance (pieces or whole units) is encountered during groundbreaking activities, all activities will stop and the construction foreman shall immediately notify the Camp's Range Control Officer for inspection and removal by qualified personnel.	Both
17	To minimize potential environmental effects from petroleum releases during construction, the Contractor shall prepare and implement a construction site management and water pollution control plan that identifies potential pollutants and provides procedures for minimizing the environmental damage from releases, should they occur. The Pollution Prevention Plan would include but not be limited to the following measures: <ul style="list-style-type: none"> • Designate "no fueling" zones within 50 feet of all drainages. • All equipment used in or near drainages shall be clean and free of leaks and/or grease. • Emergency provisions shall be in place at all drainage crossings prior to construction to deal with unintentional spills. 	Contractor
18	The exact locations of construction staging areas will be determined after the contractor is selected. The contractor will be required to select staging areas that will not require removal of significant vegetation, will not impact creeks, and will minimize potential impacts to noise-sensitive receptors. Staging areas will be restored to pre-construction conditions.	Both
19	Heavy equipment and construction activities shall be restricted to the defined construction easement. Construction materials or spoils shall not be stored within the channel or overbanks. Excavated soil and stockpiles of imported fill shall be stored at least 20 feet from active channel banks.	Contractor
20	All District construction supervisors shall receive an environmental briefing from the CAARNG Environmental Directorate and Camp Roberts Environmental Staff and shall be responsible for all construction staff who do not comply with the guidance provided.	District
21	To minimize potential short-term construction-related impacts to potable water supplies, all contractors shall use, to the greatest extent possible, nonpotable water sources for dust abatement and other non-drinking purposes.	Contractor

SECTION 13. RULES GOVERNING BID PROTESTS AND OTHER CHALLENGES TO AWARDS OF CONSTRUCTION CONTRACTS

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SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT



Rules Governing Bid Protests And Other Challenges to Awards of Construction Contracts

The requirements set forth in these “Rules Governing Bid Protests And Other Challenges to Awards of Construction Contracts” (“Rules”) are mandatory and are a Bidder’s sole and exclusive remedy in the event a Bidder desires to challenge, protest or contest the award of any Construction Contract. A Bidder’s failure to comply with these requirements shall constitute a waiver of any right to challenge, protest or contest the award of a Construction Contract in any subsequent proceeding, including but not limited to, the filing of a court action.

A Bidder may not rely upon another Bidder’s compliance with the requirements of these Rules. Any Bidder that does not independently comply with the requirements set forth herein shall be deemed to have waived any right to challenge, protest or contest the award of a Construction Contract.

Nothing in these Rules affects the right of the District to reject all bids at any time prior to the award of a Construction Contract.

1.1 Definitions.

- 1.1.1 Bidder - The contractor submitting a bid in response to a District solicitation for bids on a Construction Contract.
- 1.1.2 Protestor - A Bidder who files a Protest in accordance with the provisions of these Rules.
- 1.1.3 Board – Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District (hereinafter, also “District”).
- 1.1.4 Construction Contract - Any Construction Contract which is formally or informally advertised for bids in which the District is, or will be, a party.
- 1.1.5 Protest – Any challenge, objection, or protest to the award of a Construction Contract to any Bidder.
- 1.1.6 Response – Any response to a Protest that is filed by an Interested Party in accordance with the provisions of these Rules.
- 1.1.7 Public Works Department - The District department responsible for the preparation of the bid documents for the Construction Contract and the administration of the Construction Contract.
- 1.1.8 Director - The person appointed to be the head of the Department of Public Works and Transportation, or that person designated by the Director to

assume the powers, duties, and responsibilities conferred upon the Director under the terms of these Rules.

1.1.9 Initial Determination – A written notice by the Director that notifies a Bidder of the reasons why the Director believes that a bid is nonresponsive, or that a Bidder is not a responsible Bidder.

1.1.10 Interested Parties - For the purpose of these Rules, Interested Parties are defined as:

1.1.10.1 The Public Works Department and/or its Director.

1.1.10.2 Any Bidder that filed a Protest or whose bid is the subject of an Initial Determination.

1.1.10.3 Any Bidder whose eligibility for having the Construction Contract awarded to it as a responsible Bidder with the lowest responsive bid would be affected by the outcome of a Protest or Initial Determination.

1.2 Director's Independent Authority to Determine Bid Responsiveness and Bidder Responsibility.

1.2.1 Regardless of whether a Protest is submitted under these Rules, the Director is authorized to determine whether any bid is a responsive bid and whether any Bidder is a responsible Bidder. In the event the Director issues an Initial Determination, the Director shall provide the Interested Parties with written notice of the Initial Determination at least three (3) business days before the Director renders a final decision addressing the grounds stated in the Initial Determination. A final decision of the Director under this section 1.2 shall be the final decision of the District with no provision for reconsideration or appeal to the Board.

1.2.2 The Director need not issue an Initial Determination in order to make a final decision on whether a bid is a responsive bid or a Bidder is a responsible Bidder. A final decision can also be issued by the Director through the processing of a Protest pursuant to the procedures set forth in these Rules.

1.2.3 The Director reserves the right to amend or withdraw an Initial Determination at any time before the Director renders a final decision addressing the grounds stated in the Initial Determination. When an Initial Determination is withdrawn, it shall have the same effect as if the Initial Determination had never been made.

1.3 Basis for Protest.

1.3.1 Grounds for Protest – The grounds for a Protest may include any grounds a Protestor may have for contesting or challenging the award of a Construction Contract to any Bidder, including but not limited to the following grounds:

1.3.1.1 A Protestor objects to a Construction Contract being awarded to another Bidder on the grounds that the other Bidder's bid is nonresponsive.

- 1.3.1.2 A Protestor objects to a Construction Contract being awarded to another Bidder on the grounds that the other Bidder is not a responsible Bidder.
- 1.3.1.3 A Protestor objects to a Construction Contract being awarded to the Protestor on the grounds that the Protestor made a mistake in its bid that entitles the Protestor to be relieved of its bid under Public Contract Code Sections 5100 et seq.
- 1.3.1.4 A Protestor objects to the Director's Initial Determination issued under section 1.2.1 above.
- 1.3.2 Required Form of Protest - All Protests shall be made in writing, containing the information listed below, and shall be filed with the Public Works Department as identified in the solicitation package. Protests shall contain the following information:
 - 1.3.2.1 The name, address, telephone, facsimile numbers, and email address of the Protestor.
 - 1.3.2.2 The signature of the Protestor or its representative.
 - 1.3.2.3 The bid, solicitation, and/or contract number.
 - 1.3.2.4 The Protest must contain a complete statement of all grounds for the Protest, and must refer to the specific portion of the bid documents that are the basis of the Protest. The Protest must set forth all supporting facts and documentation. If Protestor believes there are some facts relevant to its Protest that Protestor cannot adequately present in writing, Protestor must describe such facts in its Protest under the heading "Facts Requiring Oral Presentation", and state therein the reasons why the Bid Protestor believes it cannot adequately present those facts through documentation.
 - 1.3.2.5 All information establishing that the Protestor is a Bidder for the purpose of filing a Protest.
 - 1.3.2.6 The form of relief requested.

1.4 Protest Requirements and Procedure.

- 1.4.1 Standing to Protest - Protests shall be filed only by a Bidder.
- 1.4.2 Time for Filing a Protest:
 - 1.4.2.1 Except as provided in sections 1.4.2.2 and 1.4.2.3 below, all Protests must be submitted in writing to the Director before 5 p.m. PST of the fourth (4) business day following the date upon which the bids on the Construction Contract were opened.
 - 1.4.2.2 When a Protestor objects to a Construction Contract being awarded to the Protestor on the grounds that the Protestor made a mistake in its bid that entitles the Protestor to be relieved of its bid under Public Contract Code Sections 5100 et seq., the Protest must be submitted in writing to the Director before 5 p.m. PST of the fifth (5) business day following the date upon which the bids on the Construction Contract were opened pursuant to Public Contract Code Section 5103.

- 1.4.2.3 When the Protestor objects to an Initial Determination made by the Director under section 1.2.1 above, the Protest must be submitted in writing to the Director before 5 p.m. PST of the third (3) business day following the date upon which the Initial Determination was first delivered to Protestor (either electronically or otherwise).
- 1.4.3 Written Responses of Interested Parties - If any Interested Party desires to respond to the Protest, the Response must be submitted in writing to the Director within two (2) business days of the date the Protest was first delivered to the Interested Party (either electronically or otherwise). If an Interested Party believes there are some facts relevant to its Response that the Interested Party cannot adequately present in writing, the Interested Party must describe such facts in its Response under the heading "Facts Requiring Oral Presentation", and state therein the reasons why the Interested Party believes it cannot adequately present those facts through documentation.
- 1.4.4 Proof of Transmittal - All Protests, Responses, and Replies shall include documentation evidencing that all Interested Parties were concurrently sent a complete copy of the respective Protest, Response or Reply in a manner that would provide all Interested Parties with a complete copy of the respective Protest, Response or Reply no later than one (1) business day after it was sent to the Director. The means of transmission chosen must also provide the sending party a means of verifying the date and time the copy was received by each Interested Party. Transmission by email may be an acceptable means of transmittal.
- 1.4.5 No Ex Parte or Unilateral Communications on the Merits of a Protest - No Bidder shall have any written communications regarding the merits of a Protest with the Public Works Department or its Director that are not concurrently sent to all of the other Interested Parties. No Bidder shall have any oral communications regarding the merits of a Protest with the Public Works Department or its Director other than during an oral presentation properly noticed by the Director under these Rules.
- 1.4.6 Suspension of Process for Proposed Rejection of all Bids - At any time during the processing of a Protest, the Director may elect to indefinitely suspend any further processing of the Protest by providing written notice to all Interested Parties that the Director intends to recommend to the Board that all bids be rejected. All time deadlines provided in these Rules shall be tolled during any such suspension period. If the Board decides to not reject all bids, or if the Director otherwise decides to lift the suspension, the requirements of these Rules shall be reactivated upon the Director providing all Interested Parties with written notice thereof.

1.5 Summary Dismissal of Protest.

The Director may summarily dismiss a Protest, or specific Protest allegations, at any time that the Department Head determines that the Protest is untimely, frivolous, or without merit; is not submitted in the required form of Protest, as set forth above in section 1.3.2., "Required Form of Protest;" or is submitted by a non-Bidder. In such cases, a notice of summary dismissal will be furnished to the Interested Parties.

Such a summary dismissal shall be the final decision of the District with no provision for reconsideration or appeal to the District.

1.6 Decision by the Director Based on Written Submissions Only.

In reaching a decision on the merits of a Protest, the Director may consider relevant documentation submitted by the Protestor and any other Interested Party. If the Director wishes to have additional information submitted that was not included in the Protest or in any documentation from other Interested Parties, the Director may make a request specifying the information sought and time for submittal. Submissions of additional information that have not been specifically requested by the Director may not be considered at the Director's sole discretion. If the Director does not provide an opportunity for an oral presentation under section 1.7 below, the Director will issue a written decision without any oral presentation. The Director's decision shall be the final decision of the District with no provision for reconsideration or appeal to the Board.

1.7 Decision by the Director Following Oral Presentation.

1.7.1 The Director may, at his or her discretion, elect to provide an opportunity for the Protestor and other Interested Parties to make an oral presentation to the Director regarding the Protest. In such event, oral presentations shall be conducted in accordance with the following procedure:

1.7.1.1 Notice of Oral Presentation - The Director will set a date, time, and place for an oral presentation. Written notice will be sent to Interested Parties not less than three (3) business days in advance of the oral presentation unless it is agreeable to all parties that an earlier date be established. Continuances may be granted by the Director for good cause.

1.7.1.2 Guidelines for Oral Presentation - Oral presentations are informal in nature and shall be made by the Protestor or its authorized representative. Technical rules of evidence shall not apply. The Director will determine how the oral presentations will be conducted and may set time limits for the presentation. The Director may question Interested Parties or provide an opportunity for Interested Parties to make an oral presentation. The Director may request additional documentation or information prior to, during or after the oral presentation. Unless requested by the Director, additional documentation or information may not be accepted.

1.7.1.3 Record of Oral Presentation - Any Interested Party may request, and in the Director's sole discretion, the Director may allow recording of the presentation. If the Director allows the presentation to be recorded, the Interested Party requesting that the presentation be recorded must pay the cost of recording, including the costs to make and distribute copies of the recording to the Director and other Interested Parties. There shall be no cost to the District.

- 1.7.1.4 Decisions - The Director will issue a written decision within 10 calendar days of the oral presentation; however, the time for issuing the written decision may be extended by the Director. A copy of the decision will be furnished to the Interested Parties. The decision shall be the final decision of the District with no provision for reconsideration or appeal to the Board.

1.8 Effect on Contracts.

The failure of a District employee to comply with the provisions stated in these Rules shall in no way affect the validity of any Construction Contract entered into by the District.

1.9 Director Decisions on Protests Seeking Relief from a Bidder's Mistake under Public Contract Code Section 5103.

When a Protestor objects to a Construction Contract being awarded to the Bid Protestor on the grounds that the Protestor made a mistake in its bid that entitles the Protestor to be relieved of its bid under Public Contract Code Sections 5100 et seq., a final decision of the Director that relieves the Protestor of its bid on the grounds of mistake must be approved by the Board before it can become a final decision of the District. Any other final decision of the Director regarding a Protestor's request to be relieved of its bid on the grounds of mistake under Public Contract Code Sections 5100 et seq., shall be the final decision of the District with no provision for reconsideration or appeal to the Board.

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PROJECT PLANS

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